

Reviews

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Michael Cathcart: *The Water Dreamers: The Remarkable History of Our Dry Continent*. Text Publishing Company: Melbourne, 2009. 327 pp., illus., ISBN: 9781921520648 (PB), \$34.95.

Economic historian A. G. L. Shaw claimed that the ‘history of Australia could be written as the struggle to conquer two obstacles – great distances and a lack of water’ (p. 1). Historian Geoffrey Blainey explored the former in his classic *The Tyranny of Distance*, while Michael Cathcart takes on the latter in *The Water Dreamers*. The book explores how cultural understandings of water and aridity in the Australian environment have shaped how and where we live, our relationships with the land and each other, and what we perceive as problems in need of solutions. It is told with a compelling narrative packed with interesting diversions, as well as regular evocations of the lurid and grotesque—picture, for example, the explorer Hamilton Hume squatting miserably in the drought-stricken western plains, ‘squirting [his] boots with liquid shit’ after drinking salty water from the Darling (p. 114).

The story begins with Captain Arthur Phillip seeking a landing site at Botany Bay. On the beach twelve Aboriginal men with weapons were watching cautiously as Phillip and his crew neared the shore. One of the officers made gestures signalling that he wanted to drink, and soon the owners of the land were sharing their watering place with the strangers—Australia’s post-invasion history began with a water ritual. Cross-cultural exchanges of discovery were

quickly replaced by resentment as it became clear that the white strangers were staying. The settlers at Sydney Cove destroyed three water sources in their first seventy years—the Tank Stream, the Lachlan Swamps (at present day Centennial Park) and the Botany Swamps. In this first section of the book Cathcart describes the construction of a 3-km tunnel built to bring water from wetlands to the town centre from 1827 to 1837; a tunnel ‘hewn out of fatalism and misery’ by under-skilled and brutalised convicts, working at a rate of 1 cm per man per day (p. 42). The authorities were more willing to spend large sums of money and ten years on an engineering solution rather than enforce the regulations designed to prevent exploitation and pollution of existing water sources. Patterns for Australian relationships with water were emerging.

Cathcart is interested, however, in providing more than a summary of continuing environmental degradation. His history is motivated by a desire to understand the cultural factors that he argues have led to the current circumstances of our stressed surface and groundwater systems. The book traces how people have imagined water in the Australian environment and how this has changed over time. As such, it is a book about ideas, and one of the key, recurring ideas in *The Water Dreamers* is ‘silence’. While revelling in a revision of the myth of the inland sea (with the exception of Sturt hardly anyone thought there was one, while a few others hoped there might be a great navigable river), Cathcart lists a range of sources, from surveyors to poets, who described the silence of inland Australia.

It was not a literal silence, but a figurative one. It was a metaphor for lack and inadequacy that the colonisers perceived in the Australian environment. The silence denied Aboriginal agency and ownership; it constructed a land without animation, without nature. The 'water dreaming' in this section is introspective, and the surveyors we follow express feelings of alienation rather than triumph or domination.

This is contrasted with the last quarter of the book, where Cathcart examines the 'hydro-engineers'. The water dreaming became external; visions of transformation and potential were projected onto the Australian landscape. The hydro-engineers could replace the silence with sounds of life. Cathcart goes over the short-lived hopes for artesian water (with an interesting analysis of late nineteenth century Australian fantasy literature that imagined isolated ancient civilisations living on artesian water supplies), as well as Alfred Deakin's irrigation advocacy, the Chaffey Brothers and the first small irrigation schemes along the Murray River. It is in this last section of the book that Cathcart deals directly with Australian science and technical knowledge, and it is here that I am prompted to share some minor criticisms with HRAS readers.

Like *The Tyranny of Distance*, the bulk of *The Water Dreamers* is concerned with the nineteenth century, but Blainey was writing in the middle of the twentieth while we get Cathcart's book ten years into the twenty-first: the leap in *The Water Dreamers*—from Federation and Deakin's irrigation dreams, to water trading and irrigation industry resentment over 'duck water' environmental flows—is a large one. Cathcart bridges this gap with a chapter covering Edwin Brady's Australia Unlimited, 1920s boosterism, Griffith Taylor's controversial 'un-Australian' science, fears of northern invaders and the Snowy Hydro-Scheme. If we exclude the concluding reflections we get one chapter out of sixteen for the entire

twentieth century. The result is we lose the rich narrative of the previous sections, and the book loses its nuance. Cathcart creates a division between irrational popular and political desires for water engineering, and the rational voices of experts and scientists who expressed caution. This is too simple a division. The omission of post war conservation departments and their role in dam building is conspicuous here.

The back of the book says the booster vision caused the current water crisis, and Cathcart is persuasive in a vague way on this point. But I would have liked more reflection on the relationship between the rhetoric of boosters and water policy and practice. For example, Cathcart says that although irrigation advocates talked about watering vast expanses in the interior, they only made small irrigation areas that hugged the river ways. Does this mean that the boosters failed, or that the experts who designed the schemes were more practical? Towards the end of the book Cathcart argues that in the 1960s and 70s the centre of Australia shifted from the dead heart of Lake Eyre to the red heart of Uluru; that as a society we are starting to appreciate our diverse and unique environment. Crucially, however, this is also the period in which large dams were completed and water over-allocated. There is a lag here that seems worth exploring. Perhaps one more chapter for the twentieth century might have smoothed out these issues.

The Water Dreamers is an absorbing work of synthesis that builds an idiosyncratic portrait of a water-obsessed nation. Cathcart's foregrounding of water in a sprawling history of Australia makes a familiar story new and surprising. European encounters with Australian aridity and water are told vividly, and often insightfully. This narrative history is a pleasure to read and will have broad appeal.

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Philip A. Clarke: *Aboriginal Plant Collectors: Botanists and Australian Aboriginal People in the Nineteenth Century*. Rosenberg Publishing: Kenthurst, NSW, 2008. 191 pp., illus. (colour), ISBN: 978187705 8684 (HB), \$39.95.

Readers who, like myself, instinctively mistrust historical monographs published on A4 paper are in for a pleasant surprise. This book's ostensible coffee-table format and generous full-colour illustrations accompany an account that is both scholarly and eminently readable. Clarke, current Head of Anthropology and Manager of Sciences at the South Australian Museum, with an academic background in biology, geography and anthropology, is well qualified to handle a topic of impressive breadth and considerable importance: the impact of indigenous people on the European discovery of Australian plants.

Even today, the acquisition of botanical knowledge in Australia is too often portrayed as simply a one-sided process of discovery by Europeans. Clarke remedies this imbalance, consistently foregrounding Indigenous individuals and communities who enabled or assisted Europeans' familiarisation with Australian plants. These range from the Port Jackson inhabitants who guided, and interpreted for, members of the First Fleet (Boongaree and Bennelong are two of the few Indigenous individuals likely to be familiar to Clarke's readers), through to Gyallipert from King George Sound, who exchanged bush food with plant collector Georgiana Molloy in return for flour and the use of her kitchen; Larrakia man Biliamuk Gapal, who once stood in front of collector Friedrich Schultz to protect him from a spear; and the 'remarkably kind and attentive natives' around Kakadu who offered food to Ludwig Leichhardt and his party. Clarke effectively groups broad categories of contact around representative individuals: thus, the first three chapters (Early Explorers, Settlers, Making

Plant Names) are followed by chapters centring on, among others, travelling collector George Caley, Surveyor-General's assistant Allan Cunningham, Victorian Government Botanist Ferdinand von Mueller and inland explorers Robert Burke and William Wills. The book concludes with a survey of the history of European studies of Indigenous plant use.

Recent publications on Australian-European historical encounters—notably Stephanie Anderson's *Pelletier: The Forgotten Castaway of Cape York* and Tiffany Shellam's *Shaking Hands on the Fringe: Negotiating the Aboriginal World at King George's Sound* (both 2009)—are remarkable particularly for their delicate and perceptive dissections of specific moments of contact. Clarke's reach is broader, his approach necessarily coarser-grained; yet his discussion of individual encounters retains a comparable sensitivity to Indigenous ways of thinking and being. He is, moreover, admirably honest, even humble, in acknowledging the extent to which conjecture, supposition and intelligent guesswork are required to knit together the rich but often fragmentary and occasionally contradictory tapestry of historical data.

How did indigenous Australians understand their encounters with Europeans? We may never fully know. The botanical consequences of such encounters, however, are more accessible, and here Clarke is in his element. Drawing on an impressive diversity of sources, he documents the variety of European attempts to access and benefit from Indigenous botanical knowledge: the observation and adoption of Indigenous food gathering and preparation techniques by early settlers, the numerous Australian plant names derived from Indigenous words—how many of us realised that 'lerp', for example, probably stems from Wemba Wemba (west Victorian) *lerrep*?—and the employment of Indigenous Australians as collectors, interpreters and guides, often to the apparent satisfaction of both parties.

The breadth of Clarke's research is one of this book's great strengths. He seamlessly combines explorers' journals, missionaries' letters and poets' reminiscences with archaeological, ethnological and ecological studies, contemporary Indigenous accounts and his own substantial list of ethnobotanical publications. Numerous illustrations and photographs, coupled with frequent extracts from colonial documents, contribute to the lively, evocative feel of what could, in less confident hands, easily have become a dry-as-dust, blow-by-blow list of just one more Indigenous plant collector, one more British botanist after another.

Having said this, one or two sources are notable by their absence. I missed particularly Inga Clendinnen's *Dancing with Strangers* (2003), arguably the most successful publication on the history of Australian encounters to date: a surprising omission, the more so since many of the key figures in Clendinnen's account—the Australians Arabanoo, Baneelon (Benelong), Boladeree, Bungaree (Boongaree) and Nanbaree, and their First Fleet counterparts Governor Arthur Phillip, John White, David Collins and Watkin Tench—are discussed in detail by Clarke, who also uses the First Fleeters' written records as core sources. He likewise appears to have overlooked Paul Fox's *Clearings: Six Colonial Gardeners and their Landscapes* (2004), although at least two of these six, Ferdinand von Mueller and Daniel Bunce, extensively utilised Indigenous plant knowledge. Perhaps one can never take into account every possible source of information; yet a closer engagement with these particular works would, I think, have enriched Clarke's narrative. Nevertheless, *Aboriginal Plant Collectors* is an engaging, well researched read, and a valuable contribution to the history of Australian science.

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Colin Dyer: *The French Explorers and Sydney*. University of Queensland Press: Brisbane, 2009. 224 pp., ISBN: 9780702237034, \$39.95.

What image do you have of early settlement in Sydney? For many people, this question conjures images of dust, flies and hardship, of recalcitrant convicts, seditious soldiers and loose women. We picture the toils and difficulties of carving a colony out of a new and foreign land. But if I ask you to picture the natural landscape of Sydney, as it must have been just before settlement, most people have a very different mental image. They see a strikingly beautiful harbour, framed with sandstone cliffs, white beaches, with green-clad mountains rising into the distance. We do not see historical Sydney through our own eyes, with our own modern aesthetics; we see it through the eyes and experiences of convicts, colonists and colonial administrators. But these were not the only eyes watching the early development of Sydney. In addition to the silent witness of the Indigenous population, other Europeans with very different perspectives were watching with considerable interest.

Colin Dyer's latest contribution to the history of French exploration in Australia provides an overview of the experiences and reactions of successive French expeditions to Sydney. The French were far from being disinterested observers of this English social experiment on the other side of the world. Between 1788 and 1831, the period selected by Dyer, the French had their own fair share of social experiments born of the civil unrest that affected both countries. Debates over emancipation, human rights and social justice were at the forefront of many minds of the day, not least the educated and articulate men (and some women) who travelled on the French expeditions. Dyer's selection of material provides a fascinating and insightful focus on

this shifting view of the English experiment in creating a new society from the criminal classes, and the impact it had on Indigenous Australians, convicts and free settlers alike.

There is no doubt that the French visitors were both surprised and impressed by the early success of the English colony. Several individuals visited the colony more than once on subsequent voyages and their observations of change over the intervening years are particularly interesting. French explorers expressed a great respect, not only for English maritime skills, but also for their organised, efficient and well-constructed colonies. Dumont d'Urville, particularly on his later voyage to Hobart, attributed this success to the willingness of English free settlers to emigrate, invest and remain in their new country.

But the early praise for this experiment in criminal rehabilitation (voiced most enthusiastically by Péron on the Baudin voyage) was tempered by concern over the fate of Indigenous Australians. It was Baudin who perhaps most clearly articulated the sense of injustice many of the French explorers expressed over the usurpation of Aboriginal land. These early accounts doubted that assimilation, even with the best intentions, would ever be a successful policy.

Nor were the French blind to the darker side of colonial life. Theft was a frequent problem on the later voyages, and a kind of competitive drunkenness forms the basis of many social events (descriptions which are starkly absent from official newspaper accounts of the same gatherings). Naturally, the French visitors always manage to stay on their feet, despite being apparently unaccustomed to such excesses.

It is worth bearing in mind that many of the accounts presented were written for very different purposes. For example, while Louis de Freycinet wrote the dry official

narrative of the voyage, his stowaway wife Rose probably never intended her journal to be published. By contrast, Jacques Arago, the artist on the same voyage had his eye firmly set on the lucrative travel writing market, perhaps explaining some of his more colourful descriptions.

With such a wealth of material Dyer makes use of extensive quotes, although the liberal smattering of quotation marks through the text can sometimes disrupt the ease of reading. In some cases more context and interpretation would have been helpful. For example, much is made of the generosity of the English to their French visitors even when their nations were at war, but no mention is made of the scientific passports of free passage that both countries granted for voyages of exploration. Similarly the description of Lapérouse firing on Aboriginal people to keep them away from his longboats perhaps misrepresents his broader concerns for the fair treatment of Indigenous people by colonising powers. It would have been helpful to know that Lapérouse had recently lost twelve of his men in an apparently unprovoked attack in Samoa and had undoubtedly also lost some of his trust in human nature as a result.

The views of our early French visitors provide a refreshing and interesting insight into Sydney's history and social development. Their voices are well worth hearing, particularly from the less well known voyages. Although this book does not explicitly address the scientific interests of the French voyages, historians of science may find it a useful summary of the many issues raised in the voluminous original texts, particularly for early anthropology. *The French explorers and Sydney* adds a useful resource to the growing body of work on the French in Australia.

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Stephen Dando-Collins: *Pasteur's*

Gambit: Louis Pasteur, the Australasian Rabbit Plague and a Ten Million Dollar Prize. Random House Australia:

North Sydney, 2008. xiii + 337 pp., illus., ISBN: 978 1 74166 703 5 (PB), \$34.95.

In 1888, the Intercolonial Royal Commission on Rabbit Destruction offered a £25,000 reward to anyone who could devise a viable biological control agent for the rabbit in Australia. The famous bacteriologist, Louis Pasteur and his *Institut Pasteur* believed that chicken cholera could be such an agent, and they desperately needed money to meet a serious shortfall in their funding base. Pasteur sent his nephew, Adrien Loir, to Australia to present a bid based on chicken cholera to the Rabbit Commission.

Pasteur's Gambit is Stephen Dando-Collins's attempt to explain why the *Institut Pasteur* failed to collect the £25,000 prize, in spite of the fact that they had solid evidence that chicken cholera could decimate rabbit populations.

Dando-Collins argues that there were several scientific and non-scientific reasons for the failed bid. Pasteur's support of inoculation put him at odds with a rival bacteriologist, and anti-inoculation advocate, Robert Koch. This was important in the context of the Australian prize because two of the Rabbit Commissioners, Professor Harry Brookes Allen and Dr Camac Wilkinson MP, were disciples of Koch, and inoculation sceptics. Dando-Collins claims that these men used the Rabbit Commission to undermine Pasteur and promote the anti-inoculation cause.

Dando-Collins also suggests that two of the commissioners, Edward Lascelles and Dr Alexander Peterson, were unable to appreciate the merits of the *Institut Pasteur* bid because they had financial interests in alternate methods of controlling rabbits,

including rabbit-proof fencing and poisons. Moreover, Dando-Collins claims that Queensland commissioner, Dr Bancroft, did not want the Pasteur delegation to win because he was under instruction to woo them away from rabbit control and towards creating an anthrax vaccine for Queensland's cattle.

These were serious obstacles in the way of the *Pasteur Institute* bid, but in concluding that Loir was robbed by self-serving, narrow-minded Australian politicians and bureaucrats, Dando-Collins overreaches his evidence.

Dando-Collins maintains throughout his book that chicken cholera was an effective and safe method of controlling rabbit numbers. In the second last page of an appendix, however, he describes an experiment conducted by the Rabbit Commission that demonstrated chicken cholera could kill native birds. Dando-Collins tries to minimize the significance of this result by pointing out that modern research indicates that there is little chance of this happening outside laboratory conditions. Nevertheless, the Rabbit Commissioners did not have this information, and thus had compelling scientific evidence not to support the release of chicken cholera in Australia.

By failing to acknowledge that the Rabbit Commissioners were dealing with conflicting scientific evidence, as well as their own personal agendas, Dando-Collins misses the opportunity to engage in a more balanced discussion of the Pasteur bid, and thereby weakens the impact of an otherwise impressive book.

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Note: Pasteur's *Gambit* was the winner of the 2009 Qld Premier's Prize for Science Writing.

Penny Olsen (Intro.): *A Brush with Birds: Australian Bird Art from the National Library of Australia*. National Library of Australia: Canberra, 2008. 124 pp., ISBN: 9780642276803 (PB), \$34.95.

A Brush with Birds celebrates the collection of Australian bird art held by the Australian National Library and is a visual tribute to three centuries of bird artists. The National Library must be commended for continuing to grow a national treasure that showcases the evolution of bird art since the First Fleet, and articulates our relationship with that art. The images are faithfully reproduced in their subtle or vivid tones and presented in a pleasing format.

Dr Penny Olsen, in a lively introduction that reveals her love and knowledge of Australian birds, describes the early European fascination with the contrariness of Australia; the back-to-front seasons, the black swan, birds that laugh and even one large bird that cannot fly. Early bird art tended to focus on the bizarre or whimsical, but the European interest in natural history in the New World led to increasingly accurate scientific depiction, in illustration, of the fauna and flora of Australia. Olsen is eminently well qualified to provide this introduction, as the acclaimed author of *Feather and Brush: three centuries of Australian art* (CSIRO Publishing, 2001), a scholarly, beautifully presented book that includes images from many libraries, museums and publishers, at home and abroad.

In *A Brush with Birds*, the artists celebrated are Sarah Stone, Captain John Hunter, George Raper, John Lewin, John Gould, N. H. P. Caley, Neville William Caley, Ebenezer Gostelow, Lilian Medland, Betty Temple Watts and Bill Cooper.

Sarah Stone (1760–1844), based in England, was engaged to illustrate specimens collected by John White, surgeon to the First

Fleet and the new colony. Stone faithfully sketched her birds from the skins sent to her, but her parrots and cockatoos look rather scruffy following unskilled taxidermy and a long sea voyage. In 1992, the National Library purchased some significant examples of her work.

Captain John Hunter (1737–1821), second-in-command of HMS *Sirius* and his young companion George Raper (1769–1797) were trained in draughtsmanship and naval charting. They used their skills to record in watercolours the people, birds, fish and plants of the new colony. Hunter's sketchbook of 100 paintings was acquired by the National Library in 1953. In the case of George Raper, fifty-six paintings turned up in the collection of the seventh Earl of Ducie some 200 years after execution. They were purchased by the National Library in 2005.

John William Lewin (1770–1819), a free-settler, published his book *Birds of New Holland with Their Natural History* in London in 1808. Only six copies are known to exist, two in the National Library. He enjoyed painting his birds in natural settings with natural posture; his keen eye for detail makes his art a delight.

John Gould (1804–1881) and his illustrators Elizabeth Gould (1804–1841) and Henry Richter (1821–1902) are well known for Gould's seven-volume *The Birds of Australia*, published between 1840 and 1848. The National Library holds two complete sets with a supplementary volume published in 1869. Only a few of the Gould images could be included in *A Brush with Birds*, but all seven volumes can be viewed on-line.

N. H. P. Cayley (1853–1903) published *Australian Birds* in 1911, and his son Neville William Cayley (1886–1950) first published *What Bird is That?* in 1931. Alec Chisholm commented in the Preface to *What Bird is That?* that the book was

intended to assist and encourage the public to gain knowledge and appreciation of Australia's remarkable birds.

Ebenezer Edward Gostelow (1867–1944) did not begin painting birds until he retired from his 50-year-long career as a teacher in country NSW, but completed 730 paintings of birds by the time he died. Gostelow's birds are placed in natural settings that are exquisitely executed; this attention to correct habitat is a valued feature of his work. He bequeathed his bird paintings to the National Library.

Lilian Medland (1880–1955) was a skilled watercolourist whose work is underpinned by her scientific knowledge. Among the Medland illustrations held by the National Library are seventy-seven plates depicting 883 Australian birds that she painted in the 1930s, but were never published.

Betty Temple Watts (1901–1992) collaborated with Harry Frith, CSIRO, in providing illustrations for several books. She created 134 watercolour paintings for the book *Birds in the High Country*, first published in 1961. These watercolours have been acquired by the National Library.

William Thomas Cooper (b. 1934) established his international reputation with illustrations for J. M. Forshaw's *Parrots of the World* (1973). The original artworks for this book are held by the National Library. Cooper's birds are vibrant and personable, with a mischievous gleam in the eye.

A Brush with Birds is in the genre of a catalogue, a manuscript that might be published in conjunction with an exhibition. From time to time, exhibition of these works is possible and practicable, but for access-on-demand, the National Library of Australia, with this book and associated online catalogue identification numbers, has opened the door to the feathered treasures of the nation.

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Jeanette Hoorn (ed.): *Reframing Darwin: Evolution and Art in Australia*. Miegunyah Press, 2009. 272 pp., illus. (colour), ISBN-13: 978-8-522-85684-2, \$39.99.

Darwin's work on evolution has been placed centrally as one of the most significant sets of ideas to change the way we think about our place in nature. Yet scientific thought from the time of the late nineteenth-century onwards has undoubtedly been a key force in changing the way we position ourselves, and view the world, through art, literature and philosophy. Peter Watson succinctly sums this up in his history of twentieth-century thought, *A Terrible Beauty* (2000), '...the driving motor in this mentality, even when it was experienced as art, was scientific.' (Ch. 1). Art has been an integral part of the way many scientists actually conduct research. In Darwin's day the task was relegated to the official artist who accompanied the expeditions in order to carry out first-hand sketches and artworks of scenery, people, strange animals and the like. In the description of new species of animals, plants or fossils, the scientist paid a professional artist to execute the detailed drawings showing the principal taxonomic features to accompany the written description.

Thus, the concept of an art exhibition centred on the period of Charles Darwin and his work on evolution does not seem so strange. *Reframing Darwin: Evolution and Art in Australia* is a timely series of engaging, coherent essays that enlighten the reader about the artists working with Darwin on his voyage of discovery, how Darwinian theory influenced and inspired the art, writing and thinking of the day, and how today's artists have built upon this legacy. The book further expands on how natural history and anthropology were initially influenced by Darwinian thinking and how these disciplines subsequently developed. It is sumptuously illustrated, well referenced, has a substantial index, all in

all making this a high quality and desirable book from the Meigunyah Press.

Jeanette Horne, the curator of the exhibition and editor of the book, contributes two essays, the first being an overarching introductory chapter, 'Reframing Darwin: Beagle to Bioethics', providing the historical context for Darwin in Australia with respect to the artists aboard the *Beagle* with whom he shared discussions about local natural history, slavery and the plight of indigenous peoples. This chapter ends with a series of questions raised by the works of some contemporary artists that take on issues of genetics and the genomic revolution.

Sarah Thomas's chapter presents us with attitudes and art centred around slavery. Darwin shared time both on board the *Beagle* and in living quarters in Brazil with artist Augustus Earle. Earle's dramatic portrayal of Brazilian slaves as sometimes defiant figures, as well as suffering abuse at the hands of slave-traders, exudes his open condemnation of slavery. Such intellectual discourse undoubtedly influenced Darwin's later writings concerning humans.

Elizabeth Ellis's chapter on Conrad Martens presents his eight months' participation on the *Beagle* voyage in a detailed account of how he became involved in taking up the position (no pay, just victuals and passage) and how the voyage influenced his subsequent work.

Roger McDonald's chapter on Syme Covington not only provides a sketch of the life of the man who worked with Darwin as his assistant from 1832 to 1837, but guides us to his thinking behind recreating Covington's life in the novel *Mr Darwin's Shooter* (1998). I was delighted to see Covington's handsome portrait here as in my reading of McDonald's book I had built up a more rustic, robust-framed man in my imagination.

Danielle Clode's excellent chapter on Darwin and early Australian biology provides much content for the evolution side

of the book. Clode takes us into the very head of Darwin, providing an explanation for why he may not have taken much direct interest in collecting the exotic and unique Australian fauna and flora. She argues convincingly that much of the primary work had already been done by earlier French naturalists and Darwin's thinking was by then way ahead of basic descriptions, instead using such material after it was published to support his theories rather than becoming bogged down in taxonomic duties himself. Her story of the *Trigonia* shell, first described from fossil remains, and subsequently found alive in Australian waters off Tasmania in the 1790s by Francois Peron, is used as an example of how 'missing links' can be used for either advancing science or holding it back, depending on one's personal viewpoint. Her section on 'Australian biology after Darwin' is enlightening but restricted to the period immediately after Darwin's *Descent of Man* was published. A summary of some of the more significant contributions to evolutionary theory by prominent Australian scientists of the twenty-first century might have been a valuable addition.

John Mulvaney's chapter about Baldwin Spencer explores how Spencer's arrival in Australia in 1887 to fill the chair in Biology at University of Melbourne increased the impetus of the Darwinian legacy. Spencer, also a talented illustrator, later turned his attention to anthropological studies, creating a significant collection of artefacts and images that would serve future generations of scholars for the study of indigenous culture. Mulvaney explains that Spencer's mindset, steeped in material and social Darwinism, confused cultural behaviour and innovation with the adaptive responses of organisms in their environment, and that this led him to view indigenous people of Australia in an unfavourable light.

Richard Aitken's chapter on botanic gardens and Darwinian thought in colonial Australia is deeply engaging. The

publication of *On the Origin of Species* (1859) was followed in Australian botany by counter-evolutionary tomes, like Mueller's *The Vegetation of the Chatham-Islands* (1864), which sought to readdress the significance of a 'Creator's' fixed design.

The chapter on Tom Roberts' portrait of Charlie Turner by Jeanette Hoorn addresses the central issue of whether the artist was influenced by Darwin's work either indirectly through his close relationship and intellectual discourse with Darwinian theory exponents Baldwin Spencer and Alfred Howitt, or through his own reading of Darwin's works.

Ted Gott's essay entitled 'A Gorilla for Melbourne' once more returns us to the subject of McCoy's stuffed gorillas, first encountered in Clode's chapter. Gott provides a rich storyline beginning with the tale of installing the dramatic bronze statue of a gorilla carrying off a woman by French sculptor Emmanuel Frémiet, at the National Gallery of Victoria, and ultimately leading us through journeys to Africa with Paul Chaillu detailing the discovery of the gorilla and its impact on society of the day.

Louisa Anne Meredith was born in England and moved to Australia in 1839 where she lived and worked as an artist and author for the next 50 years. In her chapter, Amelia Scurry discusses how Meredith's forty-three studies of marine life between 1860 and 1890 might have been crafted under the influence of her readings of Darwin and correspondence with Joseph Hooker. This places Meredith's work at the centre of contemporary evolutionary thinking and as an example of cultural and artistic engagement with science.

Jonathan Smith's chapter on gender, royalty and sexuality in Gould's *Birds of Australia* returns us to the topic of how Australian birds were incorporated into Darwin's developing theories of evolution and sexual selection. Darwin had known John Gould and his wife Elizabeth since return to England from the *Beagle* voyage.

Smith opens his work by introducing us to the complexity of gender roles, domesticity and sexuality in the context of Victorian ornithology and the royal family (Victoria and Albert) before we move on to Gould and his work in Australia and how it came to be used by Darwin.

The final chapters contextualise Darwinian theory within aspects of contemporary Australian art. Alex Taylor's chapter on the work of renowned Australian artist John Wolseley begins with a challenging statement that Wolseley's quest as an artist is not just artistic and poetic, but philosophical and scientific. Wolseley's 1999 watercolour *Tracing Wallace's Line: Wing Leaf and Land* immediately shows us the link between art with evolutionary theory. Wolseley represented millions of years of speciation across the Pacific in his *The Spore-bearing Bodies of Cyttaria in Tasmania and Patagonia and their Nothofagus hosts*. His work engages us at a deeply intellectual level to search for answers to questions posed about evolution and speciation.

Barbara Creed's final chapter in the book poses the question 'is evolution over?' Here we encounter art that has directly taken on the notion of the post-Darwinian body. Julie Rraps' 'Overstepping', depicting female feet with evolved high heels, is an example that prods the mind into thinking 'could this ever be?' Similarly intriguing are works by Patricia Piccinini and others that give us sometimes disturbing visions of evolutionary novelties, artworks depicting alternative evolutionary scenarios where animals have evolved human-like features, or cloning has joined disparate parts of organisms together. Such works question the way we humans have genetically modified animals and plant for our own purpose and make us contemplate the morals and ethics of a potential future where we merge dangerously close to the kinds of things we must regularly kill to eat or make shoes out of.

In summary, this is a well presented, deeply intellectual tome cross cutting

the realms of science, art and anthropology that will stimulate those parts of your brain receptive to introspection and enlightenment.

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Richard E. Petit: *Perry's Arcana: A Facsimile Edition with a Collation and Systematic Review.* Temple University Press: Philadelphia, 2009. viii + 576 pp., illus. (colour), ISBN: 978-1-4399-0195-3 (HB).

Between January 1810 and September 1811, an English amateur naturalist named George Perry issued an illustrated magazine on natural history. For 'half-a-crown' per issue, subscribers purchased the *Arcana or Museum of Nature* in monthly installments. An architect by profession, Perry's intent was, in part at least, educative; in his own words it was 'to explain in a pleasing and instructive manner, the most beautiful and interesting Objects of Nature, as they occur in the Families of Animal Life ...'.

Today a mere thirty-two sets of the original publication are known, of which only fourteen are complete. Interestingly, more than a third of the known sets are located in Australia, including three complete sets: two at the National Library in Canberra and one at the Australian Museum, Sydney.

Now the entire run of the *Arcana*, consisting of more than 300 pages of text plus 84 coloured plates, has been reproduced in facsimile form, to mark the bicentenary of the original publication. The newly published volume includes a detailed collation and systematic review. This has been written by Richard Petit, an American malacologist, and serves well as an introduction to the background of Perry's original work. Of more importance from a scientific perspective, however, is Petit's elaboration of the systematics of the various mammals,

birds, reptiles, fish, marine species, insects and one tree, described in the *Arcana*. Not surprisingly, in the past two centuries much has changed in the taxonomy of species described in Perry's work. Petit's systematic review both identifies the species with currently-accepted genera and species names, and situates Perry's descriptions and thinking within an historical context.

Historically, the *Arcana* is a somewhat neglected work. Petit alludes in an introduction to possible reasons that it is not well known today. This disregard is, in part, due to the rarity of extant copies, a natural result of its episodic format—publications issued in parts have less chance than a single volume of surviving the rigours of time. It is likely also that copies were subsequently broken up so that the full-colour plates could be sold separately, as objects of art. A more telling cause of the *Arcana*'s relative obscurity, however, lies in the intellectual debates revolving around competing interests in natural sciences in the early nineteenth century. It seems that Perry favoured a Lamarckian approach to the classification of genera, rather than the more generally accepted Linnaean system. Petit suggests that the *Arcana* may have been deliberately ignored. A later major study of shells by Perry is better known.

The lack of attention that Perry's *Arcana* has received in the past 200 years notwithstanding, the work has an interesting place in the history of natural sciences, and one with some Australian connections. That Australian animals would be featured is unremarkable, of course, given the number and range of previously unknown creatures being brought to the attention of English naturalists at the time of publication. Perry considered the peculiarity of Australian animals, combined with the size of the continent, proof that the biblical flood had not been universal; how else, he reasoned, could one 'account for the restoration of each individual species to each particular climate'.

The *Arcana* contains descriptions, with corresponding plates, not only of iconic species such as the Koala, Platypus and Kangaroo but also Wombat, Sea Horse, and Feathertail Flider. Among bird species, Perry described the Eastern Rosella, Ground Parrot and Brolga. Perry's figure of the Koala (which he calls Koalo) is the earliest published illustration of the animal. This is noted on the website of the National Library of Australia (not the State Library of South Australia, as claimed by Petit), where the *Arcana* is regarded as a national treasure.

Of further possible interest to Australian readers, the *Arcana* includes a short extract from an account of the Aboriginal people of the Sydney area. There were several contemporary accounts of the settlement at Sydney and it is uncertain from which one this extract is taken. However, the fact that an account of foreign indigenes could be part of a collection of natural history texts is indicative of the Eurocentric mind set of the day.

Great care has been taken in the creation of this facsimile, to reproduce the plates

faithfully, as close to original colours and brightness as possible. Similarly, although the text pages were cleaned of any foxing or extraneous marks during the scanning process, none of the many spelling mistakes, typographical errors or factual inaccuracies was corrected.

With the benefit of 200 years of research and familiarity with the specimens, some of the statements regarding the animals described by Perry seem today quaint and amusing, if not nonsensical. While it would be easy to simply delight in the plates and dismiss the text as of little value, from an historical perspective there is something to be gained by taking the time to read it. At the very least Perry's *Arcana* provides insights into an important period in the development of the natural sciences as we know them today.

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