Book Review Section

Compiled by John Jenkin*

Ann Moyal, *'a bright & savage land': Scientists in colonial Australia* **(Collins, Sydney, 1986), 192 pp., illus. ($54.00).**

This is a visually attractive, readable survey of invention and of foraging for taxonomic purposes in nineteenth-century Australia. The controlling theme is the isolation of the seekers, both from the metropolitan centres of science and within the Australian community. The inventors, Henry Sutton and his vacuum pumps and telephone apparatus, John Ridley and his grain strippers, and Lawrence Hargrave and his stable kites, curved wing surfaces and light engines, worked independently of local understanding and financial support and subject to having their ideas appropriated and patented by more ruthless rivals in the greater economies of North America and Europe. Although large amounts of money or technical skill were not required, it is sad to notice how early the pattern of timid entrepreneurship and smugly timid manufacturing industry was set in Australia, abetted by the crass journalists, lawyers, graziers and land dealers, who constituted the local political pack and who in turn starved technical and scientific education. Mrs Moyal does not underline this lesson, but her repeated accounts of brilliant endeavours crushed by local neglect make the story poignantly memorable.

The foraging began with the Dutch seaborne speculators and continued through the British occupation of the continent, with itinerant or resident gatherers of flora, fauna, fossils and Aboriginal objects obsessively catching, killing, drying, bottling and boxing loot for imperial accumulations in Britain, France, Germany, Switzerland and the United States. Most of these collectors appear to have worked alone, occasionally secretly, dependent upon payment, direction and intellectual support from patrons in London, Paris or Berlin. Until the efflorescence of Melbourne and Sydney in the 1880s, the scientific workers never amounted to a community confident enough to think through the principles upon which their botanical, geological or ethnological concerns were based, or to develop explanations which illuminated the local evidence; rather, they adhered to northern hemisphere concepts which often were simply inapplicable and confusing. But from the 1870s and 1880s, it is heartening — and salutary — to see that brilliant foundation appointments in anatomy and physiology, for example, at Sydney University and in organic chemistry at Adelaide produced schools whose strengths have continued for a century.

Mrs Moyal's approach is biographical. She has adroitly used the *Australian Dictionary of Biography*, which emerges as commendably strong in entries on scientists, thanks partly to her endeavours in the early days of the *Dictionary*. Each collector and inventor is introduced with a brief life sketch, and has his or her achievements lucidly described. Mrs Moyal does not probe the ambitions and obsessions which drove her subjects to pursue such unusual and commonly unrewarding enterprises in the colonies. This decision to play safe leaves the story rather flat and the individual personalities indistinct, but with exceptions like the formidable botanical and animal collector, Amalie Dietrich, who obviously engages Mrs Moyal. Territorial small fish in very small ponds, such as Sir Frederick McCoy, G.B. Halford and Sir Thomas Mitchell, receive their due, but a colonial knighthood is no safe guide to scientific excellence, and it is reasonable to suggest that Mrs Moyal takes them too much at their own estimation. Nonetheless, the magnificent, lonely achievements of the unknighted W.B. Clarke, William Farrer and Lawrence Hargrave are critically explained and placed in their international context.

The book is beautifully illustrated with contemporary paintings, engravings, photographs and portraits. It is a pity, however, that these are not always adequately documented or dated. The documentation of the main text is also occasionally too slight, as with the intriguing remark 'that the Australian section of the garden of creation appeared to be planned on principles not easily reconciled with the idea of a chain of universal being' (page 139), which turn out, after a lengthy search, to be from Professor Bernard Smith and not a contemporary commentator. Sidney Sussex College, Adolarius Humphrey, Louisa Twamley (Meredith) are misspelt, and Victoria achieved separation from New South Wales in 1850 rather than the date given at pages 103 and 149. The University of Melbourne was established in 1853 and arguably was shaped after the Queen's University of Ireland rather than London University (page 161). But these are small blemishes in an engrossing, wide-ranging and quietly provocative book.

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Lewis Pyenson, *Cultural Imperialism and Exact Sciences: German Expansion Overseas, 1900–1930* **(Peter Lang, New York, 1985), 342 pp., illus. (U.S. $40.00).**

Pyenson's book is a greatly expanded version of a paper presented at a conference on 'Scientific Colonialism, 1800–1930: A Cross-Cultural Comparison' held at the University of Melbourne in 1981, and subsequently published in *History of Science* (20 [1982], 1–43). Neither the overall argument of the present work nor the conclusions reached differ significantly from those set out in the earlier article; indeed, much of the wording is identical. What we are now given, in addition, are detailed narrative histories of the activities of German physicists in the three widely separated locations that form the basis of Pyenson's study, in place of the mere thumbnail sketches provided earlier. In connection with

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one strand of the story, the history of the geophysical observatory established at Apia, in Samoa, we are also given a valuable survey of the early years of scientific seismology that focuses on the very important contributions of the Göttingen professor Emil Wiechert. (In the recently published proceedings of the Melbourne conference, *Scientific Colonialism: A Cross-Cultural Comparison,* edited by Nathan Reingold and Marc Rothenberg [Smithsonian Institution Press, 1987], a paper embodying part of the Apia Observatory story has been substituted for Pyenson's original paper.)

In addition to Apia, the sites of early 20th-century German activity in physics that Pyenson discusses are Argentina and China. In Argentina, the institution with which he is chiefly concerned is the University of La Plata, where the physics department, undoubtedly for a time the leading centre for physics south of the Equator, and later the observatory as well, were for a number of years staffed by German professors. In China, Pyenson recounts the stories of the German-orientated Tung-Chi University in Shanghai and of two institutions in Tsingtau, capital of the German concession, namely the observatory operated by the German navy and the Deutsch-Chinesische Hochschule.

Pyenson's account is based on an impressive range of published and unpublished sources, including several Australian archival collections. He brings vividly to life several more-or-less forgotten episodes in the history of early 20th-century physical inquiry, and in doing so adds valuable detail to our knowledge of the German physics community of the day. Sometimes, indeed, considerably more detail is provided than is necessary. Do we really need to know, for example, when the two children of Bruno Meyermann, director of the Tsingtau Observatory, were born, or that both were delivered in the Faber hospital? Likewise, small but irritating errors intrude from time to time. For example, Georg von Neumayer is introduced as a 'former astronomer at Melbourne', whereas he was in fact concerned throughout his time in Australia not with astronomy but with meteorology and terrestrial magnetism. Yet such infelicities do not significantly detract from the merit of the work or from the importance of Pyenson's central theme.

That theme is the interaction of science and scientists with the forces of imperialism. The German government, Pyenson argues, promoted the exact sciences in these far-flung outposts quite deliberately, as part of a wider imperial strategy, in the expectation of long-term economic or political gain. In the case of sciences that are more or less directly applicable to daily affairs, Pyenson suggests, it is relatively straightforward to identify the practical origins of abstract scientific discourse in a colonial environment. In the case, however, of the exact sciences — a term Pyenson nowhere defines but which clearly in his usage includes at least astronomy, theoretical physics and the 'purer' aspects of geophysics — such motives are absent and one is left instead with *cultural* imperialism, the use of natural knowledge to gain prestige rather than direct material benefit for the metropolitan power. Pyenson's concern, therefore, is to show how cultural imperialism of this kind manifested itself in practice. It is a tale well told.

For the historian of Australian science, Pyenson's work is of interest on several counts. To begin with, there are scattered references to people and events in Australia that deserve to be better known. We must wonder, for example, how widespread was the extraordinary narrowness of vision that led Australian observers (in the person of H.A. Hunt, then at Sydney Observatory but soon to become the first director of the Commonwealth Bureau of Meteorology) in 1905 to decline to exchange meteorological and magnetic data with the observatory at Apia, ostensibly for want of funds.

By contrast, we learn of close links that existed between Apia and E.F. Pigot's observatory at Riverview College on Sydney's North Shore. Pigot was an Irish Jesuit who spent some years at his order's observatory at Zikawei in China before being posted permanently to Sydney in 1907. In 1908 he spent three weeks at Apia, and subsequently, with the assistance of G.H. Angenheister, director of the Apia Observatory, he installed vertical and horizontal Wiechert seismometers at Riverview. In 1911, Pigot visited Apia again as a member of a combined British-Australian solar eclipse expedition en route to Tau Is., 300 km from the Samoan capital. The Riverview Observatory remained until recent time Australia's principal seismological station. Pigot's collaboration was important to the German research programme, which required simultaneous monitoring of seismic disturbances at different locations in the Pacific basin.

At the outbreak of war in 1914, several German scientists were in Australia for the meeting of the British Association for the Advancement of Science held in Australia that year. Some were permitted to leave — a point that Pyenson fails to note — but two, the anthropologist Bronisław Malinowski (a Pole but an Austrian subject) and the physicist Peter Pringsheim, were interned for the duration of the war. Malinowski was permitted considerable freedom of movement, but Pringsheim was not. Neither were Franz Peter Defregger, detained while returning to Germany after completing a tour of duty as Angenheister's assistant at Apia, or Planck's student Erich Hupka, captured with his family in Ceylon in 1914 while en route to Tsingtau and subsequently transferred to Australia. Many other German and Austrian nationals, including a number of scientists, were threatened with imprisonment in Australia following the French seizure of the German schools in Shanghai in 1917. Other Germans detained in China had been sent to Japan but, one is shocked to learn, the French and British in Shanghai preferred Australia because they felt the Japanese treated prisoners too leniently. Fortunately their judgment was never put to the test, because the Chinese authorities succeeded in delaying the proposed deportation until hostilities ceased.

The outbreak of the war also saw the occupation of German Samoa by New Zealand forces. Somehow, however, Angenheister persuaded the New Zealanders that his observatory was a private establishment belonging to the Göttingen Scientific Society, not a public one, and thus was not subject to seizure. The Australian Prime Minister, W.M. Hughes, was scandalized when in 1916 he discovered that Angenheister had been

permitted to keep working normally, but happily his intervention did nothing to disturb arrangements. Though the war brought various inconveniences — in particular, it left Angenheister cut off from Wiechert's advice and support and forced him to depend financially upon loans from the local German community — it was not until some time after hostilities ended that serious problems arose. Once it was decided that New Zealand would retain control of the islands it had captured, it also became responsible for the Apia Observatory. The New Zealand government did not, however, share Germany's view of the value of pure science. Many of the instruments were dispersed. Only when it was clear that a substantial part of the cost would be borne by the Royal Navy and the Carnegie Institution of Washington did New Zealand agree to contribute its own modest portion to support a much reduced operation. A Rockefeller Foundation grant helped during the worst years of the Depression, but by 1933 all that was left was a pitiful annual grant of £280 from Wellington.

Yet the work of the observatory had lost direction long before this — in fact, with Angenheister's departure in 1921. Under the Germans, Pyenson indicates, the observatory had a clear purpose. The seismological programme in particular, as laid down by Wiechert, was directly related to on-going theoretical work. It took advantage of Samoa's geographical location to provide fundamental information about the Earth's interior. Furthermore, the German observers did not just collect data for analysis by theoreticians back in Germany. They themselves were expected to be masters of the theory and to be able to relate their data to it. But under New Zealand control, the work degenerated into mere data-collecting. That most of this activity was without point was not apparent, Pyenson remarks, either to the empirically minded New Zealand scientists appointed to the advisory board, or to the Carnegie Institution of Washington's Louis Bauer, whose advice they in turn sought. (It is a sad irony that, just as the Apia Observatory slid finally into desuetude, New Zealand did at last acquire a scientist, namely K.E. Bullen, who could have provided the necessary theoretical guidance. But by then it was too late.)

Though it is not part of Pyenson's brief to pursue the question, he has surely here put his finger on what was long a major weakness of Australian as well as New Zealand physical science. There is no reason to suppose that the Apia Observatory would have fared any better after World War I under Australian administration than it did at the hands of New Zealand. Most evidently, perhaps, in the deadening commitment of the various state observatories to the long-running international astrographic programme for charting the heavens at the expense of any astrophysical work, but all too apparent, as well, in the publications emanating from the physics departments in the several universities, Australian research in the physical sciences in this period was, as in New Zealand and with depressingly few exceptions, far removed from the leading edge of theoretical advance. Indeed, in both Australia and New Zealand, matters of theory were seldom even addressed by physicists all too imbued with a Baconian, fact-gathering view of their subject. German physics was never like that. The comparative merits of the two approaches emerge very clearly from this history of geophysics in Samoa.

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Patricia Mather et al., *A Time for a Museum: The History of the Queensland Museum, 1862–1986* **(Memoirs of the Queensland Museum, vol. 24, 1986), 366 pp., illus. ($18.00).**

This attractive paperback volume on the history of the Queensland Museum reflects its museum subject in its topical arrangement, its visually stimulating layout and illustrations, and its evocative detail. Patricia Mather's publication was strategically timed to coincide with the Museum's move into a new and innovative facility in south Brisbane, and offers a retrospective look at origins and development.

Organized into thematic chapters, the book demonstrates how, in fits and starts, the various divisions of the Museum (using categories of the 1980s) acquired their holdings and used them for research and display. Perhaps an inevitable result of this arrangement is repetition between chapters on geology and mineralogy, for example, and with regard to various museum administrators and staff who are reintroduced each time they influence particular developments. This layered account provides a cumulative, qualitative familiarity, however, and documents not only scientific activity but also the contributions to education, through display techniques and the essential resources of the library. The theme is triumph over hardship, highlighted by major accomplishments and by the thwarted ambitions of various curators, trustees and administrators.

It is possible to browse in this book, as one might in a museum. The large margins and hundreds of variously sized photographs and sketches provide a display of the Museum's history, with particular regard to people, specimens and printed archival material. All the pictures have captions but many lack a source; presumably the Museum itself has catalogued them in such a way as to make them retrievable. They provide an intimacy with the Museum, visually and aesthetically, that a text alone cannot provide. An additional resource that could have helped this reader would have been maps, given the frequent references to field investigation.

Although administrators and overseers of institutions typically maintain offical and accession files, the Queensland staff has been exceptionally thorough, as I discovered several years ago. The author (and perhaps some among the long list of collaborators on the title page) assiduously mined manuscripts and rare printed material in the Musuem and State Archives. From them she culled considerable detail about the careers of the staff and trustees to create an impressively comprehensive list of all museum employees to about 1970. Anecdotes and assessments of these individuals, not always documented, suggest that she relied as well on curators and museum lore to gain an added human dimension.

A museum visit, however, leads to reflection about what is displayed and explained. The habitat background is primarily provincial. First, the Queensland Museum could not aspire to the national status sought by its early counterparts, the then National Museum in Melbourne and the Australian Museum in Sydney. Second, the author integrated relatively little about parallel developments from the growing literature on museum history. To those who understand what was happening elsewhere in Australia as well as in the United States, Britain and other colonial settings over the past century and more, some innovations appear less striking and certain individuals less responsible for failures that were almost endemic at particular times and financial and political circumstances.

Mather's account nonetheless offers tantalizing evidence that the Queensland Museum was not totally isolated. What, one wonders, did Richard Daintree and C. D'Oyly Alpin bring from their experience on the Victoria Geological Survey? Charles de Vis, as she points out, had actually worked at the Queens Park Museum in England before coming to Queensland, but there is no evidence of how his directorship reflected that experience. To what extent was Robert Etheridge's scathing report on the Museum in 1910 a reflection of the distance between the Australian Museum, which he directed, and the Queensland Museum? Thomas Marshall's lost opportunity to visit the United States under a Carnegie travelling scholarship in the late 1930s is not explained (in terms of the impact of such grants on other museums in Australia and New Zealand, for example).

Much of the volume focuses positively on what was accomplished in Queensland. Rich detail documents the continuities as well as the changing orientation of the Museum as it moved from general zoology, to paleontology, to anthropology, and then to various ecological, technological and historical topics. In the scientific chapters, there are clues about the mixed blessing of outside scientific interest. Europeans, and later Americans, collected, exported and published on natural history specimens acquired in Queensland and through Queenslanders. Sometimes this inspired a flurry of local activity. The Brisbane Museum never enjoyed sustained encouragement, having few duplicate specimens and no publication until the 1890s, but it was therefore less affected by declining interest in the zoological wonders of Australia.

The principal forces for change were, in this account, the various trustees and directors. Trustees were appointed from 1876 to 1907, and again after 1970. Indeed, the early appointees were primarily 'men of goodwill', but a few alienated curators were ineffectual fund raisers, and perhaps had conflicting interests. W.H. Miskin, for example, in his role as trustee regularly tried to discourage the loan of specimens, even as he himself worked from that collection. While such behaviour is understandable and perhaps not atypical, nonetheless the charges leveled by Karl Staiger, who subsequently lost his position as curator, might have been addressed. While Mather hints as difficulties, her account does not reveal much about the administrative and political dimensions of individuals who, in the absence of clear legislation outlining their authority, occasionally acted in a preemptory fashion. The decision to disband the trustees and place the Museum under the Premier in 1907 was more, it appears, than a simple turn to a bureaucratic structure.

Some administrators with ambition did not remain long, while those who did often worked for decades with low salaries and limited recognition, according to Mather. Extensive biographical notes make the case persuasive. Those active in scientific work, however, could use their immediate access to collections to make significant contributions to systematics. Until after World War II, at least, the major administrative challenge was survival. After that, the concerns of the museum were more effectively integrated into the political and economic concerns of the state.

Some of the most interesting characters in this account were the collectors, some nearly 'swagmen', whose youthful pedestrian habits made them ideal observers of nature. Kendall Broadbent's adventures in the bush make him seem a fitting film subject (in the spirit of Crocodile Dundee!). Essential to the running of the museum itself were the volunteers and 'honorary curators', who might concentrate only on a single short task or remain committed to maintain collections for years. Their effortrs, too, are woven into departmental accounts and demonstrate the essential contribution of unpaid expertise down to the present. Women as well as men provided such assistance, and museums offered if not equitable appointments at least opportunities for women in science when they found few in universities. It would be interesting to know how volunteers acquired their interest and skills, and what conditions helped some move into employment but not others. This volume admirably credits the contribution of unpaid staff, from the preservation and preparation of specimens by the first honorary curator, Charles Coxen, to the present day recovery of the shipwreck of La Pérouse's *La Boussole* by marine archaeologists.

Changes in political policy, public commitment to education and culture, and even the basis of wealth (not simply of economic crisis and boom) certainly affected the nature and shape of the Queensland Museum, but such issues remain to be explored in detail. Did, for example, the tensions surrounding Aboriginal relations account for the historical sparseness of their artifacts in the Queensland Museum, by contrast with that of the South Australian Museum? It is only one measure of the significance of this detailed history that such questions are evident. This is not a book to be real for theoretical analysis of institution building but one to be dipped into, chapter by chapter, for the varied aspects of museum activity. Overall, it is a comprehensive account wherein the enterprise, disappointments, doggedness, tragedy and triumphs of a museum enterprise are thoroughly recounted.

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Russell Braddon, *Thomas Baines and the North Australian Expedition* **(Collins, Sydney, 1986), 160 pp., illus. ($65.00).**

This magnificently illustrated volume represents not only an overdue testimonial to the artistic abilities of the painter Thomas Baines (1820–75), but a compendium of the most remarkable results of the exploring expedition which Augustus Gregory led to north Australia in 1855–6; that is, Baines' sketches, water-colours and oils. Handsomely printed, with two useful maps and a well-chosen selection from the corpus of artwork accomplished by the indefatigable Baines, the book will be a delight to handle and to own, even at a price of $65.00. It has been published in association with the Royal Geographical Society, which owns all of the artwork Baines executed as a permanent record of an exploration which the Society itself initially sponsored. Expeditions still require promotion, and the release of this volume has been timed to provide advance publicity for 'The Kimberley Australia 200 Project', an expedition being organized by the R.G.S., in conjunction with the Linnean Society of London and counterpart Australian scientists, to conduct biological and geomorphological research during 1988 in the same general area as that investigated by Gregory's expedition.

This book, let it be emphasized, does not pretend to be a history of the North Australian Expedition. For that, one still consults J.H.L. Cumpston's adequate if not exhaustive *Augustus Gregory and the Inland Sea* (Roebuck Society, 1972), which also contains a few inferior reproductions of Baines' sketches. While providing a detailed account of Baines' activities as the artist-storeman, Braddon's narrative, based on the personal journals of expedition members, is almost exclusively occupied with tedious descriptions of the jealousies which inevitably arise among people sharing isolation and hardship. Little substantive description is provided as to the background, aims, methods and achievements of the expedition.

Baines' paintings and sketches, however, redeem Braddon's prose. They convey at a glance the light, the heat and the space of the north Australian littoral and the Victoria River hinterland. As the first Western artist to attempt to depict a region which was as alien as it was remote to the European consciousness, Baines has accurately captured the texture of the bush. In his limitless horizons, brooding escarpments, riotous vegetation and monstrous sharks and crocodiles (repeatedly and inaccurately termed 'alligators' by Braddon) we view a landscape indifferent to man and hostile to the self-confident assertiveness of the industrial and imperial age. It is the psychological need to express the shock of this confrontation, rather than mere duty, which explains why Baines filled his sketches with scenes of his companions struggling against a bizarre, implacable nature out of scale and out of time. Fording swollen streams, crossing interminable plains, confronting gigantic saurians — men as it were swallowed in the immensity of a strange continent — this is his theme. Similarly, many pictures depict attempts to initiate the process of Europeanization: the naming of topographical features, the classification of flora, fauna and rock strata, the construction of camps within neat quadrilateral enclosures, the daubing of prominent boulders with records of visitation, this last activity paralleling, probably unconsciously, the Aboriginal method of coming to terms with the land through the medium of religiously inspired rock paintings. The gun, the axe and the geologist's hammer are equally instruments of domination, and in the meticulous recording of efforts to recapture strayed horses and repair disabled sailing vessels we view the Europeans' determination to maintain mobility and technological superiority in an unfamiliar environment. Seen in this context, Baines' fascination with Aborigines is predictably equivocal. Native Australians are illustrated with respect because of their mastery of a land in which Europeans remain vulnerable interlopers, but they are simultaneously shown as treachereous, and thus of a piece with their unpredictable environment.

Baines' art displays verve, naivety and refreshing audacity commensurate with his unorthodox training as a painter of coats of arms on carriages in his native Norfolk and a subsequent decade passed as a landscape and war artist and freeland explorer in Cape Colony. As Braddon remarks, Baines' preference for action, narration and brilliant colour in his canvasses must certainly be the combined result of personality and experience. During the formative years in South Africa the artist developed the special sensitivity to non-European landscapes as well as the frontier skills of self-reliance which so well fitted him for the challenge of northern Australia.

Baines returned to Britain from the Cape in 1853. While working at the R.G.S. he met Ernest Haug, an Austrian refugee (unnamed by Braddon) who invited Baines to join a grandiose exploring expedition he hoped to lead across northern Australia. But as Braddon fails to explain, the removal of Haug as leader was engineered by Sir Roderick Murchison, President of the R.G.S., because, by publicly announcing that the Society had recommended the project before its official approval by the Colonial Office, the Austrian threatened to upset the cozy arrangement whereby the Society secured ministerial assurance of support before launching its public appeals. With Haug out of the picture, the Colonial Office then appointed A.C. Gregory, Assistant Surveyor-General of Western Australia, as the leader.

It was Murchison, too, who most thirsted for gold discoveries in northern Australia. As a celebrated geologist who headed Britain's Geological Survey and claimed to have scientifically predicted the discovery of gold in Australia's Great Dividing Range years before the historic strike of 1851, Murchison was recognized as an expert on the distribution of the precious metal. He was in consequence anxious to extend the scope of his fortuitous prognostication as well as the territorial sway of his Silurian System, whose ancient strata he believed to be peculiarly associated with gold deposits. Murchison was also an enthusiast of British imperial development, and events in California, New South Wales and Victoria had demonstrated the speed with which gold rushes could populate newly opened regions. Having advocated new settlements on the north coast of Australia since the abandonment of Port Essington in 1849 and

been further alarmed by the French annexation of New Caledonia in 1853, Murchison therefore seized on Haug's proposal as a means of securely planting the Union Jack on the continent's exposed northern flank. Aided by other advocates of empire wary of French designs and speculators — such as Trelawny Saunders who hoped to profit from a new colonizing venture on the north coast — he promoted the North Australian Expedition in hopes of precipitating the mineral discoveries which would flood the country with prospectors and necessitate the establishment of British authority on the spot. The initiative for the expedition and the strategy of imperial consolidation underlying it were thus those of the scientist Murchison, not, as Braddon claims, the Colonial Office. Murchison also appointed James Wilson as the expedition's geologist, but as Braddon points out, Wilson's results were hardly commensurate with his patron's expectations. He found no gold and seems to have expended most of his energy fostering insubordination.

Historians of science will find Braddon's book inadequate beyond the visual impact of Baines' art, which reminds us how daunting a proposition field research was in nineteenth-century Australia. The central issue which Braddon fails to address is the scientific content of the expedition. Cumpston, in spite of his deficiencies, remains marginally superior in this regard. Gregory is summed up by Braddon as a leader more concerned with the health of his horses than that of his men, Wilson is depicted as an inveterate snake in the grass, Ferdinand von Mueller, Government Botanist of Victoria, is characterized only as an 'irascibly eccentric German' (p. 17), the collector-preserver James Flood is dismissed as a sullen malingerer, and the surgeon-naturalist Joseph Elsey, who also made meteorological observations, merely receives mention for his priggishness. Nothing is said of their respective scientific philosophies, methods or contributions. The geological journal entries made by Gregory during his overland trek from the Victoria River to the head of the Gulf of Carpentaria, for example — the first such observations made in the region since Leichhardt's — are mentioned merely for their tedium (p. 133). The water-colour of Wilson at work with his geological hammer on the brink of a gorge, however, gives something of the flavour of the researches undertaken. There is also a sketch, pleasing to the historian's sense of continuity in scientific enterprise, of the expedition's members carving their ship's name on a timber on Sweers Island in the Gulf of Carpentaria beneath a tree (now preserved in the Queensland Museum) bearing the names of Flinders' *Investigator*, which charted the island in 1802, and Stokes' *Beagle*, which touched in the course of its survey work during 1841.

The focus on Baines necessarily leads Braddon away from the main expedition, for after exploring the Victoria River region the staff broke into two parties. Gregory set off with von Mueller and Elsey east to the Albert River, while Baines, Flood and the dismissed Wilson sailed for Timor to reprovision and then rendezvous with Gregory at the Albert before the land party began its final journey south to Moreton Bay. Gregory's party enjoyed an easy crossing to the Albert, but Baines' group was plagued by contrary weather, an unsound ship and incipient mutiny. A detour to Java caused further delays, and Baines reached his rendezvous over two months too late to meet Gregory despite a futile thousand-mile voyage in a longboat. Gregory, however, retained sufficient supplies to press on, and reached the northern fringe of settlements without mishap. Baines then sailed for Sydney by the safer Indian Ocean route, completing the circumnavigation of the continent begun on the expedition's initial voyage from Sydney to the Victoria River.

On the practical side, the expedition failed to discover any valuable minerals, but it did confirm the pastoral promise of the Victoria River region and northern Queensland. Penal colonies were proposed for several years afterwards as the best means of initiating north coast colonization, but this solution had already become politically unacceptable, and overlanders did not arrive for some time due to the region's isolation and trying climate. For science, the results of the expedition were an accession of knowledge regarding the geography, geology, climate, flora and fauna of the region. And while Wilson and Flood afterwards lapsed into relative obscurity as a result of their poor showing during the endeavour and Elsey died of fever in the West Indies scarcely two years later, Baines was rewarded with an appointment to David Livingstone's Zambesi Expedition of 1859 (ill-starred though it proved), von Mueller enhanced his reputation as an expert on Australian botany, and Gregory, after receiving the coveted gold medal of the R.G.S., became Surveyor-General of Queensland.

Braddon's book renders accessible Baines' visual record of one of the most important and neglected of Australian explorations. Cumpston's brief account and Gregory's own published journals notwithstanding, we still await a comprehensive history including scientific, political and social anlaysis of what Braddon rightly terms this 'strangely un-comradely' expedition (p. 70). For the art alone, however, which constitutes a unique inheritance from the era when field research was quite literally synonymous with adventure, this volume should find a place in every historical and scientific library.

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Brian Martin, C.M. Ann Baker, Clyde Manwell and Cedric Pugh (Eds.), *Intellectual Suppression: Australian Case Histories, Analysis and Responses* **(Angus & Robertson, Sydney, 1986), 304 pp. ($19.95).**

There is no doubt that intellectual suppression occurs in the world of western democracy and no doubt, in particular, that it occurs in Australia. Those with power over the conduct of research and the publication of research results have interests in the ideas developed, often interests that are non-intellectual and inappropriate, and it would be miraculous if they did not sometimes allow such interests to dictate interference.

Miraculous, at least, given the inadequacy of the constraints which are often supposed to guard against abuse of such power.

There is again no doubt, and *Intellectual Suppression* is eloquent testimony on this matter, that in many of our research institutions, even our universities, the power of professional and administrative authorities is insufficiently constrained.

All of this is to say that I am in basic sympathy with the drift of this book. As Cedric Pugh puts it, so far as the rights of those susceptible to abuse of power are concerned, our research institutions often operate in a twilight zone. The deficiencies are not equally spread across different sorts of institutions, but they are there to some degree in all. They are not beyond remedy and it is high time they were put right.

But having said this much, I must go on to report that I am not greatly impressed by *Intellectual Suppression*. My reservations are these:

1. The cases presented vary greatly in the seriousness of the suppression alleged, and this makes the focus of concern fuzzy.
2. The presentation of the cases varies from the disciplined documenting of procedural failure or abuse of power to highly anecdotal reportage which it is easy to suspect of bias.
3. The suggestion is that all suppression comes 'from above', when appointment committees and the like oten thwart the wishes of the assumed authorities and when it is obvious that suppression may also occur by such means.
4. More generally, most of the analysis offered of suppression — the feminist critique is the exception — suggests that it always occurs by the visible hand of élite interference, where radical analysis indicates that power is most effectively increased through the invisible hand of agenda-setting, criteria-formulation and the like.
5. Although there is useful advice provided for those who suffer suppression, there is little attempt to describe structures and procedures which would guard against this melancholy phenomenon.

The book comes in three sections: first, discussions of various cases; secondly and much more briefly, contributions on the motives and means of suppression; thirdly and equally briefly, analyses designed to help someone fighting against suppression. The volume has the look of a handbook for the intellectually suppressed. It would be of more general utility if it had set out instead to be a sourcebook for those who wish to devise institutional safeguards against suppression.

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