



CHAPTER 32

MINES AND MINING

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SOON AFTER EUROPEAN settlement, mining in Australia began with the discovery and exploitation of the coal deposits in and around Newcastle. The first exports of coal occurred in 1799. Although the discovery of the coal deposits was greeted enthusiastically by the authorities in Sydney and London, the prospects did not generate anything like the enthusiasm and subsequent economic development that followed the gold discoveries of the 1850s. From that decade onwards Australia was internationally recognised as a source of mineral wealth. Its riches included most of the known minerals and metals but the size of its deposits were only dimly appreciated for some decades.

Any historical bibliography of Australian mining has therefore to encompass not only two centuries in time but also a variety of aspects and experiences. The bibliography that follows has therefore been divided into the following parts: General works; Gold rushes and goldfields; Metals and minerals other than gold; Processing; Gas and petroleum; Government policy; and Administration, which includes mining law and financial matters. In some instances it will be obvious that a title could be put under more than one heading. The categories provide a functional division of the material but they should not be seen as mutually exclusive.

A wide variety of books is listed in the first part. A very useful starting point is Geoffrey Blainey (1978). The other titles in this category range from nineteenth-century regional studies to memoirs and modern assessments of mineral deposits. Also of historical importance (though included in the second part because of its relationship to goldmining) is the only entry related to labour history of the social and political outcome of mining. This is Carboni's account (1855; repr, 1983) of the events at Eureka together with some recent revisionary essays on that subject. References concerning the political, social and labour history and the industrial relations of mining will be found in other bibliographies and are not included in these listings.

In the nineteenth century the glamour metal was gold and the history of Australian mining therefore changed dramatically in the 1850s. The spotlight was initially on New South Wales but it quickly passed to Victorian goldfields and numerous books describe the nineteenth-century goldfields and the mining of gold in the twentieth century. In a sense the watershed of the 1850s and 1860s has caused the listing of this category to be biased towards Victoria, because there are so many titles from which to choose. Those presented here include regional histories, particularly of Victoria, Queensland and Western Australia, memoirs and reminiscences, and illustrative material such as photographic collections and reproductions of goldfields paintings.

Those researching aspects of the history of Victoria are additionally fortunate because of the excellent bibliography by J. Monie *Victorian history and politics: European settlement to 1939* (Bundoora, Vic, La Trobe University Library, 1982). However, any study of the gold-rush era should probably commence with Serle (1978) and Bate (1978). It should proceed from there to nineteenth-century accounts and other subsequent works and then follow the gold rushes out of Victoria and up the Great Dividing Range to north Queensland, across to the Kimberleys and south to Kalgoorlie and Coolgardie by the 1890s.

The drama of one gold rush after another can overshadow other mining activity although the latter has been considerable in both centuries. The listing devoted to non-goldmining includes the base metals, the unglamorous but important minerals coal, tin and uranium, and the environmentally sensitive mineral sands. Most of these entries are regional studies of which historically the most famous and perhaps the most important was the Broken Hill area. More recently the issues surrounding the mining of uranium have been canvassed but unfortunately there has been little or no historical treatment of them. The most that can be gained is from the occasional general source on mining or the government environmental inquiries, which are easily accessible.

Some of the current controversy over mining has been related to the export of unprocessed raw materials because the social and economic benefits from doing this are far less than those possible when some phases of processing are completed in Australia prior to export. In the past questions about processing have usually been dealt with in terms of metallurgical developments and the three items listed in this category confirm that approach. There is a useful coverage of these developments, including the new processes such as flotation which were developed in Australia, in Blainey (1978). The broader issues surrounding processing are also subsumed in the administration category because aspects such as the economics of processing and its implications for the economy and the environment are now the subject of increasing publicity and debate.

Also of more recent interest has been the search for oil and natural gas. The concern about oil deposits dates back for decades but, apart from the general works on mining, relatively little of substance has been published on this subject. Most of the sources listed offer a relatively brief introduction, with the exception of R. Wilkinson (1983), the first full-length account to become available. Government reports are a useful source and the report of the Royal Commission on Mineral Oils and Petrol and Other Products of Mineral Oils (Canberra, 1933, 1935) is one of the most detailed for the period prior to World War II.

Government involvement has been part of Australian mining from the days of convict collieries to contemporary concerns about uranium. Much of the government function has been regulatory. There have been numerous official inquiries into mining accidents and disasters, the working of the land laws or the licence and lease systems, the battery crushing operations and the gradual evolution of industrial standards. Exploration was also carried out by colonial governments and various surveys of the mineralisation in different areas were completed. In this century government geologists have done much to continue and extend those early surveys. There are some very helpful guides to the formal government inquiries; the best place to start is with D.H. Borchardt and E. Zalum's *Checklist of royal commissions, select committees of parliament and boards of inquiry* (1958–78; see chapter 8).

In recent years several important mining studies have been undertaken for governments; these are usually known by their abbreviated titles, for example, the Fox Report (Canberra, 1976) and the Fitzgerald Report (Canberra, 1974). The latter is worth noting because it attempts to assess the non-economic costs and benefits of mining as well as the economic ones. The items listed under government policy in the bibliography indicate something of the breadth and depth of government involvement in mining today. One should also remember that government departments of mines and government geological surveys have, since colonial days, produced annual reports which are included in the parliamentary papers. Some have also published their own periodicals and occasional papers.

Closely related to government policy are a number of matters—law, finance and economics

—which experience governmental intervention in varying degrees because those aspects are usually subject to regulation. Again there is a continuity with the nineteenth century, demonstrated by the need for books on management practice, mine accounting and law. The concept of a limited liability status for mining shares was first enacted in Victoria in 1871. It represented a radical change in company law throughout Australasia and had wide ramifications for those concerned with investment in the mining sector. The mining laws themselves changed over time and those who needed to understand the provisions of the various acts benefited by some of the comprehensive consolidations that were published.

Just as the legal framework changed so too did the accounting framework and by the late nineteenth century accounting systems designed for mining operations were beginning to emerge. The movement received an impetus from the depression of the 1890s and the widespread collapse of companies, especially speculative ones. Among the causes of failure were the fraudulent practices of staff, executives and directors. In this century there has been an increasing emphasis on greater accountability to shareholders and governments, and the accounting profession has gradually developed new areas of accounting theory and new professional practices.

Since World War II the financial sector has become more closely involved with large mining projects and the pressure on the accounting profession has continued. This is not altogether surprising because the history of mining in Australia often appears to have been a series of booms and slumps, and financial scandals related to mining have been in evidence since the 1850s. The publicised accounts seem to have been more frequent in the recent past because the size of the defalcation or collapse has been many times greater in monetary terms and hence deemed worthy of extensive comment in the media. However, even the Poseidon boom of the late 1960s has not yet been the subject of serious historical research despite all the drama associated with its rise and fall. Similarly, the corporate failures of the 1970s have still to be investigated by historians and until then the important one for mining history, that complex of mines known as Mineral Securities Ltd, will remain something of an enigma.

Although this bibliography is restricted to books and monographs there are numerous other sources of mining history. Because one's understanding is greatly enhanced by a familiarity with the locations in which mining took place, maps and atlases, especially historical ones, are indispensable. The Division of National Mapping in Canberra produces current topographical maps that often include old as well as modern mining sites. These maps can also indicate the other geological and geographical features which have helped to determine a particular field's or individual mine's character and development. A few historical atlases are already available, including D.A.M. Lea *et al*, *Atlas of New England* (Armidale NSW, Dept of Geography, University of New England, 1977) and J.S. Duncan *ed*, *Atlas of Victoria* (Melbourne, Government of Victoria, 1982). In addition *Australians: a historical atlas* will be of a considerable benefit to those researching the history of mining.

Because of the importance of statistical data for the evaluation of Australian mines and mining, the Australian Bureau of Statistics (ABS) publishes a number of tables related to the mining industry. Other important compilations of figures, issued by the Bureau of Mineral Resources, Geology and Geophysics, are the *Australian mineral industry annual review* and *Australian mineral industry quarterly review*. The various state departments of minerals and energy (their titles vary slightly from state to state) also issue regular data on mining and mineral production, consumption and exports. There is a summary and overview of mining statistics in *Australians: historical statistics* and attention is also drawn to chapter 8 of this volume for references to printed sources of mining statistics.

Other printed sources of information include a diverse periodical literature. One of the earliest periodicals was the *Australasian insurance and banking record*, which began publication in 1876 and continues to the present. This business journal has always carried information about mining operations and prospects, in addition to the reports and financial statements of mining company meetings. The *Australian mining standard* ran from 1885 to 1962; the *Mining journal and investors*

review was first published in 1895; and the *Bulletin's* famous *Wild cat monthly* included speculative mining for many years. There were various other journals in the nineteenth century and they continued to spawn in the twentieth. Others have emerged since the 1960s, for example, the *Mining investment digest* (1966–) and *Mining views of Australia* (1972–). Those of a more technical nature include the proceedings and occasional publications of the Australasian Institute of Mining and Metallurgy; the transactions of engineering institutes also contain articles on aspects of mining. Some with a scientific bias can be found in the proceedings of the various royal societies in the colonies. Articles of historical significance have also been included in the proceedings of the royal geographical societies.

A wide range of standard historical journals should be consulted and to assist in this task there is a guide to Australian historical journal literature to 1974 compiled by T. Hogan *et al* entitled *Index to journal articles on Australian history* (Armidale, NSW, Dept of History, University of New England, 1978). This index has been continued to cover the period 1974–81 by V. Crittenden and J. Thawley. In addition, there is the general index to the literature of the social sciences, *APAIS*, which is described in detail in chapter 7. These guides are the quickest way to check on periodical items relating to the history of mining.

Newspapers are another kind of periodical which often contain useful information about mining. Unfortunately few of the nineteenth-century newspapers are indexed and so there is no quick way of using them. The indexes for this century are incomplete in many cases. Nevertheless, a second-best option is to seek out newspaper cuttings. Two important examples for mining are held in the Mitchell Library, Sydney. The first was made by G.D. Meudell, a journalist and speculative mining investor. This collection dates from the 1880s to the mid-1920s and includes early reports on brown coal and petroleum deposits from 1913. The second is that of J. Plummer, another journalist, who was also the mining editor of the *Year book of Australia* for two decades. His writings on mining appeared mainly between 1900 and 1914.

Pamphlets are sources similar in length to journal articles. They have been written on all aspects of mining; many originated in the nineteenth century when pamphleteering was a common form of persuasion. All the state libraries and tertiary institution libraries and some municipal libraries maintain pamphlet collections. Many also have local history collections, which can be another useful source of information. Historical societies are also places where scarce pamphlets and short local histories can be found and while much of this kind of material might be episodic, anecdotal and only partly corroborated, it remains useful for cross-checking with other sources and providing leads and ideas.

Another facet of many local history programs is oral history. Geoffrey Blainey is one of several writers who have made use of interviews with old miners and prospectors. However, the oral approach is an underdeveloped resource; much of the work is conducted by local historical societies and appears only in their publications. Sometimes the regular historical journals carry an article based on oral evidence, but these are rare. Just as oral history can be part of the local historical scene, so too can manuscripts and archival material. Written and printed reminiscences, regional records, travellers' and settlers' letters and diaries, household and farm or business records can all be valuable sources. It is impossible to list here those pertaining to mining history; suffice to point out that local history collection, regional and university archives, and the state archives in each capital city will all reward the serious seeker after mining history. A very useful directory to archival and manuscript repositories is *Our heritage* (Sydney, Australian Society of Archivists, 1983). It includes mention of whether the repository also has an oral history program.

While oral history can be discursive, even disjointed, these are usually well organised and tightly constructed. Many historical theses have been devoted to mining regions, especially local studies. Most are available only in university libraries or through interlibrary loans. Postgraduate theses concerned with mining can be readily traced by consulting the *Union list of higher degree theses in Australian university libraries* (see chapter 8 of this volume). For undergraduate theses one should consult the guide compiled by M. McKernan and D. Collins, *Honours theses in history*, published in Sydney for the Australian Historical Association in 1979. Although not exhaustive

—some universities did not contribute entries and there are none from the colleges of advanced education—it is nevertheless the place to start looking for undergraduate research. As mining has inspired engineers and metallurgists as well as historians, political scientists, lawyers, economists and sociologists, information is likely to be found in a wide variety of theses, especially at the postgraduate level.

The superstition surrounding women working underground has been held long and hard in Australia, ignoring the fact that women were coalminers in England before Australia was settled. The legislation forbidding women working underground in mines was enacted in the Mines Act 1842 and may have been influential in the formation of attitudes in Australia. Historians have neither discovered nor written about the work women might have done in and around mines. The more usual role ascribed to women in the mining sector has been based on a sexual division of labour and so they are mentioned either as homemakers or for their concerted social and political action during industrial relations disputes.

Before 1850 there do not appear to have been examples of women working in the mining sector to which the excellent economic history of women by K. Alford, *Production or reproduction?* (OUP, 1984) can attest. However, the period since 1850 may well reveal more than historians have yet noticed. For instance, female miners and prospectors were observed at work on the Ballarat and Bendigo goldfields. Many mining areas in Australia were remote and devoid of creature comforts, basic urban facilities and extensive mining equipment. These factors, together with the absence of European women, help to explain the employment of Aboriginal women as prospectors and fossickers in northwestern Australia in the late nineteenth century. It seems a little strange that in those areas the assumed role of women was only that of child-minders, humpy cleaners or cooks when there are examples of women doing manual labour in other parts of the rural sector. It is even stranger if one remembers that in Cornwall it was traditional for women to work at least in surface jobs such as ore-dressing for the smelter, while in Australia there has been no record of women performing similar functions in the Cornish copper mining areas of Moonta, Wallaroo or any other.

As a result the reader cannot yet be referred to printed sources which discuss these matters. Even during the two world wars women did not do any form of mining work. The conventional wisdom is that the role of women in the mining sector only really only changed in the late 1960s when women began obtaining jobs in other previously male-dominated industries. This coincided with the Poseidon boom. Then and since, women have trained and been employed as field geologists, geophysicists and geochemists, but this partial transition over a long period of time still awaits historians. Until then the full range of human activity in the history of mining will be incomplete.



Forlorn suburban development in the shadow of the Port Kembla steelworks, c1955. Australia's preoccupation with industrial growth in the 1950s is evident in this placemat.

BOOROWA PRODUCTIONS

GENERAL WORKS

AUSTIN, J.B. *Mines of South Australia, including also an account of the smelting works in that colony...* Adelaide, C. Platts and others, 1863. 109 p, map.

The author, a mine agent and broker, provides descriptions, including geological information and yields, of many mines in SA.

ALEXANDER, J. AND HATTERSLEY, R. *Australian mining, minerals and oil*. Sydney, David Ell Press, 1981. 536 p, maps.

A compendium on operating mines. It includes historical summaries and financial information on all minerals, oil and gas. First published in 1980.

BEDFORD, R. *Naught to thirty-three*. Sydney, Currawong Publishing Co, 1944. 349 p, illus.

Memoirs of a journalist on mining in various parts of Australia in the late nineteenth and early twentieth centuries. Reprinted in 1976.

BLAINEY, G.N. *The rush that never ended: a history of Australian mining*. MUP, 1978. 393 p, illus.

Important general history of mining in Australia. First published in 1963.

BROWN, H.Y.L. *Record of the mines of South Australia*. Adelaide, Government Printer, 1887–1908. Maps.

A description of the mines, claims and companies in SA by its government geologist. Includes geological information, production and value figures for metals and mineral exports and data concerning the NT. Fourth edition published in 1908.

CALVERT, A.F. *The mineral resources of Western Australia*. London, George Philip & Son, 1893. 179 p.

A useful survey of the mineral areas, including coal, in WA.

CARROLL, B. *Australia's mines and miners: an illustrated history of Australian mining*. Melbourne, Macmillan, 1977. 112 p, illus, map.

Although all aspects of mining are covered the text is brief. The illustrations are excellent.

DAINTREE, R. *Queensland, Australia: its territory, climate and products*. London, G. Street, 1872. 117 p, illus, maps.

More than one-quarter of this handbook by the former Qld government geologist is devoted to a survey of mining including production and prospects.

DREXEL, J.F. comp. *Mining in South Australia: a pictorial history*. Adelaide, Dept of Mines and Energy, 1982. 303 p, illus, maps.

Commemorates the centenary of the appointment of H.Y.L. Brown as the first government geologist in SA. Brief text but all minerals found in SA receive attention.

GOYDER, G.A. *The prospector's pocketbook*. Adelaide, Government Printer, 1888. 63 p.

Basic information includes mineralogy, assaying, weights and measures, simple apparatus, and the determination of payable quantities of minerals. Later enlarged edition entitled *Australian prospector's handbook* published in 1898.

JACK, R.L. *The mineral wealth of Queensland*. Brisbane, Warwick and Sapsford, 1888. 71 p, maps.

A résumé by the government geologist of all the mining fields in Qld, including production figures and values.

JOHNS, R.K. ed. *History and role of government geological surveys in Australia*. Adelaide, Government Printer, 1976. 111 p, illus.

Brief histories and details of professional staff of the six state geological surveys, the NT Geological Survey, and the commonwealth Bureau of Mineral Resources.

KALIX, Z. et al. *Australian mineral industry: production and trade, 1842–1964*. Canberra, Bureau of Mineral Resources, Geology and Geophysics, 1966. 473 p. (Bulletin, 81).

A comprehensive compilation of production and trade figures for minerals and metals with some data disaggregated into individual mining fields.

LAWSON, G.A. *The past and present position of the mineral industry on the West Coast, Tasmania*. Melbourne, McCarron Bird, 1896. 69 p, illus, maps.

A short essay followed by details of individual companies in the Mt Lyell, Zeehan, Dundas, Curtin-Davis, Mount Read and Mount Black districts.

McKERN, R.B. *Multinational enterprise and natural resources*. Sydney, McGraw-Hill, 1976. 264 p.

An examination of mineral and energy resources in Australia, including financial and management aspects with appendices relating to projects in the 1960s and foreign ownership within the industry.

O'NEIL, B. *In search of mineral wealth: the South Australian Geological Survey and Department of Mines to 1944*. Adelaide, South Australian Dept of Mines and Energy, 1982. 359 p, illus maps.

A meticulous history of government institutions in geological exploration. Strongest on administrative affairs, but the science is not ignored.

PRIDER, R.T. ed. *Mining in Western Australia*. UWAP, 1979. 304 p, illus, maps.

Numerous aspects of the industry are discussed in this book ranging from geology and metallurgical processes to mining law and employment. Includes history of nineteenth-century developments.

PRIOR, S.H. ed. *Handbook of Australian mines: a historical, statistical, and descriptive record of the mines and minerals of Australia, Tasmania, and New Zealand*. Sydney, Australian Mining Standard, 1890. 228 p.

Descriptions of mines and their performances. Although the work includes all colonies it only covers the principal metals.

PULLEINE, F.A. *The Australasian mining directory...* Adelaide, F.A. Pulleine, 1888. 400 p.

Contains useful summaries of the legal details, capital and structure, directors, head offices and mine locations of various Australasian companies but mainly in NSW, Vic and SA.

RAGGATT, H.G. *Mountains of ore*. Melbourne, Lansdowne, 1968. 406 p, illus, maps.

Surveys the important mineral deposits of the late 1960s and discusses Australia's mineral economy and the role of foreign capital. The coverage includes coal, tin, mineral sands, oil and natural gas.

REYNOLDS, J. *Men & mines: a history of Australian mining, 1788–1971*. Melbourne, Sun Books, 1974. 232 p, illus, map.

A popular overview of mining in Australia.

RICHMOND, W.H. AND SHARMA, P.C. eds. *Mining and Australia*. UQP, 1983. 320 p, illus, maps.

Essays on many aspects of mining—historical, economic and urban—including a discussion of its place in Australian literature.

WOODWARD, H.P. *Mining handbook to the colony of Western Australia*. Perth, Government Printer, 1895. 216 p, illus, maps.

Discusses details of the geology and mineralogy of each district including the history of its mineral resources, sections on goldfields, technical and legal information for prospectors and details of communications to and within the colony.

GOLD RUSHES AND GOLDFIELDS

BATE, W.A. *Lucky city: the first generation at Ballarat, 1851-1901*. MUP, 1978. 302 p, illus, maps.

Standard history of Ballarat with valuable sections on mining history.

BURKE, E.K. *Gold and silver: an album of Hill End and Gulgong photographs from the Holtermann Collection*. Melbourne, Heinemann, 1973. 265 p, illus, maps.

Superb collection of photographs of mining and goldfields life during the 1870s by Bernard Otto Holtermann and Beaufoy Merlin.

CARBONI, R. *The Eureka Stockade: the consequence of some pirates wanting on quarter-deck a rebellion*. Melbourne, The Author, 1856. 126 p.

A participant's account of the Eureka rebellion. Reprinted in 1942 and 1963.

CARNEGIE, D.W. *Spinifex and sand: a narrative of five years' pioneering and exploration in Western Australia*. London, C. Arthur Pearson, 1898. 454 p, illus, maps.

The first four sections deal with goldmining in the Kalgoorlie, Coolgardie and Kanowna areas during the early 1890s. Facsimile edition, Perth, Hesperian, 1983.

CLARKE, F.McK. *Early days on Bendigo*. Ed by F. Cusack. Melbourne, Queensberry Hill, 1979. 86 p, illus, map.

The edited memoirs of one of the first to work on what became the Bendigo goldfields. He and his party were prospecting there before the rush commenced in December 1851.

CLARKE, W.B. *Researches on the southern gold fields of New South Wales*. Sydney, Reading and Wellbank, 1860. 305 p, map.

Discussions of his geological explorations in quest of gold; includes an appendix on topics ranging from fossils to gold working and diamonds.

COTTOME, T.G. *Letters from Grenfell: from a New South Wales goldminer in the 1870s*. Ed by G.J. Butland. SUP, 1971. 125 p, illus, maps.

A history of the gold rush and social and urban development as told in seven years of letters from one of the pioneering miners.

CUSACK, F. *Bendigo: a history*. Melbourne, Heinemann, 1973. 262 p, illus.

A history of Bendigo and its goldmining from the 1840s until World War I.

FAUCHERY, A. *Letters from a miner in Australia*. Trans from the French by A.R. Chisholm. Melbourne, Georgian House, 1965. xxv, 105 p, illus.

The author worked on several Victorian goldfields and became the most important photographer of the mid-1850s. First published as *Lettres d'un mineur en Australie* in 1857.

FLETT, J. *The history of gold discovery in Victoria*. Facs, Melbourne, Hawthorn Press, 1970. 495 p, illus.

A well-documented compilation of gold exploration, discovery and mining during the nineteenth century. Facsimile edition, Melbourne, Poppet Head, 1979.

GILL, S.T. *The goldfields illustrated: the sketches of S.T. Gill*. Melbourne, Lansdowne, 1972. 108 p, illus.

Forty-eight black and white sketches of various aspects of goldfields life and the diggers in Melbourne, with a short text by John Currey. Michael Cannon has also written on Gill in another book of his sketches entitled *The Victorian gold fields, 1852-53*. (Melbourne, Currey O'Neil, 1982).

GRAY, J. R. *History of the Wedderburn gold fields*. Ed by F. Cusack. Melbourne, Queensberry Hill, 1981. 92 p, illus, map.

Reminiscences of an American schoolteacher who worked on most of the central Victorian goldfields and became a pioneer settler of Wedderburn. First published in the *Wedderburn Express*, 1888.

HARGRAVES, E.H. *Australia and its gold fields: a historical sketch of the progress of the Australian colonies...* London, H. Ingram and Co, 1855. 240 p, illus, map.

Includes a review of ancient and modern goldmines in the world, of geological and gold discoveries in Australia as well as chapters on methods of gold-working and the land question.

HOLTHOUSE, H. *Gympie gold*. A & R, 1973. 209 p, illus, maps.

HOLTHOUSE, H. *River of gold: the story of the Palmer River gold rush*. A & R, 1967. 217 p, illus.

Two well-based accounts of goldmining in the Gympie and Palmer River areas in the 1860s and 1870s.

HOWITT, W. *Land, labour and gold: or two years in Victoria: with visits to Sydney and Van Diemen's Land*. London, Longman, Brown, Green and Longman, 1855. 2 vols.

A series of letters, 1852 to 1855, which contains observations on the goldfields, the urban development of Melbourne and the economic progress of the colony. Facsimile edition, SUP, 1972.

KEESING, N. ed, *History of the Australian goldrushes: by those who were there*. A & R, 1976. 412 p, illus, map.

An interesting selection of eyewitness accounts reflecting all aspects of the goldfields but emphasising the social conditions. First published as *Goldfever...* in 1967.

KELLY, W. *Life in Victoria, or, Victoria in 1853, and Victoria in 1858, showing the march of improvement made by the colony within those periods, in town and country, cities and diggings*. London, Chapman and Hall, 1859. 2 vols, map.

Detailed account of Kelly's visit to Vic with chapters on the goldfields, various aspects of mining and social conditions. Facsimile edition, Kilmore, Vic, Lowden, 1977.

KORZELINSKI, S. *Memoirs of gold-digging in Australia*. Trans and ed by S. Robe. UQP, 1979. 160 p, illus.

An account by a Polish army officer who worked on various goldfields in Vic during the 1850s, dealing with many aspects of goldfields life and revealing the ethnic diversity of the population.

LEES, W. *Goldfields of Queensland, 1858 to 1899*. Brisbane, Outridge Printing Co, 1899. 223 p, illus, maps.

Reports with some production figures and financial information. There are special sections on the Chillagoe, Cloncurry and Copperfield areas.

MACARTNEY, J.N. *The Bendigo goldfield registry: comprising a description of the goldfield, history of the opening, progress and present position of the chief reefs*. Melbourne, Charles F. Maxwell, 1871. 180 p, maps.

A summary of individual mines with lists of mining companies, tribute companies and tribute terms. Another volume, with a similar title was issued in 1872.

MORRELL, W.P. *The gold rushes*. London, Black, 1940. 427 p, maps.

A history of nineteenth-century gold rushes in the Americas, Australasia and South Africa. Useful for comparative purposes.

SERLE, A.G. *The golden age: a history of the colony of Victoria, 1851-1861*. MUP, 1978. 469 p, illus, maps.

The standard history of this decade. Bibliography. First published in 1963.

SMYTH, R.B. *The goldfields and mineral districts of Victoria, with notes on the modes of occurrence of gold and other metals and minerals*. Melbourne, Government Printer, 1869. 644 p, illus, maps.

A comprehensive mining compendium containing details of discoveries, the forms of mining and technology involved and also the mining of non-auriferous metals. Facsimile edition, Melbourne, Queensberry Hill Press, 1979.

STONE, D.I. ed. *Gold diggers & diggings: a photographic study of gold in Australia, 1854-1920*. Melbourne, Lansdowne, 1974. 208 p, illus, maps.

STONE, D.I. AND MACKINNON, S. *Life on the Australian goldfields*. Melbourne, Methuen, 1976. 224 p, illus.

Although the text in each volume is brief there are many excellent illustrations of mining operations and social conditions.

UREN, M.J.L. *Glint of gold: a story of the goldfields of Western Australia and the men who found them, especially the prospectors and one prospector known to his mates as Diorite*. Melbourne, Robertson & Mullens, 1948. 279 p, illus, maps.

Compiled from the stories of Charles M. Harris (Diorite) this book describes gold prospecting and goldmining throughout WA in the late nineteenth and early twentieth centuries.

VON GUÉRARD, E. *An artist on the goldfields: the diary of Eugene von Guérard*. Introduced and annotated by M. Tipping. Melbourne, Currey O'Neil, 1982. 84 p, illus.

Diary of the voyage out and subsequent time spent in the Geelong area and the Ballarat goldfields. The drawings depict mining and social conditions.

WILSON, H.H. *Gateways to gold*. Adelaide, Rigby, 1969. 162, [8] p, illus.

A popular account of the history of goldmines in the Murchison area and includes among others those in Mt Magnet, Meekatharra, Peak Hill and Cue.

WITHERS, W.B. *This history of Ballarat, from the first pastoral settlement to the present time*. Ballarat, "Ballarat Star", 1870. 216 p, illus.

The first notable history of Ballarat. Most chapters deal with diggers or mining and the effects of both. Facsimile edition from the enlarged second edition of 1887, published in 1980 with an introduction by F. Cusack.

METALS AND MINERALS OTHER THAN GOLD

ANNABELL, JR. *The uranium hunters*. Adelaide, Rigby, 1971. 172 p, illus.

A journalist's story of uranium exploration in the NT during the mid-1950s.

AUSTRALIA. Ranger Uranium Environmental Inquiry. *Ranger Uranium Environmental Inquiry: first [and second] reports*. AGPS, 1976-77. 2 vols, illus, maps.

The first full-scale investigation into the economic and non-economic costs and benefits of a proposed open-cut uranium mine. Chairman: R.W. Fox.

AUSTRALIAN ATOMIC ENERGY COMMISSION. *Prospecting and mining for uranium in Australia: notes for the guidance of prospectors*. Sydney, Government Printer, 1957. 128 p, illus.

A survey of the uranium-bearing mineral deposits, their occurrence, properties, the law pertaining to them, and the services and financial rewards available to prospectors at that time. First published in 1954.

THE BARRIER *silver and tin fields in 1888*. Adelaide, W.K. Thomas & Co, 1888. 86 p, map.

A series of reports to various South Australian newspapers, on the production and value of mines in the area, legal aspects, details of some mining companies, and an indication of the social development of the settlements. Facsimile edition, Adelaide, LBSA, 1970.

BLAINEY, G.N. *Mines in the spinifex: the story of Mount Isa*

Mines (rev edn). A & R, 1970. 256, [32] p, illus, maps.

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CLARK, G.L. *Built on gold: recollections of Western Mining*. Melbourne, Hill of Content, 1983. 258 p, illus, maps.

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Corbould was involved with many of the major mining ventures in Australia from the late nineteenth century. His is one of the very few autobiographies of a mining and metallurgical engineer.

CURTIS, L.S. *The history of Broken Hill: its rise and progress*. Adelaide, Frearson's Printing House, 1908. 199 p, illus.

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GRAINGER, E. *The remarkable Reverend Clarke: the life and times of the father of Australian geology*. OUP, 1982. 292 p, illus, maps.

A useful biography of the scholar who influenced much of the gold and other mining in eastern Australia.

GREGSON, J. *The Australian Agricultural Company, 1824-1875*. A & R, 1907. 336 p, illus, map.

A business history of this company which was an important colliery operator in addition to its pastoral activities.

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Popular account of one person's attempt to become a successful opal miner.

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A well-documented history of this important Qld mine.

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A business history of Moffat's mining investments ranging from north Qld tin into copper, silver, lead and oil interests and the provision of infrastructure such as railways, civil and urban construction.

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256 p, illus.

An interesting record of twentieth-century mining in various places and the methods used. It is of particular interest because the author mined for opal more frequently than for other minerals.

MORLEY, I.W. *Black sands: a history of the mineral sand mining industry in eastern Australia*. UQP, 1981. 278 p, illus, maps.

The first history of mineral sands mining—zircon, rutile and ilmenite. It discusses the companies, the production and the processes.

PRYOR, O. *Australia's little Cornwall*. Adelaide, Rigby, 1962. 191 p, illus, maps.

An account of the copper mining at Moonta and Wallaroo in SA, by the last surface manager at Moonta Mines when they closed in 1923.

ROBINSON, E. *Cap'n 'Ancock: ruler of Australia's little Cornwall*. Adelaide, Rigby, 1978. 178 p, illus.

A biography of SA's most famous Cornish mining captain, Henry Richard Hancock of Moonta.

ROBINSON, W.S. *If I remember rightly: the memoirs of W.S. Robinson, 1876–1963*. Ed by G. Blainey. Melbourne, Cheshire, 1967. 234 p, illus.

An important source of information about base metals mining and operations in the twentieth century and also the early aluminium industry.

SHAW, A.G.L. AND BRUNS, G.R. *The Australian coal industry*. MUP, 1947. 197 p.

A painstaking and thorough study of the coal industry in the interwar years.

TRENGOVE, A. *Discovery: stories of modern mineral exploration*. Melbourne, Stockwell, 1979. 277 p, illus, maps.

A relatively uncritical account of the post-World War II explorations of the major metals and minerals.

TURNER, J.W. *Coal mining in Newcastle, 1801–1900*. Newcastle, NSW, Council of the City of Newcastle, 1982. 179 p, illus, maps. (Newcastle history monographs, 9.)

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Deals with the processing and exporting prospects for base metals, including uranium and aluminium in particular, and mining in general. The subjects range from taxation financing and infrastructure to fuel and the environment.

CLARK, D. *Australian mining & metallurgy*. Melbourne, Critchley Parker, 1904. 534 p, illus, maps.

A review of mining methods and processing techniques used on mining fields in all states except SA.

IDRIESS, I.L. *Prospecting for gold, from the dish to the hydraulic plant*. A & R, 1931. 157 p, illus.

A very useful account of the range of wet and dry techniques in mining and processing, including cyanidising. Revised edition published in 1980.

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JACKSON, GRAHAM, MOORE & PARTNER. *Oil and gas exploration in Australia*. Sydney, Sydney Stock Exchange, 1978. Various pagings, illus.

A report dealing with the principal sedimentary basins in Australia and the companies involved in the oil industry.

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A general and uncritical history of petroleum refining and marketing in Australia.

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Essays on Australia's energy resources—petroleum, gas, coal, hydro-electricity and nuclear power—including some estimates of future power requirements.

SIMPSON, C. *Show me a mountain: the rise of an Australian company, Ampol*. A & R, 1961. 253 p, illus, maps.

A relatively uncritical business history. Of interest because of its sections on oil exploration and production in Australia.

TRENGOVE, A. *What's good for Australia . . .: the story of BHP*. Sydney, Cassell, 1975. 263 p, illus.

A popular history of BHP. Includes sections on its base metal mining and processing and on its oil and natural gas developments.

WILKINSON, R. *A thirst for burning: the story of Australia's oil industry*. Sydney, David Ell Press, 1983. 383 p, illus.

The first full-length history of the production and retail distribution of oil in Australia. Discusses the companies involved and includes a section on natural gas.

GOVERNMENT POLICY

BAMBRICK, S.C. *Australian minerals and energy policy*. ANUP, 1979. 240 p, illus, map.

Discusses taxation and finance, the economics of mining, infrastructure and the effects on Aborigines and the environment.

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An analysis of government policy in the early 1970s. Includes discussions of processing, marketing and the Fitzgerald Report.

BARNETT, D.W. *Minerals and energy in Australia*. Sydney, Cassell, 1979. 333 p, illus, maps.

A discussion of the major metals and energy sources, world trade aspects and both economic and social costs.

FITZGERALD, T.M. *The contribution of the mineral industry to Australian welfare: report to the Minister for Minerals and Energy the Hon R.F.X. Connor MP*, AGPS, 1974. 93 p.

This study centres on the major minerals and the principal companies involved during 1960 to 1974. Includes the economics of mining operations, the role of taxation, and the cost as well as the benefits of the sector to the nation.

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A review of each form of energy available in Qld and an assessment of its present and future status as of the mid-1960s.

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ARMSTRONG, H.J. *Handy-book on the management of mining companies in Victoria*. Melbourne, Charles F. Maxwell, 1888. 138 p.

Covers all legal aspects from the formation of a company to the presentation of the financial reports, including the winding-up and the significance of the no-liability status.

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Discusses the nature of demand and Australia's competitive position, technical developments and the size of reserves.

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The authors examine the economics of the primary energy sources and alternatives in Australia, including projections to the year 2000.

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A comprehensive treatment of all aspects of the law as it related to mining companies.

DE LISSA, A. *Companies' work and mining law in New South Wales and Victoria*. Sydney, Robertson, 1884. 454 p.

A comprehensive discussion of the legal requirements of mining companies from inception to liquidation and including mining claims and leases.

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An explanation, originally for the benefit of English investors, of the no-liability and limited liability systems of organisation and how they evolved from the Cornish cost-book system.

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Papers on the economic aspect of mining ventures in Australia including petroleum. The subjects include resources, mine development, risks, government policy and taxation.

MURRAY, R. *Fuels rush in: oil and gas in Australia*. Melbourne, Macmillan, 1972. 159 p, illus, maps.

A serious attempt to discuss the financial aspects of oil and gas exploration and development since the 1950s and present it to a wide audience.

SYKES, T. *The money miners: Australia's mining boom, 1969-70*. Sydney, Wildcat, 1978. 388 p, illus.

A popular account of the financial aspects of the mining boom.

William Strutt, Diggers at work. Pencil, ink and watercolour. Strutt (1825-1915) studied art in Paris and migrated to Victoria in 1850. His sketches and paintings over the next twelve years represent a remarkable pictorial history of the life of the colony, from miners working in the goldfields to the first meeting of the Victorian legislative council. His most celebrated picture, Black Thursday, 6 Feb. 1851, based on sketches made during the outbreak of bushfires in Victoria, was completed in England on his return in 1862.

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