KENNEDY (ed) Readings in NORTH QUEENSLAND MINING H
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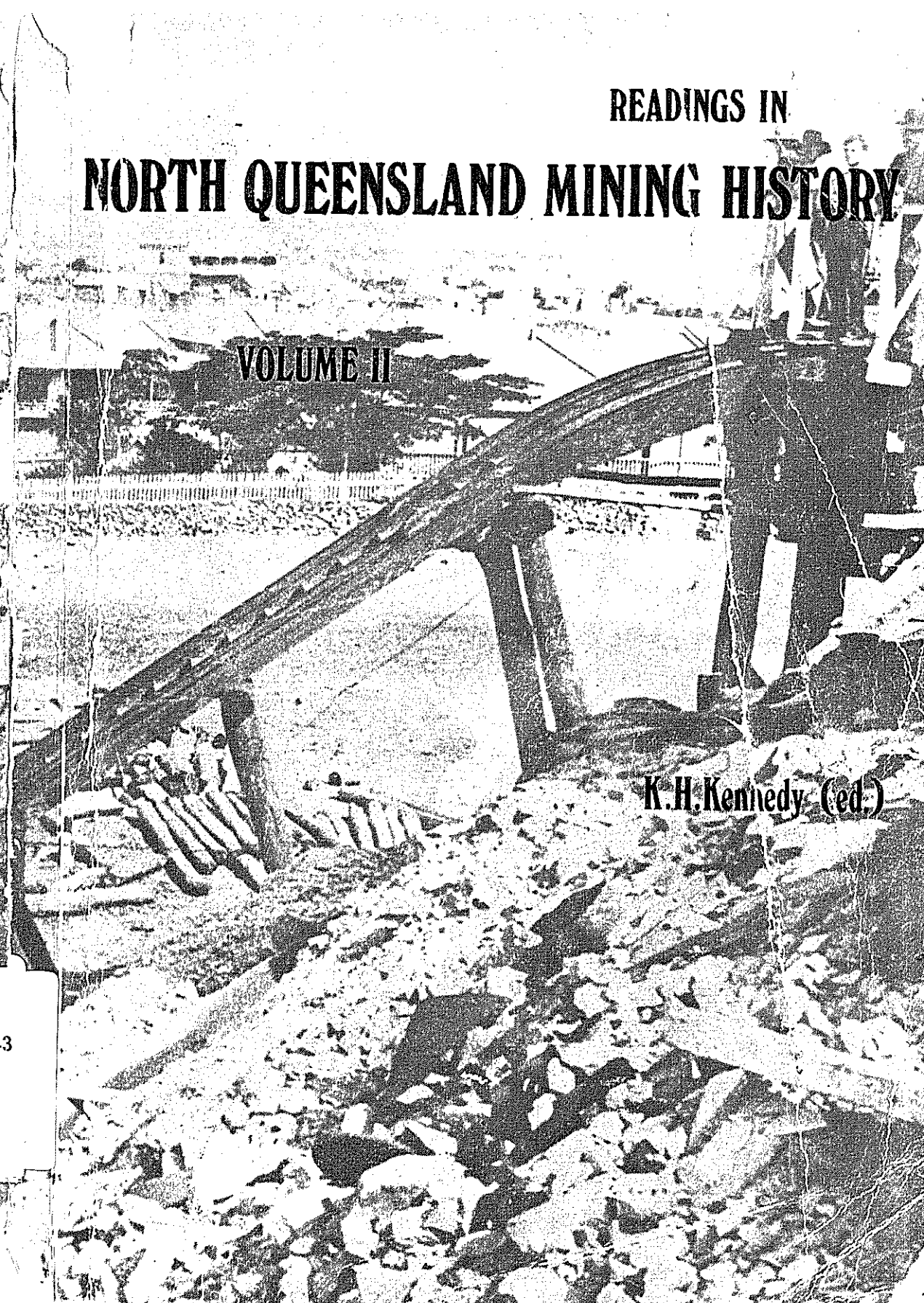
READINGS IN

NORTH QUEENSLAND MINING HISTORY

VOLUME II



K.H.Kennedy (ed.)

READINGS IN NORTH QUEENSLAND MINING HISTORY

VOLUME II.

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FOREWORD

This volume of *Readings* was planned to complement the first volume, published in September 1980, so that together they would cover major aspects of mining history in North Queensland from its origins to the 1930s, as comprehensively as the current state of research permits. Although both volumes follow the same general pattern, some differences between the two will be apparent: the papers in this volume are fewer in number but correspondingly longer; all originate from within the History Department;[1] among them are studies of the three mining areas which had the largest populations of all mining settlements in the region - Charters Towers, Chillagoe and Mt. Isa. Though unplanned, these differences are not merely fortuitous. They reflect the development, in some cases the completion, of research projects in mining history which had barely started when the first volume was compiled. This in turn reflects the growing number of research students attracted to mining history by Dr. Kennedy's vigorous activity in that field.

The original aim of the two volumes has been substantially achieved: of major mining fields, only Croydon has had to be omitted. But the publication of this volume does not mean the end of research into North Queensland mining history, even temporarily. Many minor fields await detailed study; some important aspects of the subject dealt with in the *Readings* merit still more extended examination. In time even subjects dealt with at length in the *Readings* will demand reconsideration in the light of further evidence or from a different point of view: as in any field of historical research the definitive version, always sought, can never be achieved beyond the possibility of question; the debate is never finally closed. The appearance of this volume will, however, mean that future studies will be undertaken from a much more secure base than previously; in the main they will represent the filling in of detail on a map whose major features have been accurately plotted.

Although the two-volume *Readings* constitute the largest publication on mining history completed within the Department, mention should be made of other work completed. Two other publications have been issued by the Department in the interval since the first volume appeared. The first is squarely within the field of mining history as we see it:[2]

K.H. Kennedy, Peter Bell & Carolyn Edmondson, *Totley* (1981)

is a study of a silver mine near Ravenswood which flourished during the silver boom of the 1880s, helping to sustain Ravenswood's economy through its long struggle with the refractory "mundic" ore, and which was reopened briefly after sixty years closure in the 1950s. The site is of exceptional interest because of the large quantities of equipment it contains, virtually in working order, most of it from the early twentiety century. On-site surveys and oral history are utilised as well as orthodox historical sources.

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1. Michael Drew, though Tutor in Law, is attached to the History Department.

2. Some might regard it as Industrial Archaeology.

The second is political history:

Christine Doran, *Separatism in Townsville 1884-1894* (1981)

presents a case study of the movement for a New State which was the most persistent and widely supported of all political movements in nineteenth century North Queensland. Its relevance for mining history lies in the fact that Townsville in this period of intense separatist activity was heavily dependent upon the mining centre of Charters Towers which, from a phase of acute suspicion of the movement, passed to one of ardent support. A third publication appears in the *North Australia Research Bulletin* to which Diane Menghetti has contributed a major study of the technology of ore treatment in Charters Towers, the pacesetter for all North Queensland gold extraction.[3] She succeeds in making admirably clear the exact nature of complex processes more commonly mentioned than explained, even in very technical publications, and the physical appearance and technical function of every major piece of equipment known to have been used in treating ore in Charters Towers.

Two PhD theses relevant to mining history have been completed. Christine Doran, North Queensland Separatism in the Nineteenth Century (1981) is a comprehensive study of aspirations for self government in North Queensland from the origins of the movement soon after Queensland separated from N.S.W. till its demise in the 1890s when confronted with the new political forces of labour and federation. The political aspirations of mining communities are studied in detail along with their attitudes towards other sections of the region's population.

Peter Bell, Houses and Mining Settlement in North Queensland (1982) is a wide ranging study of the familiar "North Queensland house" and its origins. Exploding much myth which has received wide currency, the thesis argues convincingly that economic forces common to the mining regions of the North and their dependent coastal cities shaped architectural style and building practice, not adaptation to climate.

Well advanced work includes a full-scale biography of Leslie Urquhart being written by Dr. K.H. Kennedy with Peter Bell and financial support from M.I.M. Holdings. Urquhart, a British mining entrepreneur, was of central importance in the development of Mt. Isa. This involvement came late in his career, so that much of the biography is concerned with mining activities outside Australia, but the effect is to relate a major Australian mining venture to its international context in greater detail than is common.

A long-felt gap in North Queensland history is in the process of being filled by Diane Menghetti who is undertaking a study of the social history of Charters Towers for the degree of PhD. Also well-advanced is a MA thesis in which Joan Neal will include study of the many mining centres of Dalrymple Shire, which entirely surrounds without including Charters Towers. At a rather earlier stage of preparation is Janice Wegner's PhD thesis on Croydon.

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3. "Extraction Practices and Technology on the Charters Towers Goldfield".

In accordance with our policy of encouraging publication of writing by research students, work based on these projects may be looked for in the future. Some is likely to appear in our monograph series *Studies in North Queensland History*, others in future volumes of *Lectures on North Queensland History*.

The present volume is the twelfth produced by the History Department in a programme of publication designed to place the results of research into North Queensland history in the hands of students and other interested readers more quickly and more cheaply than is possible through conventional publishing channels. We have had much heartening evidence of interest in these publications from a widening circle of readers. Our cost structure precludes advertising new publications on any large scale; it will help us to continue an activity we think worthwhile if readers who enjoy this volume will bring it to the attention of friends.

B.J. Dalton,
Professor of History.

ACKNOWLEDGEMENTS

The editor desires to acknowledge the financial support of M.I.M. Holdings which has offset the cost of photographic and cartographic work, and printing at the James Cook University. Peter Finch, John Ngai and Alvaro Trovalusci brought their skills to both volumes. Permissions to reproduce photographs, including those from the Reverend Frederick Charles Hall Photographic Collection and those of Kangaroo Hills by Charles Henry Powell M.I.M.E., have been identified in the captions. Special mention should be afforded to Helen Stokes for the typescript and to Peter Bell for his invaluable assistance and sustained interest in the project. Susan Rose compiled the index.

The cover incorporates a photograph from the John Oxley Library of the entrance to the Day Dawn underlie shaft, Charters Towers, in the early 1890s. Frederick Pfeiffer's house is partly obscured at right.

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EDITOR'S NOTE

As all chapters have been written from sources published before the programme for metric conversion was initiated, the authors were instructed to use Imperial weights and measures and Sterling currency. Accordingly, the following conversion factors may prove useful:

Length

1 foot = .305 metre
1 yard = .914 metre
1 mile = 1.61 kilometres

Mass

1 ounce fine = .031 kilograms
1 pound = .453 kilograms
1 ton = 1.02 tonnes

Area

1 square yard = .836 square metres
1 acre = .405 hectare
1 square mile = 2.59 square kilometres

Volume

1 pint = .568 litre
1 gallon = 4.55 litres

Conversion of £1 to dollars would be misleading as there is little relationship between $2 in 1982 and £1 a hundred years ago in terms of purchasing power. A yardstick worth noting is that a skilled miner's wage for a 48-hour week varied from £3 to £5 in the period 1884 to 1914.

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ABBREVIATIONS

A.R.	Annual Report, Department of Mines (Qld)
B.M.R.	Bureau of Mineral Resources
G.S.Q.	Geological Survey of Queensland
M.L.A.	Member of the Legislative Assembly
N.B.A.	National Bank of Australasia Archives
N.M.R.	Northern Mining Register
N.Q.R.	North Queensland Register
P.O.D.	Post Office Directory
Q.G.G.	Queensland Government Gazette
Q.G.M.J.	Queensland Government Mining Journal
Q.L.J.	Queensland Law Journal
Q.P.D.	Queensland Parliamentary Debates
Q.P.P.	Queensland Parliamentary Papers
Q.S.A.	Queensland State Archives
R.A.H.S.J.	Royal Australian Historical Society Journal
U.Q.L.J.	University of Queensland Law Journal

ESSAY ON NORTH QUEENSLAND MINING SETTLEMENT

Peter Bell

The first Australian gold rush occurred in 1788. Early in that year a convict named Daly announced the discovery of gold a few miles from Sydney Cove, and for a day or two the settlement was agog as a party of marines sought to relocate his find. When the "discovery" was revealed as a deception, Australia's first prospector received 300 lashes as his reward.[1] While no more than an act of duplicity by a man with an obscure motive, the affair foreshadowed on a small scale some of the forces which were to characterise many later mining settlements: the excitement, the credulity, the ephemerality; and the difficulty experienced by colonial administration in coping with population movements founded on these elements.

It is unnecessary to provide a chronological account of mining in North Queensland,[2] but a broad outline will distinguish the principal types of mining settlements. Gold discoveries occurred from 1865 onward, creating the alluvial rushes and the ephemeral townships that were a major feature of North Queensland settlement until the 1930s. One of these discoveries stands alone: the Palmer, archetype of alluvial goldfields, produced nearly a million ounces of alluvial gold in five years from 1873, sparking a monumental population movement into an area far beyond previous European settlement. A few goldfields developed more stable underground mining settlements: Charters Towers was by far the most important, and Croydon, Ravenswood and the Etheridge between them made up the bulk of other underground gold production. Other metals fostered small underground mining towns. Silver was mined at Totley, Argentine, Newellton, Montalbion and Muldiva in the 1880s. Tin created both alluvial and reefing settlements throughout the Herberton-Irvinebank-Mount Garnet district and the Cooktown hinterland between 1880 and 1914. The copper towns of the Chillagoe and Cloncurry fields boomed at the beginning of this century, and financial adversity facing the base metals companies after

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1. *Historical Records of New South Wales* Vol. 2, p.746.
2. G.C. Bolton, *A Thousand Miles Away* (Canberra 1963), especially chapters 3, 6, 12 and 13, provides the best general account of mining in the region.

1907 brought to life North Queensland's two coal mining towns, Mount Mulligan and Collinsville.

Although these settlements were extremely diverse, all can be divided into two categories - alluvial or underground - distinct in their implications for settlement and habitation, and in the quality of the historical evidence they provide. At one extreme is Charters Towers, with a peak population of nearly 30,000 and virtually every amenity European culture could provide, which has survived by sixty years the closure of its mines. At the other are the ephemeral camps - Cornish Jim's Rush, Mulligan's Camp, Swiper's Flat - about which almost nothing is known except their names. This essay seeks simply to illustrate some features of that diversity, concentrating in part on two very different goldfields, Charters Towers and the Palmer.

The North Queensland gold and mineral fields were part of a wave of discoveries, first involving alluvial gold, which had occurred in California, New South Wales, Victoria and New Zealand; and which subsequently moved on to New Guinea, South Africa, Western Australia and the Klondike.[3] This region inherited the participants, personal habits, technology and jargon of the earlier fields; there was little innovation in mining methods or way of life except what was enforced by geology, climate or isolation.

An entirely separate tradition affecting mining and all other communities arose from the succession of failed attempts at exploration and settlement in northern Australia in the second quarter of the nineteenth century: six separate attempts at coastal settlement were defeated between 1824 and 1864.[4] But these were an ill-assorted collection: four attempts at a trading entrepot, one pastoral settlement and a penal colony.

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3. The best account of this phenomenon is W.P. Morrell, *The Gold Rushes* (London 1940). A superficial description is R. May, *The Gold Rushes: from California to the Klondyke* (Melbourne 1977).

4. 1824 Port Essington (short-lived); 1824-29 Fort Dundas, Melville Island; 1827-29 Fort Wellington, Raffles Bay; 1838-49 Victoria, Port Essington; 1847 Gladstone, Port Curtis; 1864-67 Palmerston, Adelaide River. (See P.G. Spillett, *Forsaken Settlement* (Melbourne 1972); D. Lockwood, *The Front Door* (Adelaide 1968) pp.2-29; J.F. Hogan, *The Gladstone Colony* (London 1898) pp.5-70.

All were poorly-sited, all were based on inadequate knowledge and lacked support after establishment. But all carried a legacy of alternative explanations which had more weight in folklore: distance, lack of water, Aboriginal hostility and disease. Early settlers heard vague tales of horrors awaiting them:

> . . . before we left Brisbane we were told that we should most likely be killed and eaten by the Blacks, or else by the Crocodiles, & if not we should die of the fever . . . .[5]

As settlement proceeded, the mythic north receded ahead of it, but retained its reputation: "The 'far north' here is like the far west in America, and strange wild stories are brought down about it."[6] The extent to which these tales influenced settlement is debatable, and it is difficult to establish that any person was deterred from coming to North Queensland by its reputation. Indeed, Ray Summer has pointed out the strength of optimistic illusions even after practical experience had disclosed adverse conditions in real forms.[7]

The mining industry had its own legacy of debacle. Gold mining in Queensland commenced in 1858 with the Canoona rush - an instance of mass hysteria which brought thousands[8] of miners into the Port Curtis district on the strength of lurid exaggeration of a modest gold discovery.[9] The resulting distress and civil disturbance had its impact in two directions. On one hand it left an ingrained suspicion to temper the credulousness of alluvial miners. As late as 1901 a government geologist recorded,

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5. Arthur Neame, diary. Typescript held by Hinchinbrook Shire Council, p.20. Hereafter Neame diary.

6. D. Adams (ed.), *The Letters of Rachel Henning* (Sydney 1963) p.161. Hereafter Henning, *Letters*.

7. R. Summer, "Some Early Illusions Concerning North Queensland", *LiNQ* 3 (1974), 74-87.

8. Hogan, *Gladstone Colony*, p.125 quotes a contemporary estimate of 40,000. This round figure sounds suspiciously like the later gross over-estimates of the populations of several other goldfields. The number was probably nearer 10,000. J.M. Maclaren, *Queensland Mining and Milling Practice*, G.S.Q. publication 156, 1901, p.2 has 16,000.

9. See Hogan, *Gladstone Colony*, pp.93-134; J.T.S. Bird, *The Early History of Rockhampton*, Rockhampton 1904, pp.9-18; W.R. Golding, *The Birth of Central Queensland* (Brisbane 1966) pp.27-40. None of these accounts is reliable.

". . . the name 'Canoona' is even now, after the lapse of forty years, execrated in mining camps from Coolgardie to Croydon."[10]

And the impact of Canoona immediately preceding Separation had a lasting effect on the administration of goldfields in Queensland. When the rush to Gympie after 1867 threatened a repetition, the legislature debated the Gold Fields Bill of 1869, and the implications of such horrors as "disputed claims", "illegal traffic in spirits" and "a large number of persons . . . without sufficient capital to enable them to carry on their operations, if the alluvial diggings did not prove successful".[11] The bill, concerned largely with the powers of goldfield commissioners, failed, and it was 1874 before the *Gold Fields Act* established the administrative forms which persisted throughout the mining years.

Another event which achieved notoriety, quite out of proportion to its true significance, was the abandonment of Gilberton in late 1873. Established in 1869 as an alluvial and shallow reefing gold town, Gilberton had been in decline for a year or more through a combination of isolation, climate, failure to attract crushing machinery and the rise of Georgetown as a rival commercial and administrative centre; but its abandonment was accelerated by a sudden increase in Aboriginal resistance,[12] and this alone was remembered among the many and complex causes. As Janice Wegner suggests:

> . . . the causes of the event are perhaps not as important as the effects; Gilberton's desertion became part of frontier folklore, a spectre to haunt anxious miners in isolated camps . . .[13]

Folklore and notoriety aside, the realities of mining in North Queensland presented many features novel even to miners experienced on southern goldfields: all tended to make mining more difficult and life less pleasant.

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10. Maclaren, *Mining and Milling*, p.2.

11. *Q.P.D.* 9, 1869, p.326.

12. R.B. Brown, "The Desertion of Gilberton", *Lectures on North Queensland History* (James Cook University 1974) pp.83-100.

13. J. Wegner, The Etheridge: a Study of the History of the Etheridge Shire and Goldfield 1845-1960, BEd-BA Hons thesis, James Cook University 1980, p.41.

The first of these was distance. Whereas the principal Victorian goldfields were situated 100-130km from Melbourne, and those of New South Wales 160-300km from Sydney, the isolation of some of the northern fields beggars comparison. Their distance from Brisbane was in every case quite irrelevant, but even the distances from the nearest seaport were often huge. Georgetown and Gilberton were 350km from Townsville; Cloncurry 660km from Townsville and 320km from the Gulf ports of Burketown and Normanton. Moreover, these distances should be considered in terms of the nature of early European settlement in the region. Some of the North Queensland mineral discoveries - Cape River, Ravenswood, Charters Towers - were made within settled pastoral districts, but these were new and economically precarious, with little commercial or administrative infrastructure in existence. Most were on the fringe of the settled area - Cloncurry, the Etheridge, Croydon, Chillagoe. A few - Herberton, Coen, the Palmer and the Hodgkinson - were in utterly virgin country, presenting problems of administration and supply rarely encountered on mineral fields in the Australian colonies. The cost burden imposed by the overland distances and remoteness of settlement was crippling. Nor was this problem confined to the early years. Even decades after settlement, new mineral discoveries in areas remote from transport routes - Esmeralda, Woolgar, Batavia, O.K. - could succumb to precisely the supply problems which had beset all fields in their infancy.

Even the geology of the northern fields proved alien to diggers from the south. Many of the Victorian goldfields were characterised by "leads", old alluvial channels buried under later deposits. As discovery and exploitation of these leads was ideally suited to small labour-intensive mining operations, the Victorian fields provided employment and sustenance over long periods.[14] With the single exception of the Cape

14. R.B. Smyth, *The Gold Fields and Mineral Districts of Victoria* (Melbourne 1869). It must be kept in mind that the technology of what was often referred to in Victoria as "alluvial" mining would have been regarded as shallow underground sinking in North Queensland.

River Deep Lead,[15] the goldfields of North Queensland lacked this feature: alluvial gold was found only in surface alluvium, normally in creek and river beds. As early as 1869, Richard Daintree recognised the implications of the shallowness of the northern alluvial fields: they would be short-lived; either a succession of new discoveries must follow rapidly, or the colony would face chronic unemployment.[16]

The population structure of mining settlements varied greatly. Poor documentation leaves the structure of most of the alluvial fields in doubt, but fortunately the greatest of the North Queensland alluvial rushes, the Palmer, was recorded by the 1876 census while it was still growing towards its peak population.[17] The Palmer was atypical in the proportion of Chinese in its population (73% in May 1876):

> The whole district is crowded with Chinese who keep stores, butcher shops, gambling houses and also grow vegetables at every different settlement. You might almost fancy yourself in China there are so few whites to be seen,[18]

but otherwise probably reflected the population found in the early years of other mining settlements. Of 9,215 inhabitants, only 119 were women - 1.3% of the population, compared with 39.4% women in the colony as a whole. Few of the goldfield population were very old or very young: 59.3% were aged between 25 and 40. By contrast, Charters Towers in the 1901 census

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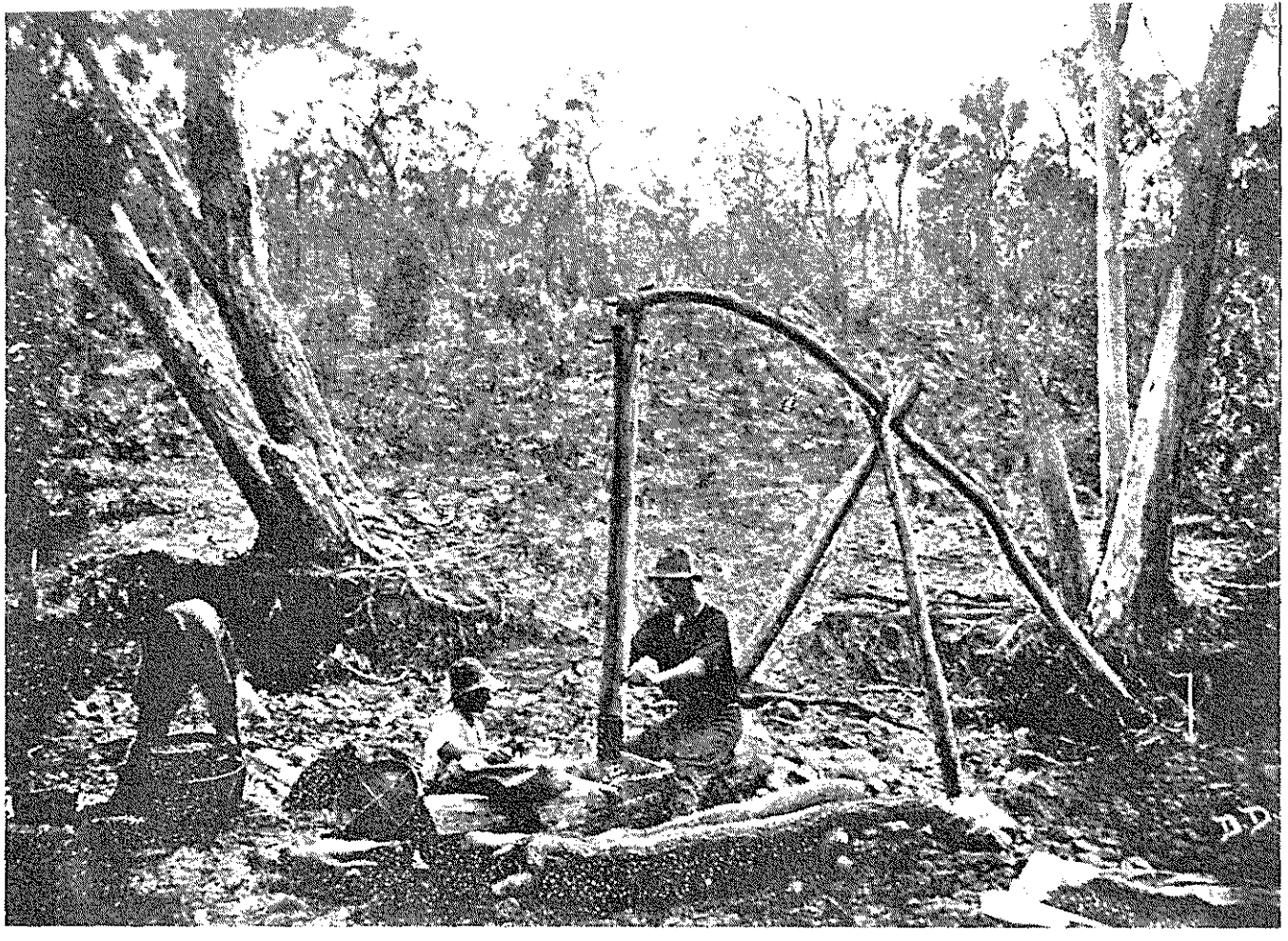
15. W.H. Rands, *Deep Lead, Pentland, Cape River Gold Field,* G.S.Q. publication 96, 1894. The term was occasionally used in connection with the gold-bearing conglomerate stratum on the Palmer, but this was never successfully exploited, and its geology is quite distinct from that of the Victorian goldfields. There was also a deep tin lead near Herberton.

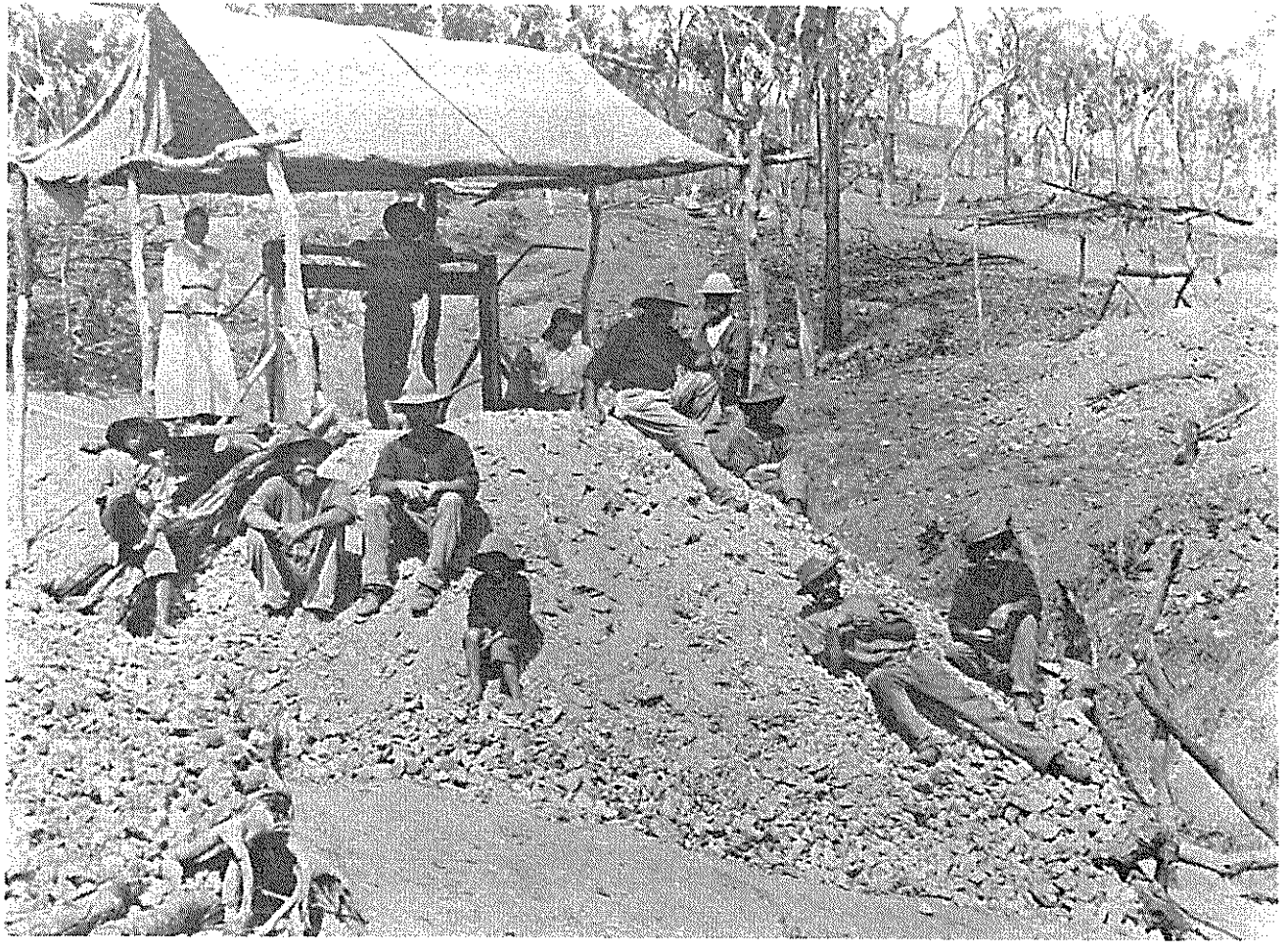
16. Daintree in *Votes & Proceedings* 1869 Vol. 2, p.171. See E.B. Kennedy, *Four Years in Queensland* (London 1870) p.208 for mention of Victorian miners' failure to recognise conditions at Gympie where leads existed.

17. *Fifth Census of Queensland 1876* (Brisbane 1877) provides the basis on which the following statements about population in that year are made. The Palmer census of 1876 is uniquely useful in that the census district included only the goldfield population during the alluvial rush. In no other Queensland census is an alluvial mining field demarcated so clearly.

18. C.W. Bowly, letter 29 November 1876. Typescript in James Cook University Library, p.153. Hereafter Bowly letters.



Pl: Crushing ore with a spring dolly [*A.R.* 1904]



P2: Mining on the Oaks Goldfield, 1908 [Rev. F.C. Hall]

represented a reefing town at maturity. Here the population was balanced: of a white population of 21,071, 49.2% were female. Age distribution was not given for the goldfield, and the surrounding census district of Kennedy took in a much more diverse population, but for some years past the warden had been estimating the field's population at about 70% "women and children."[19]

The origins and previous experience of the alluvial miners can be shown in part from census figures and from registers of births and deaths. Problems arise however in interpreting these figures. On some fields, particularly the Palmer 1876-78, a substantial proportion of the population was Chinese born, although Chinese names almost never appear in the birth and marriage registers, and surprisingly rarely in the death register.[20] Some reasons for this are obvious, but others can only be conjectured. Thus in considering information drawn from the registers, it must be kept in mind that the recorded community was at times a minority group in a much larger population of which very little documentary evidence remains.

With the exception of the Palmer and to a lesser extent the Hodgkinson and Etheridge, the greatest single proportion of the mining fields' population was until the 1890s born in the British Isles. There were few Queensland born, although up to 25% in the early years were born in the southern colonies. A significant minority was born elsewhere in Europe, principally Germany and Scandinavia.

Even the 1876 Palmer census shows 69.5% of the white population born in Britain, 13.9% born elsewhere in Europe, 10% in Australia outside Queensland, and 3% in Queensland. Thus on the Palmer there was a

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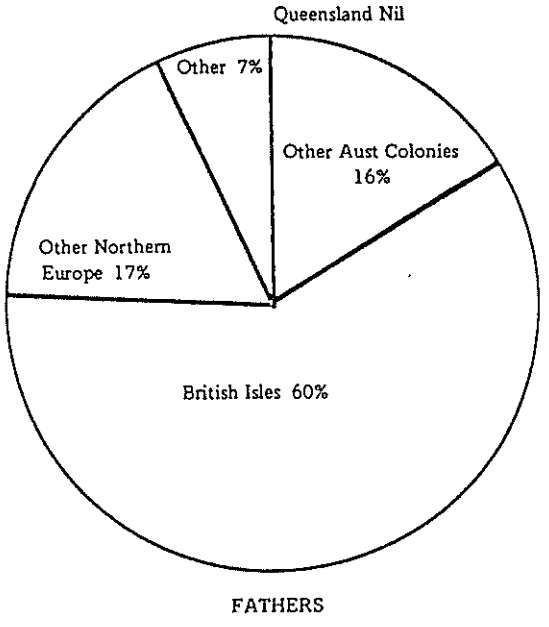
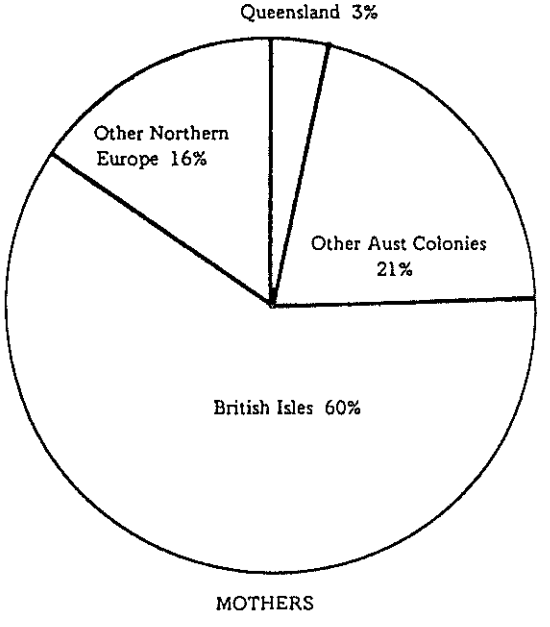
19. *A.R.* 1896, p.37; 1897, p.35; *et.seq.*

20. Registers of births, deaths and marriages for the Palmer district are held at Cooktown courthouse. However, these figures are strikingly incomplete: probably the most useful information in the Palmer death register comes from its very paucity of detailed entries, demonstrating either a casualness toward death or more probably, the anonymity which surrounded many of the mining population even in their own time.

BIRTHPLACES OF PARENTS OF CHILDREN BORN IN THE FIRST FIVE YEARS OF THE PALMER GOLDFIELD

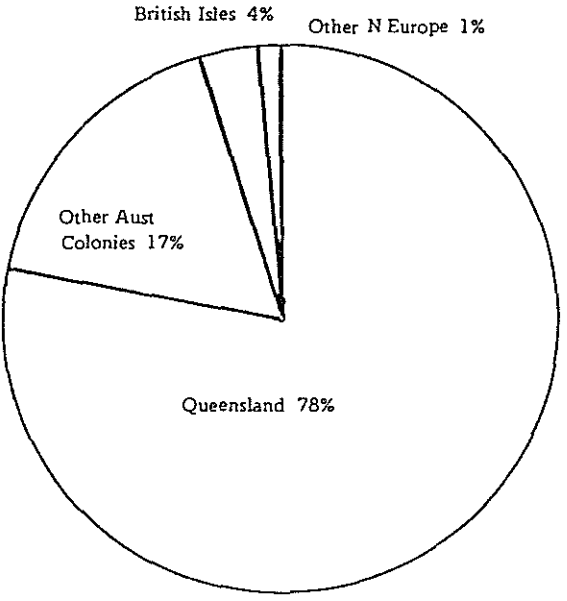
(Source: Register of Births, Palmer, 1874–78)





PLACES OF MARRIAGE OF PARENTS OF CHILDREN BORN IN THE FIRST FIVE YEARS OF THE PALMER GOLDFIELD

(Source: Register of Births, Palmer, 1874–78)



substantial divergence from the population of the colony as a whole, 34% of whom were born in Queensland and only 40.6% in the British Isles.[21] There is evidence, however, that the British majority of the white population of the goldfields had typically spent some years in the Australian colonies before arriving in North Queensland. Of the deaths registered in the Palmer district in the first 21 months of the rush, more than half of those for whom the information was known had been more than ten years in the Australian colonies. For obvious reasons the entries in the register of births give fuller information. Although very few were Australian born, 78% of parents registered on the Palmer 1874-78 had been married in Queensland, and a further 17% elsewhere in Australia. It appears that most of them had emigrated to Australia when single, and married in the Australian colonies, most of them in Queensland.

Some aspects of origins and previous experience are not illuminated by published or archival sources. There is for example a traditional belief in an influx of miners from the Californian goldfields to North Queensland. The point is worth following up, for the cultural impact of these Californians could have had great significance if such an influx did in fact occur, but no reliable figures exist. The number of American-born was small - no census ever recorded more than 1% of the population of any North Queensland goldfield as born in North America. However there is no satisfactory way of estimating the number of returned Australians who may have had some experience in California,[22] nor the number of those born in Britain and elsewhere who came via the Californian and other American fields to Australia.

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21. This tendency to include a higher proportion of British born is confirmed in the register of births for the Palmer district, 1874-78, where 60% of parents of both sexes give their place of birth in the British Isles, and only 3% of the mothers and *none* of the fathers were Queensland born - see accompanying figure. Surprisingly, there is no evidence of an influx of Cornishmen to North Queensland, although groups of Cornish miners were employed at Peak Downs and Cloncurry.

22. See C. Bateson, *Gold Fleet to California* (Sydney 1963) for contact between Australia and California in the early gold rush period.

P3: Alluvial miner, North Queensland [Rev. F.C. Hall]

This was probably not an unusual course: to take two examples, the manager of the Australian Gold Recovery Company's cyanide works at Croydon from 1895 until its closure was G.E. Jewell, who held a BSc degree from the School of Mines at Golden, Colorado, but was born in Northampton.[23] For many years Ravenswood boasted a flamboyant character styled "California Fred", who was the last survivor of the influx of miners which gave its name to American Camp on the Ravenswood goldfield about 1870.[24] But Frederick Knight was born in Hanam, Surrey in 1849, and if the information on his certificate of death is correct, his stay in California must have been brief, for he arrived in Australia at the age of nine.[25]

The movements of individual miners cannot be determined from population statistics, but from the wardens' constant references to rushes from one field to another it is apparent that a large mobile population existed, responsive to news of discoveries elsewhere. This situation has also been described in the mining regions of the American west as "a community without a locus . . . diffused over a vast geographical region and crystallised in the form of a camp for brief periods of time around this or that discovery".[26] For how long individuals typically remained in this fluid community is uncertain, but it was frequently a matter of years, and sometimes decades. The diary of E.G. Chapman shows him as semi-itinerant for a period of four years, working part of the time at alluvial mining, and sometimes carting on contract or for wages.[27] There are hints in the diary suggesting he had been on

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23. Information from Jewell sisters, Cairns.

24. Fred was renowned in later years for growing his own tobacco, drinking an evil-smelling chilli liquor of his own manufacture and carrying a Derringer pistol.

25. Information from his granddaughter, Mrs Crow of Townsville; and Register of Deaths, Brisbane.

26. W.A. Douglass, The Mining Camp: A Unique Social Phenomenon, unpublished paper, University of Nevada, 1979, p.13.

27. E.G. Chapman, diary 1895-99, held by Mr V. Butcher, Charters Towers. Hereafter Chapman diary.

North Queensland goldfields for many years earlier.[28] The case of James Mulligan, well documented but probably atypical, is worth examination. Mulligan arrived in Melbourne in 1860, and was on the New England, Gympie, Kroombit, Charters Towers, Gilbert and Etheridge fields before achieving celebrity as the discoverer of the Palmer in 1873. For three years he travelled constantly, discovering tin on the Wild River in 1875 and gold on the Hodgkinson in 1876. He was a storekeeper in Thornborough from 1877 to 1879, discovered Silver Valley in 1880 or 1881, and was at the establishment of Irvinebank in 1883, probably spending some time as a prospector in the employ of John Moffat. Apparently joining in the early Croydon rush of 1886 where he gave his name to Mulligan's Camp, he stayed on that field until 1889, when the government retained him to report on the Palmer in 1890. Involved in mining on the Mitchell River in the early 1890s, his activities are uncertain until he became associated with a mine at Mount Madden in 1896 and another at Mount Molloy in 1899. He was then on the Alice River in 1902-3, and involved in mines at California Creek in 1904 and Mount Spurgeon in 1906. He died at Mount Molloy in 1907, aged 70.[29]

The industry and social structure of a mining town was determined to a great extent by the nature of its ore deposits. Gold reefing generally created the largest and most durable mining settlements, for its value was higher than that of any other mineral, justifying a higher sustained effort in extraction. Most gold fields were initially alluvial discoveries, requiring simply manual labour and a degree of skill for mining and separating. It was feasible for an alluvial miner to work alone, although a small group made for greater efficiency. Thus the greater proportion of the population of an alluvial goldfield - 80 to

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28. See entry 22 May 1897, which suggests Chapman was in the first Gilbert rush of 1869.

29. *Australian Dictionary of Biography*, Vol. 5, pp.310-11; Bolton, *Thousand Miles*, pp.52, 259, 287-88; R.S. Kerr, *John Moffat's Empire* (Brisbane 1979) pp.16, 33, 80; *North Queensland Mining Annual*, 1891, map after p.24; *P.O.D.* 1888-1890.

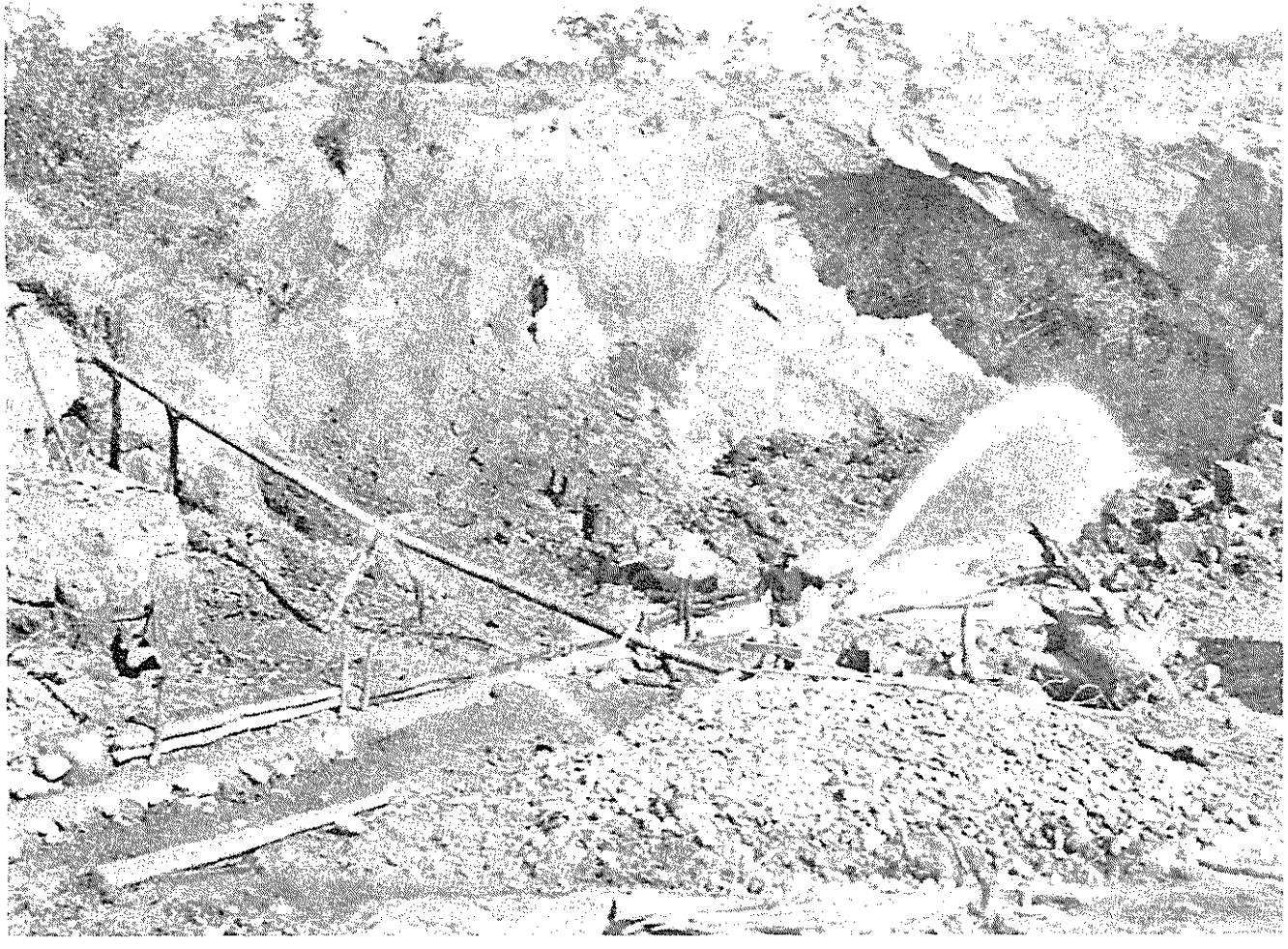
90% - consisted of miners.[30] Aware that the life of the field was probably short, few brought dependants, and their needs were met by a relatively small number of carriers, shopkeepers, butchers, hoteliers and administrators. More complex social institutions rarely developed on an alluvial field; demand for service industry was slight.

As underground mining developed on a goldfield, however, the greater complexity of the mining and ore treatment processes and consequent demands on service industries encouraged a diversity of activity in the community. The relatively stable economy of a reefing town also encouraged dependants who themselves created further demand. Miners represented a progressively smaller element of the population as the trend toward underground mining continued. In Charters Towers, where the alluvial gold was insignificant, the underground miners diminished from about a third of the goldfield's population in the early 1870s to little more than a tenth by 1900.[31] The miners were not decreasing in numbers, on the contrary; but the town was growing at a faster rate than the mining workforce.

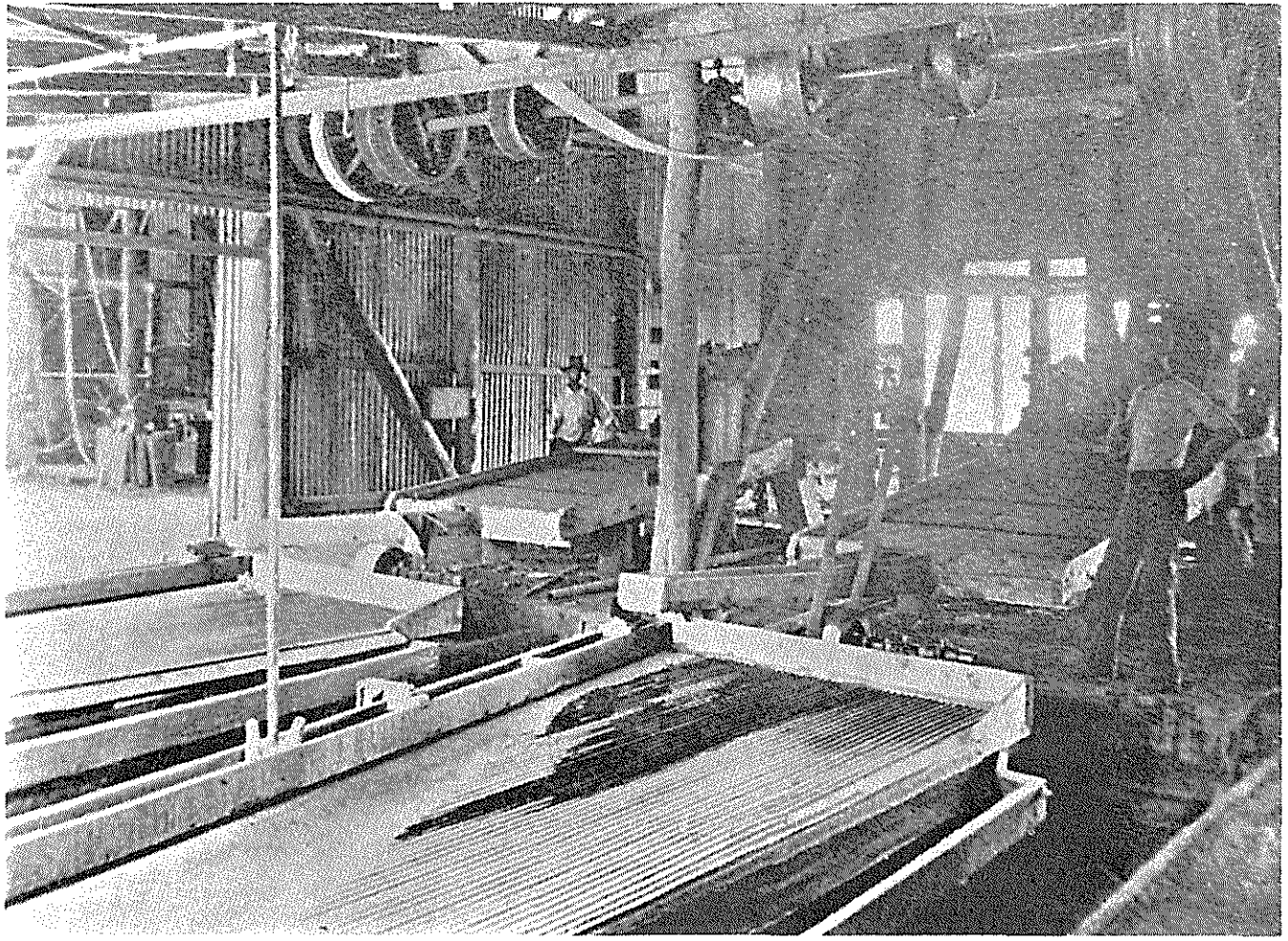
Many others were employed by the mining industry, although not as miners. Treatment of gold ore involved crushing mills and, in later years, cyanide plants: a major industry existed simply to transport ore and tailings between mines, mills and cyanide works. This transport industry itself created subsidiary demands for facilities for breeding horses, stabling, grazing, growing and carrying feed; and for tradesmen such as farriers, smiths, saddlers, harness makers, wagon builders, wheelwrights, veterinary surgeons and knackers. Several mining companies had their own railways, and the network of lines throughout the town employed further labour. Supplying firewood to mines, mills and locomotives was a major industry in itself, and one which increased in cost and complexity as the landscape near mining towns was progressively

30. Warden Sellheim put the alluvial miners at 8,000 in a total population of 9,000 on the Palmer in 1875, before significant underground mining began. From 1874 to 1878 his estimate of the proportion of miners varied from 79% to 91%. (*A.R.* 1878, p.23).

31. *Statistics of Queensland*, 1873-1913.



P4: Hydraulic tin sluicing, Annan River Coy, near Cooktown [*A.R.* 1913]



P5: Wilfley tables, Forsythe's Mill, Croydon [*A.R.* 1903]

stripped of trees.[32] The fabric of all these works demanded the services of engineering plants, smiths, bricklayers, plumbers and tinsmiths, carpenters, timber cutters and merchants, glaziers, ironmongers: by 1890, Charters Towers had two foundries, four sawmills and a brickworks.[33] From the population sustained by these industries, many services flowed:

> There is a school of arts with a circulating library of 2,500 volumes, and reading-room supplied with the principal papers and periodicals of the day. There is a first-class and well-kept hospital, and a number of halls belonging to Masons, Odd-fellows, and other lodges; a jockey club which holds four race meetings in the year; and a Mining, Pastoral and Agricultural Association that holds a show annually. Cricket, football, lawn-tennis, and rifle clubs also exist. The town possesses an efficient fire brigade - which has done good service in checking the spread of fires - and a corps of the Defence Force and Mounted Infantry. There are 3 newspapers - the *Northern Miner*, a morning daily, first established in 1872; the *Charters Towers Herald*, established in 1878; and the *Times*, established in 1887 - both evening dailies. Two brass bands dispense their melody, one generally playing on Saturday evening in the main street, where everybody seems to make a point of congregating, the street being crowded from side to side, and presenting a very lively appearance. 34

No other North Queensland mining town ever approached this level of complexity and prosperity until the rise of Mount Isa. Ravenswood and Croydon came nearest to it, but were on a much more modest scale.

The general atmosphere of the alluvial settlements is open to some question. Despite a romantic notion in much recent popular writing that the mining fields were characterised by violence and debauchery, the diggings are more frequently described in contemporary accounts as exceptionally orderly. The same restrained behaviour and absence of

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32. See Vol. 1, pp.251-253.

33. *A.R.* 1890, p.24.

34. *Ibid.*, p.23.

crime that impressed visitors to fields such as Gympie[35] was normally taken for granted in North Queensland mining areas. However, the principal evidence for such a judgment comes from the reports of wardens, who understandably had an interest in representing a calm and orderly state of affairs. When violence did occur, an amusing degree of understatement is apparent in the warden's report, exampled by Sellheim writing in 1878:

> Beyond the Lukinville riots, this gold field has been very orderly all along. Offences against property have been perhaps, more numerous than usual, but in most cases they have been of a trivial nature. A dispute about a claim led to the shooting of a Chinese by an European, who, however, has since been acquitted by a jury. 36

But independent observers' comments on disorderly behaviour also frequently contain the inference that such a state of affairs was an exception to the norm:

> This upper township [on the North Palmer] seems to be a thriving place, the storekeepers, butchers, shantyites are evidently driving a good trade, this was the only place that I saw any drinking or even a fight, and I fancy these exhibitions are generally signs of prosperity to somebody. 37

Indeed the consumption of alcohol on mining fields which received comment from some visitors went unremarked by others, suggesting their own background played an important part in their observations. Even those disapproving seemed not to detect an undesirable social climate:

> Edwardstown is very prosperous. . . .I should think about 30 public houses and of course an awful amount of drinking, etc. I meet with some rough characters

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35. Gympie is much more frequently described in documentary sources than any northern field: see Kennedy, *Four Years*, p.212; C.H. Eden, *My Wife and I in Queensland* (London 1872) p.265; A. Trollope, *Australia and New Zealand* (Leipzig 1873) pp.83-84; and also C.B. Newling, "The Gold-Diggers", *R.A.H.S.J.* 11 (1925), 262-280.

36. *A.R.* 1878, p.22. The Lukinville riots were a series of affrays principally involving Chinese miners after a rush to the lower Palmer in July 1878.

37. *Cooktown Herald*, 13 May 1874.

> in places but all seem kindly disposed and afford the best hospitality they can. 38

The earlier experiences of the colonial government ensured that administrators arrived promptly on most significant mining fields in North Queensland, and their presence usually served effectively in maintaining order. W.R.O. Hill's reminiscences contain a number of accounts of unruly and violent behaviour on the goldfields. "The Cape in 1868 was a decidedly rough locality. . .," its population including ". . .the scum of all the Southern Gold Fields"; but Hill wrote forty years afterward, and his book is unquestionably sensationalised to show up his own sterling qualities.[39] Business, mining and the sale of alcohol were all regulated by licence, a police camp was established near each major settlement, and North Queensland mining centres were connected by telegraph in a surprisingly short time.[40] There was no trace in North Queensland of the vigilance committees which appeared on some American mining fields.[41]

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38. Bowly letters 1 December 1876, p.156. Estimates of living costs and average earnings later in this chapter render questionable the legends of monumental drinking on alluvial fields.

39. W.R.O. Hill, *Forty-Five Years' Experience in North Queensland, 1861 to 1905* (Brisbane 1907) p.47. See e.g. pp.73-74 for 4 violent deaths and 2 assaults in four paragraphs of text!

40. The Colony's unsuccessful ambition to be the landfall of the inter-continental telegraph led to the construction of a line linking Brisbane to Normanton in 1871. *(Report of the Postmaster-General,* 1870-72.) Branch lines were quickly constructed to the major mineral fields.

41. J. Nicholson, "Procedures and Perceptions of Authority: the Gold Rush Camps of Australia, Canada and the United States," *Public Administration* 32 (1973), 392-403 contrasts the USA and the British colonies in this regard, attributing the absence of civilian vigilance initiatives to different ideological attitudes to legitimate authority in British regions. The explanation implied in P.R. May, "Gold Rushes of the Pacific Borderlands: a comparative survey" in L. Richardson and W.D. McIntyre (eds), *Provincial Perspectives* (Christchurch 1980), that the Australian and Canadian fields differed principally through their administrators being forewarned by the American experience, is more convincing.

There is some evidence that orderly behaviour was directly related to productive mining on the part of the majority of the goldfield population, and that lapses occurred when a large unsuccessful population gathered at a rush. Commissioner Jardine, sent to investigate unrest at Millchester in 1872, reported that the disorder was not the doing of working miners, but of "a set of roughs" attracted to the field.[42] It is significant that Jardine referred elsewhere to excess labour in the district - "many hundreds" of unsuccessful miners had returned to Townsville, and would need public assistance to return south.[43] Weitemeyer commented on the large number of unemployed in Cooktown in 1874, who included an element of "loafers, pickpockets and cardsharps."[44] Describing Croydon in 1887, Ivimey noted:

> Socially, the Croydon miner is like a great many others of his class, with his worst fault limited to taking more alcohol, or what they get for alcohol, than is good for him. There are rowdies everywhere, however, and they have come to the field in great numbers; such are not miners, however, but the ordinary tagrail who come for any unconsidered trifles on hand. 45

These accounts describe conditions in the declines which followed the initial rushes to three major fields, when the population greatly exceeded the workable ground available, giving rise to rowdyism and sometimes more extensive social unrest.

The decline of a field forced its surplus workers to disperse, affecting the labour market initially in the local district but eventually over a much wider area. Neame gleefully recorded in early 1873 that labour was plentiful on the lower Herbert because of the exodus of unsuccessful Victorians from Charters Towers;[46] the same exodus Jardine had encountered in Townsville. Rachel Henning was likewise pleased in

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42. *Votes and Proceedings* 1873, p.1074.

43. *Ibid.*, p.1071.

44. [T.P.L. Weitemeyer], *Missing Friends, being the Adventures of a Danish Emigrant in Queensland 1871-1880* (London 1892) pp.219-220.

45. A.J. Ivimey, *Mining and Separation in North Queensland* (Brisbane 1888) p.60.

46. Neame diary, pp.54-55.

1865 by an influx of disappointed miners from the Peak Downs rush near Clermont: "Now. . .the masters have their turn. Biddulph never gives more than 20s. a week, and dismisses every man who does not please him."[47]

Violence involved Aborigines much more commonly than Europeans only or Chinese; it was especially frequent in the unsettled areas of the Etheridge and the Palmer. Noel Loos has identified 147 European deaths from Aboriginal attacks in North Queensland mining areas between 1861 and 1897.[48] Noreen Kirkman, in a closer study of the Palmer between 1873 and 1883 regards 20 deaths as established beyond doubt and a further 31 as probable.[49] Deaths caused by Aboriginal attacks in this one area, therefore, occurred at a rate equal to at least one every six months and probably equal to one every ten weeks. Aboriginal violence was far from the major cause of death - only one of the first 200 entries in the Palmer death register from October 1873 to July 1875 is so attributed (although two other deaths are attributed to "murder" with no explanation) - but it was clearly a major cause of concern.

After initial penetration of the North Queensland region and the consequent skirmishes,[50] no Aboriginal attacks occurred on parties of armed Europeans, and thus it became usual for packers and miners moving between isolated settlements to travel armed and in company. Most Aboriginal attacks involved single unarmed travellers, and there was little sympathy for such people. When Charles Desailly was speared to

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47. Henning, *Letters*, p.208.

48. N.A. Loos, Aboriginal-White Relations in North Queensland 1861-1897, PhD thesis, James Cook University 1976, Vol. 2, pp.794-95.

49. N.S. Kirkman, Aboriginal-European Contact, unpublished report, James Cook University 1977, p.51. A further 41 contemporary reports were regarded by Kirkman as inconclusive or doubtful. These make a possible total of 92 deaths in ten years.

50. There was determined resistance to several early parties in Cape York Peninsula; Leichhardt, Kennedy, the Jardines, Mulligan and the first Palmer expedition. See R.L. Jack, *Northmost Australia*, Vol. 1 (London 1921) pp.194-95, 216, 307-8; Vol. 2 (Melbourne 1922) p.415, 421-22.

death on the Hodgkinson goldfield in 1883, a police report dismissed the episode with the comment: "himself entirely to blame for his untimely end."[51]

The prevalence of firearms is well attested, particularly in accounts of the more isolated mining fields. Military carbines were cheap and popular - "Snider" became almost synonymous with "firearm."[52] It is surprising that guns rarely played a part in violence among Europeans or between Europeans and Chinese.[53] Bushranging never occurred in North Queensland on any significant scale - banks and gold escorts were unmolested in even the most desolate areas, probably because the absence of close agricultural or pastoral settlement in most mining areas denied potential North Queensland bandits their logistic base.[54]

Although the alluvial settlements in their phase of stable production and optimum population were orderly places, and the large deep reefing towns developed social structures and institutions comparable with those of stable towns elsewhere, there was a third category of settlements - the smaller underground base metal mining towns - where

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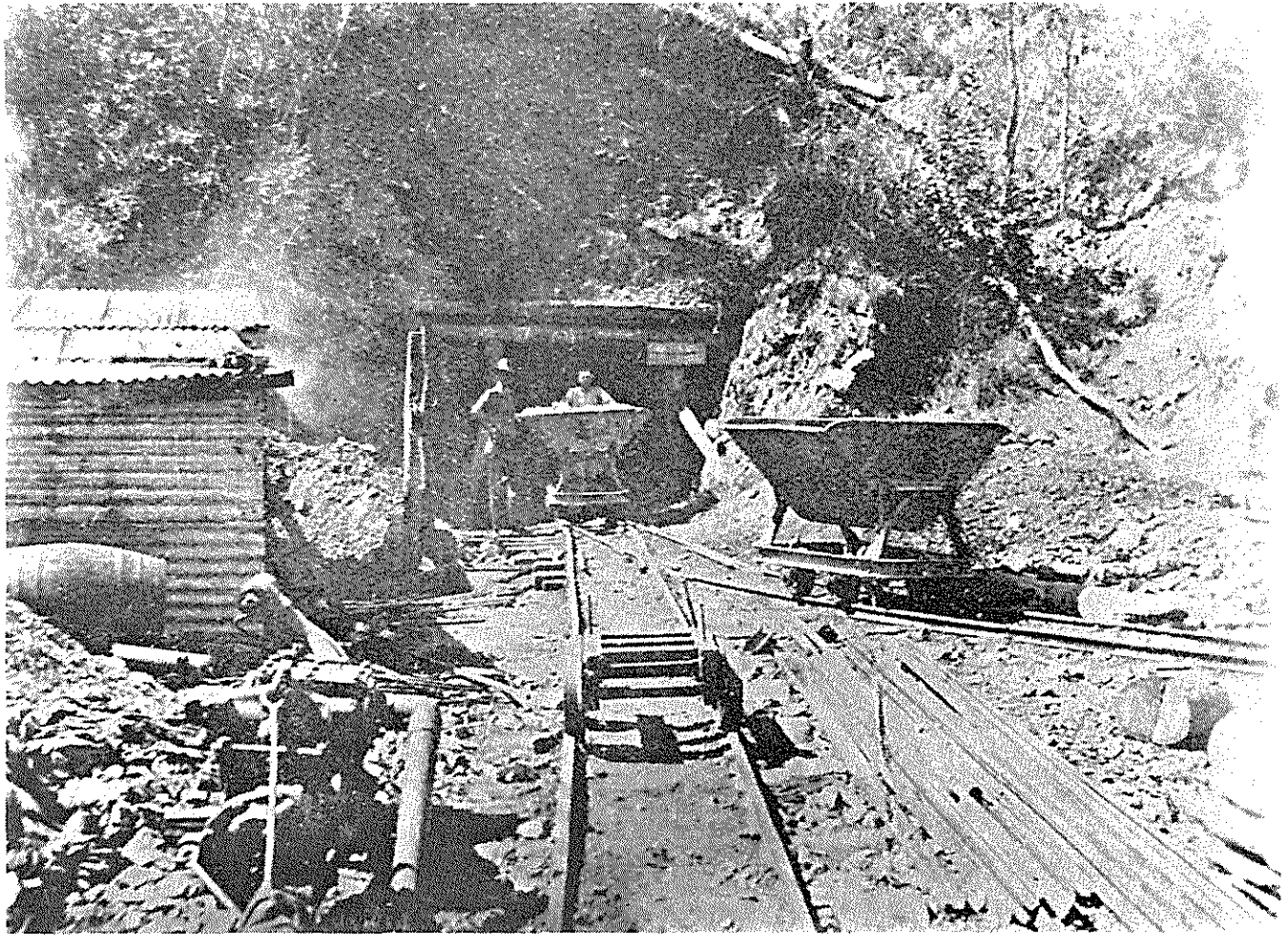
51. Sub-Inspector E.H. Carr to Colonial Secretary 16 July 1883. 83/3847, COL/A366 *Q.S.A.*

52. The Snider patent breech-loading device of 1866 was a stop-gap adaptation to many Enfield Pattern 1853 muzzle-loading rifles and carbines in British military service. The Snider-Enfields were made obsolescent by Martini-Henry breechloaders in 1871, and large numbers of them were in civilian hands in the Australian colonies in the 1870s. See I.D. Skennerton, *Australian Service Longarms* (Margate 1976) pp.19-22, 94-99.

53. There were isolated instances, notably the legendary murder and suicide of Craig and Smith in the street of Smithfield in 1877: D. Jones, *Trinity Phoenix* (Cairns 1976) p.123. See Wegner, Etheridge, p.46 for two reports of armed robbery during the early Etheridge rush. A shot was fired during a strike at Ravenswood in 1912, wounding a miner: A.L. Wilson to Directors, 9 January 1913, New Ravenswood Limited letterbook 5, held by Mr P. Kean, Ravenswood.

54. See McQuilton's theory of Australian bushranging as "social banditry" reflecting frustrated settlement ambitions in contested rural areas: J. McQuilton, *The Kelly Outbreak: The Geographical Dimension of Social Banditry* (Melbourne 1979). Commissioner Griffin's murder of the Clermont gold escort in 1867 was an exceptional incident, never repeated in North Queensland.

P6: Alluvial miner with puddling trough and cradle [Rev. F.C. Hall]



P7: Kitchener tin mine, Stannary Hills [*A.R.* 1907]

miners worked for wages as in the larger towns, but the structure of the community more closely resembled that of the alluvial camps. It is difficult to demarcate these towns. Bolton recognised the distinction when he contrasted the "settled welcoming look" of Herberton and Irvinebank, twenty years old, with the "raw edge of impermanency" about the new towns of Chillagoe, O.K., Stannary Hills and Almaden in the first decade of this century.[55] Marian Rowan, visiting Muldiva in the 1890s, left a convincing account of the noise, heat, disease, cost and impermanence of life in such a town.[56] In 1905 a state school teacher faced with a transfer to Redcap, near Mungana, recoiled from the prospect: "Redcap I have seen twice, and I put the case mildly when I say it is perhaps the roughest camp in North Queensland. . . .Since I cannot resign without borrowed money, I must accept Redcap."[57]

The physical form of mining settlements was normally determined largely by expediency. The ethos of impermanence precluded any attempt at planning in the early stages of occupation; buildings were simply erected in the location most convenient to the owner. Sometimes a straggling alignment was induced by some natural feature - Irvinebank and Stannary Hills were forced into tortuous plans by their sites in steep valleys - but usually geometric arrangement was conferred some years after settlement, and the plans of many mining towns show the surveyor's attempt to draw a coherent plan around buildings already constructed.[58] In towns free to extend unimpeded, such as Georgetown and Croydon, the surveyors adopted the square grid plan familiar throughout the nineteenth

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55. Bolton, *Thousand Miles*, pp.291-92; and see R. Bedford, *Naught to Thirty-three* (Melbourne 1976) for a first-hand description of the area.

56. M.E. Rowan, *A Flower Hunter in Queensland and New Zealand* (Sydney 1898) pp.55-57.

57. J. Adam to Undersecretary for Public Instruction, 28 April 1905, 05/0847, EDU Z 460 *Q.S.A.* Adam was at the time teaching in Calcifer, near Chillagoe, and no stranger to mining towns.

58. Don Roderick's unpublished typescript on the evolution of the Charters Towers street plan discusses the problems of survey after occupation.

century European world.[59] An attempt was made to impose order in advance on the Etheridge goldfield. There the mining surveyor marked off town plans "at any likely permanent camp" in 1892, to facilitate householders' selection of allotments in the event of a major discovery at the site.[60] It is uncertain whether these opportunities were ever exploited.

When a substantial town developed, urban planning could be further hindered by extension of mining into the town site. Croydon was fortunate; within a few years deep mining was concentrated at Golden Gate, several kilometres from the town. But in both Ravenswood and Charters Towers the march of progressively deeper mines down the underlying reefs led to cheek-by-jowl development of mining and social institutions: many of the largest mines of the Towers were in suburban streets.[61]

The location of a mining settlement was usually determined by proximity to some feature of economic importance such as a mine, mill or railway station. Butchers' shops frequently became the focus of settlement, since they provided the one staple item which for most of the year could not be carried or stored for more than a few hours. A permanent water supply was of course a major consideration, sometimes created artificially by pondage as an adjunct to ore milling. Croydon relied on underground water.[62] When these desirable focal points were some distance apart, the result was either a compromise settlement between them, or a number of small clusters of buildings around each. Thus within an area of a few square kilometres at the centre of the Palmer reefing district there arose Maytown, where the banks, post office and coach terminus were, Idatown at the principal mine and mill and Edwardstown at the abattoir.[63]

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59. See "The Expanding Mining Frontier" in J.W. Reps, *Cities of the American West* (Princeton 1979) pp.490-522.

60. *A.R.* 1892, p.65.

61. See R.L. Jack *et al.*, *Geological Map of Charters Towers Goldfield*, G.S.Q. publication 95, 1892 and 2nd edn 142, 1898; which superimposes the mine workings on the street plan.

62. Ivimey, *Mining and Separation*, p.60.

63. There is confusion in documentary sources about these three places. They seem to be distinct settlements, but it is possible Edwardstown and Maytown were the same place.

Later, when railway communication was established, the station usually became the dominant focus of settlement. There was bitter competition among mining centres for construction of railways, although the benefits were often disappointing. Unquestionably a few settlements prospered after the railway arrived: Charters Towers and its coastal terminus, Townsville, after 1882, Mareeba and Cairns after 1893. But it was quite possible for a town to collapse on arrival of the railway - Mount Garnet in 1902, Mount Mulligan in 1914 - for reasons entirely separate from transport.[64] In some cases the railway made no difference to the settlement's fortunes. Ravenswood in 1884, Laura in 1888, Herberton in 1910 and Thornborough in 1914 were in slow decline; and their long-awaited railways induced no perceptible resurgence.[65] The arrival of a railway could in fact contribute to the ephemerality of a mining settlement, since the existing town was not necessarily the best site for a terminus. Thus after 1910, the mining town of Charleston moved across the river and became the railway town of Forsayth. In 1901 Girofla was duplicated a mile northwest at Mungana.[66]

However location and form of mining towns was not always haphazard: many of them - especially the base metal towns - were conceived and directed by mining companies. Irvinebank and others of Moffat's empire, Chillagoe, Mungana, O.K., Cardross, Mount Mulligan, Stannary Hills and most of the towns on the Cloncurry field were dominated by a single company. There never developed in North Queensland the phenomenon of the "company town" with monopolistic control over social and commercial

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64. See R. Kerr, *Moffat*, pp.100-101; P. Bell, Vol. 1, p.260.

65. See J. Kerr, Vol. 1, Chapter X.

66. Charleston-Forsayth was another complex area of several small settlements in close proximity, but it appears the principal mining township from 1887 was Charleston, and the focus of settlement moved to Forsayth, the railway terminus, about 1910-11. A similar shift occurred at Mungana, although that name had already replaced Girofla at the old site in 1897, four years before the railway arrived.

activities, in the sense familiar in the U.S.A.[67] There were however retail trading companies which established chains of stores in North Queensland towns: Jack and Newell, Brodziak and Rodgers, Burns Philp, Samuel Allen, whose principals were in most cases heavily involved in mining investment. But these economic links were loose and informal; conditions never permitted the formation of trading monopolies.[68]

The physical appearance of the town was rarely considered of importance in the early stage of mining settlement. Substantial buildings were reserved for commercial and administrative premises, and on alluvial fields the majority of the population lived in tents. Cooktown was described in early 1874 as resembling "a fair in the Old Country, leaving out the monkeys and merry-go-rounds."[69] On many fields, boarding houses catered to a transient population unwilling to provide its own shelter:

> Nearly all the people boarded in two boarding-houses kept by Chinamen, one on each side of the street. I think there must have been two or three hundred boarders in each. They were both alike, two large bark-houses, no floor, only two immense tables with forms on each side. . . .The charge was one pound per week, payment beforehand, and those of their customers who wanted sleeping accommodation might, without extra charge, fix themselves up as they liked in some sheds behind. 70

On fields attaining stability, civic pride began to demand greater care in construction of buildings. A hierarchy of prestige was associated with the selection of materials. Noting in 1880 that Ravenswood had become almost entirely a reefing field, the warden commented on change in the preferred fabric of buildings: "The town has much improved in

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67. J.B. Allen, *The Company Town in the American West* (Norman Oklahoma 1966); and see *Q.P.D.* LXXVII, 1897, pp.1846-7 and 1894-1901, expressing fears of monopolistic control by the Chillagoe company under the liberal provisions of the Mareeba to Chillagoe Railway Bill.

68. The economic and personal links among mining, politics, banking, shipping and retail trading in North Queensland provide a fertile field for research.

69. Weitemeyer, *Missing Friends*, p.219.

70. *Ibid.*, p.173, describing Ravenswood.

appearance and the miners seem more inclined to settle permanently, and one sees very few eyesores in the shape of tumble-down humpies and calico domiciles."[71] And in the same year Maytown saw competition between storekeepers after the construction of two more prestigious stores:

> . . .both being large and substantial buildings of sawn timber and iron, all the material coming from Cooktown; and the other Chinese storekeepers, not to be beaten, have renovated their old buildings by putting new fronts in and substituting iron for bark wherever the latter material was used. 72

The desirable transition was to masonry construction. Stone was almost never used in North Queensland towns because of the labour cost involved, but brick was seen as the ultimate end of an inevitable evolutionary sequence: "The town is changing its aspect day by day. Bark has given way to weatherboards, and now the latter has to make room for brick and mortar."[73] There was considerable pressure exerted by wardens, newspaper editors and clergymen to encourage mining communities to build in brick.[74] Few such campaigns had notable success, partly because of the transport and labour costs involved, but also because of the abysmal quality of many locally-produced bricks: towns as widely dispersed as Thornborough and Ravenswood found that their new brick buildings collapsed in storms.[75] Better quality bricks were available from Townsville suppliers after 1888, but their use only became prevalent in Charters Towers and Ravenswood in their prosperous years.

Reluctance to invest in buildings and public utilities in a mining town came into sharp conflict with this urge for civic improvement. The Queensland National Bank rejected plans for a £900 building at Maytown in 1878, the directors resolving to construct "a galvanised iron building

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71. *A.R.* 1880, p.23.

72. *Ibid.*, p.17.

73. Sellheim describing Charters Towers, *A.R.* 1890, p.23.

74. See for example, J.S. Reid's campaign, *Hodgkinson Mining News* 1877, *passim*.

75. *Ibid.*, 16 March 1878; and W. Barker to Undersecretary for Public Instruction, 6 February 1880, 80/726 EDU/Z2309 *Q.S.A.*

which could be removed at any time."[76] In 1914 the district inspector of schools, in commenting on an application for a school at Cardross, enunciated what had been doctrine within most government departments for many years.

> . . .I would not recommend a substantial building on any of the North Qnsld mining fields. Cardross has fairly good prospects & its directors evidently have confidence in it, otherwise they would not have put £3000 into a new concentrating plant. I would recommend, therefore, the establishment of a school to accommodate about 20 pupils, the building to be of a temporary nature, until the character of the field is clearly established. 77

While the causes of ephemerality lay partly in the mineral deposits, for many were small and patchy, and quickly worked out, this problem was compounded by economic and environmental circumstances, and by the temperament of many of those involved in mining industry. Frequently alluvial workings were abandoned *before* they were exhausted, on the rumour of a better find elsewhere. In 1876, this tendency on the part of Europeans abandoned almost the entire Palmer goldfield to Chinese miners who worked it successfully for several years more.[78]

Chapman's diary, 1895-99, reveals that even at that late period when the impetus of alluvial mining was all but spent, his life was a seemingly aimless journey between alluvial and shallow reefing shows on the Charters Towers, Cape and Etheridge goldfields, with frequent entries such as: "intend to clear out if I don't get something soon"; "I think I'll make for Gilberton"; "heard about a rush to the Cape."[79] Nor was this ephemeral

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76. Minutes of directors' meeting 6 June 1878, A/QNB/301, N.B.A. In the event, the bank bought the AJS bank's premises for £650. (*Ibid.*, 11 July 1878).

77. B. McKenna to Undersecretary for Public Instruction 29 March 1914, 14/10335, EDU Z 522 *Q.S.A.*

78. N.S. Kirkman, "From Minority to Majority: An Account of the Chinese Influx to the Palmer River Goldfield, 1873-1876", in H. Reynolds (ed.), *Race Relations in North Queensland* (James Cook University 1978) pp.248-49.

79. Chapman diary, entries 14 July 1896, 8 and 21 May 1897, Chapman was en route from the Etheridge to Gilberton in 1897 when a rumour diverted him to the Cape.

quality confined to the alluvial camps: even the reefing towns could fall victim almost overnight to loss of confidence. In 1891, the failure of two mines at Grass Hut caused "a stampede away from the new township, leaving a couple of streets of nearly new houses and two hotels, a store, and butcher's shop to follow at their leisure."[80] Such failures were often the result of inexperience or reckless investment. A company at Argentine failed in 1883 after building elaborate smelters, and the new town was deserted. The warden reported: "the miners have been working in the dark to a great extent, and from inexperience may possibly have exported the wrong ores."[81]

Incompetent and sometimes greedy management caused the premature failure of some mines, and the abandonment or decline of settlements. The paradox of underground mine management was that successful long term production depended on procedures which tended to reduce the mine's profitability in the crucial early stages when management was anxious to impress investors. Prospecting an ore body and blending ore grades for a steady return were essential to long term viability, but both decreased short term earnings. Too many managers aimed at quick returns by crushing the best ore to pay early dividends, leaving the mine doomed by a legacy of low-grade ore and inadequate prospecting and development. Sellheim noted this similarity between underground and alluvial miners, dismissing over-impatient reefing syndicates as "only the analogue of the alluvial fossicker":

> 'What can be the possible cause that reefs that have yielded all throughout an average of 2½ ounces of gold, of the value of £4. 2s. 6d. per ounce for the ton of quartz. . .are not worked more vigorously, and do not give remunerative employment to ten times the number of men engaged on them now?' I think the principal reason may be sought for in the inadequacy of the capital invested in mining here, and generally speaking, in the absence of that systematic work that, as a rule, can make quartz reefing a payable industry in the long run. It must

80. *A.R.* 1891, p.59.

81. *A.R.* 1883, p.31. See K.H. Kennedy, P. Bell & C. Edmondson, *Totley*, (James Cook University 1981) for another example of failure through over-investment.

> be conceded that the latter mode of work cannot be well carried out without the aid of the former; but at the same time it would also be futile to expect its co-existence with a tendency in the minds of the miner to become unsettled every time he may hear of some new rush that may be on the tapis. . . .He most probably leaves a claim that means good wages, if nothing better, and tramps, suffering all kinds of danger and hardships, on his way to some locality where, on calm reflection, his own common sense and long experience would have told him that payable gold at the best could be but a very remote contingency; but his remembrance of having once missed a rush where his mate made a rise is too powerful an argument for him to overcome, and hence his determination at all hazards not again to lose another chance attached to some new Eldorado. Now, to this desire of looking forward to rich finds in unknown places - a feeling which no doubt is partly engendered by a longing for a change from probably the most monotonous life on the globe, and the consequent frequent shifting of the digger from one gold field to another, the absence of any great amount of local capital on this goldfield may, to a certain extent be ascribed. 82

The nutrition and health of the miners on isolated fields can be described with some accuracy from fragmentary sources. Their diet was largely a monotonous round of copious fresh beef and variations on flour and water. Meat was plentiful and usually cheap on the mining fields: the great alluvial rushes of the 1870s answered northern pastoralists' need for a local market, and there was active competition to establish butchering outlets in the mining towns.[83] Beef usually sold at 3d or 4d a pound,[84] and was consumed at such a predictable rate that the goldfield wardens fell into the habit of estimating the field's population by

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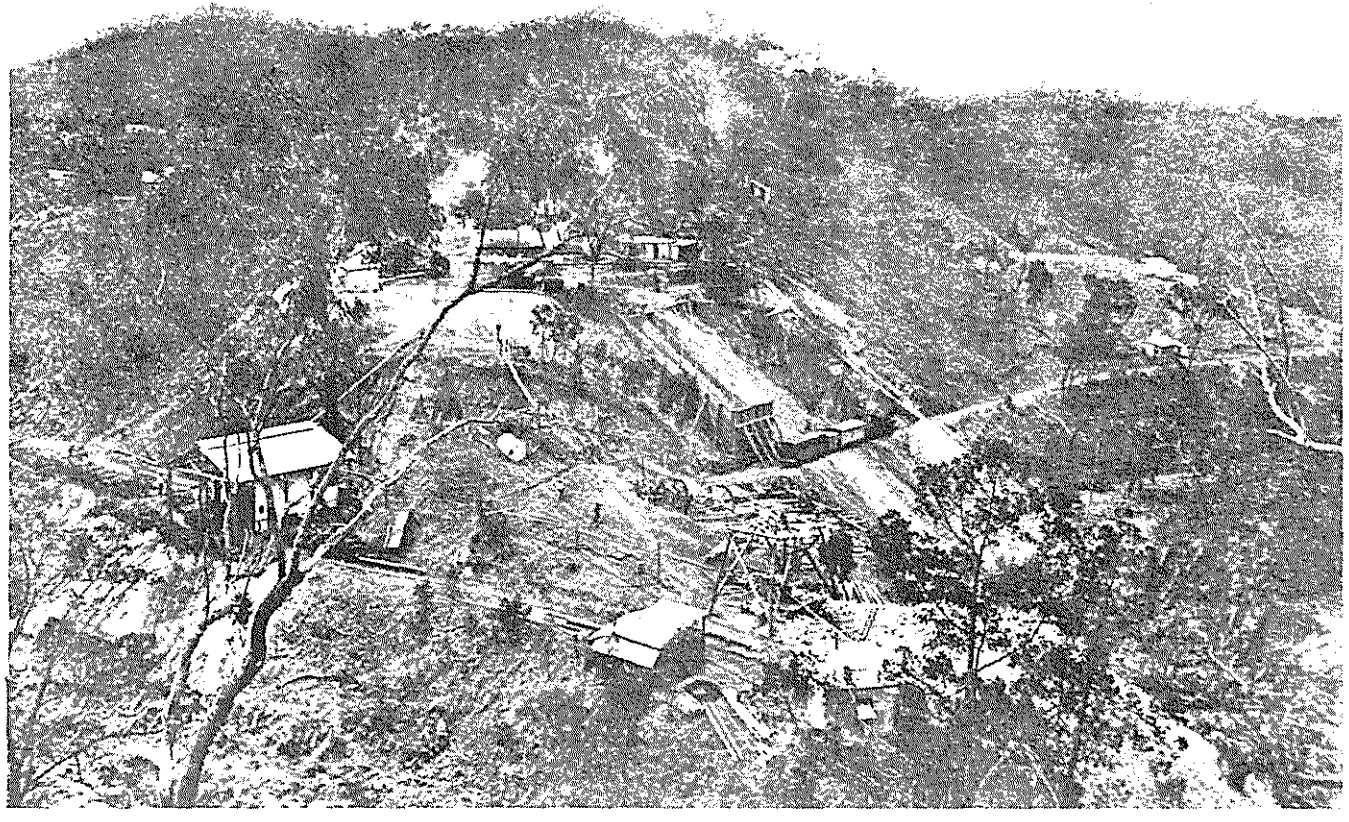
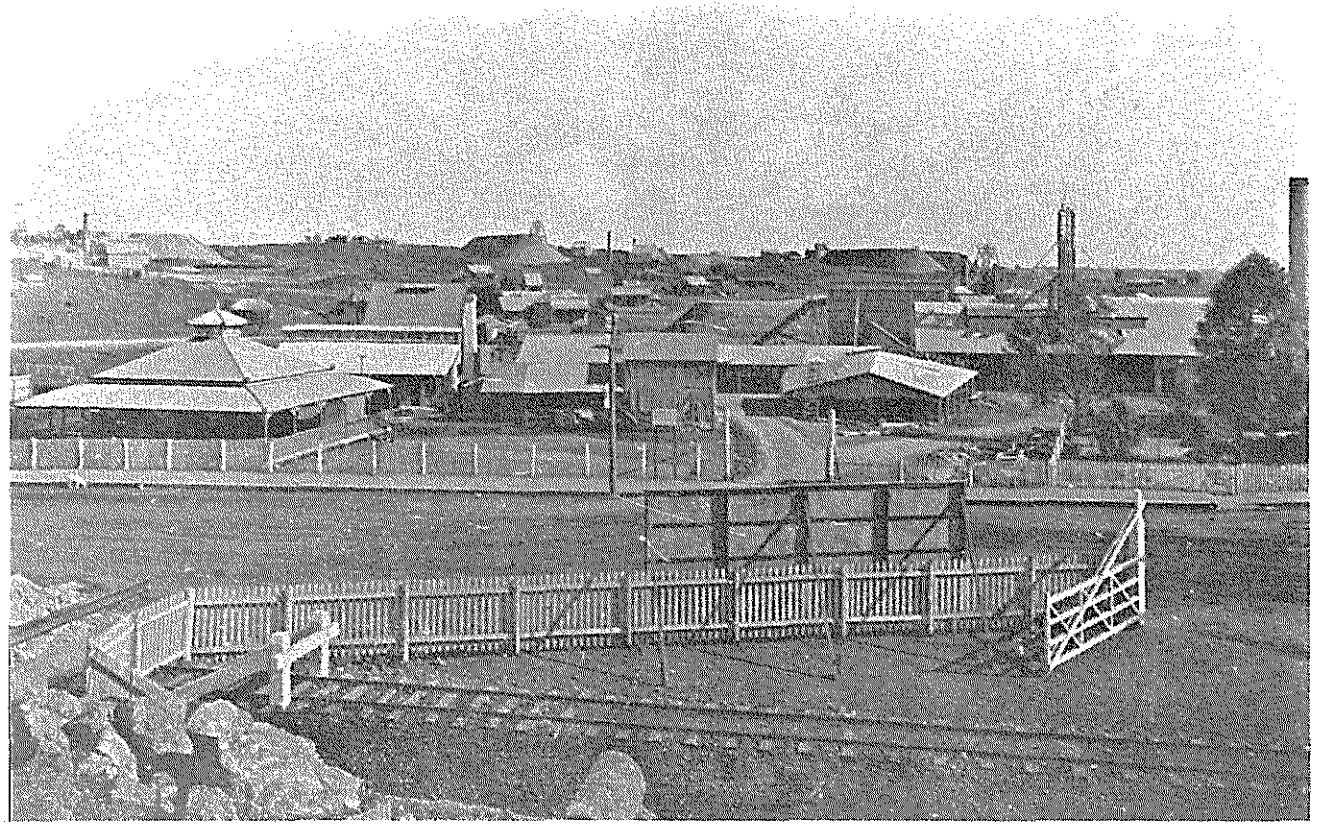
82. *A.R.* 1878, pp.21-22. The word "fossicker" was still rather pejorative when Sellheim wrote.

83. See Bowly letters, a large part of which describes his droving trips from Lammermoor and Mt Cornish stations to the Palmer and Etheridge fields.

84. *A.R.* 1890, p.27 has beef 4d, mutton 5d, in Charters Towers. J.H. Binnie, *My Life on a Tropic Goldfield* (Melbourne 1944) p.28 says: "Beef was our cheapest commodity; fat cattle were very cheap. Any cut of beef was often sold at threepence per lb. without the bone." Chapman's accounts show that in 1897 he was paying an average 3.1 pence per pound for beef, of which he bought about 8 lbs each week.



P8: Ivanhoe mine, by the Stannary Hills-Boonmoo railway
[Cairns Historical Society]



P9: ´ The New Ravenswood company's office, mines & mill [*A.R.* 1910]

summing the butchers' sales and dividing by the established rate of consumption: Hodgkinson, for example, based his population estimate for the Palmer in 1881 on sales of 39,000 lbs of beef weekly at 10 lbs per European and 8 lbs per Chinese.[85] The Chinese relied to some extent on imported rice as a staple food, but established their own butcheries, and were renowned for their competence at growing vegetables. Probably they enjoyed a higher standard of nutrition than most Europeans, who rarely established gardens, but relied on a Chinese-grown market surplus for their vegetables. In 1901 Maclaren reported that on the remote peninsula fields, ". . .eye affections and malarial fevers are prevalent; water is scarce and bad, and vegetables and fruit are costly or unobtainable."[86] Chapman's diary records what seems to be a fairly complete account of his weekly purchases over a period of four years. His diet apparently consisted largely of fresh and salted beef, flour, rice, oatmeal and tea; enlivened by jam, syrup, sugar, pickles, curry powder, tinned sardines and beef extract.[87] This accords with Binnie's recollection of his childhood on the Palmer 20 years earlier, where ". . .there were no luxuries in the way of fruit and vegetables and no bread or cakes - only damper. Tinned fruit was a real luxury and seldom obtainable in any town."[88]

There was some awareness of the deficiency of this diet. In 1864 Rachel Henning had seemed confident that scurvy was not a possibility at Exmoor, and wrote rather disparagingly of an immigrant family who cooked pigweed as a vegetable.[89] Chapman occasionally purchased fresh fruit or lime juice, and once mentioned a special journey into Charleston because his ankles were "swelled with scurvy. . .when I got to the township I was very weak after I had some supper with vegetables I felt better, bought a

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85. *A.R.* 1881, p.12.

86. Maclaren, *Mining and Milling*, p.2.

87. The items mentioned in Chapman's accounts are listed in an appendix to this essay. See also Henning, *Letters*, p.173 for a very similar list.

88. Binnie, *Tropic Goldfield*, p.12.

89. Henning, *Letters*, p.157. The Hennings attempted to grow vegetables, and themselves ate wild plants: see p.189.

bottle of Sarsaparilla from Candlish's shop at Finnigan's out of 5½ weights of gold. . ."[90]

Scurvy must have been common on the alluvial fields and the smaller mining towns, but it is probably disguised by the paucity of individual accounts, and the unwillingness of official reports to dwell at any length on disease. Scurvy is mentioned only once in the Palmer death register 1873-75, but was unlikely to be a primary cause of death. The register reveals that the principal causes of death were "dysentery" and "fever".[91] Dysentery was in many cases typhoid - there were no statutory sanitary provisions whatever on the Palmer during that period, and one need hardly describe in detail the opportunities for disease transmission in a community of thousands of men living in tents. Fever was a generic term, but is in some contemporary sources specifically identified as malaria. It is noticeable that fever increased in frequency in the register in the wet season, when mosquito breeding conditions improved; and dysentery in the dry season, when water supplies were limited and stagnant, and more liable to pollution.[92]

All aspects of life in mining settlements were pervaded by the high cost of living, inflated by overland carriage rates and high wages. William Lees, describing the early years of the Hodgkinson wrote:

> . . .the expense of everything was excessive. There was no railway from the coast, and the carriage of machinery and the necessaries of life was almost prohibitive. Crushing, in consequence, was three times as costly as it would be now. Carting to the nearest mill was too costly, except for rich stone. The carting of firewood and mine timber was very expensive. Food for men and horses was sold at prices

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90. Chapman diary, 13 December 1896. Sarsaparilla was used as a specific for scurvy.

91. A summary of the causes of death listed in the Palmer Register of Deaths 26 October 1873 - 4 July 1875 appears as an appendix to this essay.

92. There seems to be increased mention of deaths from typhoid or unspecified sickness in unusually dry seasons: e.g. Palmer, *A.R.* 1878, pp.20 and 22; Charters Towers, *A.R.* 1890, p.24; Ravenswood, *A.R.* 1902, p.102.

> suggesting a city in a state of siege. Finally, the cost of labour was necessarily ruled by the expense of living. 93

Overland transport was often horrendously expensive. Lack of formed roads, flooding for weeks at a time and scarcity of feed in dry seasons all raised the carriers' prices. £30-£40 per ton was not an unusual rate on the inland fields,[94] but the cost could be much higher, depending on the season and the number of teams operating - £200 per ton was recorded for the journey from Cooktown to Palmerville in the wet season of 1874.[95] Profiteering undoubtedly accounted for some of these charges, but teamsters defended themselves by pointing out the time taken for overland journeys and the cost of drays and draught animals ruined.[96] Sea freight however was relatively cheap, for most of the major gold discoveries were made during a period of intense competition between eastern Australian shipping companies.[97] In 1874 the Australian Steam Navigation Company reduced its freight from £4 to £3.10.0 a ton deadweight from Sydney to Cooktown,[98] and the standard rate to northern ports remained at about this level.[99]

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93. W. Lees, *The Goldfields of Queensland* (Chillagoe-Hodgkinson issue), Brisbane 1899, p.31.

94. Rates of £30-£40 per ton from the coast to Maytown (1876), Croydon (1887) and Georgetown (1884) are mentioned in WOR/A140, EDU Z 701 and EDU Z 1020, *Q.S.A.*: and BR/QNB/032 and Premises Register, N.B.A.

95. *Queenslander*, 28 February 1874. Other rates mentioned for the Palmer road demonstrate the fluctuations possible: £50, £56, £70, £100, £112, £120, £125, £130 per ton. See W.H. Corfield, *Reminiscences of Queensland* (Brisbane 1921) pp.51 and 53; R.S. Browne, *A Journalist's Memories* (Brisbane 1927) p.43; BR/QNB/032 and Maytown Premises Register, N.B.A.; *Queenslander*, 5 June 1875; *Cooktown Courier*, 8 August 1874; *Cooktown Herald*, 24 November 1875.

96. Letter from carriers G. Kootoofa and J. Healy, justifying their charge of £80 per ton from Cooktown to the Palmer: *Cooktown Herald*, 3 June 1874.

97. J. Bach, *A Maritime History of Australia* (Sydney 1976) pp.194-196.

98. *Cooktown Herald*, 12 September 1874.

99. £3.10.0 had previously been the rate per ton from Brisbane to Cooktown. See F.D.G. Stanley to Undersecretary for Public Works, 9 April 1874, 74/1586, WOR/A81 *Q.S.A.*

Wage miners earned approximately the same income as skilled workmen such as carpenters in northern areas, £3 to £4 per week in more settled areas, rising as high as £5 in remote districts or times of particular labour shortage. The figure of £4 is very widely recorded.[100] These rates reflected the inflation which mining settlement brought to the region, for they were three to four times as high as the wages of a North Queensland pastoral worker in the 1860s,[101] wages which were themselves higher than those of rural workers in the south.[102] The earnings of alluvial miners cannot be estimated as easily. There were undoubtedly cases of sudden wealth, but many of the stories about alluvial miners' riches must be regarded with some scepticism, especially when they purport to apply to large numbers of diggers.[103] The distribution of wealth was obviously very uneven, so average earnings do little to clarify individual income levels; but those from the Palmer suggest that even at its peak the alluvial miners averaged only between £4 and £5 per week, and this declined to £1 within three years.[104]

At the last significant alluvial rush, the Oaks in 1907, the warden's reports provide a clearer indication of the level of miners' earnings at a time when most of the field's population was still actively engaged in mining. Individual impressive finds were reported as worthy of note:

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100. See T.C. Davey to General Manager, 18 November 1878, BR/QNB/032, N.B.A. (£4/week Maytown miners); *A.R.* 1883, p.37 (£4/week Etheridge miners, £1/day mechanics); Letter from "Contractor", *Brisbane Courier*, 2 February 1884 (£1/day Georgetown carpenters); *Queenslander*, 6 February 1886 (£4-£4.10.0/week Cairns carpenters); and Maclaren, *Mining and Milling*, p.12.

101. A. Allingham, *Taming the Wilderness* (James Cook University 1977) pp.86-88; and see R. Gray, *Reminiscences of India and North Queensland 1857-1912* (London 1913) p.77; 30/- per week; *Port Denison Times*, 1 November 1865; shepherds 25-30/- per week, general servants £1; Henning, *Letters*, p.163: £60-£70 per year.

102. Kennedy, *Four Years*, pp.200-202 puts agricultural wages at £25-£40 per year; R. Daintree, *Queensland Australia* (London 1874) p.105 at £40-£50.

103. Kennedy, *Four Years*, p.213 claimed that Gympie miners were clearing £30-£40 per week - roughly the salary of a Supreme Court Judge.

104. *A.R.* 1878, p.23, calculated at £4.2.6/oz.

groups of men earning £7.10.0 each in a week, £20.12.6 each in five days, £10.12.6 each in two days,[105] earnings which seem modest enough when the time, costs and risks of travelling to and living on the field are considered. But the overall product of 450 miners in the first two months was 2,200oz, or 4.9oz per miner, worth £18.6.8.[106] This represents an average income of about £2.6.0 per week. Wage miners in Charters Towers and Ravenswood were earning at least £3,[107] and did not have to live in tents or pay inflated freights for their food.

Averaged production figures make even less sense in deep mining towns, where relatively few of the population were employed in the mines, and surface workers and service industries created multiplier effects which generated income not measured in Mines Department reports. But as an example, Ravenswood in 1902 with a population of 3,623, produced 52,916oz of gold, or 14.6oz annual production per head; worth £51.2.0, less than £1 per week.[108] The economic inter-relationship of gold mining and other industry is a topic worth careful research, for Ravenswood in 1902 was an ambitious, booming, prosperous town, where money obviously flowed in greater quantity than the meagre £51 per person actually extracted from the mines.[109]

Many of the daunting features of the North Queensland mining settlements were shared by all settlers in the region - the costs, heat, floods, isolation and disease were environmentally rather than economically determined. Pervading uncertainty; the constant fear of mines closing, with all that would mean to the settlement, was probably the single most characteristic feature of mining towns. But there were

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105. *A.R.* 1907, p.173, calculated at £3.15.0/oz.

106. *Ibid.*, p.7.

107. Maclaren, *Mining and Milling*, p.12.

108. *A.R.* 1902, p.100, calculated at £3.10.0/oz. The year is chosen as Ravenswood's peak production per head; but note that the total population is averaged, not the workforce.

109. See "The Profits of Gold Mining", *North Queensland Herald*, 22 March 1902, reprinted from the *Australian Mining Standard*, for a rather defensive comment on miners' earnings.

other features of the industry, perhaps best described as nuisances, which profoundly affected the quality of life in mining settlements.

First was the noise. Almost every mill in North Queensland crushed its ores with gravity stamps, a process involving between five and sixty steel cylinders each weighing nearly half a ton, falling about seventy times a minute onto rocks in a steel mortar, twenty-four hours a day.[110] Charters Towers in 1899 was ringed by seventeen mills with a total of 290 stamps.[111] Outsiders visiting mining towns frequently recorded the noise of the mills as their principal impression. A visitor approaching Coen in 1896 first noted "the distant thunder of the stampers becomes louder";[112] Rowan, who described Muldiva so superbly, dismissed Charters Towers in one sentence referring to "the ceaseless din of many hundreds of stampers, pounding away day and night."[113] Perhaps the noise of ore crushing became a constant accompaniment, unheard by residents of such towns, for the juxtaposition of industrial installations and residences is quite remarkable. The ruin of the Mabel Mill, which had thirty head of stamps, still stands in Ravenswood a hundred metres from the bedroom windows of the Railway Hotel. Several of the wealthier men of Charters Towers lived on what would today seem undesirable sites: E.H.T. Plant beside his Bonnie Dundee mill, Thomas Mills beside the Day Dawn foundry, E.D. Miles two houses from Toll's steam sawmill, all in residential areas.[114]

Bicknell spent a night in Charters Towers, and described this juxtaposition of habitation and industry, even in the heart of the city:

> We put up at one of the hotels in the main street; the place was full of miners, and the pit-head gears

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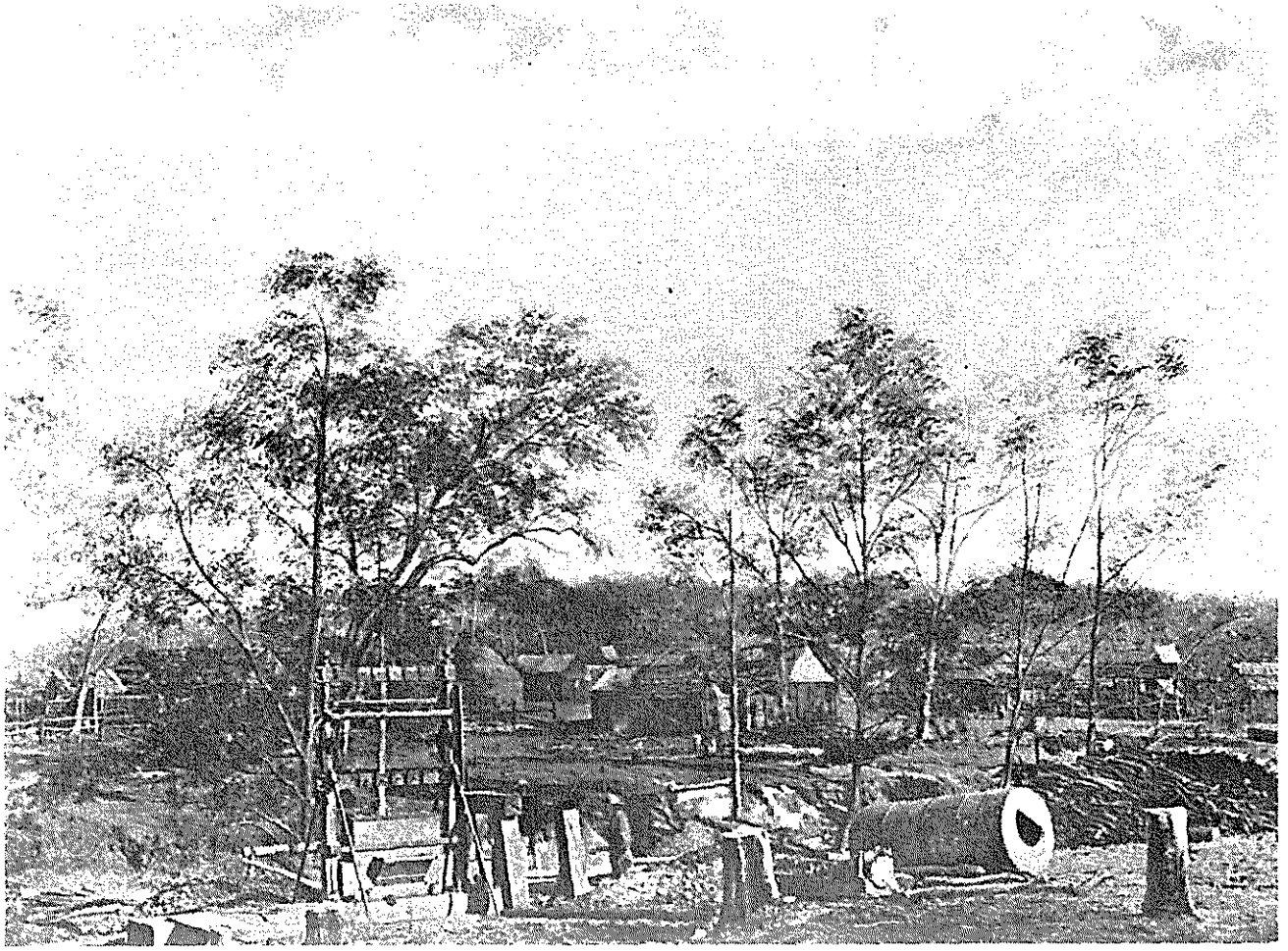
110. Maclaren, *Mining and Milling*, p.21.

111. Lees, *Goldfields* (Charters Towers issue), table: "Ore Reduction Plants on Charters Towers", no p.

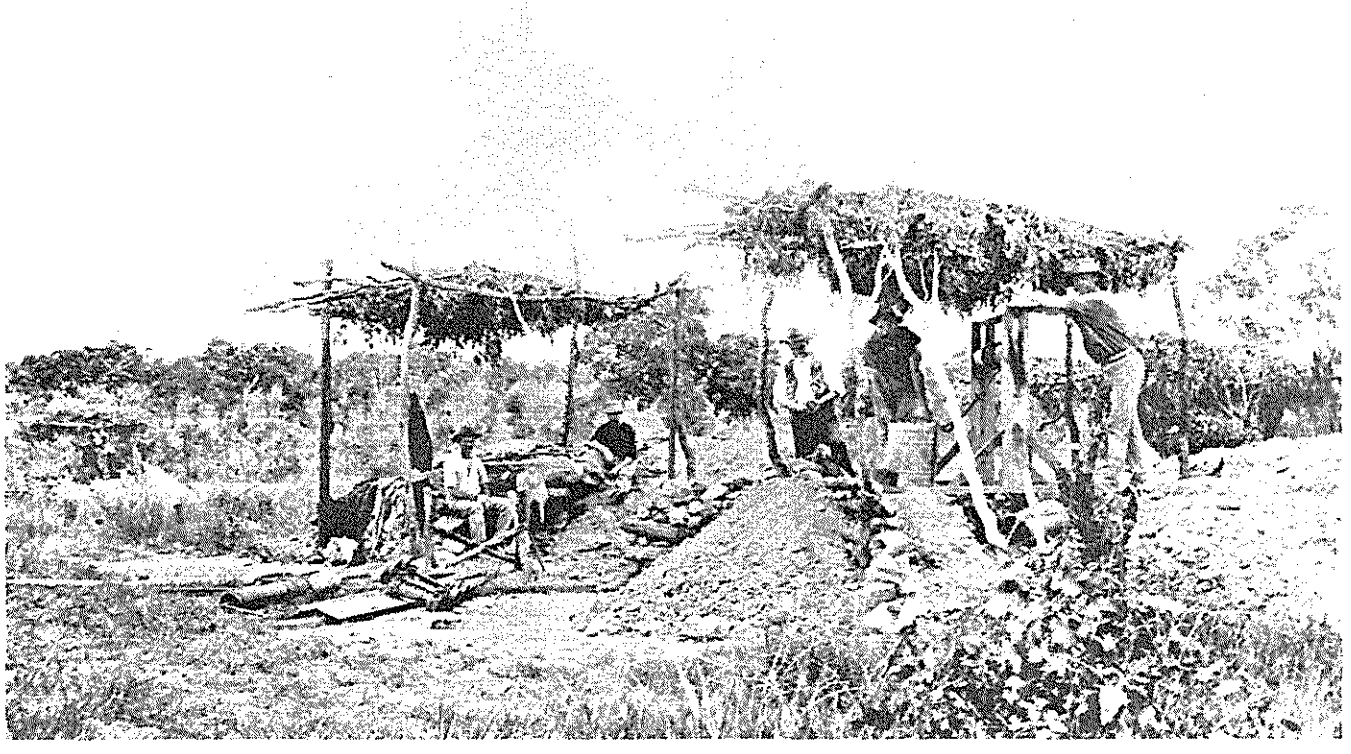
112. *Queenslander*, 21 November 1896.

113. Rowan, *Flower Hunter*, p.23.

114. *P.O.D.* 1900, and subsequent Charters Towers street listings.



P10: Constructing the Lady Blanche battery, Ravenswood, 1870 [Queensland Museum]



P11: The Bonnie Doon PC, near Charters Towers [*A.R.* 1906]

> could be seen above the house-tops in every direction, and the ring of the battery stamps could be plainly heard [115]

and Bishop White thought Charters Towers "could not be described as a beautiful place, the view consisting chiefly of poppet-legs and engine-houses."[116] All of the larger mining towns seethed for twenty-four hours a day with trains, machinery, dust, smoke and electric lights in close proximity to, or even amongst, the houses of the settlement. Other aspects of mining impinged on the quality of life. The abandonment of a mine was rarely supervised, and vertical shafts were left open and unmarked. Commenting on the death of a child by falling into a mine, the warden described Ravenswood in 1902 as "one mass of old shafts from end to end."[117] And in places where sulphide ores were smelted, those living down-wind could rarely forget the nature of the town's industry. Not for nothing was Smeltertown at Mount Molloy unofficially renamed "Smelltown" by its residents.[118]

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In summary, the North Queensland mining settlements saw the influx of many thousands of immigrants, the greatest number of them born in the British Isles, except in the few areas where the Chinese predominated for a time. Their principal concern was the mining of gold and later other minerals, with little thought for establishing a way of life in the long term. They were thus extremely careless of their environment, their comfort and their health: the settlements they established and which still exist are incidental by-products of their industry, nurtured by other economic forces in the years since the decline of mining.

The quality of life in North Queensland mining settlements varied enormously: from utterly squalid in the alluvial rushes, to comfortable

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115. A.C. Bicknell, *Travels and Adventures in North Queensland* (London 1895) p.205.

116. G. White, *Thirty Years in Tropical Australia* (London 1918) p.10.

117. *A.R.* 1902, p.100; and see comments by mines inspector, pp.129-130.

118. *Trinity Times*, 10 May 1905.

and for some genteel in a few deep reefing towns, with a great number of harsh ephemeral shallow reefing towns striking an ugly mean. Lumholtz was not impressed by what he found in North Queensland in the 1880s: "The inhabitants of Northern Queensland are willing to live like pigs if they can only make money."[119] But probably few areas in the British empire would have met with more approval from a fastidious Norwegian scholar at that time. There is evidence that people who initially recoiled from living conditions in the region became inured to them. Bowly, a few weeks after his arrival in North Queensland, described his accommodation at Dotswood: "This place is rougher than any building I have yet seen, being built entirely of rough hewn laps roofed with bark. . ." Three years later he was to write from the Palmer: "I am writing this in a large comfortable tent. . .and it is quite pleasant to sit down to write to you in comfort."[120]

It is easy for a modern observer to be appalled by the round of typhoid, scurvy, inflated prices, disappointment and destitution that was the lot of many alluvial miners. It is much harder to gain any insight into their own views, particularly into the enthusiasm which seems to have impelled them. There is little more authentic evidence than the testimony of one experienced mining man, George Clark:

> It was a pleasant life, and although disappointments were numerous, yet the possibilities, if somewhat uncertain, were great. 121

119. C. Lumholtz, *Among Cannibals* (London 1889) p.86.

120. Bowly letters, 24 January 1874, p.41 and 29 November 1876, p.154.

121. Quoted in *The North Queensland Register's Mining History of Charters Towers* (Charters Towers 1897) p.1.

APPENDIX: SUMMARY OF ITEMS MENTIONED IN ACCOUNTS OF E.G. CHAPMAN 1 JANUARY 1895-30 JULY 1899

Mentioned Regularly

Meat

Fresh Beef	Mutton
Salt Beef	Roast

Other Food

Flour	Oatmeal
Sugar	Jam
Tea	Rice
Syrup	Curry Powder
Baking Soda	Extract [of beef]
Cream of Tartar	Sardines
Pickles	

Medicinal

Painkiller*
Epsom Salts
Castor Oil

Other

Corn
Chaff
Bran
Tobacco
Soap
Kerosene Soap
Washing Soda
Matches
Kerosene

Mentioned Once or Rarely

Meat

Steak	Suet
Chops	Corned Beef
Bacon	Pork

Other Food

Vinegar	Bread
Currants	Potatoes
Pepper	Tinned Salmon
Plums	Sauce
Spice	Apricots
Butter	Mustard
Ginger	Milk
Coffee	Apples
Sago	Salt

Medicinal

Lime Juice
Sulphur
[Sarsaparilla]**

Other

Tent	Reel Cotton
Blanket	Clothes Line
Mug	Blue
Plate	Candles
Knife	Pipe
Fork	Dog Chain
Shirt	Nails
Flannel	Tacks
Saddle Straps	Fuze
Axe Handle	Acid [for assaying]
Saw	

*Not a euphemism for alcohol-probably laudanum.
**Listed in diary but not accounts because paid in gold, not cash.

APPENDIX: SUMMARY OF CAUSES OF DEATH FROM ENTRIES 1-200 IN REGISTER OF DEATHS, PALMER DISTRICT, 26 OCTOBER 1873-4JULY 1875.

DISEASE AND NATURAL CAUSES:	
Dysentery	74
Fever	47
Other	38
Subtotal:	159
ACCIDENT AND VIOLENCE:	
Drowning	9
Murder	2
Suicide	1
Speared by Aboriginal Blacks	1
Snakebite	1
Subtotal:	14
NOT ENTERED OR ILLEGIBLE	27
Total:	200

THE GOLD MINES OF CHARTERS TOWERS

Diane Menghetti

Little has been written about the mining history of the richest of the North Queensland goldfields, Charters Towers, despite its yield of over seven million ounces of fine gold and its major contribution to the social, political and commercial development of the region. Notwithstanding seminal works by Blainey,[1] Bolton[2] and Stoodley,[3] the most detailed account remains that written in 1917 by the geologist Reid.[4] This can only be explained in terms of a general neglect of mining history by Australian historians since, with some notable exceptions,[5] the Charters Towers records are quite comprehensive - this being one of the few fields for which mining wardens' files are available.[6] The social and political history of the city of Charters Towers has been better

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1. G. Blainey, *The Rush that Never Ended* (Melbourne 1963).
2. G.C. Bolton, *A Thousand Miles Away* (Canberra 1972).
3. June Stoodley, The Queensland Gold Miner in the Late Nineteenth Century: His Influence and Interests, M.A. thesis, University of Queensland 1964.
4. J.H. Reid, The Charters Towers Goldfield, G.S.Q. publication 256, (1917). Other contemporary histories include those by P.F. Sellheim, "History of the Charters Towers Goldfield: Its Rise and Progress", in *A.R.* 1887, pp.23-27; L.W. Marsland, *The Charters Towers Gold Mines: A Descriptive and Historical Account of the Town and Goldfield of Charters Towers, Queensland, with Full and Detailed Particulars of the More Important Mines, Illustrated by Plans and Photographic Views, And of all Mining Companies Carrying on Operations on the Field, Being a Handbook of Charters Towers and a Guide to Mining Investors* (London 1892); and W. Lees, "The Charters Towers Goldfield", in *The Goldfields of Queensland* (Brisbane 1899). The most recent geological report on the field is that of K.R. Levingston, *Ore Deposits and Mines of the Charters Towers 1:250,000 Sheet Area, North Queensland* (Brisbane 1974). For a concise description of the geology of the field see K.R. Levingston, "A Survey of the Geology and Mineralization of North Queensland Mining Fields", Volume 1, Chapter One.
5. For example the records of the Charters Towers miners' unions are incomplete, and those extant are scattered and sometimes inaccessible.
6. MWO 11A Series, *Q.S.A.*

served, although the specialised nature of the work so far completed[7] undoubtedly leaves room for a general history.

* * * * *

The discovery of gold on this field is credited to George Clarke, Hugh Mosman, John Fraser and Jupiter, an Aboriginal horseboy "acquired" by Mosman at Kynuna station. The prospecting party, which had worked briefly in the Ravenswood district, investigated the Seventy Mile (afterwards known as Mount Leyshon) before being attracted to what Clarke later described as a "cluster of conical and square-topped hills away to the North".[8] They pitched camp at the outcrop of the North Australia reef late in December 1871; on 2 January 1872 Mosman left the others to ride into Ravenswood to register the claim with the Cape River and Broughton Gold Commissioner, William Charters. Miners' Rights for the prospecting claim were issued on 26 January,[9] and the North Australia P.C. was granted to Mosman, Clarke and Fraser in three equal shares on 25 March.[10] The new field, proclaimed on 31 August, was, according to warden Sellheim, called Charters for the Commissioner and Towers for the hills

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7. See for example L.J. Colwell, Some Aspects of Social Life in Charters Towers from 1872-1900, B.A.Hons. thesis, James Cook University 1969; Sharon Ann Hayston, Interaction of Religion and Society in Charters Towers, 1872-1900, B.A.Hons. thesis James Cook University 1976; Joan Neal, Charters Towers and the Boer War, B.A. Hons. thesis, James Cook University 1980.

8. David Green, *Mining History of Charters Towers: 1872 to 1897* (Charters Towers 1897), unpaginated. "Discovery" is used here in the sense discussed by Geoffrey Blainey, "A Theory of Mineral Discovery: Australia in the Nineteenth Century", in *Economic History Review* XXIII (June 1970). In this sense the claim of Mosman's party to the discovery of the field is not affected by later claims that Jessop and Dumeresq directed Mosman to the field where they had prospected some eight months previously before moving on to the Broughton. *North Queensland Mining Register*, 6 January 1892.

9. Miners Rights 48661, 48662 and 48663, issued at Ravenswood.

10. Register of Claims, A/20697, *Q.S.A.*

which had first attracted the prospectors to the site.[11] Its original area was 1,700 square miles, later reduced to six hundred,[12] the boundaries being the Burdekin River on the north and east, the Seventy Mile Range to the south and the township of Southern Cross on the west. They include Mount Leyshon, Rishton and the Broughton.[13]

At the time of the discovery North Queensland gold mining had entered a depression. By 1872 the alluvial gold at Cape River was exhausted and most of its reefs had pinched out. Later in the year Superintending Gold Commissioner John Jardine estimated the total population of the field at about eighty, including some fifty Chinese fossickers.[14] At Ravenswood, the most important and heavily populated field in North Queensland, mining had reached the water level below which the sulphide or "mundic" ores were proving difficult to process. Thus the miners were even more than usually ready to rush to a new field. By 7 February Charters had issued Miners' Rights for twenty-five prospecting areas;[15] by mid-February the news had been telegraphed to Brisbane and Sydney: the *Sydney Morning Herald* announced

> a new reefing country, many miles in extent, has been discovered about a hundred miles from Townsville. It is reported to be very rich; a rush has taken place from Ravenswood. Lumps of quartz richly impregnated with gold have been lodged in the Bank at Ravenswood. More than one hundred claims are taken up at a place named Charters Towers. . . . 16

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11. *A.R.* 1887, p.23. The first written suggestion that "Towers" is a corruption of the Old English "Tors" appears in this report. There is, however, no evidence to suggest that any name change has taken place.

12. *Ibid.*

13. Lees, "The Charters Towers Goldfield", p.3.

14. J. Jardine to the Secretary for Public Works, *Votes and Proceedings*, 1873, p.1075.

15. W. Charters to the Secretary for Public Works, *Votes and Proceedings*, 1872, p.1290. A few weeks later Ravenswood Gold Commissioner T.R. Hackett reported that the "surplus population" of that town had left for the new field. *The Queenslander*, 30 March 1872.

16. *The Sydney Morning Herald*, 21 February 1872.

The new field yielded little alluvial and most of the claims were pegged on the basis of "a careful examination of surface blows".[17] Fortuitously it was marked by many outcrops of easily accessible and simply treated quartz. The early claims were centred on the North Australia, Rainbow, Wyndham, Moonstone and St. Patrick reefs,[18] but the Washington, Alexandra, Caledonia, Just-in-Time and Queen reefs were also worked during 1872. As the lodes were opened up crushing machinery arrived with unusual rapidity. Buchanan's mill was operating by the beginning of May, and its first crush of twenty-nine tons of stone for 176 ounces of gold[19] gave the diggers further cause for optimism. The Defiance Mill was next on the field, part of its machinery having been salvaged from the wreck of the schooner *Black Dog* by John Deane and William Pocock of Ravenswood.[20] Plant and Jackson's Venus Battery was crushing by July, the Working Miner by September and the One and All by October.[21] The five mills gave Charters Towers a total of seventy-eight stampers before the end of its first year.[22]

The rapid influx of machinery was encouraged by a rush which started late in August 1872. It would appear that this was triggered by a small

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17. Green, *Mining History of Charters Towers*, u.p.

18. Reid, The Charters Towers Goldfield, p.25.

19. *The Queenslander*, 6 May 1872.

20. Their bid to install this machine at Ravenswood was accompanied by a promise to reduce crushing charges on that field from 20/- to 15/- a ton, and led to a confrontation with Plant and Jackson of the Vulcan Battery. The *Black Dog* machinery was first installed at the Broughton Diggings and later transferred to Charters Towers. *Port Denison Times*, 3 June 1871; *The Queenslander*, 25 November 1871, 20 January 1872.

21. This list has been compiled from crushing reports. There was some delay in the processing of applications for machine areas which makes the Register difficult to interpret. The Working Miner was registered by J.B. Robson, W.H. Norris and L.M. Harrison; and One and All by William, John and George Tough. Venus was sold to Hutton and Whitehead for £5,000 before the end of 1872. Register of Applications for Areas, A/20767, *Q.S.A.*

22. J. Jardine to the Secretary for Public Works, *Votes and Proceedings*, 1873, p.1073.

alluvial find in the Millchester area which was much exaggerated in a telegram sent from Townsville announcing a great alluvial rush to "a second Bendigo" at Charters Towers.[23] Another telegram sent the following week claimed that the alluvial lead was a mile long with three feet of wash-dirt yielding six ounces to the load.[24] Later in the year it was rumoured that the news had originated with a Charters Towers businessman who hoped to profit from a sudden influx of population. A Ravenswood correspondent claimed that the rush had been accompanied by a land boom, and wrote: "it has been very much a rush of business people, followed by one of the diggers instead of, as it should be, preceded by them".[25] Further the *Northern Miner* reported that "a very great quantity" of flour had been brought into the town by speculators before the rush.[26] Whatever their origin, the telegrams were distributed by Associated Press,[27] and by the end of September some two thousand diggers had disembarked from steamers at Townsville to be faced, often to their surprise, by an eighty-two mile journey over a track so dry and sandy that each two ton load needed fourteen horses to pull it to the diggings.[28]

The rush, as might be expected, placed great demands on Gold Commissioner Charters,[29] whose idiosyncratic interpretations of the *Gold Fields Act* were already causing confusion on the field. Despite a ruling by the Secretary for Public Works, A.O. Herbert, which followed a dispute with Commissioner Hackett,[30] Charters' usage of the Regulation governing

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23. *The Queenslander*, 24 August 1872.

24. *Ibid.*, 5 October 1872.

25. *Ibid.*

26. Cited in *The Queenslander*, 28 September 1872.

27. *Ibid.*, 5 October 1872.

28. *Ballarat Courier*, 16 October 1872, cited in *The Queenslander*, 26 October 1872. Jardine reported that most of the diggers were seeking alluvial gold. J. Jardine to the Secretary for Public Works, *Votes and Proceedings*, 1873, p.1072.

29. J. Jardine to the Secretary for Public Works, 9 October 1872, COL/A 2340, *Q.S.A.*

30. See *Votes and Proceedings*, 1872, p.1291.

labour requirements on prospecting claims had cost Clarke and Fraser their North Australia claim during April.[31] As the population grew the administrative problems became unmanageable; the *Northern Miner* complained that claims were being jumped on the most trivial of excuses and that their owners were "at the mercy of the strong".[32] During August and September two men were killed in fights over disputed ground,[33] and many claims went unprotected as Charters tried to cope with a backlog of applications for registration.[34] Competition was intensified by the extremely limited amount of alluvial ground available for pegging. Indeed Jardine reported that the "so-called alluvial which has been worked, is rather a deposit of quartz drift in a cleft or hollow of the granite rock. . .",[35] and later wrote: "On Charters Towers I saw no alluvial (properly so called) diggings."[36]

Perhaps the most pressing problem of the rush however was the shortage of water on the field. The miners had arrived late in a particularly harsh dry season, and those who had managed to peg "alluvial" claims were unable to wash their dirt. Stone and wash-dirt were stockpiled, and at one stage it seemed that the mills would be forced to close completely. Water sold for 3d a bucket,[37] fodder became scarce and cartage expensive, and the price of crushing soared to 30/- a ton.[38]

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31. *The Queenslander*, 10 August 1872. Their claim was jumped while Fraser, who was fulfilling the labour conditions, was seeking medical treatment for an eye injury. He lost the sight of the eye, and later died of dysentery on the Palmer River during 1874. Clarke prospected the Russell River Goldfield before going on to Papua where he was killed on the Mambare River late in 1895. Only Mosman prospered in Charters Towers.

32. Cited in *The Queenslander*, 14 September 1872.

33. *The Queenslander*, 9 November 1872.

34. *The Northern Miner*, cited in *The Queenslander*, 5 October 1872.

35. J. Jardine to the Secretary for Public Works, 9 October 1872, COL/A 2340, *Q.S.A.*

36. See *Votes and Proceedings*, 1873, p.1072.

37. *The Cleveland Bay Express*, 5 October 1872, cited in *The Queenslander*, 19 October 1872.

38. *The Queenslander*, 12 October 1872.

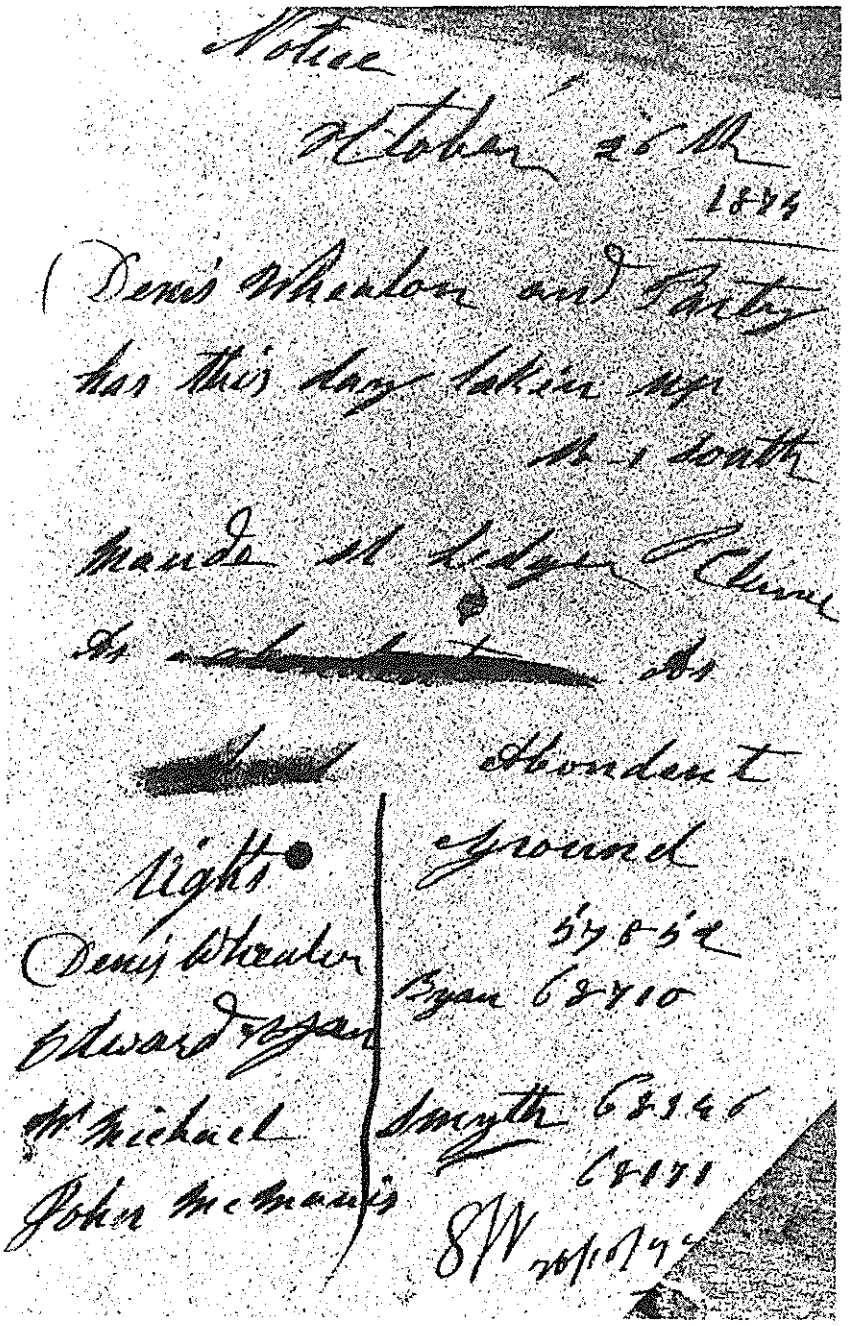
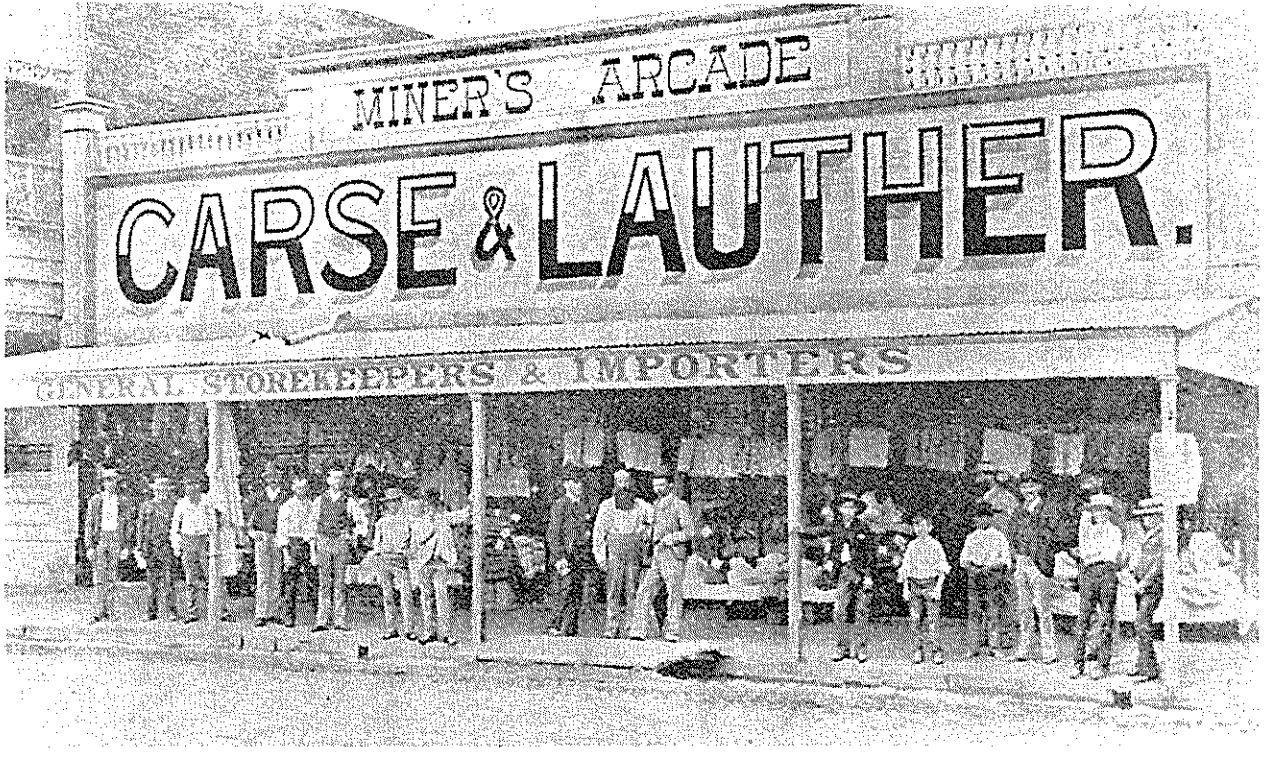


FIG 3: Notice of Claim, Charters Towers, 1874 [MWO 11A/A1 *Q.S.A.*]



P12: The Miner's Arcade [*N.M.R.* 1891]

Jardine estimated that mining and extraction cost the equivalent of one ounce of gold per ton of quartz.[39] Many undercapitalised miners were destitute, unable even to leave the field despite reduced fares offered by the Australian Steam Navigation Company for the journey from Townsville to Sydney.[40] Notwithstanding later and probably predictable claims that violence in the town originated with a "gang of roughs" rather than with the "real" mining population,[41] by mid-September Charters Towers was a community under stress.

One early manifestation of unrest was a "roll-up" of some two hundred men who had to be dissuaded from levelling the office of the *Northern Miner* which, they alleged, had been responsible for the reports of alluvial gold which had attracted them to the field.[42] A week later another "roll-up" was called, this time in an attempt to exclude the Chinese from Charters Towers. About one hundred miners attended, but no committee was formed to further what was for a reefing field an irrelevant cause.[43] As tension mounted the Colonial Government appointed a "Superintending Commissioner", John Jardine, to inquire into the administration of the district. His commission noted that it might be necessary for him to take temporary charge of the field, "the Government having full

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39. J. Jardine to the Secretary for Public Works, 9 October 1872, COL/A 2340, *Q.S.A.*

40. *The Ballarat Courier*, 16 October 1872, cited in *The Queenslander*, 19 October 1872. Although A.S.N. Company had reduced the Townsville-Sydney fare to two pounds it was reported that another pound was needed to travel from Sydney to Melbourne, and that on one steamer seventy-three passengers had been accommodated in a space 26'x20'. Assuming that the miners were prepared to walk from Charters Towers to Townsville it still cost 10/- to send a swag by the carrier. A.S.N. normally charged £2/10/- from Townsville to Brisbane. *The Towers Herald and Mining Register*, 1 January 1879.

41. See *Votes and Proceedings*, 1873, p.1074.

42. *The Queenslander*, 5 October 1872.

43. *Ibid.*, 12 October 1872. By September 1872 Chinese gardeners were supplying the field with some fresh fruit and vegetables, and at least four hotels were owned by Chinese by the end of the year. Very few Chinese, however, attempted to mine on the Charters Towers field.

confidence that you will discharge a disagreeable duty with zeal and prudence".[44] He arrived at the beginning of October and immediately attempted to ease the potentially explosive situation. Interpretations of the Gold Fields Regulations were brought into line with those on other fields,[45] and rations were issued to the "totally destitute".[46] Employment on public works in Rockhampton and Brisbane, and passages to these towns, were arranged for some of the disappointed diggers.[47] After further inspection of the field he recommended that Charters' area of responsibility be limited to the Cape and Broughton district, and that Charters Towers be administered as a separate field by the hitherto unattached Commissioner MacDonald.[48] He was unable, however, to prevent open violence on the evening of 29 October.[49]

On this date a butcher's shop owned by Adolphus Trevethan was demolished by a "roll-up" of six or seven hundred citizens[50] who were outraged by a rise in the price of beef. During the riot the authorities watched helplessly, but the following morning George Steel, James Foreman and Daniel Scullen were arrested "for unlawfully, riotously and

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44. See *Votes and Proceedings*, 1873, p.1072.

45. *Ibid.*, p.1073.

46. J. Jardine to the Secretary for Public Works, cited in *The Queenslander*, 12 October 1872. Government relief was however not extensive. The Department of Public Works Correspondence File contains the item: "Re. expenses of bringing men from Townsville (Return diggers from Charters Towers). Charged to Immigration Vote. Bright Bros. £172/-/-; A.S.N. Co. £4. A26/81-4302, *Q.S.A.*

47. Rockhampton correspondent of *The Queenslander*, 16 November 1872.

48. J. Jardine to the Secretary for Public Works, 12 October 1872, *Votes and Proceedings*, 1873, p.1073.

49. This date was taken from the reports of Jardine (*Votes and Proceedings*, 1873, p.1073) and Trevethan (Copy of Trevethan to the Colonial Secretary, 2 March 1873, MWO 11A/A1, *Q.S.A.*). *The Queenslander* reported the riot as occurring on 30 October, which is probably a difference in emphasis since the events covered several days. W.O. Hill's frequently quoted date, 2 November, is likely to have been a memory lapse since he wrote some thirty-five years after the event. W.O. Hill, *Forty-Five Years Experience in North Queensland, 1861-1905* (Brisbane 1907), p.57.

50. The reports give the number as anything between 500 and 2,000. The numbers given for both riots are taken from Jardine's report.

tumultuously assembling to the disturbance of the peace, and destroying a shop".[51] When they appeared in court on 1 November a brawl broke out among the two thousand strong crowd outside the improvised courtroom at Borghero's Hotel, during which Trevethan shot two miners, seriously injuring one of them. Only the presence of all available police, including the gold escort, prevented a lynching. The aggrieved butcher was smuggled out of town and the police were forced to allow bail.[52] Further "roll-ups" were staged during the following week, particularly on 4 November when committal proceedings were successfully concluded.[53] The incident added weight to Jardine's request for the removal of Charters, who had retired to his house on the Broughton on 29 October[54] leaving Jardine and MacDonald to cope with the disorder.

Although Charters was ordered to Brisbane[55] the Cape and Broughton diggings were not separated from Charters Towers to which he returned as Commissioner in April 1873, while MacDonald remained unattached. It is likely that the Superintending Commissioner underestimated the complexity of the political and commercial forces already at work in the infant community. Acting under the Gold Fields Regulations, Charters had announced in May 1872 that Charters Towers (or Upper Camp) was to be the

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51. Jardine to the Minister for Public Works, 5 November 1872, COL/A 4508, *Q.S.A.*

52. For details of the meat riots see Colonial Secretary's Office correspondence file COL/A 2350, *Q.S.A.*, (Reports of Sub-Inspector Clohesy, Detective Smyth and Commissioner Jardine); Mining Warden's Office correspondence file, MWO 11A/A1; *Q.S.A.*, (Trevethan's report accompanying a claim for compensation); *The Queenslander*, 9 November 1872, (Report obtained from the Colonial Secretary and the Brisbane police); 23 November 1872, (Report reprinted from the *Northern Miner*, 2 November 1872), and 30 November 1872, (Report by Trevethan as given to the *Toowoomba Chronicle*). Although committed to the Circuit Court, Rockhampton, Trevethan was not tried on charges of assault, as these were withdrawn by the Attorney-General. (John Keane to the Charters Towers Police Magistrate, 25 February 1873, MWO/A1, *Q.S.A.*).

53. T. Clohesy to the Commissioner of Police, 5 November 1872, COL/A 2350, *Q.S.A.*

54. J. Jardine to the Secretary for Public Works, *Votes and Proceedings*, 1873, p.1073.

55. *Ibid.*, p.1074.

centre of government for the new field. Some resumptions of land for reserves were made, and a business area laid out on a ridge immediately to the east of Mosman Creek.[56] As a result, some £20,000 were invested in land and business premises in Mosman Street. Clearly Jardine offended some powerful vested interests when he recommended that the Court House and public offices be constructed two and a half miles away at Millchester which, due to the superiority of its water supply, had attracted three of the mills, both banks and a larger population than Charters Towers.[57] The issue became intertwined with that of Charters' replacement, as Charters Towers investors, led by H.W. Palmer, brother of the Queensland Premier, Arthur Hunter Palmer, sought to demonstrate the superiority of Charters' judgement over that of Jardine. A petition was drawn up and street meetings organised, the first victim of which was the committee of the Miners' Protection Association, which had spearheaded the attack on Charters' interpretations of the Gold Fields Regulations over the size of protection areas. After a stormy public meeting in support of Charters the committee resigned, to the satisfaction of the editor of the *Cleveland Bay Express* who believed that the formation of "such bodies" must lead to disorder.[58]

The campaign was complicated however by the fact that leading Millchester businessman, E.H.T. Plant, had quarrelled violently with Charters over water rights earlier in the year, and his men, armed with picks and axes, had driven the Gold Commissioner and his companion, Adolphus Trevethan, from Plant's machine area.[59] Plant contrived a rival petition which enlisted support for Jardine and Millchester. The outcome of the

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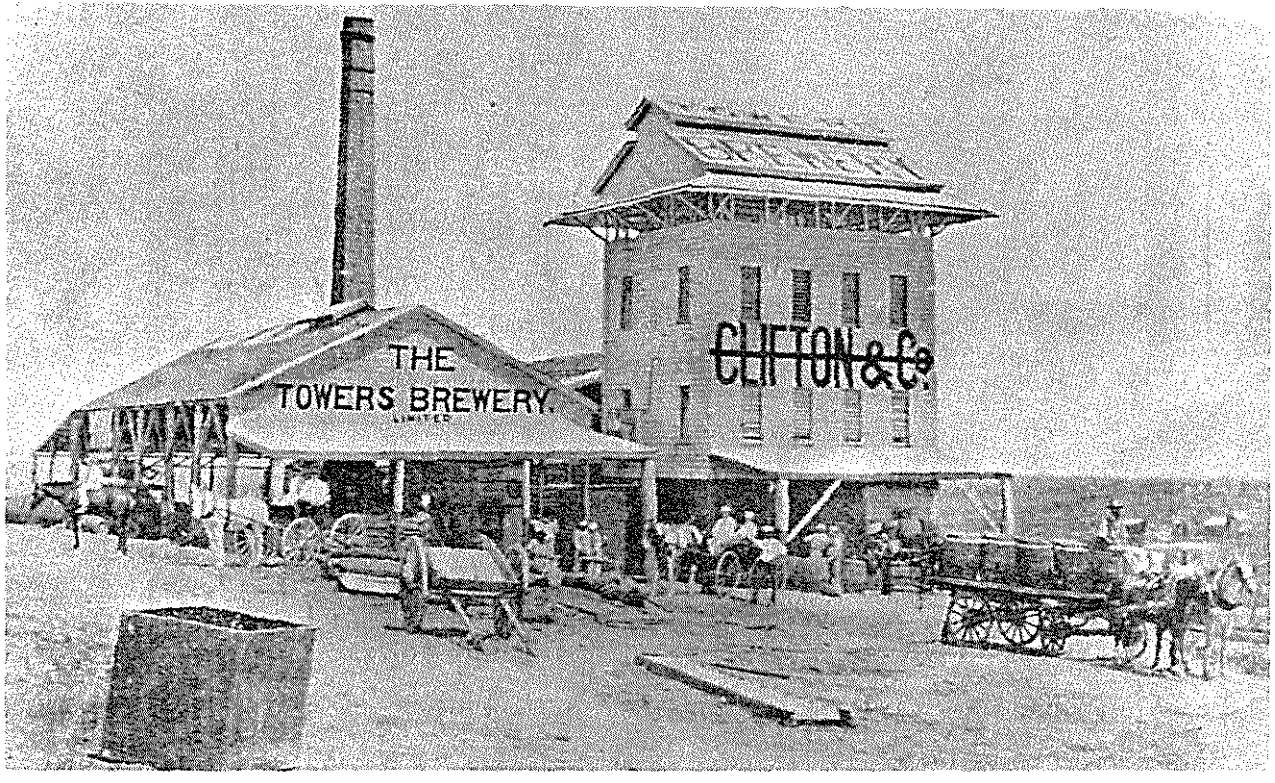
56. *The Queenslander*, 11 February 1873.

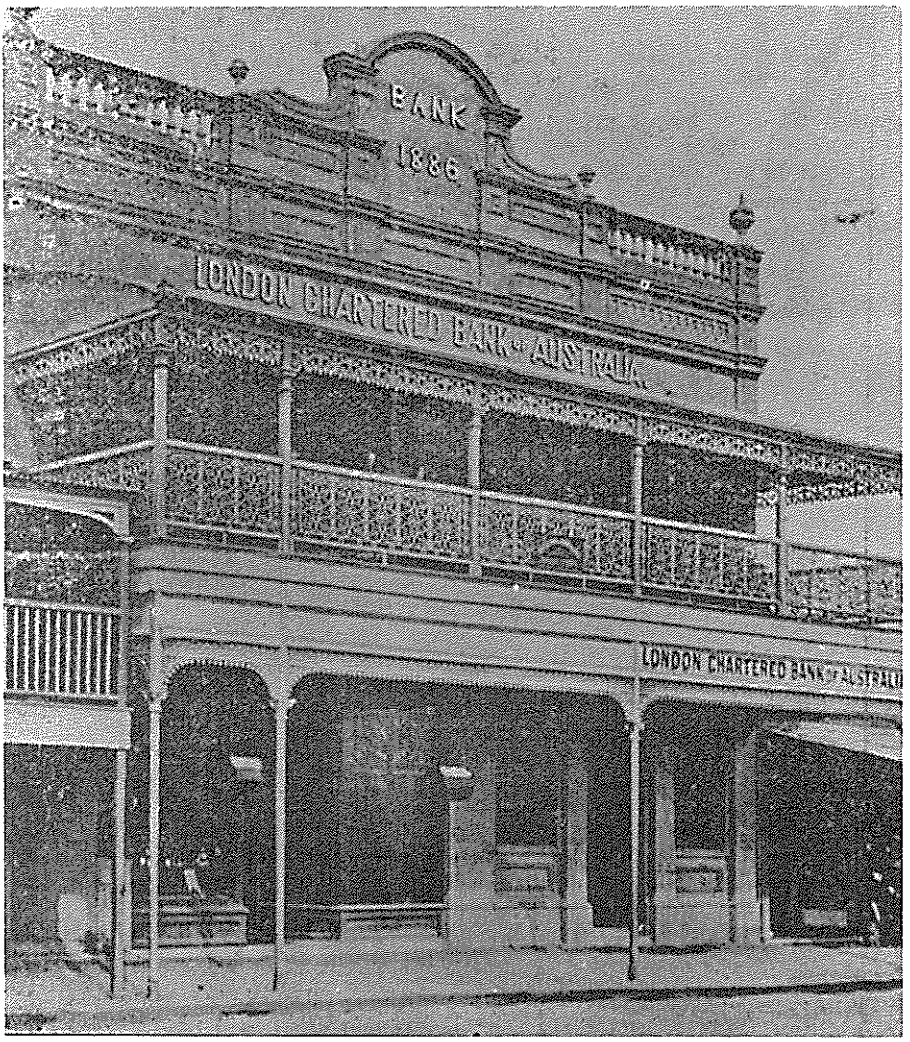
57. J. Jardine to the Secretary for Public Works, 9 October 1872, COL/A 2340, *Q.S.A.*

58. Cited in *The Queenslander*, 14 December 1873.

59. E.H.T. Plant to the Secretary for Public Works, 11 July 1872, MWO/A1 2803; W. Charters to the Secretary for Public Works, 7 October 1872, MWO/A1 4102, *Q.S.A.* Charters fared better than Commissioner Hackett of Ravenswood who was horsewhipped by the secretary of the Miners' Protection Association after a similar argument with E.H.T. Plant at Ravenswood in 1871. Trevethan was less fortunate.



P13: The Towers Brewery [*N.M.R.* 1891]



Pl4: London Chartered Bank, Gill Street
[*N.M.R.* 1891]

dispute probably satisfied no-one: Charters was reinstated but not so the business area of Charters Towers, and late in November Alex Fraser was awarded a contract for the construction of a Gold Commissioner's and a Clerk of Petty Sessions' office at Millchester.[60]

In the meantime the advent of the wet season had brought comparative peace to the field. The first rain fell in mid-November; by the end of the month reefing claims were lying abandoned as the diggers rushed to areas where alluvial gold was rumoured.[61] However, the year's gold return of about 31,000 ounces[62] derived mainly from the crushing of the rich surface stone:[63] the availability of water allowed the mills to crush to capacity, and as the yards emptied costs dropped to a more reasonable 20/- a ton. At the end of the first year some 4,500 people were scattered over about three square miles of diggings[64] on which no real trial had been made of the ground below the surface, and whose permanency had yet to be demonstrated. Already, however, an unusually large amount of money had been invested in machinery, land and business premises, and influential businessmen in both Charters Towers and Townsville had a strong interest in the long-term growth of the field.

* * * * *

Despite continued activity in the business sector, it is possible to describe Charters Towers before 1875 as a "poor man's field". The outcrops and the "brownstone" above the water level were easily worked and, although gold retrieval was not particularly efficient, the machinery on the field was adequate for the simple crushing and amalgamation processes

60. Specifications and Contract Documents. MWO 11A/A1, *Q.S.A.* In the event, the location of the public offices had less than the expected effect on development. Charters Towers became the dominant centre and when expanded public offices became necessary they were located there.

61. *The Queenslander*, 16 November 1872.

62. Reid, The Charters Towers Goldfield, p.25.

63. Lees, "The Charters Towers Goldfield", p.8.

64. J. Jardine to the Secretary for Public Works, *Votes and Proceedings*, 1873, p.1073.

used. Much of the field was still owned by working miners, either as "hatters" or in syndicates which often included one or more local businessmen contributing cash or goods rather than labour. Of the mines employing wage miners, few worked more than a single shift.[65] Nevertheless, even by the second half of 1873 there were signs that this method of exploitation could not continue. Mining costs were increasing in proportion to the depth of the shafts, and at a vertical depth of between seventy and a hundred feet, where air and water from the surface had not penetrated, more complex ores were encountered: ores containing undecomposed sulphides such as iron pyrites, galena and zinc blende.[66] For the large number of ex-Ravenswood miners on the field this development was alarming. Due probably to the presence of arsenic, Ravenswood "mundic" had proved refractory; at best the Charters Towers stone would require a more complex and therefore more expensive retrieval process; at worst it could refuse to yield its gold at all. Threatened by rising costs and the unpredictable nature of the "mundic", many small miners abandoned their claims and joined the rush to the new alluvial field of the Palmer River after its discovery in September 1873. Only months later the colonial government passed legislation which, combined with increased depth and cost of mining and the departure of the diggers, began the gradual transformation of Charters Towers into a company field.

Prior to 1874 Queensland goldfields had been administered under the 1856 *Gold Fields Management Act*[67] of New South Wales, modified after the discovery of gold at Gympie in 1867 by various regulations. The new legislation[68] allowed for the combination of leases and claims. This enabled syndicates to form partnerships to work and prove their combined ground at depth, a prerequisite for capital investment.[69] "Deep sinking"

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65. In May 1873 only six mines were working two shifts a day, none worked three shifts. *The Queenslander*, 17 May 1873.

66. Reid, The Charters Towers Goldfield, p.36.

67. 20 VIC No. 29.

68. *The Queensland Gold Fields Act*, 1874: 38 VIC No. 11.

69. M. Drew, Chapter 3. See also J. Stoodley, "An Early Aspect of Queensland Mining Law", in *University of Queensland Law Journal* 5 (1966).

at this time referred to shafts of about two hundred feet, a depth reached in a number of mines on the Rainbow and St. Patrick lines during the year following the introduction of the new Act. The reports were good; indeed *The Queenslander* published claims that the stone showed "marked improvement".[70] Company formation was for a time encouraged by the introduction of Queensland's first "no liability" legislation.[71] Previously the 1863 *Companies Act*[72] had stipulated that all companies be registered in Brisbane, and the employment of "town agents" had added considerably to the costs of North Queensland firms. The 1875 Act required local registration through the District Court. Its most important provision, however, was to free shareholders from the possibility of court action to enforce the payment of calls - substituting an automatic forfeiture of shares fourteen days after the latest possible day for payment.[73]

About the middle of 1875 the owners of the Rainbow Claim decided to float a company to finance the sinking of a new vertical shaft. The company was registered on 6 September 1875[74] with a nominal capital of four thousand pounds in one pound shares, half of which were issued fully paid to the promoters, the others being sold as contributing shares to provide capital for the new work. During 1876 another five no liability companies were floated in Charters Towers,[75] most of their shares being

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70. *The Queenslander*, 29 May 1875. The terms "deep sinking" and "at depth" were used at different stages in the life of the field to mean depths of between 200 feet and 3,000 feet. Always they signify the deepest shafts being sunk during that period.

71. *Gold Mining Companies Act*, 1875: 39 VIC No. 9.

72. 27 VIC No. 4.

73. M. Drew, Chapter 3.

74. Register of Mining Companies, Queensland, COM 1, *Q.S.A.*

75. Columbia Lease Gold Mining Company No Liability, Sir Henry Havelock GMCNL, St. Patrick and Queen Grand Junction GMCNL, Same as Usual Extended GMCNL, Alexandra Freeholds GMCNL. Register of Mining Companies, Charters Towers, MWO 11A/T1, *Q.S.A.*

taken up by local business and professional men.[76] Nevertheless, the majority of mines continued to be worked by syndicates, often through a salaried manager. Some of these were rich enough to finance considerable development; indeed the field was, at this time, dominated by two incredibly wealthy mines, the St. Patrick Block and the Bryan O'Lynn, both owned by syndicates in which Frank Stubley had very large holdings.[77] The St. Patrick Block produced 18½% of the wealth of Charters Towers during 1876, and 15% and 13% during 1877 and 1878. The following year it was replaced as top producer by the Bryan O'Lynn which yielded 13% of the gold mined on the field during 1879. The rich surface stone of these mines financed their development at depth, despite Stubley's sometimes disastrous experiments in mining, the most notable of which was the introduction of an English "borer" which he imported during 1876. Operated by a local engine driver, it promptly buckled on the hard Charters Towers granite and, as *The Queenslander* later noted, drilled a total of two feet at an average cost of £2,500 per foot.[78] By contrast, the General Wyndham mine was a model of local ownership. Its principal shareholder, Thomas Mills, purchased the machinery of the London Battery at Ravenswood during 1877 and connected the mine to both battery and mullock heap by tramway the following year. Three hundred feet of pipes through which water was pumped from the mine to a dam and thence to the mill provided ample water for crushing, at the same time solving the General Wyndham's troublesome bailing problem.[79]

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76. For example shareholders in Sir Henry Havelock GMCNL comprised 6 publicans, 7 miners, 2 commercial travellers, 2 graziers, 2 drapers, 2 accountants, a journalist, a chemist, a merchant, a banker, a doctor, a solicitor, an auditor and a bartender. Memoranda and Articles of Association for Companies Registered, MWO 11A/S1, *Q.S.A.*

77. Stubley arrived on the field during 1872. He owned the major part of both the St. Patrick Block and the Bryan O'Lynn, and also had interests in the No. 4 Queen (with the Secretary for Mines and Public Works, H.E. King, and King's brother-in-law, Thomas Buckland), the Mexican, the No. 1 East Sunburst and the Identity. He was elected M.L.A. for Charters Towers in 1878. Later Stubley invested heavily in wheat and ships, lost all his money, and died and was buried by the roadside while on his way to Croydon to mend his fortunes.

78. *The Queenslander*, 30 November 1878.

79. *The Northern Miner*, 28 July 1877; also *The Queenslander*, 16 November 1878.

Many mines, however, were neither fabulously wealthy nor prudently managed, and the period 1875 to 1880 was marked by a polarisation of the capital of the field. For several reasons the possession of adequate working capital was of particular importance in Charters Towers. Firstly, the reefs were irregular in both direction and angle of dip, and so it was not uncommon to find several shoots of gold lying parallel to each other at different depths in the same mine. Indeed the history of the field is one of mines "worked out" and abandoned then taken up at a later date to yield even greater wealth than before. The continued success of a mine was, therefore, dependent on the ability of its owners to survive long and expensive periods of "dead work". Secondly, the cost of sinking was high - during this period from £10 to £12 per foot by contract - and, as the mines sank deeper,[80] dangerous and expensive water problems were often encountered, making the replacement of whims and whips by steam engines and poppet heads a matter of urgency.[81] Those syndicates forced to abandon their mines found few new surface deposits to exploit. Although many new mines were yet to be opened these normally occupied "block" claims on which it was necessary to sink at least one shaft to cut the reef at depth before any return might be expected.[82] The problems of undercapitalised syndicates were further aggravated by transport and ore treatment difficulties.

Transport of stone to the mills was expensive due to the poor condition of the roads[83] and the shortage of draught animals in the

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80. By 1880 more than eighty shafts had reached a vertical depth of over one hundred feet, the deepest reaching around six hundred feet. *A.R.* 1880, p.12. The calculation of shaft depths is complicated by the use of underlie shafts, sunk at varying angles and often in conjunction with vertical shafts.

81. Although there were 69 (aggregate 736 horsepower) engines on the field by 1882, whims and whips were used in some mines at depths of 400-500 feet, especially where water was not a problem.

82. *The Towers Herald and Mining Record,* 2 June 1877.

83. Even the road connecting Charters Towers to Millchester became impassable during the wet, and a fatal accident occurred on this route in December 1874 when a public coach, "The Big Bus" overturned.

poorly grassed, frequently drought stricken and already impoverished countryside.[84] In fact transport problems frequently led to the closure of "outside" mines which, under more favourable conditions, might have worked profitably.[85] On reaching the mills the smaller syndicates were likely to be further disadvantaged. Although the law required battery owners to supply the Gold Commissioner with returns of the amount of stone crushed and its yield, Charters evidently had little faith in the accuracy of figures supplied him before 1877.[86] The miners too believed that they did not always receive the full gold content of their ore, the great Venus Mill being considered particularly suspect.[87] Such scandals, as well as more normal reasons of mine economy and reduced transport costs, persuaded many of the wealthier ventures to install their own crushing plant and connect it to the mine by a tramway. Others, however, purchased public mills at which they gave priority to their own ore. Early in 1876 Stubley and Buckland bought the Defiance Mill, and Richard Craven took over the Enterprise to crush for his Caledonia, No. 4 Queen and Mexican interests.[88] The following month the Never Despair was purchased by David Nagle and Ellen Kelly, partners in the No. 1 St. Patrick,[89] leaving only three mills on the field which gave priority to custom crushing. Increasingly those mines which were most dependent on

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84. In 1880 warden Philip Sellheim, who had replaced Charters, reported: "At the present moment there are sixty-seven persons on this goldfield that own more than fifty head of cattle each, and in the aggregate they depasture 14,121 head. To this number must be added about 3,000 head, the property of the owners of smaller herds. When it is taken into account that besides this, at a modest computation, about ten thousand goats are permitted to devastate the country, it must be conceded that this goldfield is about the closest stocked piece of land in the country." *A.R.* 1880, p.11.

85. *A.R.* 1879, p.9.

86. *The Queenslander*, 1 April 1876.

87. *Ibid.*, 7 June 1876.

88. *Ibid.*, 26 February 1876.

89. *Ibid.*, 11 March 1876.

quick returns were forced to wait weeks or even months to put their stone through the mills.[90]

During 1876 technological innovations improved the production of the field, but contributed only marginally to the viability of the smaller mines. At the end of 1875 tests carried out on a small quantity of stone from the St. Patrick Block suggested that crushing and amalgamation released less than half the gold from the "mundic" ore.[91] This revelation resulted in the introduction of large quantities of new machinery,[92] and those mines which treated their own stone increased their yield considerably. For some years, however, owners of tailings treatment machinery refused to treat sands for the miners, preferring to buy them outright. As current law did not stipulate that such operators furnish the warden with returns, miners were unable to gauge the value of their sands, and some large fortunes were made by men such as Deane and Sadd, the Plant brothers, Hutton and Whitehead and Thomas Buckland. During 1877 the Gold Escort carried 12,754 ounces over and above the mill returns. In 1878 the figure was 17,462 and the following year 12,133. While it is possible that up to 5,000 ounces a year came from outlying areas to travel by the escort, this must be offset by the strong likelihood that some gold left the field in private hands, and by the fact that mill returns are given in retorted gold while escort figures are in refined gold, and should therefore be smaller. Although by 1882 the warden reported that "the after-treatment of sands at separate works. . .

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90. Problems in tracing the history of the mills arise because changes of name and occupation or cancellations were not always registered. Even when registration was effected, it was often many months after the event had been reported in the newspapers. The Enterprise Mill appears to have been set up by Deane and Sadd using part of the Defiance machinery; and Never Despair was a new name for the Working Miner. Buchanan's was sold to Thomas Mowbray during 1873 and probably removed to another field. The sixth mill was the Mary Louisa, set up during 1874 by John Thomas. Applications for Areas, A/20767, *Q.S.A.*

91. *The Queenslander*, 4 December 1875.

92. By 1878 in addition to crushing machinery the field contained 3 buddles, 95 Berdans, 33 Wheeler's pans, 5 settlers, 2 furnaces, 1 Wheeler's separator, 6 concentrators and 3 Poman's pans. *A.P.* 1878, p.10.

has nearly fallen into disuse",[93] and it was normal practice for millers to carry out the entire extraction process for their customers, the owners of tailings plants probably absorbed up to one seventh of the wealth of the field in the intervening years.

When small mines ran into difficulties many diggers turned to wages mining. The big mines began to work three shifts a day and some became quite large employers, the Queen, for example, having eighty-one miners on its payroll during 1879.[94] Wages in Charters Towers were quite good,[95] but employment tended to be seasonal since "dead work" - which employed a smaller workforce than stoping - was best carried out during the winter when the shafts were drier and water shortages increased crushing and transport costs. Surplus miners were invariably discharged: some became tributors, working mines which could not be operated profitably by their owners on a percentage basis.[96] Frequently these were mines which had been taken over by the banks after their owners had defaulted. Some unemployed miners "fossicked about in old workings"[97] hoping for news of another alluvial rush.[98] It is perhaps indicative of the condition of the wage miner on the field at this time that despite massive investment in machinery[99] all stoping was still done by hand, no rock drills arriving on the field until 1881. Further, as the shafts

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93. *A.R.* 1882, p.10.

94. *A.R.* 1879, p.11.

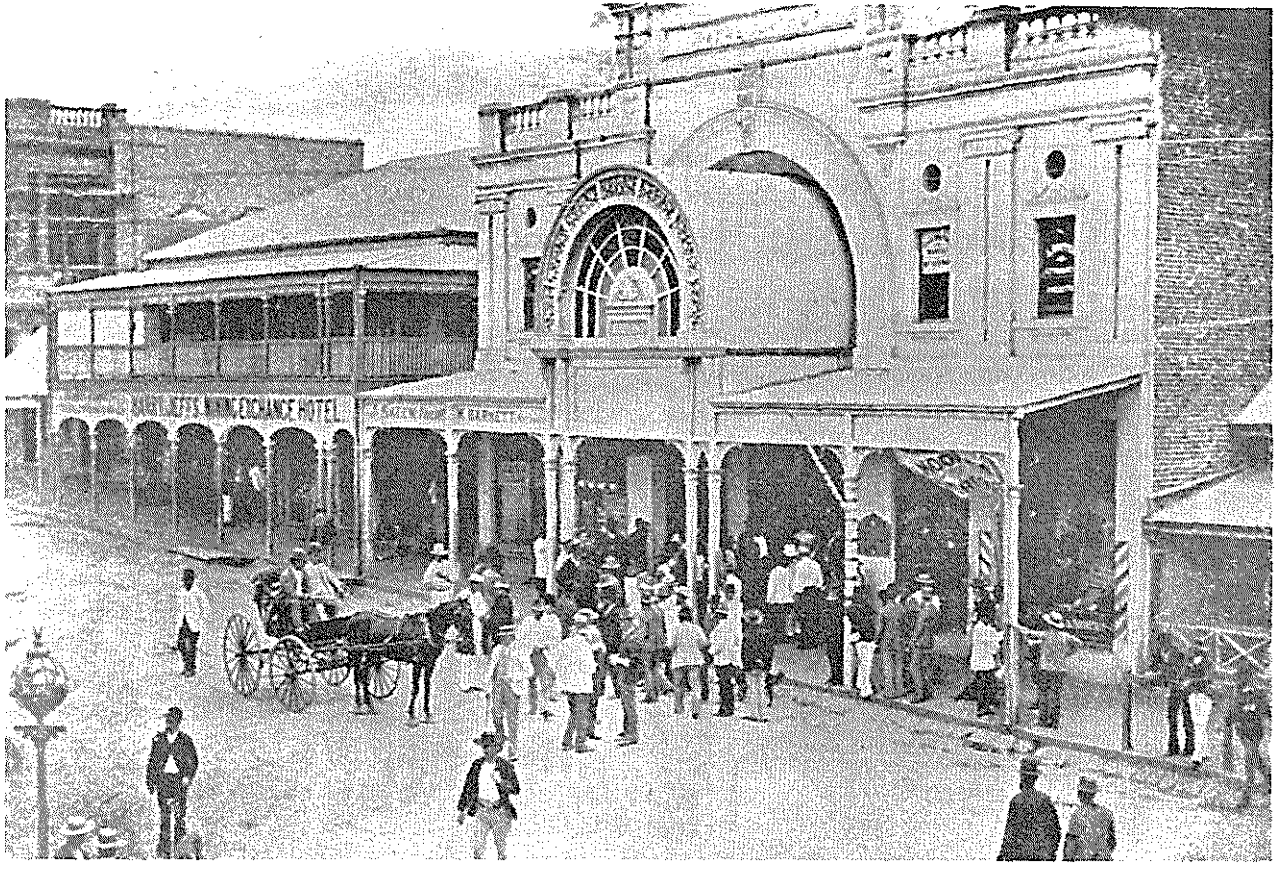
95. Charters Towers miners were paid £3 to £3/10/- a week throughout the nineteenth century. This compared favourably with Gympie and Ravenswood, but unfavourably with the other North Queensland fields. Labourers received about £2.

96. A typical agreement might involve a period of three years, during the first of which the tributors paid 5% of the gross yield to the owners, and 10% for the following two years.

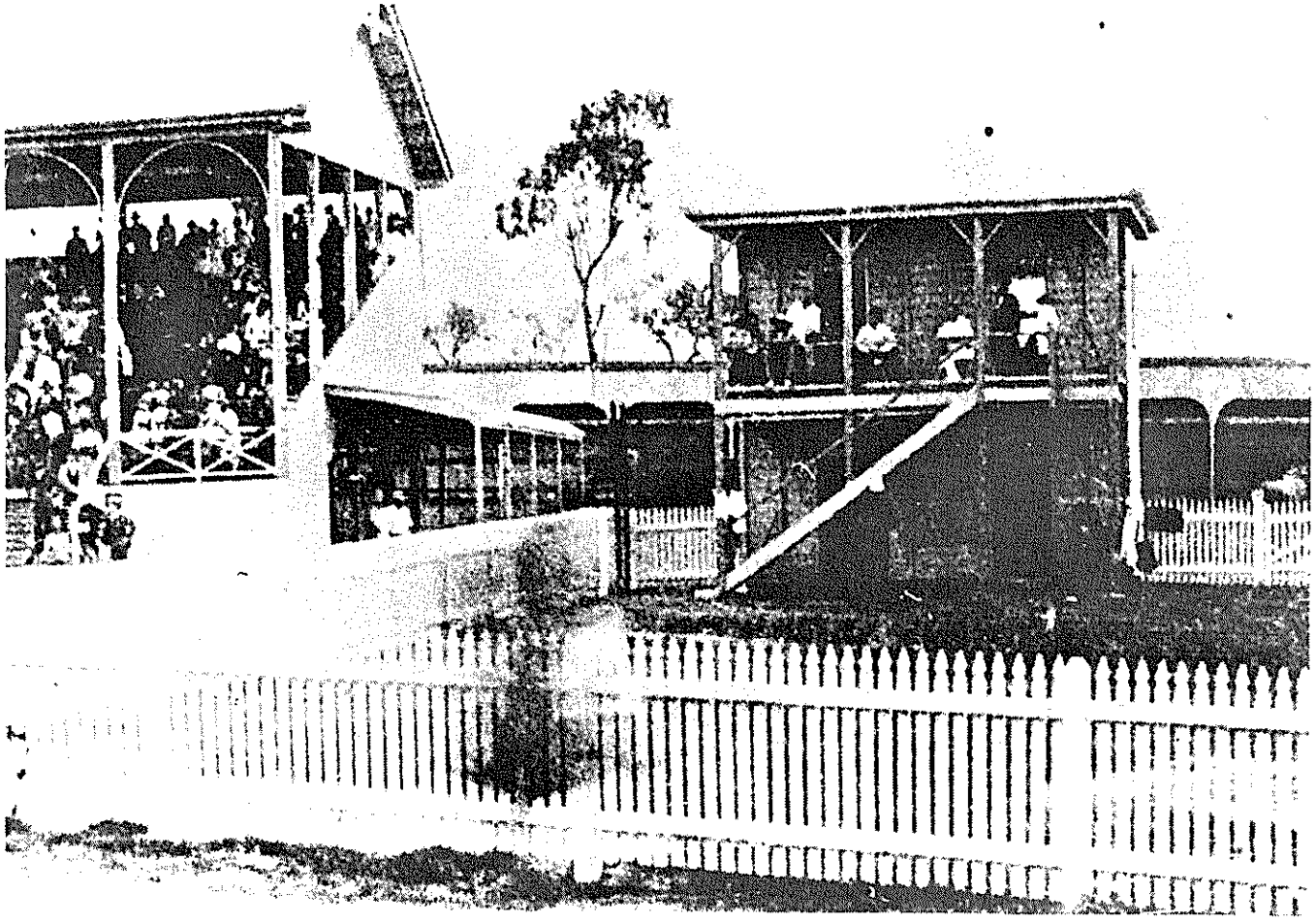
97. *The Queenslander*, 9 March 1878.

98. In addition to the Palmer rushes of 1873 and 1874, there was an exodus to the Hodgkinson in March 1876 which attracted a quarter of the population of Charters Towers; Coen River, Lukinville and New Guinea during 1878; Fanning River, Mount Pleasant, Old Broughton and Rishton during 1879 and Woolgar in 1880.

99. The machinery on the field was conservatively valued at £81,500 in 1880. *A.R.* 1880, p.12.



P15: Charters Towers Stock Exchange [*N.M.R.* 1891]



P16: Grandstand and Stewards' Office, circa 1888 [Don Roderick]

went deeper, accidents increased both in number and severity. Falls of ground, mishaps in the shafts and rushes of water became more common: during 1876 several tons of water broke, without warning, into the North Australia mine,[100] and the following year three men were drowned in a similar accident at the Identity.[101] While the mining wardens invariably ascribed accidents to the carelessness of the victims, the safety standards of the management are suggested by such practices as weighting the safety valves of the steam boilers to obtain extra steam.[102] It was not until 1881 that the first safety regulations were passed,[103] controlling ventilation, the use of explosives and the fencing and staging of shafts, and providing for inspection of the mines by both government inspectors and miners' representatives. Although only mines employing six or more men were covered by the Act, it nevertheless afforded a degree of protection to the growing number of company miners on the field.

The "no liability" companies registered during 1876 proved disappointing: none of them survived beyond 1878.[104] Despite specimens regularly sent to exhibitions at Sydney and Melbourne to attract southern investors little outside interest was aroused.[105] Two reasons for the lack of investment stand out - isolation and the flaws which appeared in the "no liability" legislation. Although both Millchester and Charters Towers had been connected to the electric telegraph in 1875, communication with other centres was still poor. During 1878 the road to Townsville was described as "unpleasant as can possibly be conceived. . .the whole distance being covered with several inches to a foot of fine powdered

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100. *The Queenslander*, 18 September 1877.

101. J. Stoodley, The Queensland Gold Miner, p.55.

102. *The Queenslander*, 5 July 1879. In March the *Towers Herald* drew attention to the frequency of accidents arising from the use of perpendicular ladders in shafts which, it claimed, were particularly dangerous at the end of a shift when the miners were tired. *Towers Herald and Mining Register*, 22 March 1879.

103. *The Mines Regulation Act*, 1881: 45 VIC No. 6.

104. No more "no liability" companies were registered until late 1881. Register of Mining Companies, Charters Towers, MWO 11A/T1, *Q.S.A.*

105. One exception was the Towers and Millchester Pyrites Saving Company Ltd. (1876), successfully floated in Melbourne.

dust".[106] Clearly a rail link was needed, but though enabling legislation passed the Legislative Assembly during 1877, tenders were not called for over a year, and the railway was not completed until 1882. It was undeniable, however, that local investors as well as southerners shied away from "no liability" companies. A common criticism was that the clause in the Act stipulating that sales of forfeited shares must be advertised in the *Government Gazette* at least twenty-one days in advance[107] led to long delays in the receipt of calls which, should a large shareholder default, might be sufficient to cause the collapse of a company. It was also suggested that the cost of incorporation was too high,[108] that fees paid to directors and company secretaries were exorbitant, and that banks refused to lend to such companies.[109] It would appear, however, that another factor was the inability of their promoters to raise the five per cent of the nominal capital stipulated by the Act.[110] The formation between 1877 and 1881 of seven new companies under the old Act[111] which made no such stipulation adds substance to this theory, as does the flotation, early in 1882, of three "no liability" companies with very small nominal capital which was increased dramatically soon after registration.[112] Nevertheless it was during 1882 that internal

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106. *The Queenslander,* 8 November 1878.

107. 39 VIC No. 9, Clause 8 (4). Allowing fourteen days after the call was made, a further fourteen for postage and advance notice of twenty-one days, a minimum of seven weeks elapsed before shares could be sold.

108. Although the cost was the same as under the Act of 1863.

109. *The Northern Miner,* 29 August 1877. The companies were dubbed "no reliability companies" by this paper.

110. Clause 8 (1).

111. Rainbow Amalgamated GMCL (July 1877), Hope GMCL(December 1877), Comstock GMCL (February 1878), Day Dawn Extended GMCL (September 1880), Day Dawn Block GMCL (March 1881), No. 1 North Alliance GMCL (May 1881), all registered in Queensland. Register of Companies, Queensland, COM 1, *Q.S.A.* Also the Pyrites Company, see footnote 105.

112. The Lady Maria GMCNL, capital £1,200, raised after registration to £12,000; The Union GMCNL and the Caledonia GMCNL, both raised from £3,000 to £24,000. Register of Companies, Charters Towers, MWO 11A/T1, *Q.S.A.*

and external circumstances combined to make company mining the rule rather than the exception.

One such circumstance was the discovery of the rich deposits of the Day Dawn P.C. This ground was originally laid off during 1873 and for five years was worked by a small group of Germans, led by Frederick Pfeiffer.[113] In 1879 Thomas Christian bought into the syndicate and assumed management of the mine. He soon abandoned the rickety vertical shaft and, borrowing one thousand pounds, replaced the whip with steam winding gear with which he developed the underlie shaft.[114] Within months it became evident that the mine contained the largest reef yet found on the field.[115] During 1881 the syndicate floated the first of the new "no liability" companies, with the unprecedented capital of £24,000.[116] Within two weeks the company paid its first dividend and, although the standard of management may have declined during 1882,[117] it continued to give handsome returns to

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113. Pfeiffer was born in Attenhasslau in 1834, arrived in Australia in 1856 and worked on the Victorian and New Zealand goldfields before moving north. The members of the Day Dawn syndicate had changed often during the five years, but in 1879 consisted of Pfeiffer, Christian, Ievers, Harman, Romberg, Reidrich, Paradies and Bandholz. Pfeiffer owned 25% of the mine. He later became a mining speculator and company director, and died in Charters Towers in 1903.

114. L.W. Marsland, *The Charters Towers Gold Mines*, p.72.

115. Yields from the Day Dawn P.C. were: 1881-13,933 ounces, 1882-22,778, 1883-18,077, 1884-30,130, 1885-34,775, 1886-29,365. The mine continued to be one of the biggest producers on the field until the 1890s and was worked until 1913.

116. 11 October 1881. Register of Companies, Charters Towers, MWO 11A/T1, *Q.S.A.*

117. Christian was succeeded as mine manager by T. Edwards, late in 1881. Under Edwards pressure to maintain production appears to have led to rivalry between shift bosses, resulting in dangerous mining practice. An inquiry into an accident which had occurred in March 1882, when a body of stone 120 feet long, 76 feet high and 15 feet thick fell killing two men, heard evidence that despite three rock falls during the preceding five weeks, in two of which miners had been injured, the reef had been undercut leaving the top overhanging with no timber whatsoever to support it. Edwards was found not guilty of negligence. *The Northern Miner*, 27 June 1882.

its shareholders; the company paid £131,800 in dividends by the end of 1882.[118] The importance of the Day Dawn, however, was by no means limited to its success as a joint stock company. Prior to 1880 it had been accepted that, in Charters Towers, a yield of one ounce for each ton of stone raised was the minimum level of profitability. In addition to some very rich pockets the Day Dawn reef possessed vast bodies of low grade ore which, combined with the comparative freedom of its gold, made its working profitable at a yield of 15dwts per ton.[119] Therefore it guaranteed the permanence of the field and, indeed, through the Day Dawn P.C., the Day Dawn Block and Wyndham and Mills Day Dawn United, the new reef dominated the field during the 1880s and continued to be worked for three decades.

As the Day Dawn was beginning to realise its potential in Charters Towers innovations on the distant Victorian goldfields prepared the way for a nationwide boom in mining speculation. On the rich but uneven Ballarat field, where early prospecting has been described as a "game of blind man's buff",[120] diamond drills were introduced late in 1878. Their revelations enabled a massive increase in production,[121] further encouraged by an inflow of capital after interest rates started to fall in February 1880.[122] The prices of Victorian mining shares soared, stimulating the formation of gold mining companies on other fields. In Queensland the effects of the share boom were first encountered at Gympie during 1881, when large numbers of new companies were floated in what has been

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118. *A.R.* 1882, p.13.

119. Marsland, *The Charters Towers Gold Mines*, pp.14-15. In Victorian mines 10 dwts per ton was considered payable.

120. Weston Bate, *Lucky City. The First Generation at Ballarat: 1851-1901* (Melbourne 1978), p.193.

121. This started in 1879 but reached its peak during the following year when almost three times as much gold was produced as in 1878.

122. A.R. Hall, *The Stock Exchange of Melbourne and the Victorian Economy 1852-1900* (Canberra 1968), p.95. During the next two years they dropped from six per cent to three per cent, encouraging the opening of new avenues for investment, particularly the formation of joint stock companies.

called a "period of speculation beyond description."[123] Aided by the completion of the railway and the consequent improvement in communications, the boom arrived in Charters Towers during 1882, at the end of which year Warden Sellheim reported the existence of twenty-four registered companies on the field.[124] Although many of these were short-lived, from 1882 to the end of its productive life Charters Towers remained a company mining field.[125]

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The transition was not smooth. Although some very sound properties were floated during the 1882 boom[126] many of the companies, designed to reopen mines whose surface workings had been unable to finance their development at depth, were unsuccessful. Although their nominal capital was adequate for the work,[127] in the tighter monetary conditions of 1883 and 1884 the local speculators, who made up the majority of their shareholders, soon lost patience with the "dead work" entailed and refused to pay repeated calls on their shares. The Warden's Court dealt with a constant stream of applications for exemptions from labour requirements as new companies postponed the inevitable forfeiture of ground. Confidence, however, was restored by an enormous increase in production during 1884.[128] Despite the fact that this increase was almost entirely

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123. R.G. Lockwood, History of Gympie in the 1840s-1900s, B.A.Hons thesis, University of Queensland 1964, p.48.

124. *A.R.* 1882, p.13. Seventeen companies were registered in Charters Towers during 1882. Register of Companies, Charters Towers, MWO 11A/T1, *Q.S.A.*

125. 1882 was also the year during which the field produced its millionth ounce of gold. It had become the most productive field in the colony when it overtook the Palmer in 1880.

126. These included the Band of Hope and the Day Dawn Block and Wyndham.

127. Most of the mines floated during 1882 had a nominal capital of £24,000. Register of Companies, Charters Towers, MWO 11A/T1, *Q.S.A.*

128. In 1884 production rose by 57%. *A.R.* 1884, p.5. The confidence inspired was reflected by the publication, in May 1884, of the *Charters Towers and North Queensland Mining Journal*, a monthly which ran for five issues.

due to the output of two mines, the Day Dawn P.C. and the Day Dawn Block and Wyndham,[129] and encouraged by an easing financial situation and a sharp drop in the prices of wool and wheat, reducing their attractiveness as an investment area,[130] the number of companies on the field rose during 1885 from thirty-nine to ninety-three.[131]

Again, many of the new companies were unsuccessful; this time, however, the failures were more predictable. The *Northern Miner* remarked that "a perfect mania has seized on the people for forming companies on every available piece of land there is a chance of striking a reef on, and others have been taken up where there is not the slightest chance of ever getting on a reef".[132] The warden expressed concern about "wild cats" and about the share manipulations of unscrupulous company secretaries and mine managers.[133] Partly as a response to such practices an attempt was made to regularize the market by opening a public stock exchange. The short-lived Charters Towers Mining Exchange which opened on 1 August 1885 was unusual in that its initiators were businessmen and mine managers rather than stock brokers. Indeed, it is likely that the refusal of the established brokerage firms to participate was largely responsible for the failure of the enterprise.[134] In any event it would appear that Charters Towers' success in attracting British capital during this period owed more to developments in Britain than to the efforts of the developers in Charters Towers.

McCarty has pointed out that all capital markets have a speculative section which is mainly operative in boom conditions. He suggests that British investment in overseas mining before 1900 was largely a function

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129. Day Dawn P.C. produced 30,130 ounces and Day Dawn Block and Wyndham 15,956 ounces during 1884.

130. Wheat prices were 40% and wool prices 15% below those prevailing at the end of the 1870s. Hall, *The Stock Exchange of Melbourne*, p.120.

131. *A.R.* 1885, p.18.

132. *The Northern Miner*, 6 October 1885.

133. *A.R.* 1885, p.16.

134. In addition to the private exchanges which flourished in Charters Towers, another public stock exchange was opened in 1890.

of this section and was consequently dependent on upturns in the trade cycle.[135] During the boom of 1881-2 the main area of British speculation had been the Indian gold mines which were almost totally discredited by 1884. Thus when the cycle began another upturn during the northern spring of 1886 British investors needed a new field for speculation. Attention had already been drawn to Queensland by the great Mount Morgan mine which, although it was not floated until later in the year, was already yielding prodigious quantities of gold,[136] and as the Day Dawn mines reached their peak it was natural that they should attract the interest of the stock market. Thus the staging of the Colonial and Indian Exhibition in London at the end of June was opportune.

While the timing of these events was outside local control, Charters Towers mining men were not slow to maximise the opportunities they presented. A local Working Committee of the Colonial Exhibition, funded by subscriptions,[137] collected photographs, figures and maps to be displayed in the 11,400 square feet which comprised the Queensland Court, together with an impressive 1,709 ounce cake of retorted gold from the Day Dawn Block and Wyndham mine. The focus of the display, however, was a fully equipped ore treatment plant which, amid great noise and excitement, treated some two hundred tons of quartz, composed of half ton samples from each of the leading mines,[138] to produce bars of fine gold.[139] A

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135. J.W. McCarty, British Investment in Overseas Mining 1880-1914, Ph.D. thesis, University of Cambridge 1960, p.245.

136. Blainey, *The Rush That Never Ended*, p.237.

137. The subscribers were so enthusiastic that the Committee had to dispose of a surplus of ninety-seven pounds after the Exhibition had closed. *The Northern Miner*, 17 June 1887.

138. These included Mosman, North Queen, Day Dawn P.C., Day Dawn Block and Wyndham, Queen No. 2 and Victory as well as mines at Gympie, Ravenswood, the Etheridge and the Palmer.

139. "Report on the Colonial and Indian Exhibition", *British Australian*, reprinted in *The Northern Miner*, 10 August 1886.

group of local businessmen who were at "home"[140] at the time assiduously fanned enthusiasm by relaying news of dividends cabled from Charters Towers to London throughout the Exhibition.[141]

With the economic climate ripe for speculation and the investors' attention drawn to the field, company formation was further assisted by new legislation: *The Mining Companies Act* of 1886 [142] brought "no liability" and "limited liability" companies under the same Act and simplified their winding up by giving sole powers of dissolution and administration to the warden. The new Act also made provision for foreign shareholdings by requiring six months notice of forfeiture of shares held outside the colonies, as compared with twenty-six days for local owners. Later in the year the *British Companies Act* of 1886[143] clarified the position of British companies formed to operate in Queensland. The stage was set for overseas investors. In August, the Day Dawn Block and Wyndham was floated in London, followed by Bonnie Dundee, No. 2 Queen and Mosman before the end of the year.[144] The long awaited British investment had finally arrived.

While the capital inflow was welcomed by the mine owners and businessmen of the field, the wage miners were less sanguine. Some equated British money with British wages and, worse, an inflow of migrant, probably coloured, labour. Undoubtedly these fears encouraged moves towards industrial organisation, although more tangible factors, both in Charters Towers and in other parts of the colonies, were more influential. By 1887 the population of the field had reached eleven and a half

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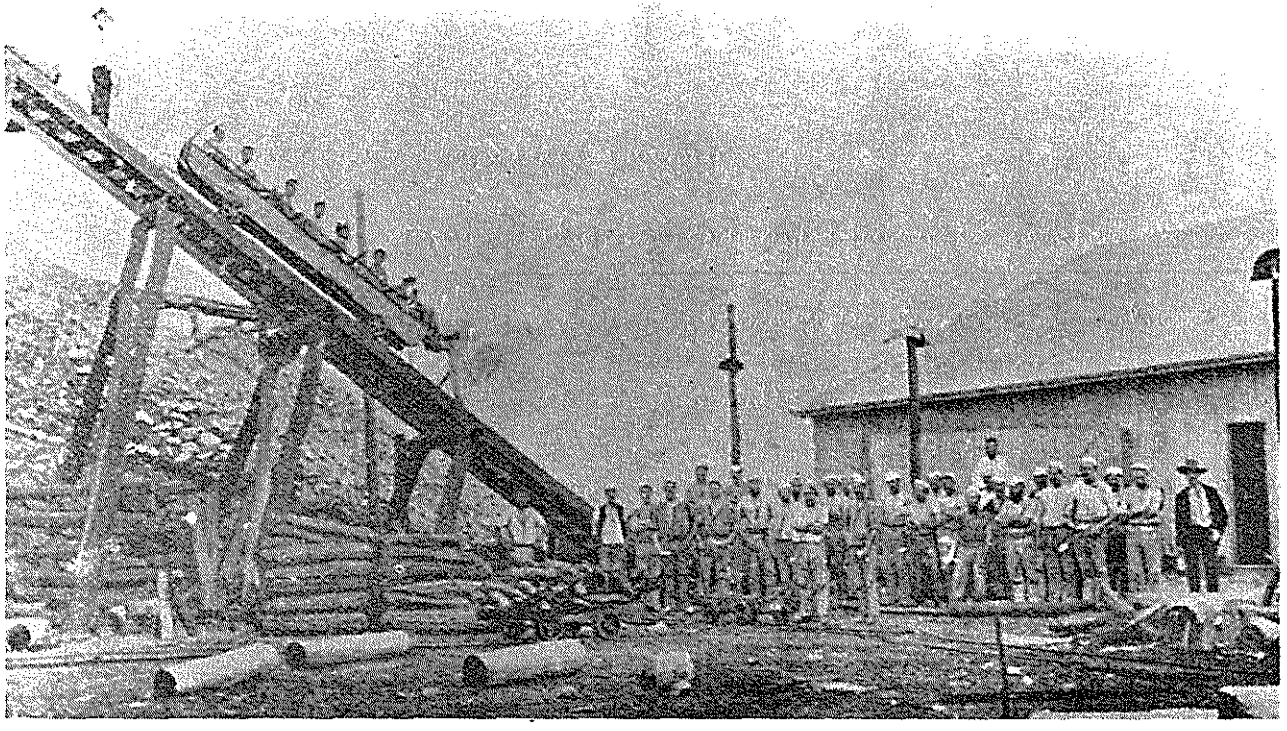
140. H. Mosman, E.H.T. Plant, J. Stirling, G. Ievers, T. Mills, J. McDonald and L.W. Marsland. It is interesting to note that both the Irish editor of the *Northern Miner*, Thadeus O'Kane, and the German born Warden, Philip Sellheim, use "home" as a synonym for England.

141. *A.R.* 1886, p.17.

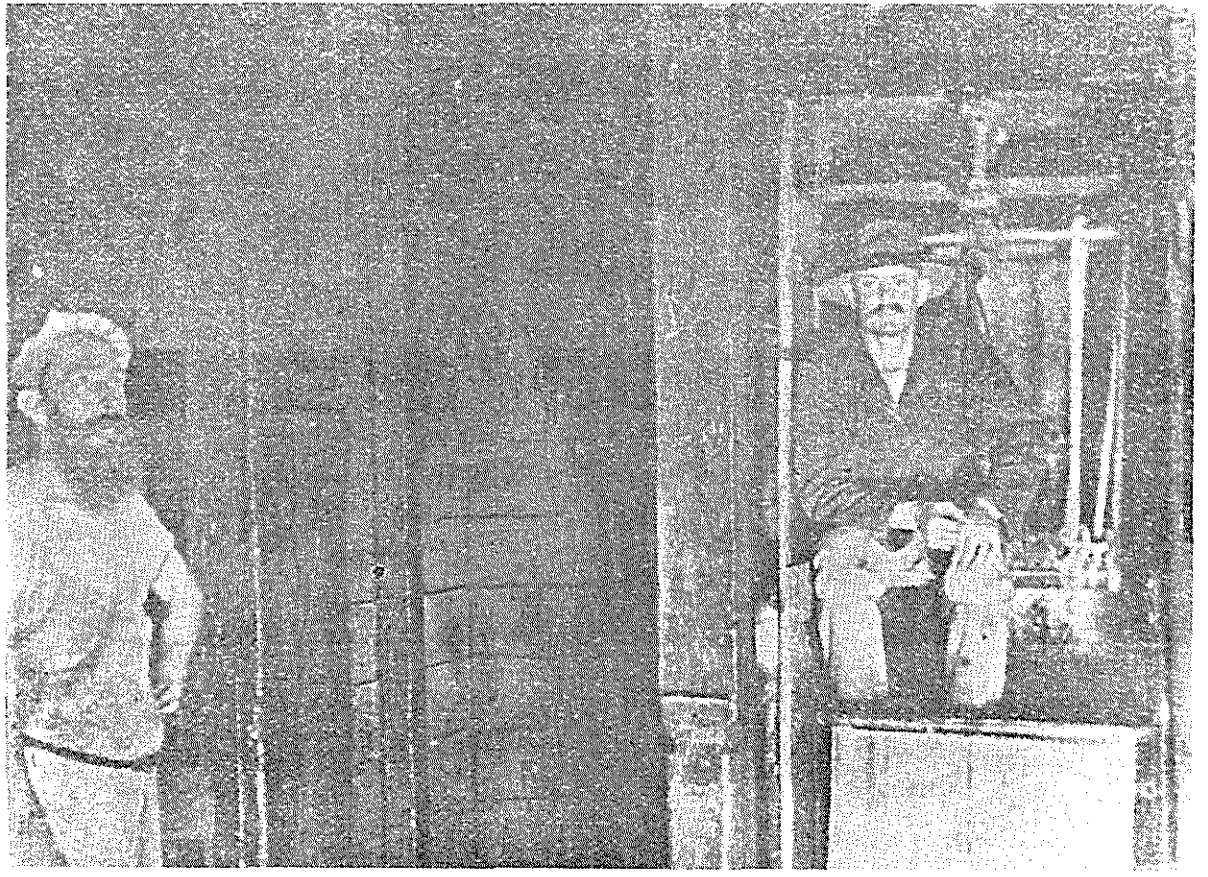
142. 50 VIC No. 9.

143. 50 VIC No. 31.

144. McCarty, British Investment in Overseas Mining, pp.54-56.



P17: Going on shift, Day Dawn P.C. underlie [*N.M.R.* 1891]



P18: Starting for the Surface, Mills United shaft [*N.Q.R.* 1895]

thousand;[145] about two thousand men worked as miners, most of the others being employed in trade or commerce or in one of the quartz mills, sawmills, engineering works and so forth which provided the mining industry with its infrastructure.[146] Although 157 mines were registered as being worked (138 by joint stock companies), the workforce was heavily concentrated in a few of the larger concerns, some six per cent of which were responsible for seventy per cent of the field's production.[147] The Day Dawn P.C. and the Day Dawn Block and Wyndham employed about 350 underground miners between them, the No. 2 Queen had 76 and Bonnie Dundee 50[148] in addition to a large surface workforce engaged in their mills and treatment works. This concentration of labour provided suitable conditions for the industrial developments currently taking place outside the field to spread to Charters Towers.

By 1886 the Victorian based Amalgamated Miners' Association [A.M.A] was firmly established and reaching out to mining fields in other colonies in an attempt to "unite all miners - gold, silver, copper and coal - in one body".[149] In Queensland this aim was encouraged by the formation of a Trades and Labour Council during 1885,[150] and by *The Trade*

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145. Including some two and a half thousand women and nearly four thousand five hundred children.

146. *A.R.* 1887, p.22. These figures were unusually accurate for a nineteenth century mining warden's report as a census was taken during 1886.

147. The Day Dawn P.C. and the Day Dawn Block and Wyndham between them were responsible for 43% of the total yield. Only 73 of the 158 mines had crushings during the year. Production figures are computed from *A.R.* 1887. Readers of G.C. Bolton, "Labour Comes to Charters Towers", reprinted in Volume One of this series, will observe contradictions in dates and figures given in this and succeeding paragraphs. Whereas sources for this article are cited in footnotes, Bolton uses such reference devices sparingly, whereby it is impossible to reconcile the derivation of his dates and figures.

148. *A.R.* 1887, pp.20-21.

149. W.G. Spence, *Australia's Awakening* (Sydney 1909), p.33. Spence was General Secretary of the A.M.A. for sixteen years from 1882.

150. Robin Gollan, *Radical and Working-Class Politics: A Study of Eastern Australia 1850-1910* (Melbourne 1960), p.93.

Unions Act, 1886[151] which gave belated legitimacy to unions in the colony.[152] The Charters Towers Miners' Union was formed at a meeting held at the Oddfellows' Hall on 16 October 1886.[153] Despite one fiery but quickly suppressed speaker, the initiators do not appear to have had radical or militant intentions. Indeed, the meeting passed a resolution that the union be a "Miners' Association within the true acception (sic) of the term".[154] Further, when the infant organisation was faced, some weeks later, with its first strike, doubts were expressed as to whether it came within the ambit of the union's legitimate concerns.[155] Nevertheless, the dispute in connection with mass sackings at the Day Dawn Block and Wyndham, in response to alleged gold theft, was conducted with considerable aplomb.

Throughout his Charters Towers career Warden Sellheim was tormented by unaccountable differences between mill returns and actual bank purchases of gold: in 1886 some 6,000 ounces remained unaccounted. The focus of his suspicions changed however as company mining became more prevalent. From about 1882 it was widely believed that at least some of the surplus carried by the Gold Escort was derived from samples stolen by wage miners. During 1883 much excitement ensued from the theft from the Day Dawn P.C.'s mill of a red-hot retort full of gold, and in the following year the same company failed to obtain the conviction of two men accused of stealing specimens from its underground workings. Since that time both big Day Dawn mines had installed changing rooms where the miners' clothing was inspected at the end of each shift. Despite this precaution and regular advertisements of a reward of two hundred pounds

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151. 50 VIC No. 29.

152. See also R.J. Sullivan, the A.L.F. in Queensland 1889-1914, M.A. thesis, University of Queensland 1973; and June Stoodley, The Development of Gold Mining Unionism in Queensland in the Late Nineteenth Century", in *Labour History* 11 (November 1966).

153. *The Northern Miner*, 18 October 1886.

154. *Ibid.* The committee consisted of J. Tyson, C. Cole, H. Harvey, H. Fitzpatrick, J. Kemp, J. Wresden, T. Collins, W. Griffith, W. Walters, T.M. Crompton, J. Boshop, J. Shepherd, J. Grubb, J. Waterson, J. Donohue and W. Richards.

155. *The Northern Miner*, 1 December 1886.

for information about thefts, gold was still missing. The local director of the English-owned Day Dawn Block and Wyndham, E.H.T. Plant,[156] began sacking batches of five or six men a week in the apparent belief that this would lead to the discovery of the culprits. A strike against his methods began on 30 November 1886, with a procession in Mosman Street followed by a "stump meeting" at the Number Two shaft. There are no indications that the Miners' Union was involved in the initiation of the action but, amid discussion about whether unions should confine themselves to questions of wages and hours, committee members joined the deputations which waited on Plant.[157] The affair ended quickly in a compromise, with the warden arbitrating,[158] but in the long term the union gained confidence and membership from the confrontation. Shortly after, it affiliated with the Victorian A.M.A., and by early March boasted 1,300 members.[159]

Mine owners evinced little concern about trade unions at this stage;[160] far more absorbing was the constant threat of water shortage. Despite the establishment of a municipality during 1877, most drinking water was still collected in corrugated iron tanks erected outside houses. When, as frequently happened in Charters Towers, the rainfall

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156. E.H.T. Plant was an Englishman who had worked at Peak Downs and the Ravenswood goldfield, where he owned a mill. On arriving in Charters Towers he set up the Venus, but sold it before the end of 1872. (See pp.52 & 3). He interested himself in treatment plants, investing in each new process as it arrived on the field, as a mine owner, director and share speculator. He was active in local government as Chairman of the Dalrymple Divisional Board, and was a Legislative Councillor from 1905 to 1922.

157. *The Northern Miner*, 1 December 1886.

158. *A.R.* 1886, p.18.

159. *The Northern Miner*, 31 May 1887. This number however appears to have fallen during the following year. Capitation fees to the A.M.A., at a rate of 1/- per member per month, amounted to £14/15/4 for February 1888. Minutes of the Miners' Union, 2 March 1888.

160. While the union was busy corresponding with W.G. Spence, and purchasing its regalia, Warden Sellheim wrote that it "will be beneficial to all in the long run, provided it is carried out on the same prudent lines of moderation and common sense as it has been commenced with." *A.R.* 1886, p.18.

was not sufficient to replenish the tanks, residents had recourse to wells dug on the flats which were often polluted by seepage from the town's cesspits.[161] As a result, each dry season brought with it epidemics, the most serious of which was of typhoid. The years 1883 to 1886 were plagued by drought, and the warden annually reported severe outbreaks of typhoid.[162] In 1885, when only nine inches of rain were recorded, the death rate was thirty per thousand, alarmingly high considering the low average age of a mining population and the reputed healthiness of the town's geographical location.[163] After a vain appeal to the colonial government for £50,000 to establish a town water supply,[164] the local authority attempted to ease the situation by importing 7,000 gallons of drinking water a day from the Burdekin River by train.[165] Community health problems were compounded by the decimation of the herds of cattle which roamed the grossly overstocked Homestead Leases of the field, and unemployment inevitably followed the closure of mills because of water shortages and the consequent suspension of stoping at many mines.

In the wave of optimism which swept the field during 1887 the warden remarked that "Here poverty - excepting in cases of the sickness or death of the bread winner - is almost unknown."[166] This belied the destitution experienced by widows or the families of injured workers. Under the *Mines Regulation Act* of 1881 it was technically possible for the Inspector of Mines to prosecute mine managers for negligence leading to injury or death, and the fines imposed could be awarded the victims.[167] In practice

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161. *A.R.* 1883, p.20.

162. *A.R.* 1883, p.20; 1884, p.20; 1885, p.21; 1886, p.21. The drought broke in July 1886.

163. *A.R.* 1885, p.21.

164. *The Northern Miner*, 1 October 1885.

165. *Ibid.*, 6 October 1885. Although the construction of a water scheme was started in 1887, the town's water problems were not solved until 1902 when the Burdekin Weir was completed. Even so, 157 cases of typhoid and 82 of enteric fever were reported during 1903. Register of the Notification of Infectious Diseases, Charters Towers, 11CHA/19, *Q.S.A.*

166. *A.R.* 1887, p.27.

167. S.17. See M. Drew, Chapter 3.

the clause was ineffectual. In the first place, since mines employing fewer than six men did not come under the Act, many of the smaller and poorly equipped concerns were exempt. In fact in 1887, only 65 of the 157 mines on the Charters Towers field came under its jurisdiction.[168] Secondly, in order to obtain a conviction, the Inspector not only had to prove negligence but also had to establish the existence of the manager to whom it might be attributed. As the warden reported in 1886: "As the matter stands at present, if any responsibility has to be taken, nobody is manager; but when any benefits are to be derived, such as immunity from serving on a jury, there is a perfect plethora of them."[169] By 1889, when the legislation was repealed, only four prosecutions had been instituted at Charters Towers, the maximum fine imposed being two pounds and with no damages. During 1886 an *Employers' Liability Act*[170] provided for compensation. However it too was ineffective in the mining industry owing to Clause 5 which removed liability in any case where the workman had been careless, had not obeyed instructions or knew of, and had failed to report, defective conditions or equipment.[171]

It is not suggested that the miners were entirely without recourse in time of hardship. The Charters Towers hospital made provision for some free "indoor" and "outdoor" patients,[172] and a Ladies Benevolent Society, presided over by Mrs Plant, was founded during 1886.[173] More palatable, perhaps, was a number of insurance schemes, including those organised by the Friendly Society Lodges. The International Order of

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168. *A.R.* 1887, pp.20-21.

169. *A.R.* 1886, p.18.

170. 50 VIC No. 24.

171. Evidence that at least one of these three conditions was present was given in virtually every accident inquiry heard after this date. This evidence may have biassed the findings on miners' attitudes to safety legislation presented in Stoodley, The Queensland Gold Miner in the Late Nineteenth Century. Nevertheless it should be understood that, for the 1880s, the legislation was very "advanced".

172. Rules of the Charters Towers District Hospital, gazetted 23 September 1880.

173. *The Northern Miner*, 11 March 1886.

Oddfellows (I.O.O.F.), the Protestant Alliance Society, the Rechabites and the popular Manchester Unity Order of Oddfellows (M.U.O.O.F.) provided "lodge doctors", chemists and, in the event of their failure, funerals for their subscribers, as well as contributing to the social life of the town.[174] At the beginning of 1886 the Charters Towers Mining Accident Association was established at the instigation of company secretary, sharebroker and insurance agent, E.D. Miles.[175] This organisation, which offered insurance against mining accidents, had attracted some 750 members by the end of its first half year. The Accident Association amalgamated with the Miners' Union in October 1887.[176]

There can be little doubt that many accidents on the Charters Towers field were caused by technical incompetence. Although milling methods were up to date[177] it was admitted that "this goldfield is rather behind the world in appliances for hoisting and breaking out quartz."[178] In 1886 there were still twenty-three whips and five whims in use on the

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174. Newspaper reports of the meetings and social functions of these groups however suggest that much of their patronage came from the more prosperous sectors of society.

175. Minutes of Public Meeting held February 1886, Charters Towers Mining Accident Association.
E.D. Miles came from Wales and began his Australian career in Ballarat in the 1860s. He arrived in Charters Towers in 1875 and worked briefly as an engine driver before beginning his career as a mining investor in 1876. He was Town Clerk from 1880-1882, then opened a brokerage firm which he rapidly built into the most important mining agency on the field. Very active in local government, particularly on the Municipal Council, he was Mayor in 1897, and M.L.C. 1902 to 1922.

176. Minutes of the Charters Towers Mining Accident Association, 8 October 1887 (General Meeting), 15 October 1887 (Committee Meeting), 22 October 1887 (Poll), 12 November 1887 (Combined General Meeting). The accounts and correspondence of the two organisations continued to be kept separate.

177. The chlorination process had arrived on the field by 1886, and electricity had been used to light some mills since 1884.

178. *The Northern Miner*, 8 October 1886. See also *A.R.* 1885, p.17, ". . .a primitive style of mining."

field, and centipede (or Jacob's) ladders[179] were far from rare. Safety cages were still unknown,[180] and although some rock drills had arrived on the field, they were lying idle because the miners had been unable to adapt them to the local granite.[181] Inadequate equipment resulted in accidents such as one at the Golden Gate during 1886, in which a miner was killed by an iron column which fell while being lowered down the shaft in a rope sling.[182] Poor timbering, particularly on the unstable Queen line of reef, caused six accidents, two of them fatal, during 1883,[183] while the lack of any complete plan of the underground workings, which horrified visitors from other mining areas, resulted in a number of casualties the following year.[184] A widespread ignorance of the properties of explosives cost many miners their lives. When the first Northern Mining Inspector was appointed in early 1883 he discovered that it was not uncommon for up to three hundred pounds of unprotected explosives to be stored underground where the miners could only approach them by the light of a candle.[185] "Black powder" was normally rammed home with metal tamping bars, and it was fairly common for powder to be used in conjunction with the newly invented dynamite. Indeed one accident investigation revealed that the dead miner had used two plugs of dynamite topped with powder which he then attempted to ram down with a copper rod.[186] Even more spectacular was an incident in which five pounds of

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179. *A.R.* 1883, pp.10 & 68. Centipede ladders consisted of a single shaft into which wooden pegs were driven at intervals.

180. *A.R.* 1885, p.79.

181. *A.R.* 1885, p.17.

182. *A.R.* 1886, p.82.

183. *A.R.* 1883, p.10.

184. In one of these a group of miners drove into the disused workings of an adjacent mine; the old drive was full of gas formed by decomposing timber, which exploded on contact with the miners' candles. Two more occurred when miners unexpectedly tapped old workings which were full of water. *A.R.* 1884, pp.17 & 66.

185. *A.R.* 1883, p.68. This position was held by Joseph Shakespeare from 1883 to 1900. He was succeeded in 1901 by S. Horsley who held the position until 1904. M. Russell was Mining Inspector from 1905 to 1912, and he was replaced in 1913 by J.A. Thomas who presided over the demise of the field.

186. *A.R.* 1885, p.79.

explosives, which had been lying discarded at the North Queen blacksmith's shop, was recognised as potentially dangerous and dropped into a bucket of water, probably on the assumption that dynamite, like black powder, would not react when damp. After twenty-four hours the then harmless plugs were carefully disposed of and the water into which their nitroglycerine content had leached was thrown into the blacksmith's cooling tub where it killed the first man who tried to temper a tool.[187]

Much of the technological incompetence of the field was concealed by its consistently high yields and there was a strong tendency to favour "practical men" over those with "book learning". However the enthusiastic reception in 1887 of a government appointed peripatetic mineralogical lecturer suggests that some miners were beginning to question established mining practices. A.W. Clarke,who held this position for two and a half years up to July 1888, was a popular lecturer and, although poorly equipped and accommodated,[188] attracted the support of the press which published his lecture notes, and of the population of both Charters Towers and Millchester, where a Chemical and Mineralogical Society was formed to establish and equip a small laboratory. But despite the existence of a School of Mines Committee[189] by 1888, and a North Queensland Mining Institute[190] by the end of 1889, little attempt was made to raise money to meet the government's offer of a pound for pound subsidy for the establishment of a permanent School of Mines.[191] Although the Miners' Union appealed to the Mines Department for his retention, the Lecturer was withdrawn at the end of 1892 and the movement lapsed for some years.

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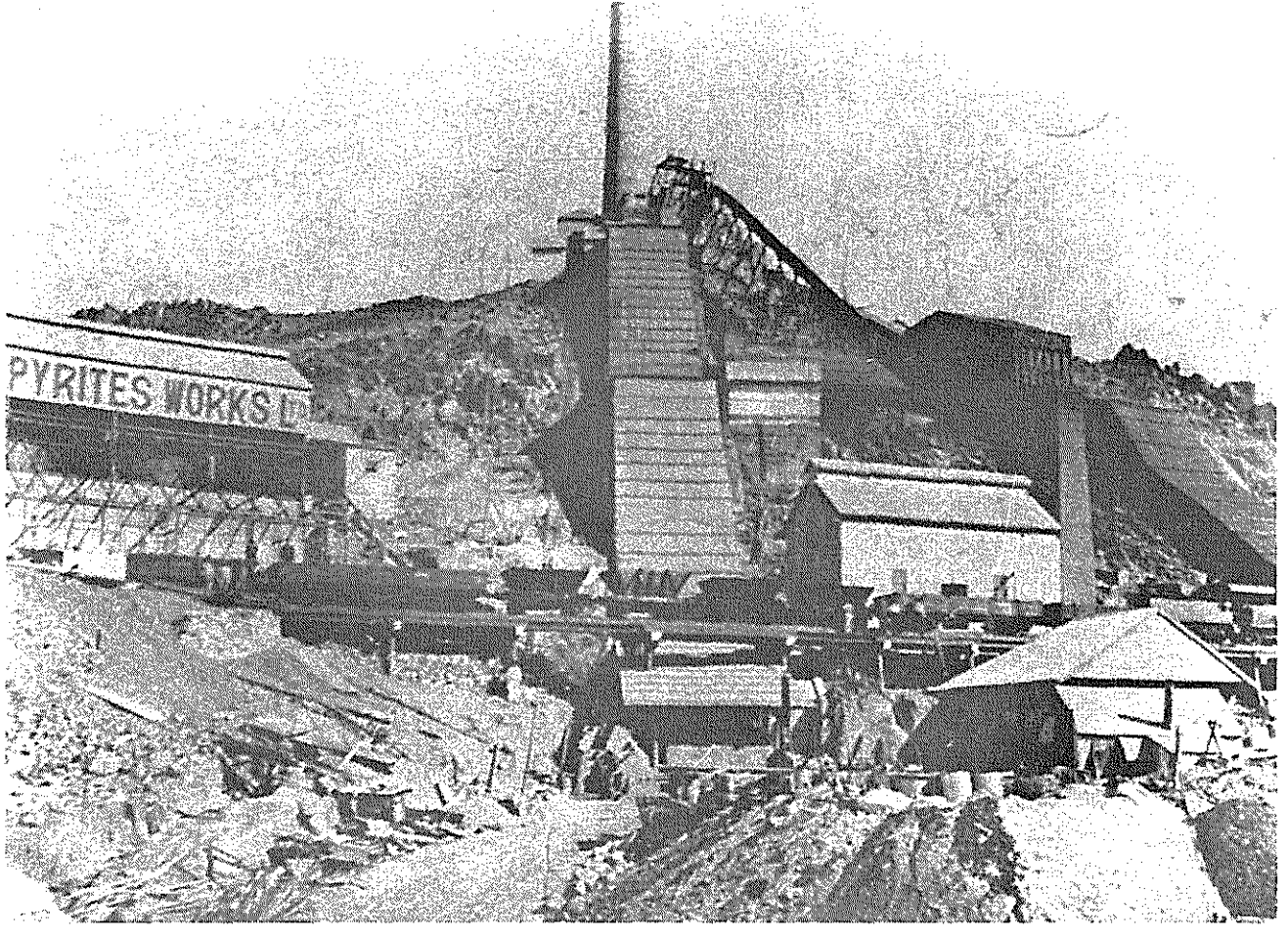
187. *Ibid.*, p.80.

188. *The Northern Miner*, 2 April 1887. Clarke first lectured at the Town Hall, later moving to the Fire Brigade Room, neither of which he found satisfactory. During 1888 he obtained the use of "a good sized shed" but was still improvising his laboratory equipment.

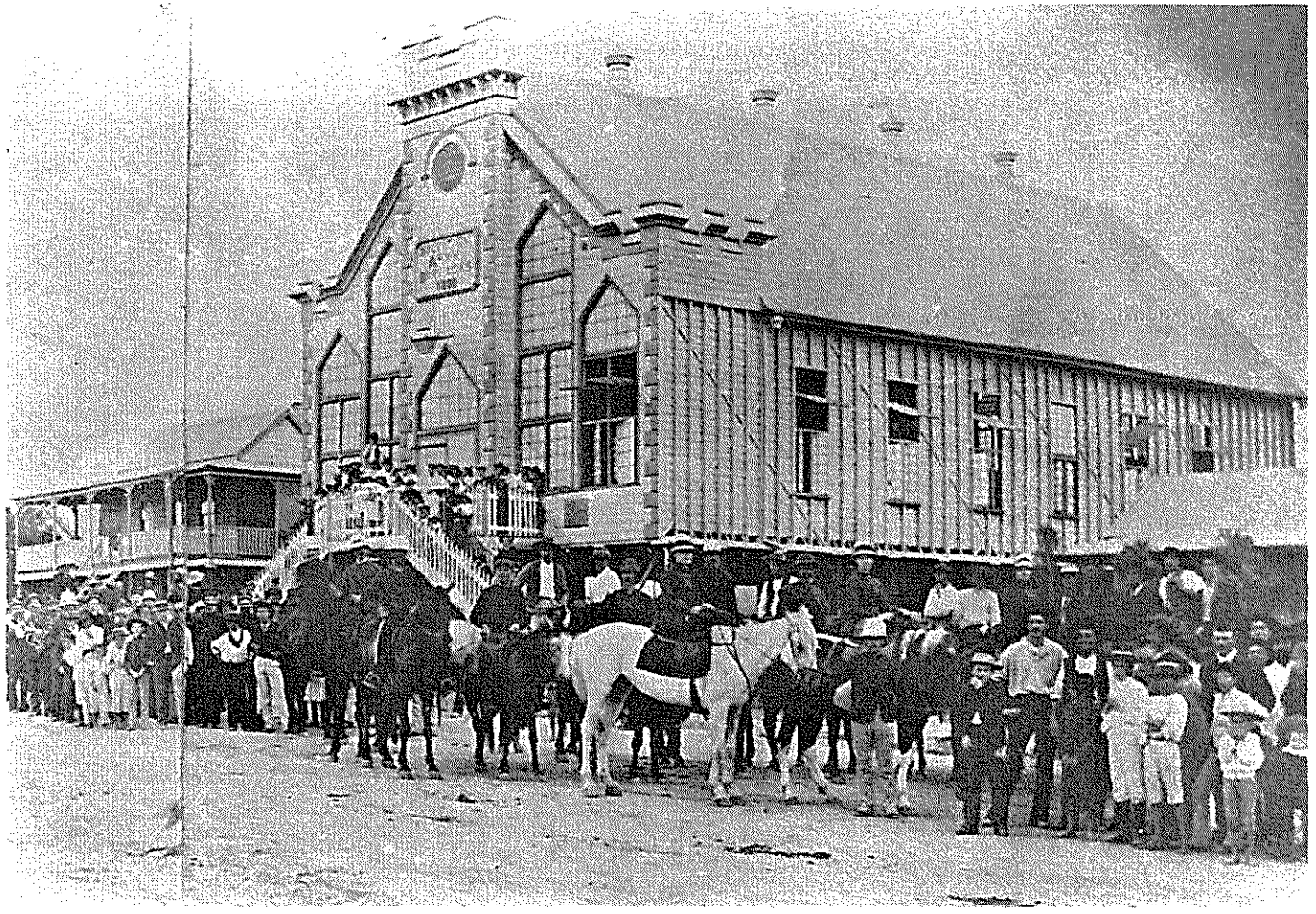
189. *The Charters Towers Times*, 4 July 1888.

190. *A.R.* 1889, p.125.

191. Stoodley, The Queensland Gold Miner in the Late Nineteenth Century, pp.39-40. For the union appeal see *The Northern Mining Register*, 3 February 1892.



P19: Chlorination works [Don Roderick]



P20: Salvation Army Barracks, Hodgkinson Street, 1892 [Capt. P. Mullins]

Notwithstanding such incidents there is little justification for McCarty's assertion that local inefficiency was a major contributory factor in the failure of British investment in Charters Towers.[192] Since the mid-seventies the mine owners had sought outside capital in the belief that it would enable them to explore and equip their mines without needing to gut rich pockets of ore to finance such development. The investors of the late 1880s however were speculators rather than developers. Paper transactions became more important than mining and rich pockets were deliberately exploited to produce the dramatic dividends needed to boost share prices. Certainly the London share dealers did not corner the market in cupidity. Established mines were sold by their Australian owners at inflated prices, and by the end of 1886 Sellheim was already warning that

> An established mine may have a most excellent record in shape of the quantity of gold that had been taken out of it: but it should be recollected that this is gone forever, and it behoves buyers to ascertain what may be left in it for *them* to bring to grass. 193

This was particularly relevant to the Day Dawn Block and Wyndham and the Day Dawn P.C. which was floated in London some six months later. These magnificent mines had both reached their peak when they were sold to

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192. McCarty, British Investment in Overseas Mining, p.55. McCarty's generalisation that the old Charters Towers Boards "milked profits by sending the ore to their own private expensive customs mills" (p.60) must also be questioned. Although this may very well be true of Mills Day Dawn United, many other mines milled their own ore. For instance the other two big Day Dawns both owned mills before being floated in London, and these were improved by the English owners.

193. *A.R.* 1886, p.17. See also E.H.T. Plant as reported by *The Charters Towers Times*, 16 October 1888: "There can be no mistake about it that one of the great causes is in Stock Exchange dealings. . . . Then again the share-holders are in too much of a hurry to get dividends. . .perhaps the main reason of the low price of shares in many of the companies on the market arises from the way they have been 'loaded' for the benefit of promoters."

British companies, the Block for £498,400 and the P.C. for £470,000, of which £401,600 and £450,000 respectively were paid to the vendors.[194]

In addition to the established mines many new or previously abandoned properties were floated in London at this time. Some,particularly those sold during the "Black Jack" rush[195] of 1886, were "wild cats" of which Sellheim reported ". . .the promoters could not have expected to strike a reef if they had penetrated the earth to its centre".[196] The worst abuses were checked in November of that year when the Queensland government, in an attempt to regulate speculation, telegraphed the Agent-General in London:

> Press telegrams report that attempts are being made to float in England several Queensland mining companies. There is reason to fear that some are not altogether *bona fide*. . . .Care should be taken by investors. 197

Others, however, were properties which might have been, and often were,[198] profitable in more favourable circumstances, but with substantial blocks of paid up shares and large sums of share capital being allotted to the vendors, insufficient money remained for their development. Often they survived only for as long as they could obtain exemption from working their claims, and confidence was further eroded by the disappearance of several mining company directors together with the funds and records of their companies. By the end of 1888 the number of companies on the field had dropped to 113 and the number of employed quartz miners to 1730. As large numbers of farm labourers forced off the land by the drought of

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194. McCarty, British Investment in Overseas Mining, pp.55-57. Other large mines floated in London by the end of 1887 included Livingstone, Bonnie Dundee, Phoebe and No. 2 Queen.

195. After some good crushings at the Black Jack P.C. some 203 acres were taken up in this area. *The Northern Miner*, 27 September 1886.

196. *A.R.* 1887, p.16.

197. Cited by McCarty, British Investment in Overseas Mining, p.57.

198. Many were later reformed as locally owned companies in which British investors bought shares and London Boards were set up. After this, investors were wary of paid up shares and most companies were floated with all contributing shares, thus increasing the working capital available.

1888[199] swelled the ranks of the unemployed, and "speed-up" practices in the working mines caused a dramatic rise in the accident rate,[200] the advantages of British capital must have seemed small indeed to the workers of Charters Towers.

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The future of the goldfield lay with a reef which was unaffected by the boom of 1886-7 and its aftermath. During 1878 the field had been mapped by the Government Geological Surveyor Robert Logan Jack. He developed two theories which were to influence exploration for many years. The first of these was that because "the heavy precipitates. . .would tend to be deposited in the lower parts of the fissures more than the higher", the reefs would prove to be richer at depth than in the brownstone.[201] The second postulated that the outcrops of the Charters Towers reefs formed a horseshoe pattern, from which they dipped inwards converging in a very rich gutter of gold:

> These fissures, if protracted beneath the surface, would converge along a vertical line - the 'axis of elevation', 'centre of depression', or 'seismic-vertical', according to the theory adopted for the cause of the fractures. This line. . .may be expected to lie to the north of Millchester, probably between the township and Mosman's Creek. 202

Although clearly a scientific version of the "mother-lode" theory, the

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199. *A.R.* 1888, pp.22-23.

200. *A.R.* 1888, p.27. During 1888 32 accidents resulting in 12 deaths and 26 injuries were recorded. Warden Mowbray noted that most were due to the miners having "disregarded ordinary precautions in their anxiety to push on with their work".

201. Robert Logan Jack, *Report on the Geology and Resources of the District between Charters Towers Goldfields and the Coast*, GSQ publication 1, 1879, p.26.

202. *Ibid.*, pp.27-28.

idea attracted much attention[203] and several "Junction" companies were formed. In 1886 one of the field's earliest speculators, Richard Craven,[204] took up G.M.L. 585, a twenty-five acre lease on which he believed he would find the junction of the Queen and Day Dawn reefs. He persuaded an old business associate, G.M. Ievers,[205] to provide capital of £12,000 to finance a vertical shaft and the flotation of the Brilliant Gold Mining Company.[206] By late 1889 the shaft had reached nine hundred feet, and their capital was almost exhausted when Craven decided to explore an apparently unpromising shoot which had been passed at 765 feet. Within weeks they opened out, not on the junction of the Queen and Day Dawn, but on a new ore body: the Brilliant reef.[207] In the excitement which followed its discovery the Charters Towers Stock Exchange was reconstituted; it opened for business in the Royal Arcade in Mosman Street in May 1890.[208] By 1891 the Brilliant P.C. had become the biggest producer on the field, and by 1899 it had yielded over £2,000,000 in gold. All adjacent ground was quickly taken up for deep sinking, and for the

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203. See *The Northern Miner*, 19 February 1880; also Marsland, *The Charters Towers Gold Mines*, p.10. The theory was invoked by Thomas Mills during the Lissner Park Scheme inquiry in 1912. Queensland, Legislative Assembly, *Report of the Board of Inquiry appointed to Inquire into the Proposal of Thomas Mills to Sink a Deep Shaft on Charters Towers* (Brisbane 1913), p.7.

204. Richard Craven arrived in the colonies in 1865 and was involved in a series of rushes to Crocodile Creek, Gympie, "Ridley's Rush", Gayndah, Cape River, Cloncurry, Peak Downs, Normanby, the Broughton and Mount Leyshon, where he was working when Mosman's party arrived late in 1871. He arrived in Charters Towers in March 1872 and remained there until 1891 when he retired to Sydney where he died eight years later.

205. Ievers was a major shareholder in the Day Dawn P.C. in 1879. He retired to Ireland on his earnings from this mine and was active on the London stock market during the 1886 boom when he floated Phoebe as an English company. One of the vendors of this property was Richard Craven.

206. Ievers was the major shareholder with 57%, Craven held 27%. A further 3% were held in Charters Towers, 6% in Dalby and 7% in Britain. Summary of Capital and Shares of the Brilliant Gold Mining Company, MWO 11A/01, *Q.S.A.*

207. Reid, The Charters Towers Goldfield, p.27.

208. Don Roderick, *Charters Towers and its Stock Exchange* (Townsville 1977), p.14.

first time since the tapping of the Day Dawn reef vertical rather than underlie shafts began to predominate in the larger mines. The Brilliant was the most productive ore shoot ever discovered in Charters Towers and was eventually mined to a depth of nearly 3,000 feet.

The working of the Brilliant reef, however, could only be undertaken by highly capitalised companies employing large and varied workforces. This favoured the trend towards industrial organisation within industries rather than trades which was then sweeping the colony. During June 1889 the Australian Labour Federation (A.L.F.) was set up in Brisbane to encourage the "new" unions and to give them political unity; early the following year the organisation developed into a group of practically autonomous District Councils to which local unions were urged to affiliate. In Charters Towers the Miners' Union, comprising some 1,000 members, began to organise towards regional co-operation, and by the time the A.L.F. organiser Gilbert Casey arrived on the field in May 1890 the miners' support had been secured. The Charters Towers District Council of the A.L.F., which held its first official meeting on 23 June 1890, accredited delegates from ten unions, but the A.L.F.'s system of proportional representation[209] ensured the domination of the miners. During August the District was represented by Charles McDonald at the First Annual General Council in Brisbane, within two weeks of which the A.L.F. was plunged into the disastrous industrial disputes of 1890 and 1891.[210] All but two of the affiliated unions disbanded rather than pay strike levies, and though the Miners' Union survived it was broken financially by the levies, combined with capitation fees which it was paying to both the A.L.F. and the A.M.A.[211] It was clear that a choice between "old" and "new" unionism had to be made, and after much discussion the miners decided to allow their A.M.A. affiliation to lapse and to reconstitute as

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209. One delegate was allowed for each fifty members or proportion thereof.

210. Maritime strike 1890 and Shearers' strike 1891. See Ian Turner, *In Union is Strength: A History of Trade Unions in Australia 1788-1974* (Melbourne 1976), pp.40-54.

211. At this time members paid one shilling per month, 6d of which was paid to the A.L.F. and a further 1d to the A.M.A. Sullivan, The ALF in Queensland, p.181.

an Associated Workers Union (Ass.W.U.), whose membership was to be open to workers in all trades, and whose work was to be directed primarily towards gaining political representation.[212] In this it succeeded admirably: the union's president, Anderson Dawson, was elected M.L.A. for Charters Towers in May 1893 and six years later became Australia's first Labor Premier. Further, the reconstruction, which necessitated separation from the Accident Association,[213] enabled the union to survive the severe depression of the early 1890s.

The mining industry did not escape the effects of the financial crisis. As credit ceased and large amounts of capital were locked up, many shareholders defaulted on calls made to finance development work vital for the establishment of the deep mines. Values dropped as the market was flooded with the shares of over-extended speculators, and the number of working mines on the field fell from 113 at the end of 1891 to 90 in December 1893.[214] Like most mining towns, however, Charters Towers suffered less than other centres, since falls in prices and costs increased the purchasing power of gold. Indeed on two economic indicators Charters Towers actually prospered during this period: the population rose at a rate of about one thousand a year as people poured into the town from the coast in search of work, and this led to a consistently high demand for and construction of domestic accommodation.[215] Further, some unproductive mines had sufficient capital reserves to enable

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212. Despite an attempt by the A.M.A. to re-establish that union on the field in March 1892 the Ass.W.U. remained the dominant miners' union until it was absorbed by the Amalgamated Workers' Association in December 1910 which in turn merged with the Australian Workers Union (A.W.U.) in 1913. See R.J. Sullivan, The A.L.F. in Queensland; also K.H. Kennedy, "The Rise of the Amalgamated Workers Association", in *Lectures in North Queensland History*, Series Two (Townsville 1975), pp.189-210. For the formation of the Ass.W.U., see *The Northern Mining Register*, Christmas Edition, 1891.

213. Minutes of the Charters Towers Mining Accident Association, 29 January 1892.

214. *A.R.* 1891, p.26; 1893, p.43.

215. *A.R.* 1893, p.49.

them to continue to sink throughout the period.[216] Certainly unemployment in the town was high, but even this was relieved to some extent by the departure of miners for the expanding goldfields of Africa and Western Australia.[217] Most importantly, the economic situation on the field was eased by the introduction at the peak of the depression of an important innovation in the treatment of ores.

Milling technology had developed considerably since the early 1870s when Charters Towers ores were crushed initially by gravitation stamps, with the resulting powder carried by a stream of water over copper plates coated with mercury. In the process the gold was caught by the mercury and recovered by scraping the amalgam from the plates and separating the two metals by distillation. When mining reached the water table this method proved inadequate for the recovery of gold in pyrites and base metal sulphides: new plants were set up to concentrate and retreat the tailings from the mills. Considerable experimentation was carried out to discover the best method of treating local ores; although some of the value of this was lost because of the extreme competitiveness and therefore secrecy surrounding the ventures. Often the concentrates were reground with mercury in Wheeler or Berdan pans, although a variety of other appliances were tested. Some operators tried roasting the concentrates before amalgamation, smelting and, eventually chlorination. Chlorination, which was introduced in the mid-1880s, involved first roasting the concentrates slowly in a large reverberating furnace to expel the sulphur from the pyrites and to oxidise their base metals so as to reduce the amount of chlorine they could absorb. Then salt was added to satisfy copper, zinc and other metals whose oxides have a tendency to form chlorides when chlorine is presented to them in a free state. Finally chlorine and water were introduced so that the gold gradually

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216. Notably the Brilliant Extended, Brilliant Freeholds, Brilliant, St. Patrick and Queen, East Mexican and the Day Dawn School Reserves.

217. For a discussion of the depression of the 1890s see John L'Huillier, "Depression and a National Economy", in James Griffin (ed.), *Essays in Economic History of Australia* (Brisbane 1967).

formed a solution of gold chloride which was collected and precipitated.[218] The process however required complex and expensive machinery - the Charters Towers Pyrites Company Limited had machinery valued at £45,000 in 1898 - so metallurgists looked for a solvent which, unlike mercury and chlorine, had a stronger affinity for gold than for sulphides to simplify the treatment process. The solvent they chose was cyanide.[219]

Although the idea that potassium cyanide was an effective solvent of gold was not new - indeed it had for some time been used to clean amalgamation plates - its use in the treatment of mill tailings was not developed commercially until the early 1890s when the McArthur-Forrest cyanide process was patented. In this the sands were mixed with a very weak potassium cyanide solution in which, after some hours, the gold present dissolved. The solution was then trickled through a filter of zinc threads onto which the gold was precipitated as a fine powder which was removed by shaking it into water. The cyanide process required neither expensive machinery nor large amounts of fuel and could be used by small operators in almost any circumstances provided that water was available. It was introduced to Charters Towers during 1892 by the Australian Gold Recovery Company which bought the patent and erected a plant to treat dumps built up over the previous years. The Day Dawn P.C. Company also bought a right to use the method and introduced appliances into its Excelsior Mill to treat the tailings from its mine.[220] By the end of 1897 there were about seventy cyaniding plants on the field,

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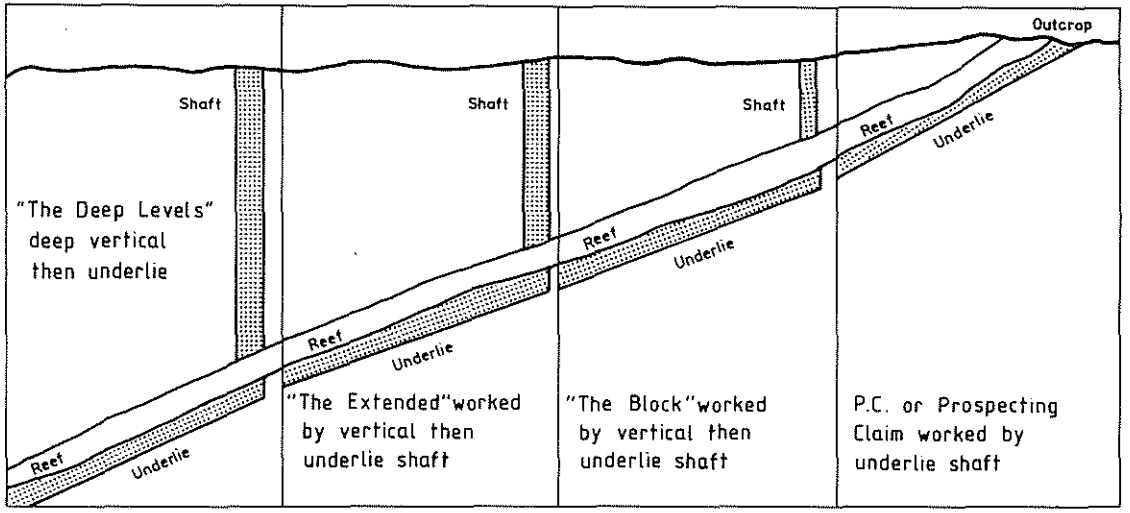
218. Chlorination was the most successful extraction method to date; however because chlorine attracts metals other than gold it was inapplicable to some ores, particularly those containing an appreciable quantity of lead.

219. See McArthur's report: "The Cyanide Process", in *A.R.* 1892, pp.17-20; E.A. Weinberg, "Refractory Gold Ores of Queensland", in *A.R.* 1894, pp.33-40; D.A. Brown, "The Charters Towers Pyrites Company's Works", in *A.R.* 1895, p.53; Joseph Shakespeare, "Special Report on Methods of Mining in Deep Ground in Victoria", in *A.R.* 1895, pp.37-48; William Blane, "Report on the Conditions and Modes of Working on the Goldfields of Queensland", in *A.R.* 1901, pp.37-42; J.M. MacLaren, *Queensland Mining and Milling Practice*, G.S.Q. publication 156, 1901.

220. *A.R.* 1892, p.44. This led to later litigation between the two companies.



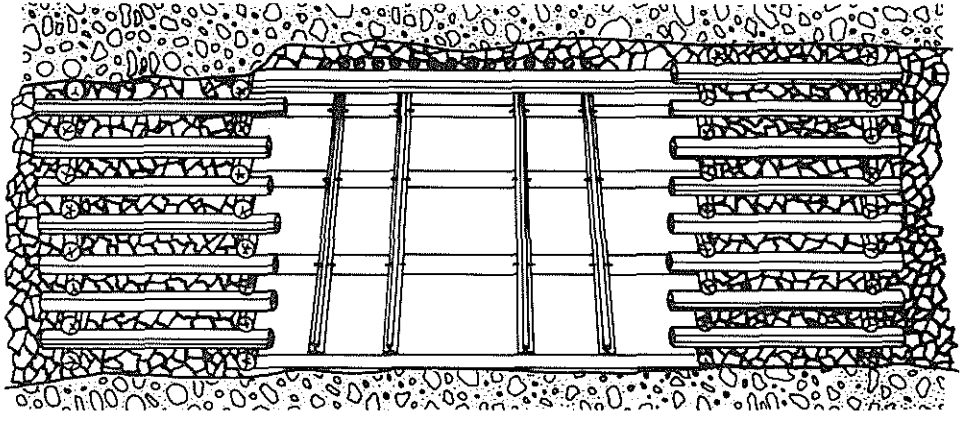
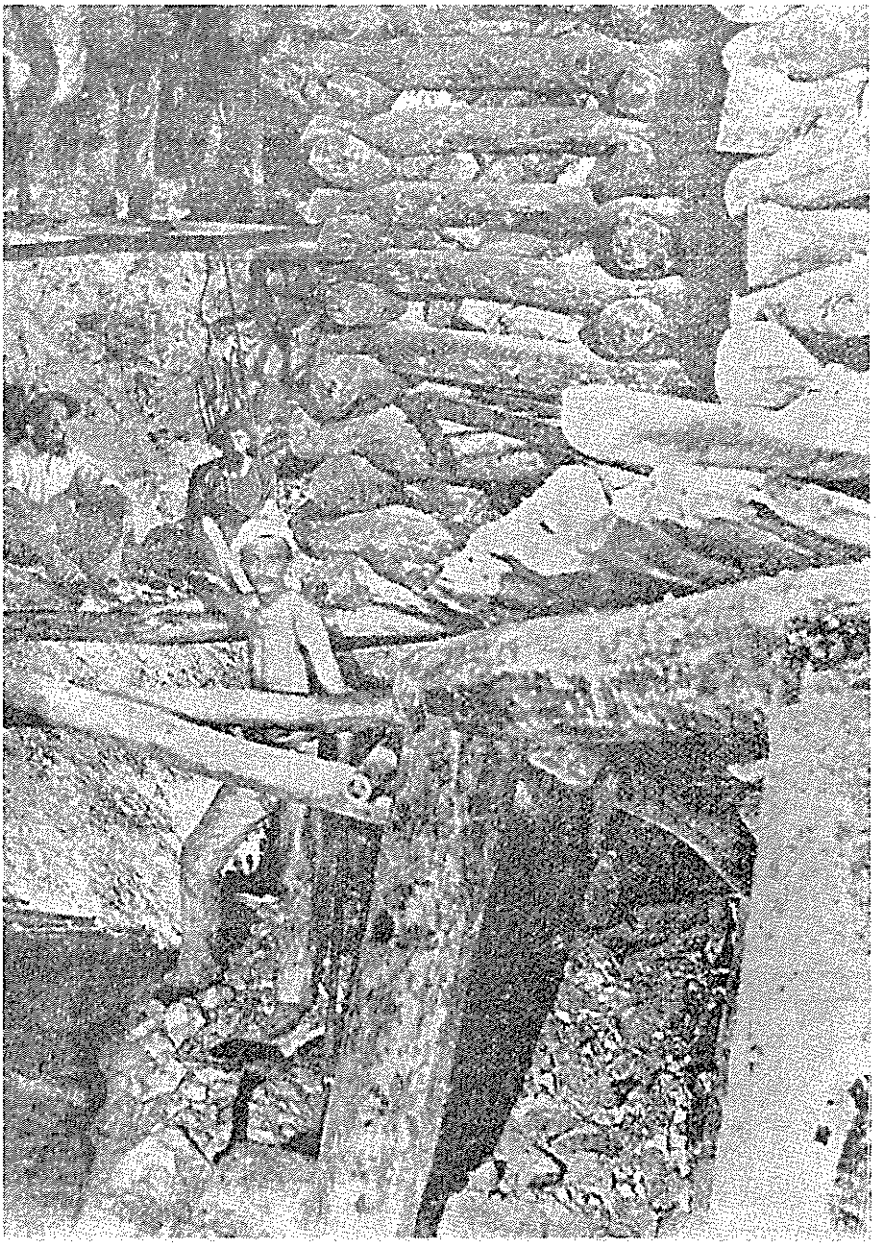


FIG 4: Underlie shaft and Pigstye timbering.



P21: Pigstye timbering - Brilliant P.C.
[*N.M.R.* 1891]

between them treating some 25,000 tons of tailings a month;[221] two years later the number of plants had risen to ninety-six.[222] With the advent of cyanide Charters Towers production peaked at 319,572 fine ounces in 1899.

Table 1: Gold Returns – Charters Towers

Year	Ore Raised	Gold	Year	Ore Raised	Gold
	Tons	Fine oz		Tons	Fine oz
To end of 1877	..	493,558	To end of 1898	209,978	272,368
1878	35,509	59,482	1899	209,802	319,572
1879	41,584	63,715	1900	206,205	283,237
1880	39,285	67,773	1901	214,595	235,302
1881	45,378	65,410	1902	221,098	265,244
1882	45,663	63,242	1903	247,481	285,771
1883	44,602	55,264	1904	241,200	262,018
1884	52,561	86,228	1905	224,519	226,696
1885	70,164	106,981	1906	240,416	205,632
1886	77,665	112,166	1907	211,090	175,552
1887	82,853	117,603	1908	193,858	162,270
1888	81,698	106,839	1909	187,454	171,654
1889	108,828	126,666	1910	168,619	147,484
1890	121,406	127,426	1911	175,803	133,833
1891	173,789	183,830	1912	136,431	96,046
1892	186,392	216,679	1913	79,139	69,982
1893	180,208	216,660	1914	70,121	62,610
1894	224,294	221,544	1915	55,066	56,888
1895	230,672	200,916	1916	33,289	42,772
1896	176,112	181,923	1917	19,319	30,786
1897	198,873	242,641			

Source: Reid, "The Charters Towers Goldfields", p.31; also *A.R.* 1917, pp.27-28. These figures include returns from Cape River and Broughton, but after 1878 the return from these fields is too small to affect the accuracy of the table appreciably.

Mining technology, on the other hand, developed only slowly, although two distinctive features survived throughout the life of the field. The characteristic underlie shaft, which followed the formation down from the outcrop of the reef, was originally adopted because of the unpredictability of the angle of dip of the ore body.[223] Although criticised on account of the expensive timbering it necessitated[224] the method remained

221. *A.R.* 1897, p.34.

222. Reid, The Charters Towers Goldfield, p.29.

223. The angle of dip of the Charters Towers ore bodies varied from about 27 degrees to (rarely) 65 degrees.

224. MacLaren, *Queensland Mining and Milling Practice*, p.4.

in use even when adequate data about the lie of the shoot was available from adjacent workings. After the discovery of the Brilliant reef it became necessary to sink a deep vertical shaft on the boundary of the lease where the reef was nearest the surface until the ore body was met. Thence the formation was, as in the earlier mines, followed by an underlie shaft. Also distinctive was the "pigstye" method of timbering used in many Charters Towers mines, particularly in underlies on the Day Dawn and Brilliant reefs. This style of timbering had been used during the early days of the Victorian field. Despite being abandoned in southern mines because of its high cost, it was retained in Charters Towers where it was found suitable for coping with the "flat" lodes, wide formations and unreliable hanging walls, and the shortage of heavy mining timber in the area.[225]

Much adverse comment was levelled at the high cost of mining in Charters Towers[226] but to some extent it was unavoidable. The geologist J.H. Reid pointed out that local conditions were responsible for much of the expense. As he explained:

> The local conditions referred to are the great number of narrow branch reefs which have been exploited, necessitating considerable dead work to work them as well as the construction of separate underlie shafts, which in turn involve the use of extra numbers of air winches and two, sometimes three, separate haulages to transport ore to the surface. Secondly the flatness of the greater number of reefs necessitating a large amount of shovelling in the stopes. Thirdly, the restricted thickness of the ore bodies and the presence of loose lodestuff between the quartz reefs and the walls, entailing a large expenditure in timbering the levels, shafts and winzes. 227

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225. Shakespeare, "Special Report on Methods of Mining", p.39. The vertical shaft followed by an underlie was also used at Croydon and Ravenswood.

226. A particularly strong criticism was recorded by the South African mining engineer Blane in his "Report on the Conditions and Modes of Working on the Goldfields of Queensland."

227. Reid, The Charters Towers Goldfield, p.41.

More tenable were criticisms of long term planning in the mines,[228] a subject particularly sensitive to management problems. It was very rare in Charters Towers to find one man responsible for the entire mining operation; more frequently separate managers were appointed to work the mine, mill and cyanide plant, and overall control was retained by the directorate. The Boards usually consisted of men who had a history of investment, and sometimes experience in mining and prospecting in the early days of the field. Having attained affluence, they tended to exude a confidence in their mining knowledge which, for the complex operations they presently controlled, was often unjustifiable. Further, as "practical" miners, they were scornful of mining theory and reluctant to entrust their operations to the competent graduates produced by the School of Mines after its establishment in 1901.[229] The position was not improved by the highly speculative nature of mining investment which demanded high dividends and consequently discouraged the equalisation of ores and the systematic prospecting by which the life of a gold mine may be extended. This concentration on the payment of dividends combined with the success of the cyanide process to disguise production trends at the turn of the century. The population of the field peaked at 26,780 during 1900[230] and business confidence remained strong. Nevertheless, even in the most productive year of 1899 the warden's returns show that the mills crushed 176 tons less stone than in 1898 for 8,388 fewer ounces.[231] The increased yield was, in fact, due entirely to the production of 278,256 ounces of cyanide bullion from the accumulated

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228. See Blane, "Report on the Conditions and Modes of Working on the Goldfields of Queensland", p.41; also MacLaren, *Queensland Mining and Milling Practice*, p.11.

229. Report of the Director of the Charters Towers School of Mines, in *A.R.* 1905, p.151. It should be noted, however, that graduates of the School were most successful in obtaining positions in other districts.

230. *A.R.* 1900, p.52.

231. *A.R.* 1898, p.35. Warden's returns become increasingly difficult to interpret after 1892 as they give annual production in terms of retorted mill gold plus the much less valuable cyanide bullion.

Table 2: Production and Dividends of Principal Mines.

Mine	Period	Ore Raised	Gold	Value of Concentrates and Tailings	Dividends
		Tons	Crude oz	£	£
Day Dawn Block and Wyndham	1883-1912	589,531	546,871	23,905	892,962
Mills D.D. United	1890-1916	507,428	428,429	410,701	667,500
Brilliant and St. George	1892-1914	371,088	462,296	67,493	787,800*
Brilliant P.C.	1889-1916	340,582	403,198	5,242	680,416
Day Dawn P.C.	1881-1913	275,128	379,859	8,854	638,000
Brilliant Extended	1894-1916	567,500	202,188	475,505	150,000
Queen Cross	1890-1910	138,125	287,039	8,062	653,466
Brilliant Central	1892-1914	245,477	215,523	37,763	294,166
Victory	1881-1916	98,803	216,360	18,984	305,925
Victoria	1887-1902	70,913	146,968	...	259,000
Brilliant Block	1892-1916	158,606	133,988	1,141	81,250
New Brilliant Freeholds	1894-1916	124,360	92,537	131,978	135,000
New Queen	1889-1907	106,366	121,515	2,059	57,617
Kelly's Queen Block	1892-1913	91,586	113,937	17,575	200,200
Band of Hope	1887-1912	86,454	104,637	4,341	111,400
Stockholm	1875-1916	97,667	64,894	114,387	+
Bonnie Dundee	1881-1916	59,296	70,808	17,277	34,685
Papuan, Bril. and Vic. (Queenton)	1887-1916	41,354	70,559	2,650	80,000
Victoria and Queen	1893-1910	35,730	63,613	1,075	66,225
Golden Gate	1888-1896	35,303	56,626	...	66,000
Day Dawn Gold Mines	1899-1904	51,937	54,120	...	70,488
Victoria and Caledonia Block	1899-1911	36,849	49,906	3,703	63,600

*Not including £75,000 previously paid by mines working the St. George reef at shadow depth.
+Not available.

Source: Reid, "The Charters Towers Goldfield", p.215.

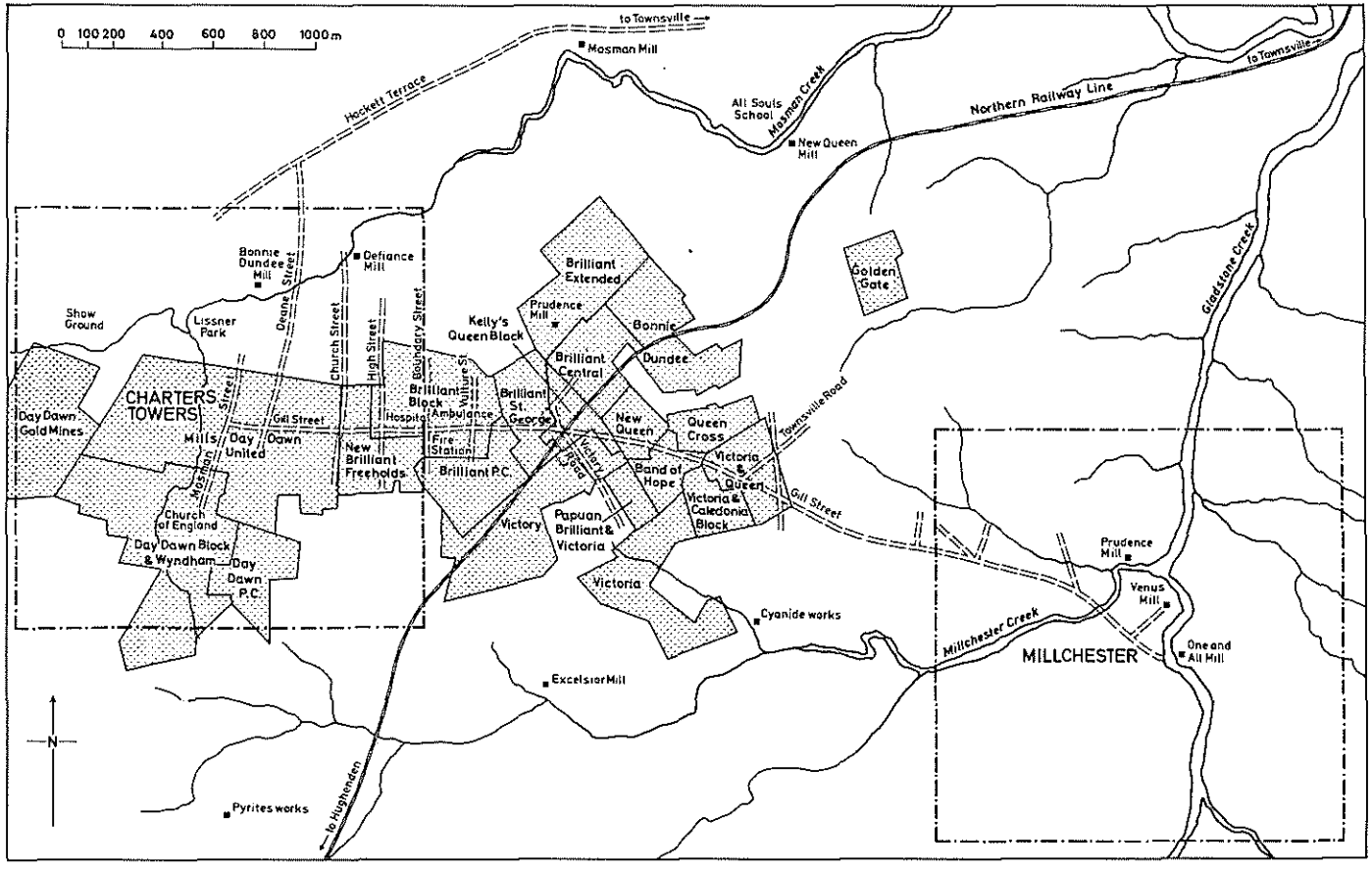

FIG 5: Charters Towers Leases.

tailings heaps. Fortunately the exhaustion of the old tailings[232] coincided with the last of the great discoveries on the field, the Queen Cross reef, during 1902.

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Like so many of the Charters Towers mines the Queen Cross Reef had worked a series of parallel reefs at different phases in its long and varied life. Part of the ground had been pegged in 1873 as the Just-in-Time Numbers 3 and 4 North claims, the first of which mined the Just-in-Time reef with some success. The claims were apparently worked out when, in 1876, a syndicate[233] took up adjacent ground as the Just-in-Time Block. The party was unsuccessful and the ground, together with the numbers on the Just-in-Time, was acquired by E.H.T. Plant[234] and E.D. Miles who, in the wake of the 1882 boom, floated the Queen Cross Reef Company, registered during 1884.[235] The company won some 16,500 ounces from the "old" Queen Cross reef[236] before reconstructing as the Queen Cross Reef GMCL, nominal capital £100,000, to undertake deep sinking in search of the Brilliant reef.[237] Early in 1902[238] a crosscut at a depth of 876 feet

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232. Small amounts of tailings continued to be recovered from the water courses and treated by small operators, but they have an insignificant effect on the annual production figures.

233. R. Collins, E. Tubbs, R. Smith, Joe Hammond and T. Farrington.

234. Plant bought into the syndicate just before the shaft bottomed. It was subsequently announced that the syndicate had bottomed on a "duffer" and Plant and Miles were able to buy the mine and its equipment for a few hundred pounds. After taking up the adjacent ground they floated the Queen Cross Company and the Victoria and Queen which was the third highest producer on the field in 1903. Green, *Mining History of Charters Towers*, u.p.

235. Register of Companies, Charters Towers, MWO 11A/T3, *Q.S.A.*

236. Reid, The Charters Towers Goldfield, p.281.

237. Register of Companies, Charters Towers, MWO 11A/T3, *Q.S.A.*

238. Although Reid gives the date as 1901, the year stated by the warden, F.P. Parkinson, has been accepted. Sellheim left Charters Towers in 1888, succeeding wardens were: A.C. Haldane (Acting) February to October 1888; W.M. Mowbray October 1888 to April 1900; L.E.D. Towner April 1900 to September 1901; F.P. Parkinson September 1901 to March 1905.

cut the "new" Queen Cross reef two hundred feet east of the shaft, and the mine immediately became the biggest producer on the field.[239] In the boom which followed share values soared, and thirty new companies were formed, some of which were of value only to their vendors and were described as having "vied with one another in acquiring the varied contents of the scrapheap."[240] Reaction was inevitable and the boom collapsed towards the end of the year. Nevertheless the confidence generated by the discovery enabled the larger companies to call in contributing capital to finance some rewarding prospecting.[241]

The Queen Cross Reef dominated the field from 1902 until 1905, but its career demonstrated how little had been learned about mine management. The shoot, which on an ounce per ton basis was probably the richest (though certainly not the largest) in the history of Charters Towers, was gutted out to provide £614,166 in dividends within three years. For the greater part of this time two shillings per share was distributed each month, and for 1903 the mine showed a profit equal to £686 for every working day of the year. Although the company purchased a twenty-five stamp mill and installed electricity into both mill and mine, there is

239. Reid, The Charters Towers Goldfield, p.180.

240. *A.R.* 1902, p.141.

241. For example during 1902 the Brilliant Deep Levels reconstructed to finance a new shaft, the Day Dawn Block and Wyndham took up more land and began diamond drill prospecting and the Brilliant Extended paid its first dividend. Figures for dividends and calls were as follows:

Year	Dividends	Calls	Year	Dividends	Calls	Year	Dividends	Calls
	£	£		£	£		£	£
1890	152,812	*	1899	301,535	67,222	1908	100,980	60,522
1891	255,020	*	1900	299,205	56,241	1909	156,819	57,475
1892	341,692	112,521	1901	271,113	43,001	1910	112,190	58,921
1893	300,898	61,889	1902	415,157	103,746	1911	131,635	64,283
1894	289,074	50,999	1903	460,042	129,681	1912	35,981	36,023
1895	244,800	91,761	1904	399,128	83,067	1913	49,842	37,411
1896	254,616	130,747	1905	219,610	93,461	1914	5,978	22,407
1897	343,318	93,557	1906	176,602	125,134	1915	27,907	10,875
1898	308,588	81,093	1907	120,099	81,863	1916	19,408	7,105

*Not available

Source: Reid, The Charters Towers Goldfield, p.32.
For the dividends paid by individual mines see Table 2.

no evidence that any serious prospecting was done on the lease until after the Queen Cross shoot pinched out during 1905. Certainly no attempt was made to equalise the ores to lengthen the life of the mine and preserve the jobs of its three hundred and fifty employees.[242]

On the other hand it might be suggested that the activities of the Queen Cross company demonstrated how much North Queenslanders had learned about the working of the stock exchange. In 1901 large numbers of shares had been purchased by Charters Towers residents from the English investors who had bought into the property after the reconstruction of 1892. The price of shares during 1901 was fifteen pence; they had risen to over two pounds[243] in 1904 and were falling rapidly when, in 1905, an explosion of dynamite which could be heard seventeen miles away[244] blew up the engine house at the mill allowing the abrupt closure of the mine. Despite large rewards offered by both the Queensland government and the chairman of directors E.H.T. Plant, the saboteur was never discovered. The explosion arrested the fall in share values - it is not known how many shares changed hands before the mine was reopened and it was revealed that the Queen Cross reef had pinched out.

Such emphasis on the speculative aspects of mining investment contributed to the development of acute operational problems. Profits which were needed as working capital to equip and ventilate the mines were disbursed as dividends in an effort to boost the price of shares. As the central mines sank below two thousand feet their companies found themselves ill-equipped to cope with the problems of deep mining. Although the *Mines Regulation Act* of 1889,[245] which brought the smaller

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242. Two hundred and fifty miners and an estimated one hundred surface hands.

243. Share values are quoted in C.T. Elmslie, *Mining in Queensland: A Descriptive Account of the Principal Gold Mines of Queensland with Survey Plans of the Principal Goldfields* (London 1904), p.45.

244. *A.R.* 1905, p.32.

245. 53 VIC No. 7. This superseded the *Mines Regulation Act*, 1881.

mines under the supervision of the inspector and required the registration of mine managers,[246] prescribed additional safety appliances for man cages, the dangers of transport in the shafts increased in proportion to their depth. Indeed, since it added to the cost of safety cages without insisting on their use it discouraged the installation of such devices. In 1890 only three cages were on the field, rising to nine by the turn of the century,[247] and in 1901 MacLaren noted that in the Brilliant Deep Levels mine the only transport for the miners in the 2,556 ft. vertical shaft was a bucket, innocent of guides or even a swivel hook.[248] Danger in the shafts was increased by incompetent maintenance on some of the winding gear, an extreme example of which resulted in an accident in the Brilliant Central early in 1903 when an ill-adjusted brake on the winding drum allowed a safety cage containing six miners to be dropped down the shaft.[249] More common were accidents caused by the breaking of steel ropes due to the use of heavy lubricants which did not penetrate their inner fibres.[250]

Ventilation, however, was the area of mining which suffered most from the short-sightedness of the Charters Towers directorates, which sank shafts without consideration of future air circulation. Almost all the ventilation on the field was effected by what were somewhat

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246. Interestingly the Act required engine drivers to possess a certificate of competence but, while it introduced such a certificate for mine managers, did not insist on their obtaining one. Mining law was codified in 1898 when the 1889 statute became a part of the new statute.

247. *A.R.* 1890, p.111; also *A.R.* 1900, p.162. Safety cages were also unpopular since they tended to impede ventilation in mines with small diameter shafts.

248. MacLaren, *Queensland Mining and Milling Practice*, p.8.

249. *A.R.* 1903, p.132.

250. See for example *A.R.* 1892, p.128; 1894, p.132; 1901, p.152; 1902, p.141. During 1902 six accidents, two of them fatal, were caused by breaking ropes. Signals were another source of danger in the shafts, particularly the use of the same signal (one knock) to indicate both "stop" and "hoist". Three accidents, two of them fatal, were caused by this practice in 1903. *A.R.* 1903, p.132.

euphemistically called "natural methods": that is air entered the mine through a downcast and left through an upcast shaft, without mechanical assistance.[251] At best, due to the high surface temperatures, the system was inefficient; in mines which had only one shaft it was impossible. On other fields single shafts were divided into separate compartments to provide an upcast and a downcast, but in Charters Towers the size of most shafts precluded this practice. Indeed, in 1901 Blane commented on ". . .the ridiculously small shafts, which would be quite inadequate for the proper ventilation of the mines even if filled with the best known appliances",[252] and as late as 1912, when there were twenty shafts between 1,500 and 3,000 feet deep on the Brilliant and Day Dawn reef systems, their aggregate area of unimpeded downcast was only 123 square feet.[253]

Clearly the solution lay in connecting the underground workings of adjacent mines to co-ordinate the use of their shafts. However this system gave rise to many problems, one of which was tragically demonstrated during the underground fire which ended the life of the Brilliant P.C. in October 1904. Carbon monoxide generated by burning mine timbers travelled through the underground connections to kill three miners in the Brilliant Block and another three in the Mexican, as well as a member of the rescue team.[254] Lack of co-operation between the managers of the connected mines was common as each manager naturally wanted his shaft to be used as the downcast. To this end they resorted to a variety of dubious practices, some of which led to interference with

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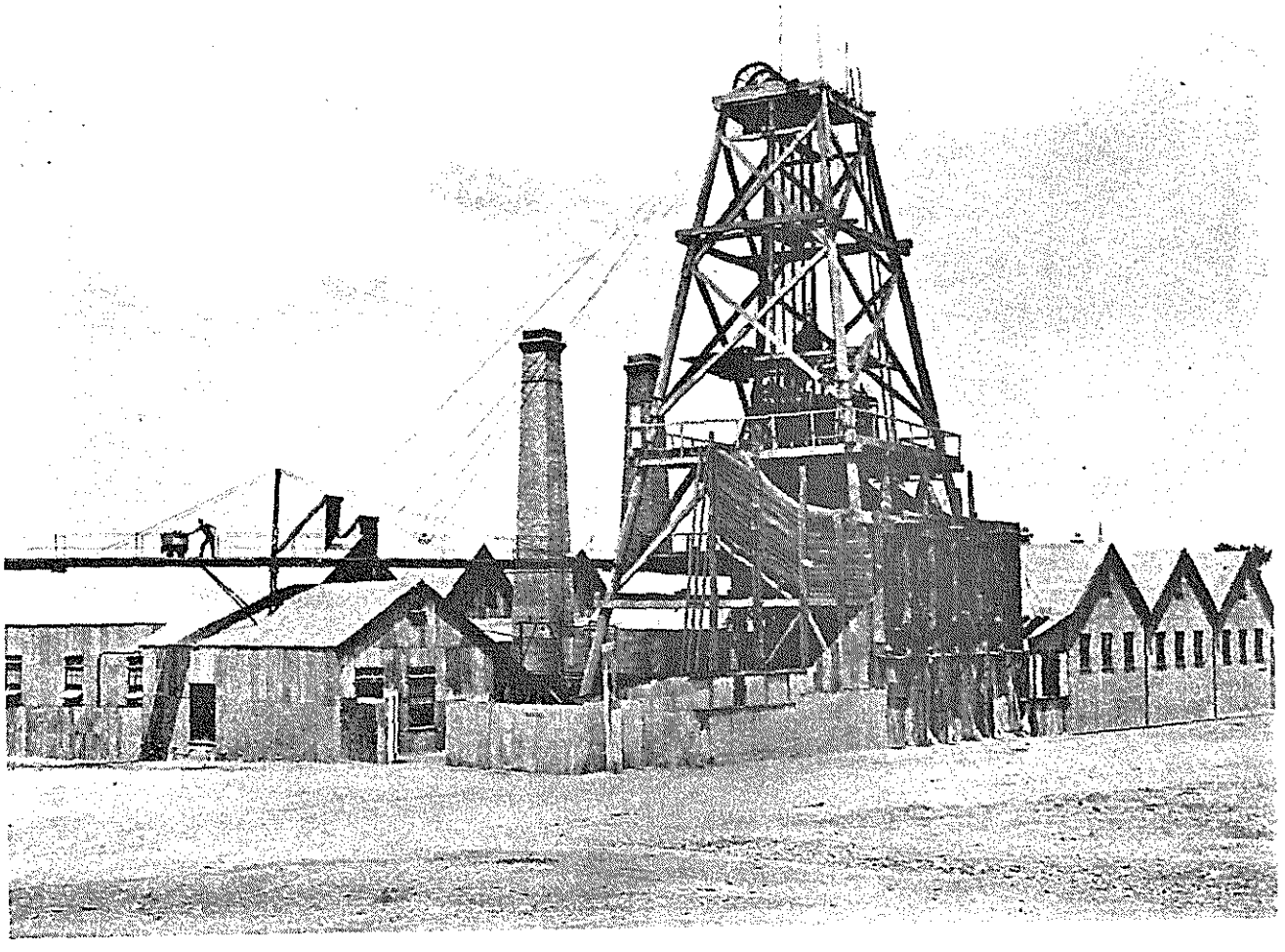
251. A Cappell fan was installed in the Brilliant Extended during 1897, and the Brilliant Deeps experimented briefly with a 4'8" Sirocco fan during 1912.

252. Blane, "Report on the Conditions and Modes of Working on the Goldfields of Queensland", p.39.

253. *Report of the Board of Inquiry*, p.xv. There were seven downcast shafts with an aggregate superficial area of 340 square feet, and a superficial area unhampered by cages of 123 square feet. The average shaft size was 7'x7', compared with 12'x16' or 16'x16' which was the practice in deep mines in Victoria. Circular shafts of about 18' diameter were in use on the Rand.

254. *A.R.* 1904, p.31.



P22: Mills United headframe [*Q.G.M.J.* 1905]

P23: Aftermath of dynamite explosion at Mills United [*N.Q.R.* 1897]

the ventilation of the connected workings.[255] The most serious effects were felt by miners working in levels which extended below the connections. The Inspector recorded temperatures of up to 110 degrees in the Brilliant Extended which, with a vertical shaft of 2,800 feet, was the biggest employer of underground miners on the field: 447 miners in 1910.[256] Even worse was the Brilliant Deeps where one hundred and fifty men worked nearly three thousand feet underground. Their only air came through a single shaft of three 4'x4' compartments: it was commonplace for men to faint at the face[257] before 1914 when a government subsidy enabled the cutting of a connection between that mine and the Brilliant Block.[258]

The related problem of dust was considered by a Royal Commission during 1910 and 1911.[259] Evidence given during the hearings revealed considerable confusion about dust related diseases. The Commissioners eventually concluded that all deaths ascribed to miners' pthisis were actually caused by tuberculosis and, while admitting that pulmonary fibrosis was a predisposing factor in the contraction of the disease, insisted that fibrosis was not widespread among Queensland metalliferous miners.[260] In fact one hundred and eleven cases of pthisis had been diagnosed in the municipality of Charters Towers in the decade preceeding the Commission,[261] and later medical research suggests that these miners were probably suffering from silicosis caused by silicone particles in

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255. *A.R.* 1909, p.155.

256. *Ibid.*, p.156; 1910, p.39. In 1909 the Inspector of Mines admitted that ". . .the conditions under which some men have to work must be highly injurious to them", and added that ". . .in places the air was so heavily charged with dust that it was almost impossible to enter them."

257. *A.R.* 1906, p.159.

258. *A.R.* 1914, p.38.

259. *Royal Commission on Health Conditions in Queensland Mines*, Q.P.P., 1911-12, Vol. 3.

260. *Ibid.*, p.559.

261. Register of the Notification of Infectious Diseases, 1901-12, 11 CHA/19, *Q.S.A.*

the local granite.[262] The new *Mines Regulation Act* of 1910[263] treated dust as a part of the ventilation problem, and made allowance for dust prevention appliances to be used only if required by the Inspector. This led to the installation of water buckets in some Charters Towers mines, but the use of even these was desultory since any increase in humidity created as much discomfort as the dust itself.

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After the failure of the Queen Cross Reef the gold yield fell rapidly; for the first time in the history of the field there was no single fabulously rich mine to boost production figures. The most profitable operation at this stage was the old Mills Day Dawn United, by then well into its decline. Some investors turned their attention to the growing silver and base metal industry and early in 1907, when metal prices were particularly high, the Ambrose Silver-Copper Mines and Rio Tinto companies were formed to mine in the Stockyard Creek district.[264] Others, however, retained their faith in Charters Towers and, sometimes subsidised by a Legislature which feared the political and social consequences of the collapse of the state's largest mining centre, continued to search for yet another parallel reef below their exhausted workings.[265] In the old Revenge shaft a government financed diamond drill sank over 3,000 feet, only to augment the already considerable list of failures of this machine in Charters Towers. In 1907 the Brilliant P.C. was let on tribute[266] and the following year the Day Dawn P.C. followed suit.[267] During 1909 an aggregate of 2,000 feet of vertical shaft was

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262. See J.E. Peterson, *Industrial Health* (New Jersey 1977), p.64; Douglas W. Piper (ed.), *Medicine for the Paramedical Professions* (Sydney 1970), p.66. Dr. I. Dickson, Townsville, Informal communication, 23 March 1981.

263. 1 GEO V. No. 24.

264. *A.R.* 1907, p.34.

265. For example Pfeiffer's Day Dawn Gold Mines and Brilliant Deep Levels received subsidies. The Venus Battery was sold to the Queensland State Government during 1919.

266. *A.R.* 1907, p.34.

267. *A.R.* 1908, p.35.

sunk without any new discovery,[268] and the next year the Day Dawn Block and Wyndham which, two years before, had employed 174 miners and a large surface workforce both at the mine and at the company's Burdekin Mill, was assigned to tributors.[269] In 1911 the Rockhampton field, dominated by the Mount Morgan mine, replaced Charters Towers as the state's most important goldfield.

As the deep mines brought up their last shifts water rose in the complex system of underground workings. Although few mines were troubled by heavy ground water, for many years the field had encountered a growing problem with surface water which leached through the levels to accumulate in the deepest workings. The problem intensified as exhausted mines ceased bailing, hastening the demise of the few still open. It also added enormously to the difficulties of tributing parties which, quite unable to finance drainage, were pursued by rising water through consecutive levels until forced to abandon their operations. Hopes were raised in 1916 when the new Labour government, in fulfilment of its election promise to "revive the mining industry",[270] subsidised the formation of a Drainage Board to finance and co-ordinate the drainage of the central mines. Nevertheless in 1917 the last of the big companies, the Brilliant Extended, brought up its final shift.

Unlike so many of Queensland's gold mining towns Charters Towers did not die when its reefs were exhausted. It remained the centre for small mining operations which were serviced by the Venus Battery (a state owned mill from 1919) until the Second World War. Despite the removal of many of its domestic and commercial buildings to the coast and to the growing Cloncurry field, it continued to act as the institutional hub of the surrounding pastoral district, and as a monument to one of the country's great goldfields.

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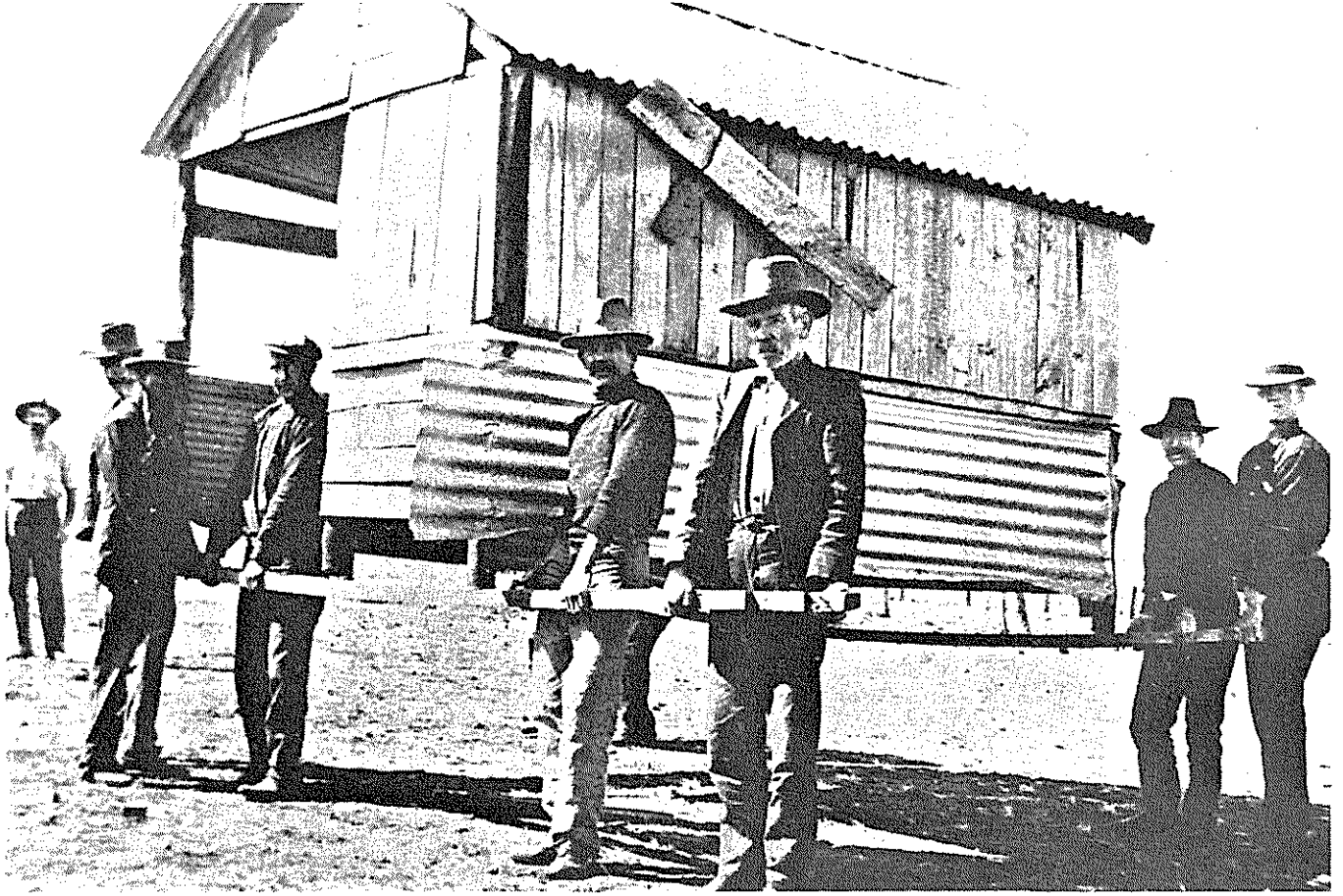
268. *A.R.* 1909, p.33.

269. *A.R.* 1910, p.32.

270. D.J. Murphy, et al. (eds.), *Prelude to Power: The Rise of the Labour Party in Queensland 1885-1915* (Brisbane 1970), p.296.



P24: Relocating miner's hut, Cloncurry, 1918 [*Queenslander*]

QUEENSLAND MINING STATUTES 1859-1930

Michael Drew

The uninformed observer could be excused for thinking that planning of mining development, and therefore the law in relation to mining, is solely the product of the endeavours of government in the post-war years. This impression is dispelled by delving into the rich overburden of mining legislation dating back beyond the separation of Queensland as a self-governing colony. The mining statutes of the years 1851 to 1930 are the prototypes of current-day legislation. Much of the language of present statute law can be traced to early attempts to regulate the industry, and many of the present concepts of rights and legal interests in mining ventures have their genesis in 19th century legislation.

In 1859 the law governing mining matters in Queensland was the inherited law of New South Wales, which included the general common law of England, and some statutes, up to 1828.[1] The New South Wales Mining Law comprised proclamations by the Governor, Statutes and decided cases. The proclamations related to the discovery of gold around Bathurst and on the Victorian diggings and they notified the Queen's subjects that any gold found was the property of the Crown, irrespective of where it was found.[2] Regulations for the issue of licences to dig gold were made in 1851 and 1852. Soon after, the first New South Wales statute, *The Gold Fields Management Act 1852*[3] became the governing enactment. This was replaced by the 1857 *Gold Fields Management Act*[4] which although

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1. See the *Australian Courts Act*, 9 GEO IV c.83, which provided that such English laws prior to 25 July 1828 were applicable to New South Wales except where altered by valid local statutes and case law.

2. In *Attorney-General-v-Brown* (1847) 2 S.C.R. (N.S.W.) 30, it was determined that all waste lands belonged to the Crown from date of settlement.

3. 16 VIC No.43. The first Australian gold mining statute was the *Goldfields Act 1852* (15 VIC No.15) passed by the legislature of Victoria.

4. 20 VIC No.29.

repealed in New South Wales in 1861 remained the basis of Queensland mining law until the comprehensive 1874 Queensland *Gold Fields Act*.

Between the years 1859 and 1874 the Queensland legislature dealt with the mining activity of the new colony in a piecemeal fashion. Various statutes empowered the Governor-in-Council to alienate Crown lands for mining purposes other than gold mining.[5] The first statute passed by the Queensland legislature connected directly with the product of mining was the *Gold Export Duty Repeal Act 1860*, although this related to gold won in New South Wales. Other statutes dealt with ancillary mining matters, for example *The Gold Fields Town Lands Act of 1869* and its replacement, the *Gold Fields Homestead Act of 1870*, which allowed miners to gain security of tenure through leases over land they occupied with the possibility of purchasing the freehold title upon expiration of the lease. The 1868 *Rules of the Gympie Local Mining Court* which regulated proceedings on that gold field, which had been discovered in the previous year, complemented the early mining-related statutes.[6]

In the thirty years following 1870 gold discoveries in Queensland were responsible for a burgeoning economy and an influx of population with attendant political and social ramifications. The fact that during the period 1870 to 1930 no fewer than four Royal Commissions were conducted into the mining industry and, as well, the enactment of over seventy statutes and consideration of numerous short-lived Bills indicates the considerable time and energy expenditure of the parliamentarians and their lobbyists. The result was, despite one attempt

5. Examples of these were the *Crown Lands Alienation Acts* of 1860 and 1868 (24 VIC No.15 and 31 VIC No.46) whereby purchase of up to 640 acres at £1 per acre was possible. Another was the *Immigration Act 1864* (28 VIC No.17).

6. C.A. Bernays, *Queensland Politics During Sixty Years* (Brisbane 1919) notes that the language of the rules "was materially different" from that in use in his own time, "there being several instances in which nominatives and verbs are in strong disagreement with one another". (The rules derived their validity from the New South Wales statute (20 VIC No.29)).

at codification,[7] a plethora of legislative measures which to lawyer and layman alike presented a labyrinthine set of rules as complex as the shafts and drives of the mines they purported to regulate.[8]

Rather than taking a strict chronological reading of the law this paper is a concatenation of like statutes under four main themes: Management of gold and mineral fields, Health and safety, Legislation affecting the economy of the mining industry and the Living Environment in mining areas.

MANAGEMENT OF GOLD AND MINERAL FIELDS 1859-1874

In 1870 the importance of mining to colonial development and the realization that the patchwork of inherited law overlaid by the patois of the Gympie Mining Warden Rules would be inadequate for effective regulation of the now booming gold fields caused the Legislative Assembly to issue a Royal Commission to the Hon. Ratcliffe Pring Q.C.[9] to survey the existing practices and to recommend curative legislation. With characteristic efficiency Pring visited the northern goldfields within a month of receipt of his commission.[10] He noted that "the apathy of the miners seemed remarkable....although

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7. A popular preoccupation among lawyer-politicians at the time.

8. For a detailed treatment of Queensland mining law to 1972 see C.F. Fairleigh Q.C., *Mining Law of Queensland*, LLM thesis, University of Queensland, 1973.

9. Pring was born on 17 October 1825 in England. He practised at the N.S.W. Bar and the Queensland Bar as Crown Prosecutor (1857-1859). He was a member of both the Legislative Assembly and Legislative Council between 1860 and 1879 and was at one time Attorney-General. He became a Supreme Court Judge in 1880 and died in 1885.

10. Bernays, *op.cit.*, p.11 describes him as "an exceptionally industrious legislator...a vigorous speaker with a hasty temper and a very remorseful nature after his frequent outbursts had subsided." See Report: *Votes and Proceedings*, 1871, p.575.

a general feeling of satisfaction seemed to pervade the community that their interests had been thought of", and within weeks he had produced a recommendation which served as a blueprint for the comprehensive 1874 *Act for the Management of Gold Fields*. As the embryonic mining industry relied heavily on the prospecting endeavours of individuals, the Act's major provisions focused on leases, consolidated miners' rights and the size of claims.[11]

(a) Leases

Under the 1856 New South Wales statute the Governor-in-Council was empowered to grant leases in auriferous areas.[12] Pring's inquiry found "among working miners a strong objection to this system based on the ground of monopoly of gold lands". The new Act and Regulations gazetted in October 1874 provided for the grant of leases of not more than twenty-five acres for terms up to twenty-one years at the rental rate of £1 per acre per annum with a moratorium on the grant of such leases for two years following proclamation of a field. The compensation provisions for occupiers of such land were now incorporated into the Act.[13] Section 12 stated that such leases were voidable at the will of the Governor should lease conditions be breached or for non bona fide use. The Regulations further "fleshed out" the protections against monopoly and speculation by providing a stringent set of working conditions. Whereas the 1870 Regulations had attempted a complete management scheme covering such diverse matters as leases of auriferous

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11. For a detailed discussion of the political aspects of lease sizes and working conditions see J. Stoodley, "An Early Aspect of Queensland Mining Law," *U.Q.L.J.* 5 (1966) p.179. *Passim.*

12. 20 VIC No.29 S.6. The later General Regulations of 1870 (*Queensland Government Gazette*, Vol. XI, No. 17, p.213) provided for two classes of lease, 5 year auriferous and quartz leases and leases for longer periods up to 21 years. These Regulations also provided penalties for non-compliance with working conditions and compensation provisions for occupiers of business and residence areas who were disturbed by mining operations.

13. SS. 25 & 26.

tracts [Regs. 78 to 82] and the marking and stacking of quartz stone [Reg. 71], their provisions were regarded by administrators and miners alike as "so vague and ambiguous in expression, that no uniform or intelligent legal construction can be placed on them".[14] The new Regulations were much more precise, particularly in the application process and the survey requirements for leases. Furthermore Wardens could assess the number of miners required to work the lease so granted and the circumstances under which these working conditions could be relaxed. However the Act and Regulations were silent as to the requirements regarding machinery erection, as Pring had offered the view that this would "hamper the enterprise of lessees".[15]

(b) Miner's Rights

The unrest of the early 1850s on the Victorian Diggings influenced the introduction of the concept of confering rights on individual prospectors in relation to mining, occupation and title to gold found; the Miner's Right was effective only in respect to wastelands of the Crown.[16] It was adopted by the 1857 New South Wales legislation and therefore part of the mining law of Queensland after separation. By 1870 this emphasis on the rights of individual miners and the limitations on the areas of ground which could be worked by a party of miners had discouraged attempts to combine for a more systematic exploitation of a field.[17] The new Act accordingly provided for a

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14. Pring's Report, *op.cit.*, p.576.

15. The labour requirements themselves seem to have been a measure aimed at absorbing unsuccessful miners - "a numerous class on every gold field" - into steady and remunerative employment. These requirements together with the anti-speculative stance taken toward the grant of leases were hoped to remove the working miner's opposition to the idea of leasing of land and thus create an attractive proposition for investment capital.

16. 18 VIC No.37. (1855-Victoria).

17. Regulation 8 of 1870, restricting the numbers in a mining party to four, was a limitation found necessary in the early days of gold digging, as it was the custom for large numbers to rush from one place to another on the slightest intimation of a new discovery.

consolidated Miners' Right [S.7] which enabled companies and co-partnerships to exercise the statutory privileges outlined in section 9.[18] The possible time the Right might remain in force was increased to ten years at a fee of ten shillings per year. The Act further deemed property rights (and shares to such rights) gained through Miner's Right tenure to be chattel interests rather than real property interests, but that notwithstanding this limitation on the land tenure in respect of claims under the Miner's Right, the holders could assign or encumber the property (or any part of it) in order to finance mining operations.[19]

(c) General Aspects of Gold Field Management

(i) "Frontage"

The pre-1874 law covering reefing contained some difficulties for administrators due to the system of "frontage" adopted in marking out the length of the claim; the width of the claim was considered less important because of the miners' practice of following the lead or reef down. Unlike the deep leads of the Victorian Diggings the geology of the Queensland reefing districts caused problems for administrators of gold fields. Following the line of a reef miners frequently found themselves beneath neighbouring claims. The Gympie Warden's rules and the 1870 Regulations introduced the requirement of pegging "block" claims, thus fixing length and breadth of individual areas to remedy an anomaly arising from Victorian legislation. Many claim holders under the old law regarded themselves as having the right of following the reef wherever it went. The 1874 Regulations [Regs. 45 & 47] reaffirmed the policy of block claims and increased the base line along the reef to fifty feet per claim.[20]

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18. The privileges included the right to possession and occupation of Crown Land for mining purposes, certain timber and construction rights, water storage and diversion rights and residency rights. There was no limitation of numbers in co-partnerships.

19. Reg. 33 of 1874 set up a registration system for liens given over shares or interests in claims, as security for payment of debts.

20. Pring had recommended 80 feet.

(ii) "Payable gold"

Pring reported great dissatisfaction among miners over the requirement that should a claim be found to yield "payable gold" a 100 per cent increase in workers employed for at least the following three months was necessary. The interpretation of this requirement varied according to the goldfield in which the discovery was made but on most the measure was mandatory irrespective of the subsequent yield of the mine. The main objection was the absence of a definition of "payable gold" and uncertainty as to whether the term took account of such variable charges as extraction costs and crushing expenses. The 1874 Regulations [Regs. 48 & 49] therefore deemed a quartz reef to be payable when the quantity of gold obtained equalled, in value, the sum which had been paid in wages to all miners of the working party actually employed thereon during the extraction and treatment process, together with the necessary crushing overheads. These two issues exemplify the minutiae which concerned the early miners, and on the proper regulation of these issues depended the harmony and prosperity of the gold fields. Further examples, such as the regulation of dams, races, puddling claims and machinery areas, are in the 1874 Act and Regulations.

(iii) Existing pastoral leases

The New South Wales legislation gave the Governor-in-Council power [S.10] to suspend pastoral leases extending over gold fields, subject to the proviso that such interference was allowable only so far as it was necessary for the accommodation of miner's live-stock, the supply of water and the effective working of actual mining areas. This was subject to a compensation clause. The 1874 Act was more specific, giving not only a suspension power but also allowing the possibility of absolute cancellation.[21] This subtle change to the law indicates the increasing importance of mining to the colony vis á vis pastoral interests.

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21. 38 VIC No.11. S.25, although remission of "just and reasonable rent" was provided for.

(iv) Business Licenses

The commercial interests of gold fields were also now subject to more specific regulation. A Business License [SS.17 to 20] entitled the holder to occupy up to a quarter acre for residence and business purposes. Individuals were limited to one such portion. The maximum license period was ten years at an annual cost of four pounds. Such licensees were deemed in law to be possessed of the surface of the land and the Act declared this tenure to be a chattel interest (rather than realty) which could be transferred by endorsements on the license document at a fee of five shillings.

(v) Administration of justice

Pring's report noted that "the present provision for the determination of mining disputes and for exercising the right of appeal do not appear to give general satisfaction....and may well be unsuited to the gold mining community." He successfully recommended a Warden's Court for each gold field with jurisdiction to try all cases concerning encroachments, claims to land and cases over rights to auriferous soil or stone. All matters in which pecuniary compensation was sought or money demands made were also within its jurisdiction. Rights of appeal from the Warden's Court lay to the District Court which was invested with an Equitable Jurisdiction as well as being given sole jurisdiction involving title to land. Pring specifically disapproved of the concept of elected local Mining Courts or Boards with regulation-making powers such as those which were the subject of an earlier Victorian Royal Commission in 1866 and the 1867 Gympie model. He felt the changes in the rules between the various gold fields "would greatly confuse and embarrass the miner on his removal from one gold field to another." Furthermore this situation would "tend to depress the industry by creating a sense of insecurity in the holders of mining property as well as creating uncertain meaning and doubtful legality of laws, framed by those who, perhaps, may not possess sufficient legal knowledge for the purpose." Pring also rejected the notion of a Central Board located in Brisbane.

P25: Ratcliffe Pring [Oxley Library]

P26: Alluvial claims, North Queensland [Rev. F.C. Hall]

The 1874 Act provided for appointment of Mining Wardens by the Governor-in-Council. Wardens could deal with matters before the Court either summarily by consent of the parties or in conjunction with two Assessors selected by ballot (subject to a challenge system similar to the jury selection process) from a list of 200 local persons "of good repute who shall be registered claimholders, machine owners, leaseholders or business licensees."[22] In addition to the normal court facilities such as a "payment in" mechanism, the Warden had special powers which indicate the unique nature of the Warden's position on mining frontiers of that period. The Act conferred the power of granting injunctions upon the Warden, a measure normally the exclusive preserve of the Supreme Court exercising its Equity Jurisdiction. This power enabled the Warden to restrain persons from encroaching, occupying, using or working claims, races, dams and so on. Injunction also lay to the sale, damaging or interference with claims, machinery, stacked earth or gold.[23] Such Injunctions could issue without notice and remain in force for seven days. Furthermore the Warden could authorize surveys and trespass on claims to check encroachment allegations by litigants. By S.51 the Warden could seize gold to satisfy debts, damages or costs found to be proved. Appeal regarding facts in issue lay to the District Court which conducted circuits to the larger gold field towns,[24] and such actions involved re-hearing *de novo*. Appeals on questions of law lay to the Supreme Court located in Brisbane, Rockhampton and Townsville.[25]

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22. See 38 VIC No.11. S.S.39 & 40.

23. See 38 VIC No.11. S.54. By S.69 the right to sue was limited to holders of Miner's Rights.

24. For a history of North Queensland circuit courts see J. Hunter, "A Historical Perspective", *Qld Law Society Journal* 1975, Vol. 5, No. 4, p.113.

25. *The Gold Mining Appeals Act 1880* (44 VIC No.7) confirmed that all mining appeal cases should be heard according to the 1874 Act, notwithstanding anything contrary in other statutes.

(vi) Rewards for discovery of gold

Pring's exhortation that prospectors' services "should be recognized with no niggard hand" resulted in S.97 of the new Act which authorized a reward not exceeding £1,000 to the actual discoverers of any new gold field. The regulations further dealt with the mechanics of the notification of the location of gold discovered.[26]

GOLD FIELDS ADMINISTRATION LAWS 1874-1898

Over the next 24 years the 1874 Act was subject to six amendments and many independent, complementary statutes dealing with health and safety, economic and homestead issues were enacted. The amendments to the Principal Act dealt with such matters as the influx of Asiatics to northern gold fields,[27] mining under Reserves and the use of Miner's Commons. Each of these issues is discussed under subsequent subject categories.

MINERAL LANDS ADMINISTRATION 1860-1898

Prior to 1898, successive Parliaments dealt with minerals other than gold by separate statute. The *Crown Lands Alienation Acts of 1860 and 1868* which provided the possibility of large areas for non-auriferous metals exploration and development were supplemented in 1872 by the *Mineral Lands Act*. This created "proclaimed areas", which in 1882 became "mining districts" under the control of Commissioners.[28]

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26. Earlier, in 1860, it had been proposed by vote of the Legislative Assembly that £500 be given toward the expense of a properly organized party in order to ascertain whether a payable gold field existed in the Colony.

27. Bernays, *Queensland Politics, op.cit.*, estimates that there were in 1876, 7,000 "followers of Confucius" on the Palmer field alone. Later, a Royal Commissioner estimated their numbers at 17,000.

28. See 36 VIC No.15 and 46 VIC No.8. The 1882 Act established a Commissioner's Court with a similar jurisdiction and power grant as the Mining Warden's Court [SS.27 to 38]. Both Offices were generally performed by one official.

It enabled the sale of up to 320 acres (with a minimum of 20 acres) at thirty shillings an acre. Upon proof of the expenditure of £1 per acre, the fee simple (freehold) was to issue to the purchaser. In addition, leases of land to 99 years (at five shillings per acre per annum) were permissable. Not unexpectedly the 1872 Act caused a rash of speculation with 55,000 acres being sold under the scheme, most of which was kept idle. By comparison, up to 1882, the tightly controlled gold field leases (only 1,500 acres) yielded many millions of pounds in output.

The *Mineral Lands Act of 1882*,[29] repealing the 1872 Act, nevertheless preserved all existing rights. The new measure created the concept of the non-transferable mining license for renewable periods of twelve months and was valid only for specially designated sectors of the Mining District. The rights and privileges of the licence in relation to occupation of lands and constrictions thereon were similar to those of a gold field Miner's Right holder.[30] The Act further provided for mineral leases up to 160 acres at ten shillings per acre per annum, on "such conditions as the Minister deems equitable" for a period not exceeding 21 years.[31] Exemptions from the areas which might be leased included land occupied under mining/business licenses and alluvial ground, unless determined, again by the Minister, to be unsuitable or abandoned. A royalty of one per cent of value of gold found was chargeable. Should "payable gold" be discovered, the 1874 *Gold Fields Act* was to apply with certain protective priority rights available for the mineral lease holder. Lastly a rather stringent penalty of five pounds a day was

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29. 46 VIC No.8.

30. The licence cost ten shillings [S.7] and was available to all except Asiatics and Africans. Similarly, transferable Business Licenses were available with all the rights and privileges which existed on gold fields.

31. See 46 VIC No.8. S.15(3). The first reference to the present-day well developed *direct* ministerial discretionary power.

applied to leaseholders mining metals other than that stated in the lease without permission of the Minister.

The 1882 Act was deficient in respect to coal miners, whereupon the *Mineral Lands (Coal-Mining) Act 1886*[32] was enacted. It provided for issue of licenses to search and occupy Crown Lands as well as conferring power to dig and to pasture stock on such lands. Licensees could occupy up to 640 acres at sixpence per acre per year. Leases were also possible under this Act to license holders up to a maximum of 320 acres, rents being by way of royalty at the rate of threepence per ton of coal removed for ten years, sixpence per ton thereafter.[33] These provisions prompted speculation, so much so that in 1891 an amendment took the discretion for the issue and renewal of licenses away from the mineral lands Commissioner and vested that power with the Minister.[34]

Because of the proliferation of legislative measures in the two decades since the Principal Act's proclamation, Parliament and administrators recognized the need for some rationalization in keeping with the spirit of codification abroad during this era.[35] In 1897 a Mining Commission comprising five members was appointed to consolidate and amend the former laws relating to gold fields. mineral lands and mining in general.[36] Their findings resulted in

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32. 50 VIC No.20.

33. Under S.7 if the miner found new coal more than 15 miles from existing mines and not less than 600 feet from the surface the lease area could be doubled.

34. 55 VIC No.6.

35. *The Queensland Criminal Code* 1901 and *The 1898 Sale of Goods Act (Qld)* reflect this trend.

36. Although the Commission also included a command to inquire into the Pearl-Shell and Bêche-de-Mer industries of Torres Strait,that there were five Commissioners indicates the complexity of the issues involved. All Commissioners were members of the Legislative Assembly, namely: W.H.B. O'Connell, A. Dawson, J. Hoolan, W. Smyth, J. Hamilton.

a statute of fourteen parts, *The Mining Act 1898*.[37] Its longevity (it was finally laid to rest in 1968) and detail is testimony to the ability of the Commissioners and the Under-Secretary for Mines, P.F. Sellheim, a former Mining Warden.

In North Queensland the Commissioners visited Charters Towers, Ravenswood, Herberton, Hodgkinson, Etheridge, Croydon, Horn Island, Rocky (near Coen) and the Palmer. They noted the "desuetude" of many fields, and a concern among miners regarding the paucity of capital investment. It was argued that capitalists were discouraged by the small areas of leases (25 acres) and heavy labour conditions.[38] In their report the Commissioners recommended increasing the size of leases to 50 acres and in the case of amalgamation of leases to no more than 100 acres in total, with ample powers for the Minister to exercise his discretion upon the discovery of false pretences. Secondly, they noted the one man per acre requirement was seldom enforced in the case of unprofitable ground and recommended a reduction to one man per five acres. Thirdly, they suggested fines by the Minister instead of forfeiture for breach of lease conditions by a holder, and that a deposit system be imposed on potential litigants seeking forfeiture of leases because of non-compliance, as a guarantee against costs.[39]

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37. 62 VIC No.24. Perhaps one could suggest that the whole purpose of the new Act was to increase the advantages of mining investment for the capitalist venturer.

38. Report *Votes and Proceedings* 1897, IV, p.xlix. Even though exemptions granted through the discretionary powers of the Minister "had virtually taken the sting out of labour conditions" it was contended that "persons out of the Colony were not satisfied with having their holdings at the discretion of whoever happened to be Minister for Mines....and they argued for greater security of holdings, easier labour conditions, and larger areas."

39. This measure was particularly aimed at vexatious actions by "Jumpers" which were apparently quite common.

The resultant *Mining Act* (1898) contained much of the law in the existing statutes and adopted many of the recommendations of the Royal Commission.[40] The value of the reward to the first discoverer of gold was increased to £10,000 by section 8 of the new Act. Gold fields leases were increased to 50 acres with the proviso that the area was not to exceed twelve acres within seven years of the proclamation of a gold field nor was it to exceed 25 acres within fourteen years of proclamation. The previous absolute prohibition on grant of leases within two years of proclamation was retained. Another proviso fixed the area to 25 acres unless the poverty of the ground necessitated an increase to the full 50 acres. The term of twenty-one years (renewable on the same terms) was retained and the lease fee was set at £1 per acre per annum [S.26]. This increase in the possible area would seem to be a pyrrhic victory for Capital, although in the matter of labour requirements the lease holder was obliged to employ one man for every four acres. Furthermore the Minister was given very wide discretion over exemptions and the power to fine up to £100 for the first two breaches of lease covenants (with power of forfeiture thereafter) [SS.28 & 29]. Similar provisions applied to mineral leases: the area was fixed at 160 acres throughout the term of the lease at a cost of 10/- per acre per annum with labour requirements set at one man per ten acres [S.33]. The Act also facilitated union of both types of mining lease. Furthermore S.26 provided that no gold mine shaft could be sunk within ten feet of the nearest boundary line, a measure designed to thwart the practice of sinking shafts on boundary lines to satisfy the both sets of covenants of adjoining one-owner leases.

The new Act repealed mining licenses and made the Miner's Right the basic document conferring benefits on individual miners. The entitlements remained unchanged as did the rights conferred by a Business License, except that in the case of a Miner's Right the holder was now entitled to possess, mine and occupy <u>all</u> Crown Lands

40. 62 VIC No.24.

and not merely lands within a mining district.[41]

In the area of administration of justice the major change was the constitution of a "one court" system under a Warden for both types of mining field.[42] Other inclusions were the guarantee of the right to legal counsel and wide powers of summary imprisonment "on view" for up to fourteen days for insulting or obstructing a Warden.[43] The Principal Act, as it became known, was complemented by a new set of Regulations[44] which repeated earlier rules concerning water rights, stacking of tailings and claims and in addition provided for "returns of gold", Court rules and forms as well as homestead leases. Furthermore, the 1898 Act retained the provisions of the earlier *Mineral Lands (Coal Mining) Act* without change and notwithstanding the intervening seven years no increase was made in fees and royalties payable.[45]

MANAGEMENT OF THE MINING INDUSTRY 1898-1930

By 1930 most of Queensland's gold fields were deserted, and the mining industry in general was in recession. Even so the intervening three decades were not productive of drastic changes to the law contained in the Principal Act. The concept of codification started to break down in 1906 with the passing of the independent *Mining*

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41. The Act did not however incorporate a "no fee" permit system conferring similar rights to the Miner's Right on impecunious persons who were expected to take up market gardening on fields according to the Royal Commissioners, an occupation no doubt already engaged in by the Chinese who were denied Miner's Rights.

42. See 62 VIC No.24 Part IX.

43. S.166 also provided penalties for striking the Warden or his officers as well as punishment for clandestine mining activities forbidden by Court order.

44. *Q.G.G.*, Vol. LXXI, 1899, pp.969 and 1064.

45. This part of the Act was eventually repealed by the 1925 *Coal Mining Act*, (16 GEO V No.30) a specialist statute beyond the scope of this paper.

Machinery Advances Act and the later *Mining on Private Land Act* (1909). In 1910 Part XIII of the Act was deleted and reproduced as the *Mines Regulation Act*. This trend continued with Acts such as the *Mining for Coal and Mineral Oil Act 1912*, the *Miners' Homestead Leases Act 1913*, the *Petroleum Act 1915 and 1923* and the *Coal Mining Act 1925*.[46]

The changes to the remainder of the *Mining Act 1898* were largely cosmetic and were designed to ease the task of construction by lawyers and Courts.[47] However a number of substantive amendments were enacted to facilitate changes to mining practices under pressure from industry. Specifically,a 1901 amendment introduced the concept of a mining lease for tramway construction purposes and a new proviso releasing such leaseholders from labour covenants. Further, this amendment enabled union of leases not contiguous with one another because of intervening streets, watercourses or freehold lands.[48] The following year saw further amendments aimed at widening the possible scope of the beneficial provisions of the drainage of mines sections of the Principal Act.[49] No further changes to the Act were made until 1914 when a measure designed to encourage deep sinking of shafts, by a grant of a special lease of up to 300 acres, was passed.[50]

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46. Perhaps the most valid reason for the demise of codification was the increasing complexity of matters being regulated requiring specialist statutes which could be quickly promulgated by being printed and distributed under their own cover.

47. Many Court actions hinged on the construction of statute language. To review these cases would be a gargantuan task, one to a great extent undertaken by Fairleigh, *op.cit.*, who cites approximately one thousand local and foreign cases in his review of Queensland Mining Law.

48. See 1 EDW VII No.10, especially SS.6 & 7.

49. 2 EDW VII No.24, S.2.

50. 5. GEO V No.25.

The advent of a Labor Government in 1915 saw a change in the discretionary powers given to Ministers in relation to failure by gold and mineral leaseholders to honour covenants. The capitalists' "two chances" (i.e. option of a fine for the first and second breach of conditions) were lost to a general discretion given to the Minister to fine or forfeit according to the situation.[51] But a further ten years elapsed before Labor again amended the Principal Act, although it had been active in the coal and petroleum industry arena. In 1925 it was decided to give the Minister greater personal power in the area of forfeitures of holdings for non-compliance; thus appeals from a decision by a Warden to forfeit a mining tenement or share therein now lay to the Minister alone and not to the superior Courts.[52] Again in 1927 the Parliament acted to clarify the position of certain mining rights and thereby declared the *Water Act 1926* to be subservient to the Principal Act regarding water-use rights.[53]

THE ROYAL COMMISSION OF 1929-30

By 1929 the mining industry was depressed and the only real growth area seemed to be for lawyers drafting new rules for its future conduct.[54] A mining revival was needed and accordingly the McCormack government issued a Royal Commission on 7 March 1929; the

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51. 6 GEO V No.27 SS.2 & 3 amending SS.28 & 38 of the Principal Act respectively.

52. 16 GEO V No.8 S.2 (not incorporated into the Principal Act). It was alleged that the reason for this change was due to a recent mine accident which could have been avoided had the Minister been vested with such absolute powers.

53. 18 GEO V No.25 S.2 (not incorporated into the Principal Act - See S.1).

54. Indeed the profession must have benefited greatly from the intervening years since the Act's introduction due to the practice of "briefing out" work to members of the Private Bar. Apart from the amendments discussed in the penultimate paragraphs seven major independent Acts, twelve sets of Regulations and five sets of rules were promulgated, as well as rules and regulations governing coal and oil production.

Report was presented a year later on 27 February 1930 and amending legislation arising from the Report was assented to on 18 December 1930.[55]

The Commissioners' brief was to make full inquiry into the Acts and Regulations as well as general administration and management. They isolated the causes of decline as the instability of the metal market, the deterioration of ore values and the difficulty of finding new deposits coupled with increased production costs. The law had met the requirements of the industry and had been sympathetically administered their Report noted, but "conditions had undergone considerable change". Therefore they recommended the concept of a prospecting area, granting of immediate gold leases upon proclamation of a field at nominal rentals, relaxation of labour requirements, increases in lease sizes and numerous changes to existing regulations. Changes were also recommended to other Acts regulating safety and taxation, the rationale being to afford greater security for capital in undertakings involving large expenditure on exploration, development and equipment. This risk capital had to be attracted because of the disappearance of "rich alluvial and reefing deposits specially suited to the working owner and small company".

The resultant legislation[56] incorporated many of the proposals:

(a) Authority to Prospect

Whilst the existing Regulations (Regs. 25 & 26) provided for small prospecting areas the Act did not give the Minister discretion to grant larger areas on generous terms as had the New South Wales *Mining Act 1906*. New section 23A, in part III A, now reproduced the New South Wales provision. This measure signalled the demise of the small scale

55. The members of the Commission were: T.A. Ferry (Chairman) and mining professionals A.A. Boyd, C.F.V. Jackson, Professor H.C. Richards. For further details see Report on the Mining Industry of Queensland, *Q.P.P.* 1930, I.

56. 21 GEO No.32.

prospector, as Authority holders' right to possession later developed into a right to exclude others, including holders of Miner's Rights.[57]

(b) Location and Size of Leases

The amendments provided that gold mining leases could thereafter be granted in respect of Crown Land generally and not merely land within a mining field. The two year moratorium on the grant of leases was abolished. The maximum lease area was increased to 100 acres and the provisos requiring a gradual increase in area over a number of years were abolished. The possible size of a mineral lease was increased to 320 acres.

(c) Labour Conditions

The employment requirement was amended to one man per ten acres of lease holding. The Minister was given power of exemption and an additional power to accept a money payment of £30 per acre per annum in lieu of enforcing the new labour requirement.

(d) Union of Leases

The 1930 Act provided that no union was valid unless application was made by at least a two-thirds majority in number and value of interest of the persons registered for the time being as holders of each lease. This condition also applied to cancellation of united leases.

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HEALTH AND SAFETY 1859-1930

That most mining in Queensland during the eighteen sixties and seventies was concerned with the exploitation of alluvial gold deposits and shallow quartz ores is perhaps the most valid explanation of why

57. An exclusion which directly affects the "new wave" prospectors armed with electronic detectors.

it took twenty years before the Parliament considered a comprehensive mining safety statute. Paradoxically the legislation was not due to pressure from miners, as Stoodley notes, "The initiation...seems to have been due less to outside pressure than to humanitarianism" (on the part of politicians!). This lack of pressure from miners can be attributed to a combination of factors - physical recklessness, fear of the stigma of cowardice, fear of dismissal, lack of effective leadership and organization and "perhaps a perpetuation of the alluvial diggers' dislike of government interference".[58]

The initial statute, *The Mines Regulation Act 1881*[59] was quite advanced in its provisions although another decade was to pass before miners themselves began to take safety issues seriously.[60] The provisions of the seminal statute however are important to an understanding of later legislation. The Act applied to mines employing more than six persons (although mines employing fewer could come within its ambit in special circumstances). No females or boys under fourteen years were to be employed underground and provision was made for miners to appoint two of their number to inspect mine safety at least once a month and report findings in a book kept at the mine. Furthermore, the Act authorized entry by Inspectors of Mines "at all reasonable times day and night", but not so as to impede or obstruct the working of the mine.[61] A code of twenty-two rules relating to ventilation, gunpowder, blasting, fencing and refuges was provided by section 6, and the mine manager was required to

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58. See J. Stoodley, "Queensland Miners' Attitudes towards the Need for Safety Regulations in the Late Nineteenth Century", *Labour History*, No. 14, pp.23-33.

59. 45 VIC No.6.

60. Bernays, *op.cit.*, p.369 notes that in its final year of operation alone there were 107 fatalities.

61. Inspectors were also required, if called on to do so by a Court to check encroachment claims in the company of a surveyor (S.30) (subject to the Minister's approval).

P27: William Charters [Oxley Library]

P28: Millchester Court House, 1874 [Jim Manion]

inspect and report on these matters once a week. Miners themselves came under a statutory duty to satisfy themselves as to the safety of mining appliances [S.14]. There was a separate part of the 1881 Act devoted to the particular problems of collieries.[62] Provision for compensation for injury or death was made under the 1881 Act. Section 11 allowed the injured miner (or his Personal Representative) to recover from the mine owner "as for a tort committed by such owner" on proof of negligence by the mine owner or his agent.[63] Furthermore, in addition to these rights, negligence by any person causing death or injury was deemed an offence against the Act punishable by fines payable to the victims [S.17].

By 1889 the influx of a "careless nomadic class", the use of insecure timbering and dangerous ladders together with a cavalier attitude to falling rocks and earth ensured the passing of a new *Mines Regulation Act* framed largely on the experience gained in Queensland, Victoria and New Zealand.[64] Inspectors were required to

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62. These Regulations were rudimentary, but increased in sophistication as each successive replacement Act arose. They were finally incorporated into the 1925 *Coal Mining Act* and provided by then stringent standards due partly to the Mt. Mulligan disaster in 1921. (See P. Bell, *The Mt. Mulligan Disaster*, James Cook University of North Queensland, 1978.

63. The *Employees Liability Act* of 1886 (50 VIC No.24) also provided a remedy for all employees upon proof that injury resulted from a defect in the "ways, works, machinery or plant" (S.4) as well as acts of negligence by fellow workers and supervisors. S.6 limited the amount recoverable. The *Mines Regulation Act* remedy is without this ceiling, is wider in scope and appears to incorporate the concepts of Lord Campbell's Act (*Common Law Practice Act 1867* (Q)) which gave survivors a right of action in relation to *their* loss of a source of "comfort and society" and breadwinner. [It was not until 1940 that the law of torts was invested with a new statutory *remedy* (not "cause of action") giving the deceased's estate the opportunity to sue on any right of action accumulated by the deceased prior to death - *Common Law Practice Amendment Act* 1940].

64. See 53 VIC No.7. The use of iron tamping rods was the cause of many mishaps - see *Shanahan-v-Taranganba Gold Mining Co. Ltd.* 1889 (3) *Q.L.J.* 147. Problems associated with alcohol were probably the reason for the inclusion of S.18 which forbade the payment of miners in public houses and beer gardens.

hold first class certificates of competency and the Act repeated the earlier ban on such officers holding interests in mines as well as acting in their own right, or in partnership, in the business of land agent, mining engineer, mine valuer or arbitrator. The Inspector's powers remained unchanged although a new provision made it mandatory for Inspectors to "make inquiry forthwith" upon complaints made regarding mine safety. The identity of the informant was not to be divulged by the Inspector (S.9). Inspection by representatives of miners was continued although by this provision the monthly restriction was abandoned in favour of an "immediate notice" to the manager system. Owners were now required to appoint a full time mine manager who was restricted to managing no more than two mines at once depending on numbers employed in both mines. The burden of ensuring that the strengthened safety rules were observed fell to the lot of such managers and the Act [S.18] declared that "the occurence of any accident in or on a mine shall be *prima facie* evidence of neglect on the part of the owner and the manager", although proof that all reasonable means of enforcing the Act had been taken was declared a defence. The provisions relating to injury compensation were widened to include not only the negligence of owners and their agents but also contractors and tributors and their agents.

The new Act also introduced a certification scheme in relation to operators of steam engines over 25 H.P. Only qualified persons, over eighteen years, could lawfully be in charge of such machinery. The Rules were strengthened by a code of signals for hoists as well as minimum requirements in relation to brakes on windlass drums. Section 21 introduced the 8 hour day for persons in charge of machinery. Finally S.7 required that plans of abandoned mines be deposited with the Minister to guard against the possibility of new mines breaking unexpectedly into the water-filled passages of old workings.

No further changes were made to these safety measures until 1898 when the 1889 statute became Part XIII of the Principal Act. The Royal Commission stated that managers be given an opportunity to gain

certification but had recommended that absence of a qualification should not disbar a person from acting as mine manager. Accordingly the new S.199 provided for appointment of examiners. Furthermore the code required that in the event of an accident one representative each from the Mining Managers' Association and the Miners' Accident Association be selected by the Mining Warden to report independently of the Inspector of Mines [S.207]. The new safety rules in relation to, first ventilation - minimum of 100 cubic feet per minute of fresh air for each man, boy and horse - and second, explosives,[65] were introduced though the Commissioners' recommendation regarding certain metallic tamping bars was not acted upon.[66]

The growing strength of unions, particularly in North Queensland, had by 1910 brought about a change in attitude regarding the personal safety of miners. A Royal Commission was appointed in that year to report on the causes of pulmonary diseases among miners, particularly miners' phthisis. The importance attached to health and safety by these events required that the law relating to such matters have a life of their own: as a result, "an Act to make better Provision for the Regulation and Inspection of mines" was passed, its short title being the *Mines Regulation Act 1910*.[67] It soon assumed the proportions of a safety code with amendments made in 1912, 1916, 1920, 1925 (coal mining) and 1930.

The new statute retained most of the existing provisions and generally clarified and simplified the language. Most changes increased the power of officialdom and the stringency of safety requirements. For

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65. This became the basis of the 1906 *Explosives Act* (Q) [6 EDW VII No.21] and Regulations.

66. This concerned the use of copper tamping bars of which the Commission commented, "The prevalent belief that copper bars cannot produce sparks is a dangerous fallacy." Iron and steel bars however were banned [S.214(J)].

67. 1 GEO V No.24. Rules complementary to the Act were published in the Government Gazette on the following dates: 30 November 1912, 24 January 1913, 20 March 1913, 9 August 1919 and 24 September 1921.

example Inspectors were given power to call, examine and cross-examine witnesses in respect to accidents, and were entrusted with the supervision of the care and treatment of animals in mines. They were also given a "roving brief" to detect dangerous practices not covered by the Act, and if authorized by the Minister, in these circumstances Inspectors could demand that owners rectify faults.

Section 16(1) now required managers to hold certificates and be over 21 years of age. Daily supervision of mines by managers, with more formal weekly inspections, were obligatory. Managers were deemed to have control and supervision of independent contractors and tributors unless the latter appointed their own manager. Miscellaneous provisions of the Act forbade Sunday work except for special tasks and emergencies and required the furnishing of plans to the Minister. The Safety Rules were now located in a schedule to the Act and became more detailed in relation to ventilation, lighting and particularly health and sanitation [Rules 56 to 62]. The Rules also contained standards and tests for quality and quantity of air, strengths of ropes and chains, and braking systems.

The *Mines Regulation Act 1910-1955* remained in force until repealed in 1964. During the period 1910 to 1930 it was amended to only a slight degree, the changes being limited to such matters as extending its application to certain quarries, increasing the emergency powers of Inspectors where a danger was discovered in the course of a casual inspection[68] and giving mine Managers protection against interference from mine owners in matters of safety.[69] Amendments in relation to daily supervision of mines and the tightening of provisions relating to dual management of mines were perhaps the most significant changes to the law in this period.[70] The 1930 Amendment apart from reaffirming

68. Particularly the power to command mine managers. 11 GEO V No.9. S.6.

69. 7 GEO V No.12.

70. 7 GEO V No.12. (Managers were permitted to supervise only one mine at a time [SS.9 & 10]. Accident procedures were also dealt with by this amendment [SS.14 & 15].

the "no Sunday work" principle made only superficial alterations relating to disqualification of mine managers in cases of proven negligence.[71]

Perhaps the burgeoning of laws relating to health and safety over six decades could be cited as a partial reason for the decline in the industry's profitability by 1930. However, it could be argued equally that the effects of this legislation were probably offset by the provisions (or in some cases, the lack of provision) of statutes impinging on economic matters.

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LAWS AFFECTING THE ECONOMY OF THE MINING INDUSTRY 1859-1930

It is a valid proposition that in the mining sector of a State's economy virtually all associated legislative measures in some way impinge on the industry's profitability. Thus laws regulating mine safety can have an effect on the short-term prosperity of mining ventures; industrial laws have a similar effect. However, there have been legislative measures in force in Queensland which have had a *direct* impact on the economy of the industry through their effect in changing the conditions for investment in mining.

One of the first Acts of the Queensland Parliament was a measure repealing duty on gold exports.[72] This however related to gold won in New South Wales at Tooloom and was not a concerted attempt to stimulate investment in mining; rather it was the result of the merchants of Ipswich town losing the miners' trade because gold taken out through Moreton Bay was subject to double duty.[73] Forceful

71. 21 GEO V No.32. S.19.

72. 20 VIC No.22. The duty amounted to two shillings and sixpence per ounce.

73. The Duty Act was a N.S.W. statute also still applicable in that colony.

arguments soon convinced the Governor that continuation of the duty would be "productive of a serious inconvenience to the public of this colony" (not to mention the members of the Brisbane Exchange).[74] Gold duty however did not disappear for long from the armory of the Queensland tax collector and in 1864 a new Act provided for a duty of eighteen pence per ounce of gold exported from Queensland. Penalties for smuggling included forfeiture of vessels and vehicles used for the carriage of contraband gold, and section XII gave a unique incentive for informants and seizing officers.[75] Gold could only be exported through nominated ports and the Collector of Customs had sweeping discretionary power regarding "on-the-spot" fines. The Act remained in force until 1872 when rates were reduced and ultimately abolished in 1874.

Another foray by government into taxing by duty levy occurred in 1890 with the passing of the *Dividend Duty Act*.[76] This statute applied to all companies, although certain exemptions were granted insurance and mining companies. In the latter case the value of dividends issued to shareholders up to the amount actually expended in labour and material plus three quarters of the value of actual machinery costs was exempt from the grasp of the Commissioners. That mining companies paid £46,874.19.5 into revenue during 1890 which, considering the duty was set at one shilling for every twenty shillings in dividends over the exemption level, reflected the wealth being derived by shareholders during the prosperous "golden years".

Colonial administrators realized that the capital required for longer term development of reefing fields could only be provided by company investment. Pring's 1871 Report noted that "encouragement

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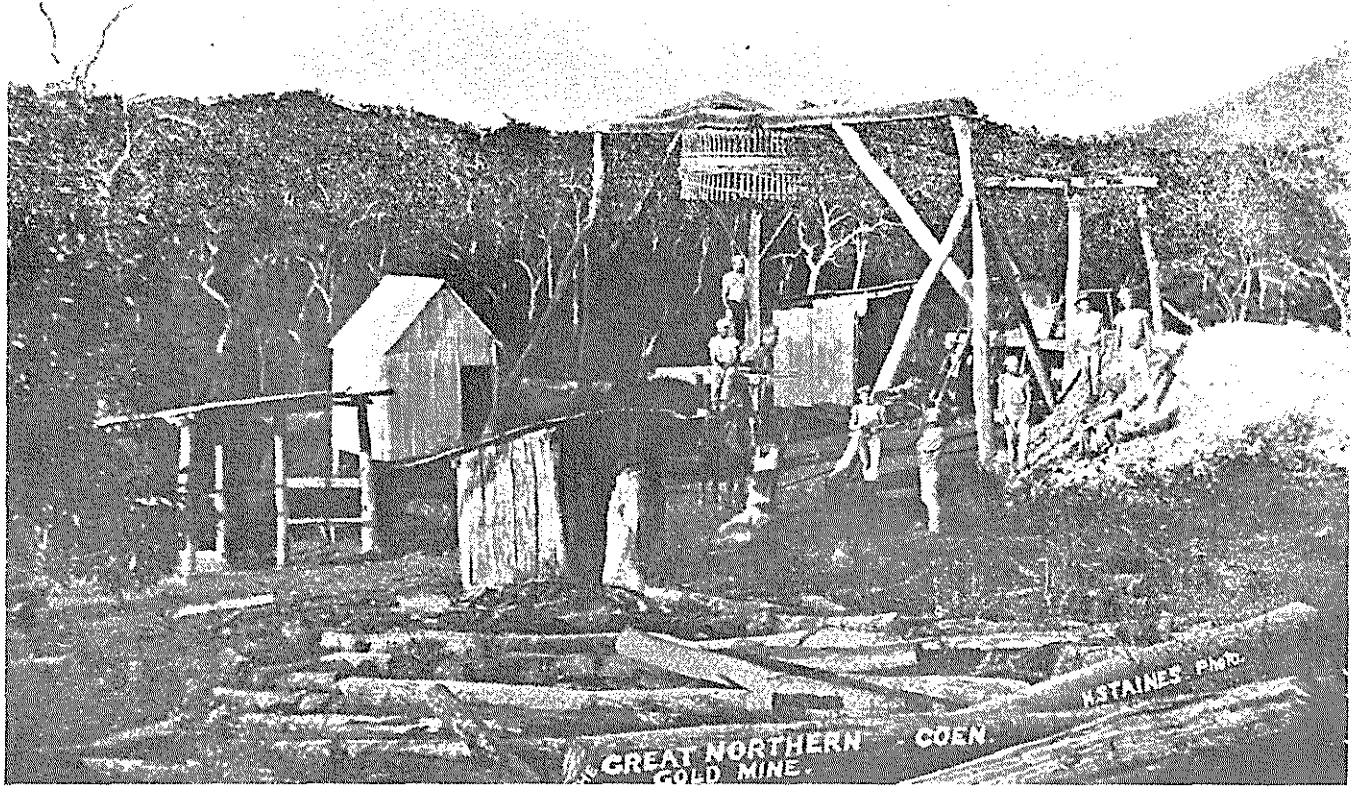
74. *Q.P.P.* 1860, p.887.

75. Fines and forteitures were to be split between "Her Majesty" and those instrumental in the seizure after deduction of Court expenses.

76. 54 VIC No.10. Ostensibly the purpose of the Act was to raise funds to defray the costs of the Public Service.



P29: Great Northern Gold Mine, Coen, with whim and head gear [*A.R.* 1901]

P30: Reefing claim, Oaks Goldfield, 1908 [Rev. F.C. Hall]

seems specially desirable at the present time, because [of] the disadvantage of the absence of capital which is so apparent on these fields."[77] Pring however advocated a co-operative philosophy, coupled with amalgamation of claims and consolidated Miner's Rights, although the seed of the corporate-led investment advance was present in his optimistic exhortation:

> when liberal encouragement is given by legislation, both to persons with means and to the labouring classes, to assist their development, due security being afforded to all in the prosecution of their enterprise, that an equitable combination of capital and labour will attract to our goldfields from without, as well as within, that solid countenance and assistance which alone is required to enhance their wealth and prosperity.[78]

Such legislation was forthcoming in 1875 with the introduction of "no liability" company legislation.[79] The *Gold Mining Companies Act* provided for the expeditious incorporation of joint stock companies to carry on the business of gold mining and (ironically perhaps) for the "speedy and economical winding-up of such companies". Section 7 stated that shareholders were not liable for calls or contributions, although as a corollory to their immunity from court action they were restricted in their right to participate in dividend distribution while calls remain unheeded. The Act allowed automatic forfeiture of shares after fourteen days following the last date of payment of the call, a disadvantage for investors living in foreign countries due to poor communications. Further, local District Court Registries (Townsville, Cairns and Normanton) would perform the registration and winding-up functions formerly vested in the Registrar of Joint Stock Companies in Brisbane; this had obvious cost advantages for companies floated in North Queensland as it obviated the need for expensive solicitor's "Town Agents" fees. This specific legislation was repealed in 1886 and

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77. Pring, *op.cit.*, p.5.

78. Pring, *ibid.*, p.10.

79. 39 VIC No.9 which modified the 1863 *Companies Act* - 27 VIC No.4.

replaced by a more general *Mining Companies Act* which rendered regulation of companies more flexible.[80]

The new Act retained the 'no liability' system and also applied the normal "limited liability" provisions of the 1863 *Companies Act*. Rules relating to registration and winding-up gave further extensive powers to local, more accessible, Mining Wardens. Petitions seeking dissolution or administration of companies were to be heard by Wardens *alone* with appeal lying to the District or Supreme Courts. Indeed the Wardens by this time had assumed the proportions of legal potentates by virtue of the far-reaching jurisdiction conferred on them by successive generous parliaments. A complementary Act, *The Company (Winding-up) Act of 1892*[81] limited the costs involved in mining company "undertaking" to the Warden's Court scale. Such measures had a direct effect on the cost of floating companies, enabling local mining entrepreneurs to register companies without visiting major centres. Whether the local control had a dampening effect on bogus "wild cat" mines is questionable as the 1898 Royal Commission noted that two obstacles to foreign capital investment were insecurity of tenure of leases and the "most seductive of cat, far more enticing and gorgeously got up than the *quid pro quo* cat."[82] Indeed the numerous recommendations on technical aspects of shareholding in mineral companies were designed to encourage confidence in the industry. The liability of former shareholders for calls on scrip which had not been submitted for registration changes by buyers, shareholders' liability for back-debts incurred by Directors prior to the purchase of shares and the lingering twelve month period of liability for company debts (upon liquidation) following sale of shares were examined. Curative legislation was gradually introduced as a result of the finding.

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80. 50 VIC No.19. This Act was eventually subsumed intact under the general *Companies Act of 1931*, 22 GEO V No.53, Part IX.

81. 56 VIC No.24; a later Royal Commission recommendation in 1898 further streamlined the *procedural* costs of winding-up.

82. They recommended a mining investors information service be set up in the London Agent-General's office.

Other statutes which directly affected the economics of the mining industry included such practical assistance measures as the *Gold Mines Drainage Act 1891*, the *School of Mines Act 1894*, the *Mining Machinery Advances Act 1906* and a myriad of special "one of" statutes promoting particular enterprises. The *Drainage of Mines Act*,[83] whilst it did not provide government subsidy, made it possible for owners of water-logged shafts and drives to be constituted as statutory boards to co-ordinate drainage, and to require any mine owner within the board's area to construct and maintain dams, engines and other drainage works. The boards were authorized to enter mines of recalcitrant owners to construct or repair such works. Costs were to be borne by mine owners in proportion to the benefit derived. The board could recover such contributions, and local authorities were authorized to fund works out of local revenue, derived by special rate levies. This Act was eventually subsumed into the 1898 Act;[84] however its provisions were later to be recast in the separate *Drainage of Mines Act 1912*.[85]

The School of Mines legislation[86] set up institutions to educate miners to a certificate of competency standard: the Charters Towers School was a progeny of this Act. The legislation provided for capital cost funding on a one third subsidy basis with minimum mining industry involvement of £1,000 being required. Ongoing expenses were subsidized to 50% by government endowment under a funding formula based on a three year contribution by the industry. Scholarships endowed by government were also available for university studies. The schools were to be located on freehold land under the control of Trustees.

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83. 55 VIC No.26.

84. 62 VIC No.24, Part XII.

85. 3 GEO V No.9. In addition this Act provided for the incorporation of boards, set up a system of "credits" in relation to water sold to neighbouring leases after drainage and provided for "compulsory bailing".

86. 58 VIC No.16. It was not repealed until 1973.

The 1906 *Machinery Advances Act*[87] authorized advances to individuals and companies for purchases of mining and treatment machinery. The statute outlined the application procedures and authorized the Minister to make loans available at five percent interest. No limit was set on the quantum of the advance. A further provision, which was to be repealed by the 1915 Labor Government,[88] required proof of expenditure by the recipient of an equivalent sum. Further provisions allowed the government to take security over the borrowers property, but the Act specifically forbade the Minister from recovering from the borrower personally. Nothing, however, was done about deep sinking until 1914 even though government action on this issue had been urged by the 1898 Royal Commission.[89]

A further area of economic legislation was the now familiar infrastructure agreement acts relating principally to railway construction.[90] The earliest was the *Day Dawn Block and Wyndham Gold*

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87. 6 EDW VII No.10.

88. 6 GEO V No.17.

89. One exception, the *1902 Glasgow-Gympie Act* - 2 EDW VII No.6, gave that venture an increased area (200 acres) providing the lessees constructed a shaft of not less than 4,000 feet deep. The Act required lodgment of a cash security of £10,000 but relaxed working conditions for eighteen months. The *Mining Act Amendment Act* 1914 (5 GEO V No.25) increased the possible area of "deep sinking" special leases to 300 acres and relaxed labour conditions. A prerequisite to this lease issue was the sinking of a 3,000 foot shaft within a certain period unless difficulties "for which the lessee cannot justly be held responsible" were encountered. Rigorous forfeiture provisions were enacted.

90. A 1901 amendment to the Principal Act (1 EDW No.10) already allowed construction of tramways. For example the Ballara-Wee MacGregor line, the Oona-Dobbyn line, the Stannary Hills-Irvinebank line and the Biboohra-Mount Molloy line.

Mining Company's Railway Act 1888[91] which approved the construction of a spur line to the Northern Railway. When not in company use it was to be a toll railway open to the public. A different type of agreement was cast in the 1897 enabling legislation for the Mareeba to Chillagoe Railway.[92] In return for its construction and maintenance Chillagoe Railway and Mines Limited was granted 2,000 acres of mineral lands for fifty years at £1 per acre per annum. The leases were declared to be indefeasible so long as the rental was paid. The Act contained a purchase clause exercisable at the option of the government at the expiration of fifty years at a value no more than one and one tenth of certified construction cost. In 1900 this company was again favoured with the grant of mineral leases through its construction of a spur line from Lappa Junction to Mt. Garnet.[93]

In 1906 perhaps the most complex agreement involving company enterprise and government subsidy was enshrined in legislative form. The *Etheridge Railway Act*[94] proposed the construction of a Chillagoe-Georgetown track through measures such as a line profit sharing agreement [S.2(4)], use of Crown Land corridors and a government subsidy of 2½% per annum on construction costs up to £450,000. After fifteen years the line was to revert to the government on payment of a purchase price twenty-eight and four-seventh times the average net earnings. For its part the company would receive mining concessions which the Act authorized as negotiable securities. The line, to be operated and maintained by the Commissioner for Railways, was eventually diverted to Forsayth at the company's behest. A similar agreement was

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91. 52 VIC No.6. The act empowered the use of company rolling stock on the government railway system. It was amended in 1889 (53 VIC No.11) and 1903 (3 EDW VII No.5) to provide a branch line, giving the company the right to acquire easements over the now crowded Charters Towers gold fields town area. Mine owners were forbidden to construct workings under the line.

92. 61 VIC No.19.

93. 64 VIC No.22. Again a "buy back" scheme was to operate.

94. 6 EDW VII No.2.

enacted in 1908 to extend the Great Western Railway north from Cloncurry to Hampden-Mt. Elliot.[95]

By 1930 State Government intervention in the mining industry extended beyond specific regulation. Assistance statutes such as the *Charters Towers Mines Disaster Act 1904*, retrospectively validating actions performed in emergency causing economic loss and the 1923 *Mt. Mulligan Mines Disaster Act* reflected this emerging trend. Between 1915 and 1929 the Labor administration was *directly* engaged in mining, crushing, smelting and the provision of services such as State Assay Offices through its State enterprise policies. The 1930 Royal Commission Report confirmed the State's new found role. The Commissioners commented on the retarding effect of import duties on mining machinery and the level of freight rates on mine products. Specifically in the area of transport they recommended substantial increases in grants for roads and bridges in mining areas. However it was in the area of taxation and stamp duty that they made a particularly strong plea on behalf of the industry.

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MINING FIELDS ENVIRONMENT 1859-1930

The lifestyles of northern miners have been vividly described by Geoffrey Bolton.[96] The harsh climate, the danger of aboriginal attack, the noise and bustle of boom towns and the drinking and gambling pastimes of miners are now part of the folk-lore of the region. So far as the law was concerned miners in remote areas were subject to the same general law protecting property and person as were metropolitan citizens. However several specifically mining-oriented statutes governed the conditions under which they might build homes and

95. 8 EDW VII No.12 (see also 3 EDW VII No.8 and 1 EDW VII No.16).

96. G. Bolton, *A Thousand Miles Away* (Canberra 1963).

businesses, graze their stock, and the degree to which actual mining operations could impinge on, and under, their holdings.

(a) Homestead Legislation

The first Queensland attempt at mining settlement legislation the 1869 *Gold Fields (Town Lands) Act*[97] provided for the granting of twelve month leases (which were to mature into freehold title on expiry) to the holders of improved blocks whose prior, rather insecure, tenure was authorized by Miner's Right or Business License. The Act was repealed in the following year by the *Gold Fields (Homestead) Act*[98] the rationale of which was stated in the preamble: "Whereas it is expedient that gold miners and others should be induced to become permanent residents...". Again adult holders of Rights, Licenses or Leases who had been resident on the field for at least six months were eligible to apply for agricultural leases of up to forty acres.[99] Miners were allowed to work on two leases, with the permission of the leaseholder, and the leases were readily transferable.[100] An amendment in 1880[101] was designed to curb speculation by limiting the possible areas held by one person in the aggregate to forty acres. Another provision put into effect the Pring recommendation of 1871 that all monies derived through lease fees should go to a special fund from which local road and bridge construction costs would be paid.

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97. 33 VIC No. 14.

98. 34 VIC No.15.

99. S.3 provided such leases were to be rectangular in shape, the length of which varied according to whether or not the block fronted a creek. Rentals were to be one shilling per acre per year with a flat five shillings per acre per annum for areas under five acres.

100. Forfeiture provisions applied if the land was not occupied within three months of grant. (The 1886 Act reduced this to two months). Otherwise leases remained in force so long as the rent was paid.

101. 44 VIC No.15.

Both of these measures were repealed by the *Gold Fields Homestead Leases Act* 1886,[102] which indicated the increasing tendency of inhabitants of mining towns to put down more permanent roots. The Act allowed leaseholders to sub-divide property and undertake mortgage transactions using the lease as security.[103] The right to transfer was retained but was limited to transferees who would be qualified at any event by virtue of being a holder of a Right or Licence. Areas were curtailed but rents remained the same,[104] and again the leasehold was available for prospecting and claims subject to certain conditions. *Gold mining leases* could be granted to miners and they could erect buildings and sink shafts on the homestead leasehold upon payment of a sum equivalent to the likely damage cost.[105] However, actual mining activities were not permitted on the *surface* of the homestead lease. Subject to payment of compensation in respect to actual improvements on the demised land the Governor-in-Council had power to resume the homestead lease upon six months notice. An identical Act regulating mineral lands homestead leases was passed in 1891.[106] Both types of lease were amalgamated under the *Mining Act of 1898*.

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102. 50 VIC No.32.

103. SS.22 and 24. Subdivision was possible after payment of a 10/- fee and providing the area transferred did not exceed half an acre within the boundaries of a township and not less than two acres outside. The mortgage provision did not act as a transfer of the lease but was purely a security which ripened into possessory and sale rights upon default.

104. Areas: within township, half an acre, within two miles of township, five acres and beyond two miles, forty acres.

105. The damages applied only to actual injury to improvements and not merely the decrease in value of the land.

106. 55 VIC No.18. A further type of homestead tenure was also possible at this time. These arose as a result of residence areas being carved out of ordinary gold mining leases. (i.e. an 'incident' of the lease). These holdings were quite often retained and occupied long after the original lease had expired.

The 1898 Royal Commission Report contained criticism of the administration of the 1886 Act, particularly the restrictions placed on the transferability of such leases being limited by the need for transferees to be suitably qualified. The expansion of the town boundaries of Charters Towers and Gympie meant the reduction in size of holdings although this restriction seemed to have been overcome by a system of "dummying" among leaseholders. A further complaint was the sequestering of funds into Treasury rather than into the construction purposes required by the 1880 amendment. The 1898 Act however did little apart from increasing the possible areas.[107] A minimum of four thousand acres, with boundaries determined by Wardens, was required for all new townships on gold and mineral fields; homestead lease rents were increased.[108] Subdivisions were limited to a minimum of 40 perches conforming with provincial and metropolitan town planning practices.

By 1913 the proliferation of grants of such leases and the decline of gold mining, leading to abandonment, required that new use be made of land under leases legislation. A new Act[109] was proclaimed independently of the 1898 *Mining Act*. Areas of land

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107. Areas: one acre within town limits, five acres within two miles of town boundary. Forty acres between two miles and five miles from the boundary, thereafter eighty acres were available. (Aggregate area for one person on the same gold field was not to exceed eighty acres).

108. Town blocks: 5/- per acre per annum for term of lease.
Blocks up to 40 acres: 1/- per acre per annum.
Blocks over 40 acres: sixpence per acre per annum for thirty years thereafter a peppercorn rental if demanded.
(The Act also allowed non-occupation for up to four months in the initial stages before forfeiture occured).

109. 4 GEO V No.14. It soon became known as the Principal Act due to the numerous amendments e.g. 1920 (10 GEO V No.27), 1921 (12 GEO V No.16), 1929 (20 GEO V No.35), 1930 (21 GEO V No.32).

were increased to enable grazing and farming activity on the now defunct fields with the maximum possible being 640 acres.[110] Rents under the new Act varied according to the mode of grant of the lease.[111] Leases were now granted either by application to Wardens (and approval by the Minister) or, in the case of land set aside "on account of its quality" [S.16], by auction. In 1920 an amendment[112] introduced the *perpetual* leases (M.H.P.L.) to replace the existing lease grant. The move was consonant with Labor's ideological stance on land-holding which preferred perpetual leases to freehold. In 1929 the Moore conservative government reversed the Labor lease policy and restored the former Homestead lease arrangements in regard to rentals and tenure.[113] A further amendment in 1930[114] made provision for increased areas, rental changes and sub-leasing.

(b) Mining effects on private land, reserves and commons.

(i) Miners' commons.

The 1874 *Gold Fields Act* gave the Governor power to proclaim a portion of a gold field a common which would be available for depasturing stock but which was not protected from the incursion of

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110. Township area: one acre, although this could be increased to five acres on a field over twenty years in existence, with the Minister's sanction. One mile from boundary: 20 acres, thereafter: 80 acres with discretionary grants up to 640 acres (increased to 1,280 acres by the 1930 amendment).

111. "Auction" leases rents: 1/30th of purchase price annually. "Application" leases: 1/30th of capital value determined. (the later "perpetual" leases were £3 per centum of capital value).

112. 10 GEO V No.27 Part IV. These changes were in line with similar developments under the *Land Act* (Q) and are a further indication of the non-mining character of such leases. Under a perpetual lease rentals did not terminate after thirty years.

113. 20 GEO V No.35 Part III. S.24A allowed a 6 month period during which 1920-style perpetual lease holders could convert to the new lease arrangement.

114. 21 GEO V No.32 Part III B.

prospectors and mining activity.[115] This provision remained unaltered until 1895 when an amendment to the act declared *all* lands on gold fields to be a common (except freehold, residence/business areas, leases, claims and grazing/pastoral leases).[116] It was designed to limit the large numbers of animals, particularly goats, roaming the gold fields.[117]

(ii) Reserves

The 1874 Act also reserved from mining operations Crown Land for schools, police stations, cemeteries and streets.[118] This exemption disappeared in 1886 when an amendment allowed leases for all such areas, with the exception of streets which were to remain inviolate until 1927 when claims under Miner's Rights were allowed.[119] The gold mining leases thus granted over these former reserves were subject to two provisos; the lease only applied *underground* and disturbance of the surface or interruption to beneficial enjoyment was prohibited. This was a placatory measure designed to satisfy the shopkeepers and residents who were also given rights to sue for damages in the Warden's Court.

(iii) Mining on private land

The Mineral Lands (Sales) Act of 1892 provided that *future* freehold sales of lands within gold and mineral fields were subject to certain

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115. *Gold Fields Act* 1874 S.28.

116. 59 VIC No.18 S.4.

117. One was limited to 20 head free of charge, thereafter a fee of 1/- per head per annum in excess, (except for bona fide travellers). The list of stock allowed ranged from camels to oxen with a bar on "entire animals over six months". A stringent prerequisite was the necessity to be a Miner's Right holder actually resident on the particular gold field where the animals were grazing.

118. Other exemptions were yards, green cultivated fields or orchards, outhouses or sheds actually in occupation, although the latter could be mined if all parties agreed.

119. 50 VIC No.15 S.3 and 18 GEO V No.25 S.3.

title reservations in relation to mining.[120] Accordingly freeholders were subject to interuption by prospectors and mining activity, on leases granted under the Act. Owners were entitled to inspect underground workings and were able to sue for compensation in appropriate cases.[121] An 1894 amendment[122] was enacted following the decision of the Supreme Court in *Plant* v *The Attorney-General*,[123] which held that gold found on the freehold lands on gold fields belonged to the Crown by virtue of the "Royal Mines" doctrine, whereby traditionally gold and silver always remained the property of Her Majesty. It enabled the surrender of such freeholds in return for leases which gave mining rights, although a royalty of one shilling per ounce of gold won was imposed. Ironically *Plant's Case* was overuled shortly afterwards by *Plant* v *Rollston*[124] in which Griffith C.J. held that royal mines under designated mining land granted in fee simple were not "crown land" within the meaning of the *Gold Field Act 1874*, but such gold and silver deposits were passed to the fee simple grantee unless the Deed of Grant specifically reserved such mines to the Crown. (Mr. Plant in this case was able to prevent Mr. Rollston trespassing on a gold reef 600 feet below the surface of his land). When these two Acts were later incorporated into the 1898 Act the only future reservations to the Crown made were in relation to copper, tin, antimony and opal [S.58].

The major measure which interfered with the freehold rights of land owners was the *Mining on Private Land Act* 1909, designed to free for mining large tracts of land previously purchased under the 1872

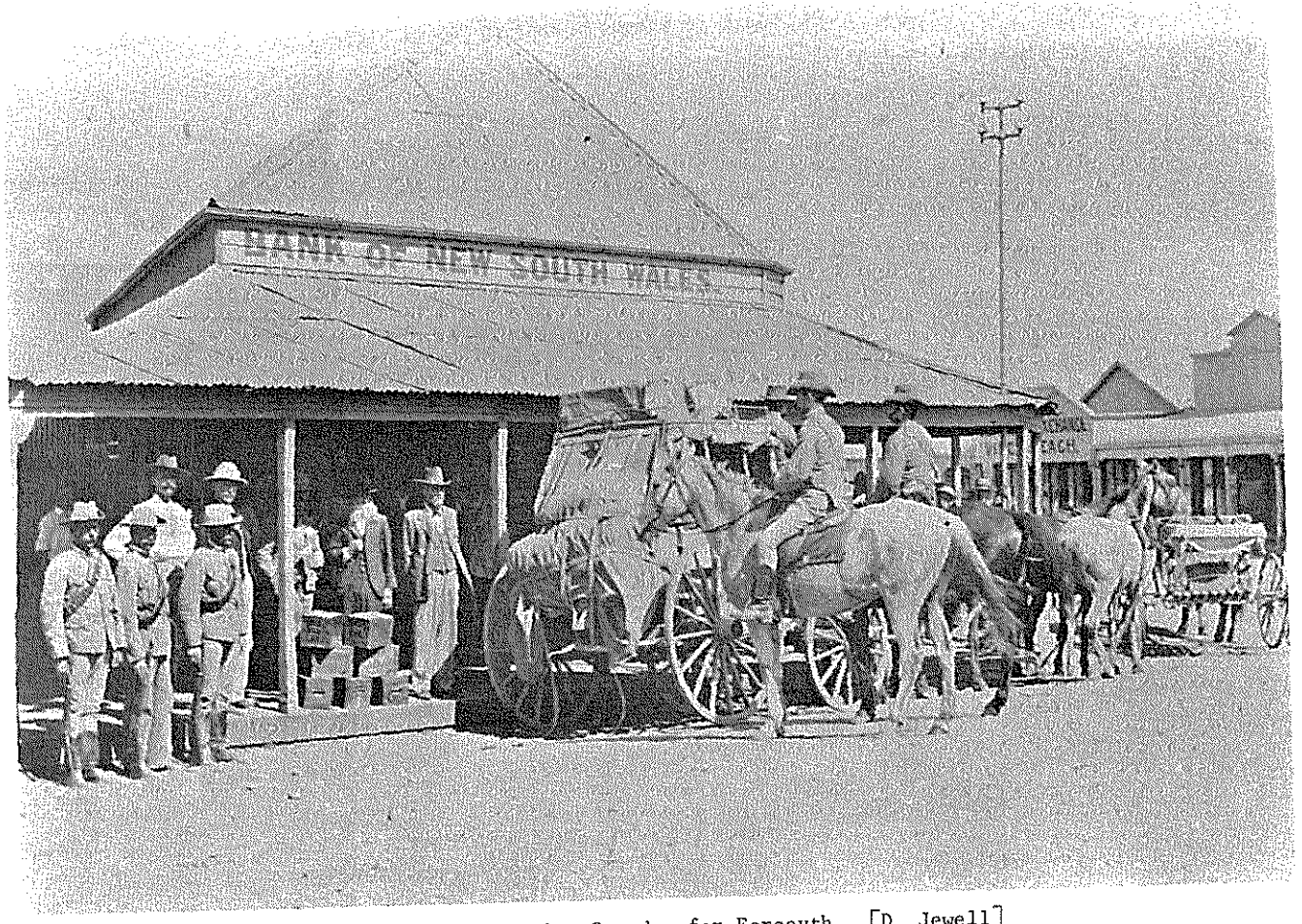
120. 56 VIC No.31.

121. The Act also made provision for construction of underground way-leaves, and for surrender of existing titles in order that freeholders could gain the benefits of the Act.

122. 58 VIC No.24. Under this Act the Mt. Morgan Company surrendered its freehold title in favour of leases.

123. (1893) *Q.L.J.* 57.

124. (1894) 6 *Q.L.J.* 98.



P31: Gold Escort leaving Croydon for Forsayth [D. Jewell]

P32: Charters Towers School of Mines [*A.R.* 1901]

Mineral Lands Act and prior general land grant statutes.[125] Its operation was dependent on the definition of "private land" in S.4 - "land which has been alienated from the Crown...in fee simple or which is lawfully contracted to be so alienated". Land held under other types of Crown tenure, for example grazing leases, which would ripen into freehold in the future was also deemed "private land". The definition specifically excluded reserves outside mining districts, and lands in which rights to such metals as silver, copper, tin and opal had either been previously granted or reserved by earlier legislation.[126] In the case of *gold* bearing lands, the definition of "private land" included such land granted in fee simple before the commencement of the subject Act, which then stated in S.6(1) that "gold on or below the surface of *all* land in Queensland whether alienated in fee simple or not so alienated from the Crown...is the *property of the Crown*". This amounted to a reaffirmation of the Royal Mines doctrine and automatically implied in all past and future Deeds of Grant a gold reservation power.[127] The Governor was given power to exempt lands from the operation of the statute to protect closely settled areas from the depredations of alluvial gold-mining.[128]

Having secured these rights and reservations to the Crown the Act then provided for the issue of mining tenements according to the

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125. 9 EDW VII No.15. The statute was introduced by a conservative government with the tacit support of the Labor members.

126. For example - grants under *Crown Lands Alienation Act* 1860, 1868 and S.21 of 1872 *Mineral Lands Act*; base metals and opal - reservations made by *1898 Mining Act*.

127. *Future* reservations were mandatory by S.6(2). The act further made silver and the base metals (copper, antimony, tin, lead etc.) the property of the Crown with the exception of those holdings excluded by the "private land" definition. The act did not *retrospectively* claim Crown rights to base metals (listed in S.4) in freehold land granted prior to 1909.

128. In introducing the legislation the Secretary for Mines indicated that the main thrust of the act was in relation to *underground* mining and that any tenements granted over the surface were merely for entry and egress of traffic. This view is not confirmed by the actual language of the statute (see S.16).

claim/lease provisions of the 1898 Act. However, in order to prospect on private lands, miners were required to hold a thirty day permit issued by the Warden which was limited to a nominated area of up to 640 acres at a discretionary fee of up to twenty shillings per permit.[129] This system evolved to the now widely used Authority to Prospect. The rights to mining gained under this Act had a disturbing effect on freeholder's previous notions of the security of that tenure. Any land subject to the Act must have become a less attractive re-sale proposition, particularly when the compensation provisions, never generous under *any* scheme of resumption, denied owners rights where the mining was confined solely underground, a significant factor considering later ground subsidence on cessation of mining operations.[130]

The overall effect of the *Mining on Private Land Act* 1909 was to make much of Queensland, with the stated exceptions, a gold and mineral field, subject to the general provisions of the Principal Act, with the exception of Homestead and residence/business provisions, with their attendant rights to timber. The Mining Warden's Jurisdiction was similarly extended. The exempt mineral lands however were to lose their status by virtue of an amendment enacted by the 1925 Labor government, amid shouts of "repudiation of existing rights". It bought silver, lead, copper, antimony, tin and opal lands under the Act and made them available for all miners. Owners however were given priority rights to apply for mining tenements. The amendment however had practical effects, for example where silver and lead were being extracted from a mine on freehold property, the deed of

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129. The fee was to provide security for any compensation to land owners. Miners refused permits could apply to the Minister for an issue. The Act specifically exempted town lands and certain improved land unless consent of owners was obtained.

130. SS.15 to 20 *passim*. An owner's common law rights to sue however were protected by S.20, but this would not have been as advantageous as the Act's pre-payment of compensation scheme, as the mining company responsible for the subsidence may have been long defunct at the time of such damage.

which had been granted prior to 1909, the lead belonged to the freeholder and the silver belonged to the tenement holder by virtue of the 1909 Act. Up to 1925 private agreements were necessary to resolve these problems.[131] These changes were short-lived: in 1929 a newly ensconsed conservative government passed the *Mining Acts Amendment Act 1929*, which restored mineral rights previously held by freeholders, the rationale for the amendment being "restoration of confidence".[132] It reverted mineral rights to the 44,000 acres of freehold issued under the 1872 *Mineral Lands (Sales) Act*. Such land might then be worked by private agreement without labour strictures. The Parliamentary debate on this Bill was highly reminiscent of contemporary clashes of ideology over the competing rights to minerals in Queensland soil.

(c) Racial discrimination in the mining industry.

The successful bids by the present Queensland Government to attract capital from Asia to fund mining development would have been greeted with cries of anger and disbelief by miners of a century ago. Moreover the current practice of issuing Authorities to Prospect to ventures with substantial Asian equity thereby excluding local prospectors holding Miner's Rights from potentially wealthy mineral lands reflects a complete revolution in attitudes over such entitlements in the twentieth century. For many decades following 1870 the issue of racial origins was a highly sensitive one on the Queensland gold fields.

The influx of large numbers of non-Europeans, many of them technically British subjects, to the Palmer fields in the early eighteen seventies led to the introduction of a statute imposing higher fees for Asiatic or African persons who wished to hold

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131. Copper reserves "tied up" under the provisions of the Land Act (1868) deeds of grant were similarly not available to the State during the first world war because of the refusal of the freeholders to allow mining.

132. 20 GEO V No.35.

Miners' Rights or shopkeepers licences.[133] The preamble rationalized the need for the statute thus: "whereas great expense is incurred in maintaining order on gold fields in consequence of the presence of large numbers of Asiatic aliens thereon, and whereas it is desirable to discourage the immigration of such aliens and their employment in goldmining be it enacted...." This was a somewhat forlorn hope given the industriousness of the "aliens" who were mainly Chinese. Consequently three years later a further amendment designed to debar absolutely the Chinese, by introducing the concept of the "new" gold field which was a status applying for three years following the discovery of payable gold.[134] Asiatic or African persons were not eligible for Miner's Rights in respect of such fields except in the case where those "alien" applicants were the actual discoverers of the field. By 1890 it was found necessary to give the Governor-in-Council power to deem a field a "new" gold field for further periods of time beyond the original three years.[135]

These discriminatory measures permeated much of the mining law of the time even to the extent that railway "assistance" legislation, for example the Mareeba-Chillagoe agreement, contained prohibitions on the employment of Asiatics and Africans. Some amelioration in the area of homestead leases was introduced in the pre-World War I era with the institution of an Asiatic "dictation

133. 41 VIC No.12. Miner's Rights were to be £3 and Business Licences £10. Penalty for non possession was £5 or three months imprisonment.

134. 42 VIC No.2.

135. 54 VIC No.2.

test" however the positive discrimination clauses which had carried over were to remain operative until 1968.[136]

* * * * *

It is upon this complex pattern of loosely interlocking pieces of legislation that current day mining statutes are based. The one thread which does link the network of laws is the continual struggle between the rights of the individual miner, employing small amounts of money and the large capital intensive corporate interests. The overall history of Queensland mining shows that it has been the "small man" initiatives which have created the opportunities for later large scale ventures.

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136. *The Aliens Act of 1965* (Q) (No.19 of 1965) empowered aliens to take and deal with property and interests in Queensland by repealing certain statutory provisions. The restrictions on the issue of Miners' Rights to non-Europeans were removed as were the "dictation" test provisions of the *Homestead Leases Act* 1913. Asiatics were still however denied the right to hold Business Licences on goldfields until 1968. The 1965 Act coincided with the passing of the Theiss, Peabody, Mitsui Coal Pty. Ltd. Act.

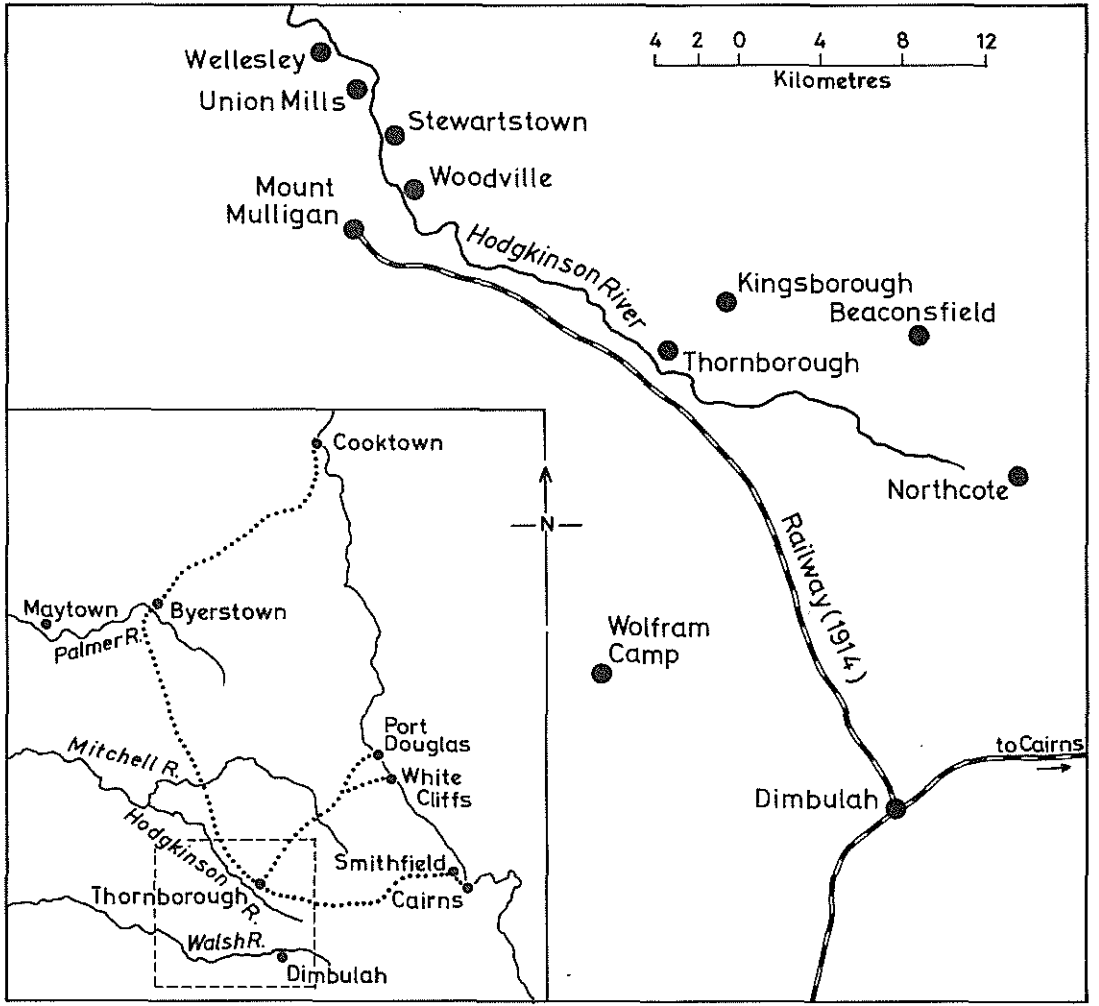

FIG 6: The Hodgkinson.

MINING ON THE HODGKINSON

Noreen Kirkman

The Hodgkinson Goldfield, extending over an area of approximately 2,000 square miles along the valley of the Hodgkinson River, was proclaimed on 15 June 1876. Although geologically similar to the great alluvial producer to its north - the Palmer - the Hodgkinson was predominantly a reefing field, with its major mines in the vicinity of Kingsborough, Thornborough and Northcote.[1] It was however a "poor relation" of the Palmer Goldfield, for while the gold output of the Palmer well exceeded a million ounces in its first decade, the yield on the Hodgkinson came to less than one-sixth that amount for a corresponding period. Though Robert Logan Jack proclaimed that it was "most undeservedly a 'neglected goldfield'",[2] and official reports retained an optimistic outlook until the first decade of the twentieth century, it was clear by 1908 that its small yield no longer justified separate goldfield administration. As the warden wrote: "THE HODGKINSON, the impoverished inheritor of former renown, rests its claim to distinction as a goldfield of the past rather than on recent achievement".[3] Accordingly in 1909, it was incorporated into the Chillagoe Gold and Mineral Field and the value of rare metals soon surpassed the earnings from gold. Yet just as Ravenswood and Charters Towers had been responsible for Townsville's development as a major seaport, the Hodgkinson gave life to Cairns and Port Douglas and prompted settlement throughout the Cairns hinterland.

The circumstances in which payable gold was discovered on the Hodgkinson River are still shrouded in mystery. The river was named as early as September 1874 by J.V. Mulligan in honour of the incumbent member for Burke, W.O. Hodgkinson, once mining warden on the Etheridge. In the following year Mulligan led a government sponsored prospecting party through "the country at the heads of the Mitchell and other rivers"

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1. See K. Levingston, Vol. I, Chapter 1, pp.10-12.
2. R.L. Jack, Notes on the Present Condition of the Hodgkinson Gold Field, GSQ bulletin 4, p.1.
3. *A.R.* 1908, p.9.

in search of payable gold, but after six months' trekking they failed to report any find. Despite the government's withdrawal of support and instruction to disband the party, Mulligan and the government geologist, Frederick Warner, persisted with their investigations.[4] In February 1876, the *Queenslander* reported that Mulligan had decided to focus on the Hodgkinson River and await the wet season, anticipating a valuable discovery. Confident Mulligan asserted that there was a goldfield in the region: "The field is on the Hodgkinson, a river twice as wide as the Palmer, and, as yet, known to very few people".[5] Of the "few people" whose curiosity was aroused, William MacLeod was unknown to Mulligan, but not for long. MacLeod's party was already working the river in late January 1876 when Mulligan's small group approached them only to be greeted by a ragged volley of gunfire. Afterwards MacLeod's men told Mulligan that he had been mistaken for "a blackfellow going to spear the horses".[6] When the rain set in at the end of the month - extraordinarily late for the wet - payable gold was found by both parties in different localities during February.[7] According to Mulligan, a compromise was reached as to publicly disclosing their finds:

> MacLeod, Kennedy and ourselves understood each other respecting the Hodgkinson River for some time, and now understand each other respecting the reporting of the field, which will be a large reefing field. 8

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4. Memorandum, Department of Mines, 31 March 1875, 75/2022 A/8711, *Q.S.A.*; Annotation dated 11 October 1875 on J.V. Mulligan to H.E. King, 25 September 1875, 75/1750 *ibid.*

5. *Queenslander*, 19 February, 25 March 1876.

6. See reprint of Mulligan's diary, *ibid.*, 1 April 1876. The true nature of this incident, which occurred on 26 January 1876, is not clear. But taken at face value, it is a revealing comment on the nature of Aboriginal-European contact in the district.

7. Mulligan noted in his diary that he discovered gold on 7 February 1876, and that when he encountered MacLeod's camp on 21 February they were "getting payable gold in different gullies". See *Cooktown Herald*, 18 March 1876.

8. *Queenslander*, 1 April 1876.

An official statement by Mulligan was lodged with Thomas Coward, the warden at Byerstown, administrative centre of the Upper Palmer. It was suggested that the reefs were "large and numerous and show freely in the stone - the alluvial is payable in places but patchy".[9]

News that rich discoveries had been made on the Hodgkinson River, almost equidistant from Maytown and the port of Cooktown, spread rapidly throughout the Palmer. The chief warden, P.F. Sellheim was ordered to supervise the rush but was hampered by the flooding of the Mitchell River. By the time Sellheim's assistant, W.R.O. Hill, arrived on the Hodgkinson on 19 April there were already 2,000 men on the ground, very few of whom were "making wages".[10] The amount of alluvial gold was limited, though three nuggets weighing 16, 20, 21 ounces respectively were uncovered; this discouraged attempts to introduce methods other than panning or dishing: no cradles had been brought to the field by late May 1876. Soon however shortage of rations, the absence of permanent administration and the fear of destitution in the face of little or no gold, forced an early exodus of diggers from the field. In fact Hill passed no fewer than 700 men returning to Byerstown, "all of whom gave most discouraging accounts of the rush".[11] The influx of disillusioned miners to Byerstown placed a severe strain on the settlement's facilities where nearly all stores had been exhausted by the middle of April.[12] Amid the atmosphere of despair, Mulligan and MacLeod were accused of misleading the far northern mining community and absconding with alluvial gold accumulated on previous prospecting excursions. The *Cooktown Herald* reported rumours of a "swindle", and that Mulligan had left for Cardwell with a hundredweight of gold in tow.[13]

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9. Statement in the names of Mulligan, Warner, Ableson, MacLeod, Kennedy and Crosby, 9 March 1876, 76/429 A/8711 *Q.S.A.*

10. W.R.O. Hill to Minister for Mines, 24 April 1876 76/9 MWO 13A/G1 *Q.S.A.* It was estimated by one miner at Hemmants Town that only five percent were making adequate finds.

11. *Ibid.*

12. *Cooktown Herald*, 12 April 1876.

13. *Ibid.*, 19, 26 April 1876; *Queenslander*, 13 May 1876.

According to F.J.W. Beardmore, a leading Cooktown businessman, the area was exhausted: "All the ground spoken of by Mulligan is old worked-out ground, as McLeod and Kennedy had thoroughly worked it for nearly two years, and others had also worked it, and left it as not payable".[14] Despite whispers of possible riots and grog-shanty talk of threats to Mulligan's life, the disenchantment was not manifested in violence.[15] Meanwhile, Hill telegraphed the Mines Minister that the position on the Hodgkinson was grim: "Alluvial no good, no large finds very few making tucker. Alluvial rush must be stopped if possible or starvation and more serious results must issue."[16] Sellheim also denounced the goldfield as "a total failure", and recommended that "every effort be made to stop such an insane rush".[17] Acting on Sellheim's urgings, the Colonial Secretary urged his counterparts throughout the country to display placards dissuading diggers from heading to North Queensland and informing them that the Hodgkinson was a fizzer.[18]

Notwithstanding the poor rewards for alluvial miners, some men recognized the reefing potential of the field. But they too encountered difficulties arising from disputes over ground as miners' rights had to be lodged at Byerstown, Maytown or Cooktown. Rather than ameliorating the confusion, Hill's short visit in April only served to alienate the prospectors, locking up valuable claims and creating a conspicuous clique of angry reefers. The *Cooktown Herald* aired their grievances on 21 June 1876:

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14. F.J.W. Beardmore to editor, *Brisbane Courier*, 22 April 1876. A similar accusation was levelled by an unidentified special correspondent in *Queenslander*, 6 May 1876.

15. A meeting of diggers exonerated Mulligan of instigating a rush, on the basis of the note of responsibility explicit in Mulligan's calls for caution. *Cooktown Herald*, 3 May 1876.

16. Telegram, W.R.O. Hill to Minister for Mines, 76/9 MWO 13A/G1 *Q.S.A.*

17. Telegram, 21 April 1876, 76/1022 COL/A 221 *Q.S.A.; Queenslander*, 22, 29 April 1876.

18. See correspondence 24, 25 April 1876, 76/1054 COL/A221 *Q.S.A.*

THE NEW RUSH

CAUTION !

The Police Magistrate has received instructions to issue the following notice:—

"*Department of Public Mines,*
"*Brisbane, April 22nd,* 1876.

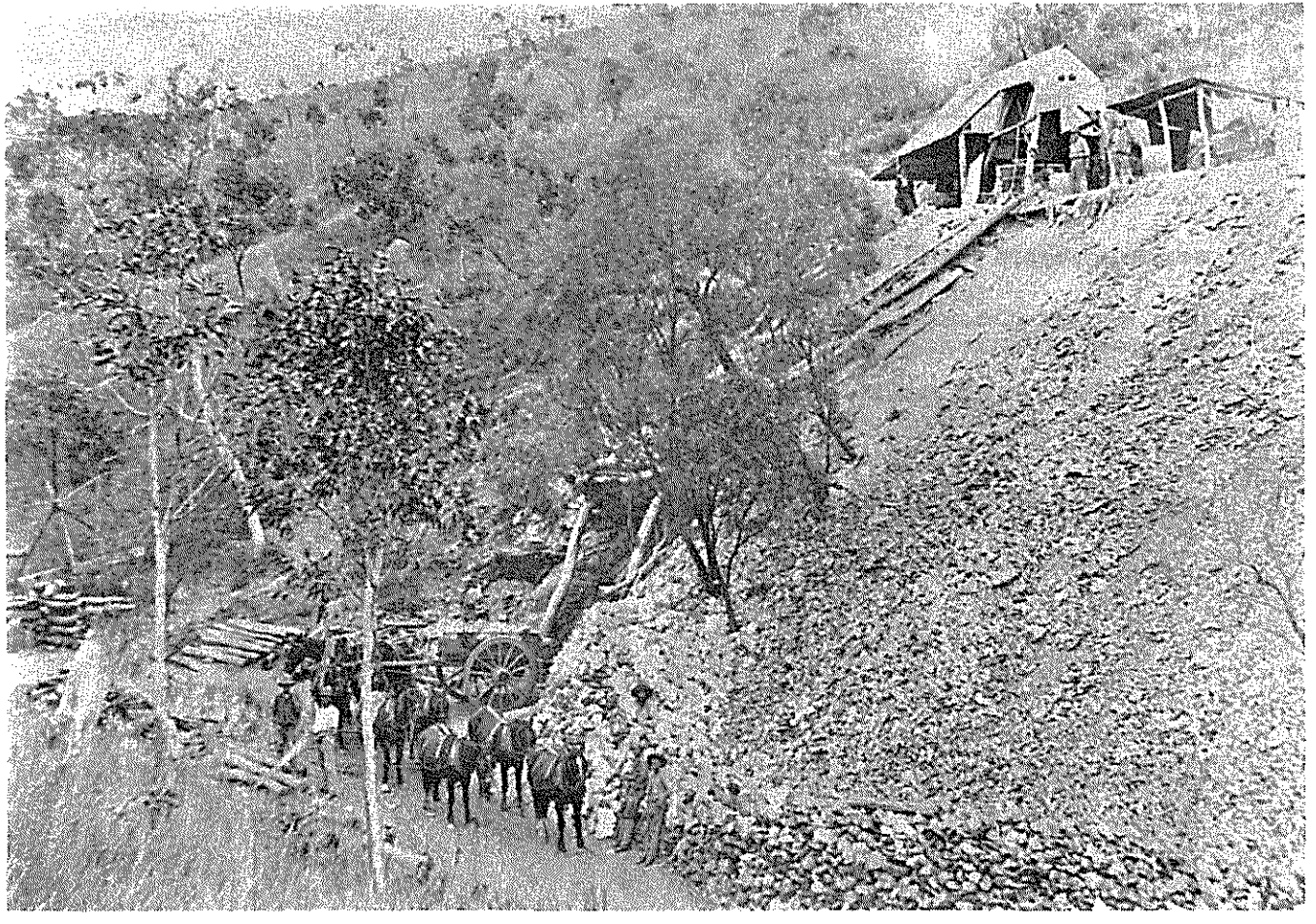
"Reliable information has been received by this Department from the Warden of the Palmer River Gold Fields, who has just returned from a visit to the locality, that the NEW RUSH is a TOTAL FAILURE.

"All the Diggers are making their way back, and great dissatisfaction and distress prevail amongst them."

Court House, Rockhampton.
April 22nd 1876.

Printed at the "Argus" Steam Printing Office, Bolsover-street, Rockhampton.

FIG 7: Government Poster, 1876 [MISC 43 *Q.S.A.*]



P33: Early Mining at Thornborough c.1880 [Oxley Library]

> This reefing district has been almost ruined by the Government not sending us a warden. £20,000 worth of capital has been utterly wasted in the ground, because the holders of numbers of reef can do nothing in the shape of developement [sic] until they are made certain of the ground they hold.

But once the goldfield had been proclaimed, reefing and dollying started in earnest. Howard St. George was despatched from Cooktown and was kept busy laying off reefs and solving disputes.

Crushing machines were brought to the field with impressive haste, inspired by the glowing descriptions of the reefs. The first was E.W. Spain's XL which was located at Glen Mowbray, having been intended for the Palmer.[19] It was quickly followed by others which were located at centres of reefing activity - Tyrconnell, Watsonville (later Woodville) and Beaconsfield - along with Plant and Jackson's Vulcan machine at Kingston (Kingsborough) and Martin's Hercules at Thornborough, the latter having been hauled by seven teams from the Etheridge.[20] A parcel of ore from Mulligan and company's King Attila P.C. was the first to be crushed on the field on 1 December 1876 by the XL. All told, eight machines were operating on the Hodgkinson within a year of its discovery. Another four arrived in the following twelve months.[21]

Faith in the permanency of the reefs was reflected in building activity: by the end of 1876 there had been an influx of entrepreneurs. As the *Cooktown Courier* reported:

> Shanty keepers are swarming in running up houses with the usual bush accommodation, in great hopes of good crushings and thirsty 'foolish' miners. The 'ladies' are pretty well represented, but nothing to what are expected to arrive. 22

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19. *Cooktown Herald*, 26 August 1876.

20. The Brisbane was situated at the Tyrconnell, the Magnet at Watsonville and the Monarch at Beaconsfield. *Hodgkinson Mining News*, 17 March 1877.

21. W.J.M., Thornborough, to editor, *Cooktown Courier*, 2 May 1877; *A.R.* 1877, p.11.

22. Cosmopolitan to editor, *Cooktown Courier*, 6 December 1876.

In almost every case settlements were located in close proximity to major reefs at which machine sites were established. By mid-1877, Kingsborough had a population of 1,100 and Thornborough 1,000;[23] no other township was over 300. The degree of confidence and optimism was rare for northern goldfields. Warden Mowbray, who succeeded St. George, remarked that "business establishments on the field appear to be fully equal to the requirements of double the population".[24] Regular church services were held in 1877, at least one Catholic chapel was built, and committees were formed to finance others.[25] This contrasted with the Palmer River field, where despite much greater population and heady prosperity no Christian church was ever constructed. At Thornborough, a school, two banks, hospital and school of arts were established,[26] and soon a vigorous campaign was underway to encourage brick construction. At the forefront of the agitation was J.S. Reid, pioneering newspaperman who had sold up his *Cooktown Courier* and launched the *Hodgkinson Mining News*. According to Reid:

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23. *Hodgkinson Mining News*, 30 June 1877.

24. *A.R.* 1877, p.12. The warden went on to say: "In Thornborough there are two banks, an assay office, two jewellers, two butchers, nine general stores, and twenty public-houses; in Watsonville, four general stores, five public-houses, and one butcher; Kingsborough, eight general stores, two butchers, and twelve public-houses; in Stewartown, four general stores, one butcher, and six public-houses; in Northcote, one general store, two butchers, and three public-houses; in Beaconsfield, one general store, four public-houses, and one butcher; in Merton, two general stores, one butcher, and two public-houses; and at Glen Mowbray, a general store, a butcher, and two public-houses."

25. *Hodgkinson Mining News*, 9 June 1877, 19 January 1878. The Anglican clergyman from Port Douglas, Clifden Eager, also conducted services.

26. A school was opened by Mr. Dodwell in October 1877, and the state school in October the following year. *Hodgkinson Mining News*, 20 October 1877, 14 September, 5, 20 October 1878. Branches of the Bank of New South Wales and Queensland National Bank were opened in 1877. *A.R.* 1877, p.12. The hospital was made of galvanized iron and catered for twenty. *Hodgkinson Mining News*, 11 August 1877. At the end of 1878, Anderson's Club Hotel was purchased for £80 for a School of Arts, Kingsborough, which eventually housed standard works of poetry, fiction, and history. *Ibid.*, 14 December 1878, 7 June 1879.

> The promise of stability which Thornborough can congratulate itself on enjoying, and the reasonable price of bricks and bricklaying, should induce intending builders to discard wood altogether and erect permanent and seemly houses straight away. 27

The second court house, finished in early 1878, with its white-washed brick walls shaded by narrow verandahs, embodied the belief that the Hodgkinson had a long life as a reefing field.

The demand for goods and machinery gave impetus to surveys for a more direct route to the coast and a suitable port. However the range and coastal swamps made the task a difficult one. By the end of 1877 the Hodgkinson was serviced by an untidy network of tracks leading to a cluster of coastal settlements, namely Cairns, White Cliffs, Port Salisbury (soon known as Port Douglas) and Smithfield, all on Trinity Bay. After Cairns and Smithfield were severely damaged by cyclone in March 1878, machine owners tended to favour Port Douglas. In a memorial to the Works Minister they argued for an access road to the port. As the *Hodgkinson Mining News* recorded:

> That Messrs Plant and Jackson, Martin Bros., and Mr Buls, machine owners on the Hodgkinson together with the principal merchants on the gold-field, have been here to inspect the road for themselves, and now so thoroughly satisfied that this is the road to which they must look to furnish them with cheap carriage so essential to the development of the Hodgkinson gold-fields, that they have ordered all future shipments to be despatched to this port. 28

However, the facility of Port Douglas did not materially effect the number of crushing plants or encourage new and efficient machinery.

Gold-bearing reefs on the Hodgkinson - of which approximately 400 distinct lines were identified - varied in width from twenty feet, as

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27. *Ibid.*, 28 July 1877.

28. *Ibid.*, 3 November 1877, 10 August 1878, 30 August 1879. Cobb & Co. and the government also supported the route via Granite Gap to Port Douglas.

found at the Tyrconnell P.C., to extremely narrow "pipes" which were difficult to trace. Their irregularity, and sometimes abrupt pinching-out, discouraged many smaller miners without sufficient capital to prospect shows at depth. Often, claims were abandoned prematurely, and in the absence of outside capital most mines were being worked on revenue from crushing returns. In an effort to conserve money, reefers cut back on timbering, which was criticised by the Inspector of Mines, and resorted to primitive handling methods.[29] While wooden-handled windlasses and greenhide buckets were only to be expected in the early days of the field, smaller claims were still employing them as late as 1884.[30] Invariably accounts of the field stressed the inefficiency of mining techniques:

> At the Explorer, Homeward Bound, Union and Home Rule the water was pulled up by bucket, necessitating two or three men's extra labour. The stone in each and all the mines was shovelled down the pass (the only shovelling it should get), shovelled into buckets and dumped into the paddock, shovelled again into the drays, broken by hand labour in the battery yard, and then shovelled into the barrow to the battery.... 31

By 1882 there were only four mines (two of which were later wound up) worked by steam machinery, totalling twenty-six horsepower; there were only nine with horse drawn whips or whims.

In contrast, however, the battery owners were highly mechanised. By 1882 there were ten mills powered by steam engines aggregating 133 horsepower, as well as thirteen Berdans, six Wheeler pans, and other appliances.[32] But to ensure a return on their outlay and to offset their high operating costs, the machine owners were obliged to strike

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29. *A.R.* 1883, p.72. See also *Hodgkinson Mining News*, 27 October 1877; *A.R.* 1884, p.69.

30. *A.R.* 1877, p.11; 1884, p.69.

31. G.J.E., "The Hodgkinson District", *The North Queensland Mining Annual* (Charters Towers 1891), p.125.

32. *A.R.* 1882, p.22.

expensive crushing charges which, in turn, militated against the mines' profitability. With rates as high as £2 per ton in 1877, the *Hodgkinson Mining News* was widely acclaimed for its criticism of the machine owners for refusing to cut costs. Their action had brought "capital into contest with labour" and had left miners "utterly unable to hold against the powerful combination...who were evidently determined to make the miners pay for the heavy cost of the erection of machines on the field".[33] Early in 1878, the Vulcan battery reduced rates to £1/2/6. The ring having been broken, crushing rates came down dramatically and thereafter fluctuated from between 12/- and 20/- per ton. Water supplies were crucial for the machine owners, and only after sufficient dams were built were they able to maintain continuous crushings; some mills relocated for better water supplies.[34] Even so, the benefits of more cost efficient batteries only went a small way in compensating the miners, for carriage rates remained a major impost. Carriers made up for the lack of feed and the uncertainty of consignments of stone by averaging their rates which were as high as thirty shillings per ton in 1877 and £1/2/6 in 1879.[35]

The advent of company mining in the early 1880s was a dismal failure.[36] The first and longest lasting of these companies, Tyrconnell

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33. *Hodgkinson Mining News*, 3 November 1877. Immediately after the first crushing on the Hodgkinson miners talked of holding a meeting to protest against the rate of crushing. A year later the situation was much the same despite the existence of 12 machines on the field. *Cooktown Courier*, 2 December 1876, and *Hodgkinson Mining News*, 31 March 1877.

34. Small dams were built at the Beaconsfield, Hercules and Vulcan machine sites. The XL was removed to Northcote, and then to Deep Creek because of the lack of water.

35. *Hodgkinson Mining News*, 31 March 1877; *A.R.* 1879, p.20.

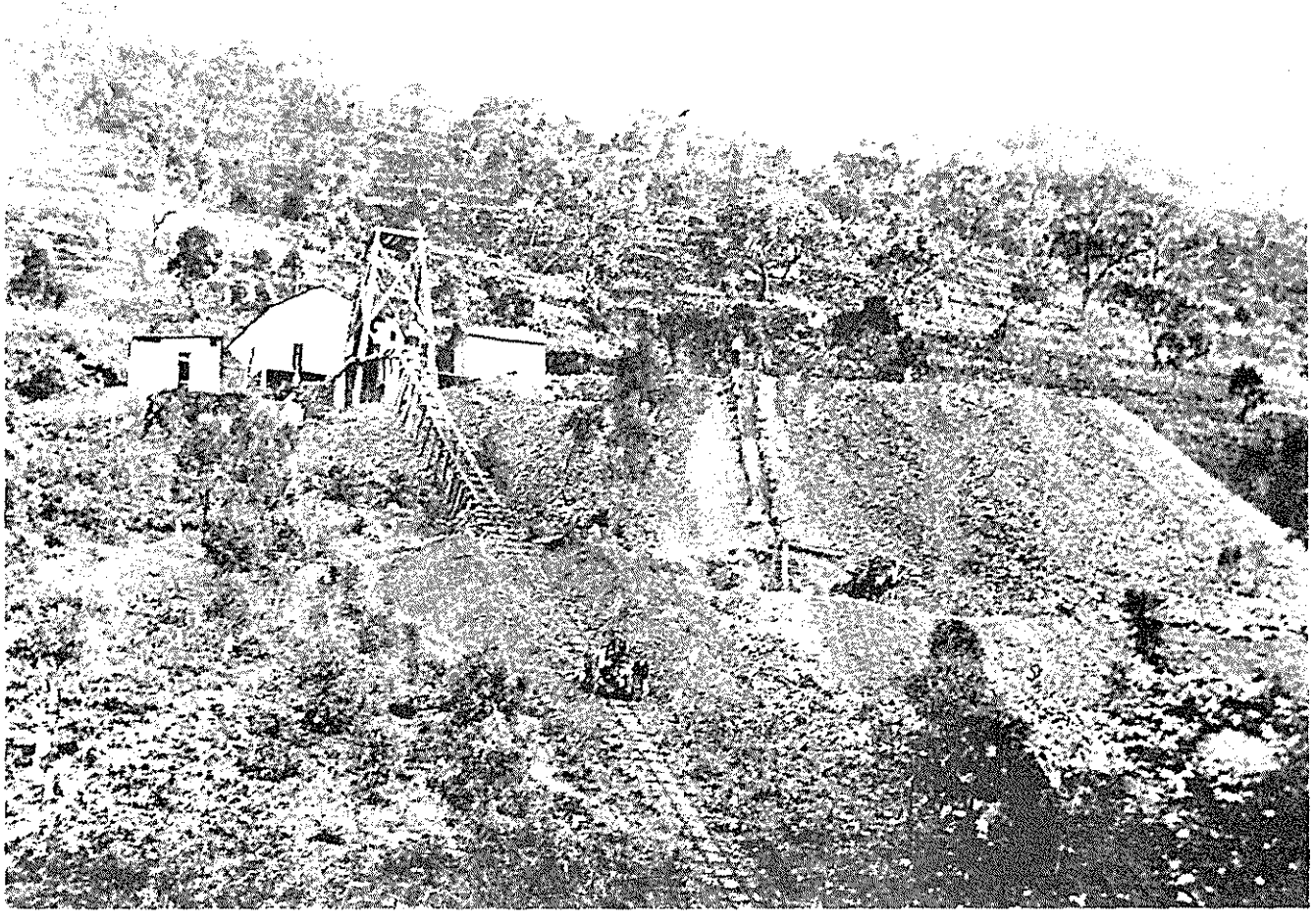
36. There were two unsuccessful attempts prior to 1877 to form companies. The Pioneer Gold Mining Company, with J.V. Mulligan a director, tried to promote prospecting by a tunnel to the major Thornborough reefs. The Kingsborough Quartz Crushing Limited planned to erect a co-operative battery at Kingsborough.

Gold Mining Co., was formed to purchase and work the Tyrconnell and Lizzie Redmond lines of reef. Considerable capital was invested sinking the Tyrconnell to 430 feet, the deepest shaft on the field in 1884, and acquiring the Vulcan mill. But operations were self-defeating: the mill remained at Kingsborough and the cost of carriage was too high to transport stone from the mine to the battery. With funds exhausted in less than two years, the Tyrconnell mine was let on tribute and the machinery was listed for auction. The other companies had even shorter lives. The first crushing of the Home Rule Gold Mining Limited of 459 tons for a miserable 178 ounces of gold was "about the poorest crushings that have taken place on the Hodgkinson".[37] Like the Homeward Bound Gold Mining Co. and the Hodgkinson Union Gold Mining Co. it folded within twelve months. The only other attempt at company mining in this period was connected not with gold, but antimony. A semi-metal similar in appearance to zinc, antimony was added to lead as a hardening agent. It had been mined at Northcote as early as 1877, and by 1882 there were eight lease applications in force absorbing a sizeable labour force. In response to the demand for a reduction works, the Northcote Antimony Smelting Co. was formed and commenced operations in early 1884. However, inadequate capital outlay on plant and disappointing returns, over which there had been long delays, compelled the board to close down at the end of the year.[38] The failure of company mining and the prolonged drought of 1883-85 influenced the downturn in the fortunes of the Hodgkinson. European miners were attracted to tin discoveries on the Barron, Wild and Tate Rivers, and silver at Silver Valley, and the population decreased dramatically. Chinese became correspondingly more conspicuous.

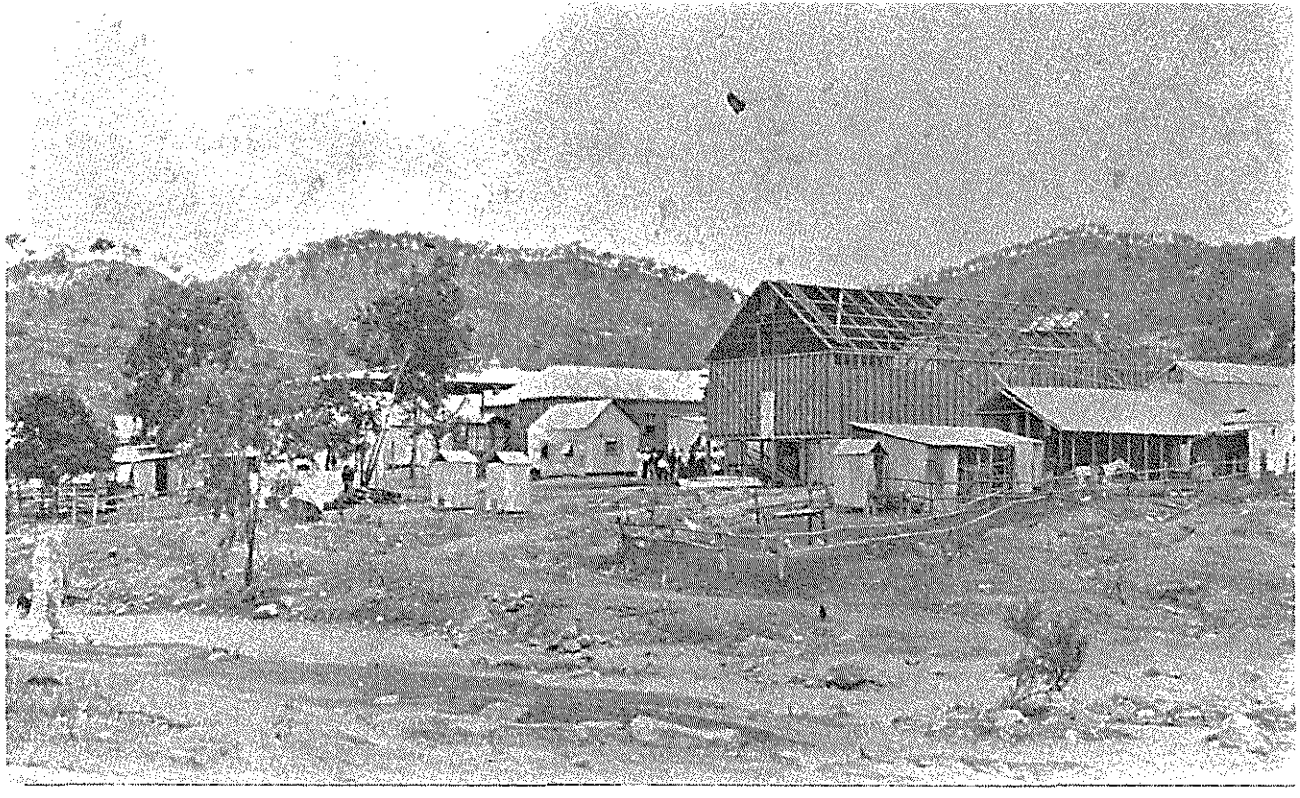
Despite the anti-Chinese vitriol of the *Hodgkinson Mining News*, Chinese were not involved to any great extent in alluvial mining. As the editor unwittingly admitted in April 1877: "This is a reefing diggings, not alluvial, and there is not a single Chinaman that we know

37. *A.R.* 1882, p.18.

38. *A.R.* 1884, p.24.



P34: General Grant mine, Kingsborough [*A.R.* 1901]



P35: Gilders' picture show under construction, Wolfram
[Cairns Historical Society]

of connected with mining of any sort on the field".[39] This was before the failure of the Lukinville rush of 1878, after which the Chinese population of the Hodgkinson climbed temporarily to 2,000. Still the 1878 legislation which provided for a moratorium of three years from the discovery of a field before miners' rights could be issued to Asiatics or Africans was effective in reducing the number of Chinese to 220 by the end of 1879.[40] Those who remained found the service industry more lucrative than gully-raking, and engaged in a wide range of activities from providing firewood to offering a first class table at Wah Lee's Canton Hotel in MacLeod Street, Thornborough.[41] By 1885 Chinese market gardening was a prosperous industry, as the mining warden noted: "Besides vegetables, they produced 137 tons maize worth £1,918; 38 tons of English potatoes worth £760 and 37½ tons of sweet potatoes worth £150."[42] With a shortage of European labour at the batteries, at least one major partnership recruited Chinese workers. As Jackson explained to a public meeting:

> To prevent the entire suspension of work at his mills he had been compelled to employ some Chinamen to carry in wood to it - no teams being procurable. It was a matter of necessity or he would never have employed Chinamen. He was paying them as much as he paid Europeans, and therefore it was not for the sake of cheap labour he had them - indeed he never thought Chinese labour cheap. 43

By the mid-1880s as many as forty-three Chinese were engaged in quartz-mining at the Union No. 1 Tunnel and the Black Ball.

This new source of labour, however, could not arrest the decline of the field, which was exacerbated by rushes to Croydon and the Kimberleys in 1886 and by attractive wages at the Montalbion silver mines. Several

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39. *Hodgkinson Mining News*, 7 April 1877.

40. *A.R.* 1878, p.24; 1879, p.19.

41. *Hodgkinson Mining News*, 30 June 1877. Wah Lee was from Ravenswood. He worked his hotel for nearly forty years.

42. *A.R.* 1885, p.28.

43. *Hodgkinson Mining News*, 11 January 1879.

mills were dismantled and removed to other fields.[44] Within fifteen years of its discovery the yield had dwindled to just over five hundred ounces for an entire year. Though Sellheim contended that "the Hodgkinson cannot be said to be fairly tested yet", it was on the verge of complete desertion by 1891.[45]

For five years, during the depression of the 1890s, the field was moribund apart from a few gougers. Quite unexpectedly there was a revival. The opening of the Cairns-Mareeba railway in 1893 had made the field more accessible; the increasing use of the cyanide process throughout North Queensland promised improved returns for reefing fields. In 1896 there were new finds in the Kingsborough district which led to the erection of the Reconstruction mill, formerly the Good Hope battery from Limestone, and a cyanide plant. The real spur came in 1897 when British money - the Cecil Syndicate - focused on the General Grant mine. With an infusion of capital not previously witnessed in the area, the syndicate erected sophisticated surface plant and sunk the shaft to 580 feet. Following close on the confidence generated by the Cecil Syndicate, and partly inspired by a boom in gold scrip stimulated by the West Australian boom, no fewer than eleven companies were floated to work the Hodgkinson over the next few years. These included the Great Dyke Gold Mining Company, the Monarch Gold Mining Company and the Cyanide Gold Recovery Company. The Hodgkinson United Gold Mining Company opened the General Grant No. 1 South to 735 feet, the deepest shaft on the field, and soon the population began to return. The revival was reflected in the resurgence of building activity in the older almost abandoned settlements. As the warden reported:

> The field in general appears to be steadily progressing, and the population daily increasing. Many of the old hands are

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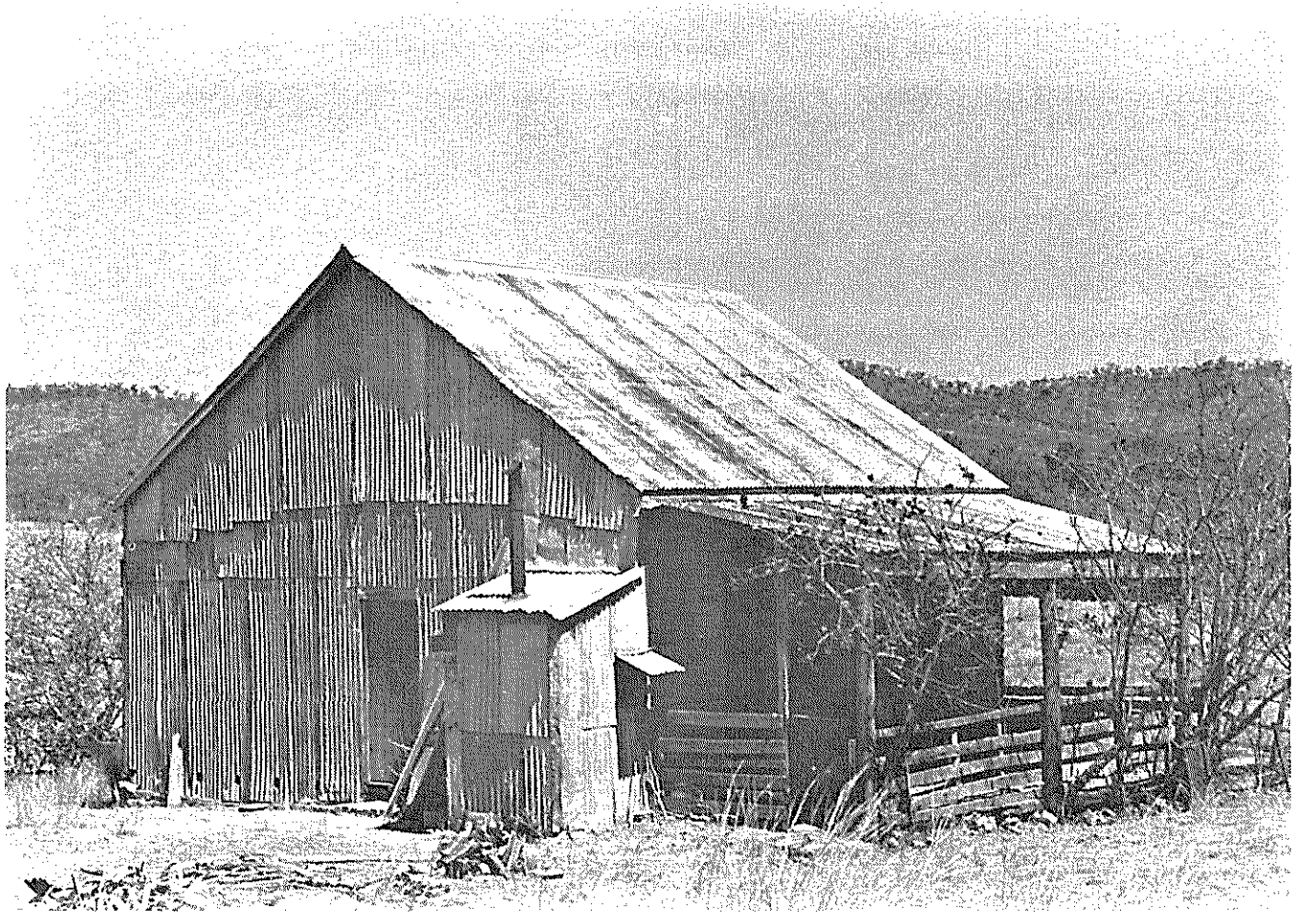
44. The Mowbray mill was removed to the Etheridge and the Lady Marianne to Herberton. *A.R.* 1890, p.32; 1891, p.75. The Vulcan was re-erected at "Sam the Roman's Camp". *A.R.* 1896, p.72.

45. *A.R.* 1891, p.6.

P36: Reconstruction Battery, Kingsborough, 1979 [Ron Burnett]



P37: Former Canton Hotel, 1979 [P. Bell]

> returning here with their families, which has caused quite a demand for dwelling houses. Judging from the activity they are showing in the way of new buildings both at Thornborough and Kingsborough, the latter place in particular, would lead one to believe they have come to stay. 46

The revival, however, was as ephemeral as it was unexpected, not least because of disappointing results. The first crushing from the deep General Grant No. 1 South yielded under fifteen pennyweights to the ton. The warden commented that "the funds of the company were completely exhausted and an effort was made to reconstruct, but failing the company went into liquidation". The whole concern - mine, plant and battery - went under the hammer for a paltry £650.[47] Similarly the crushings from the Cecil Syndicate's mine did not even recoup the £8,000 outlayed on a ten million gallons capacity dam and the erection costs on the mill and cyanide plant.[48] Rather than waste public funds on a goldfield with little yield, the Mines Department abolished the separate administration and incorporated the Hodgkinson into the Chillagoe Gold and Mineral Field in 1909. It was a realistic move for the local men were now turning to other forms of mining. As the Under-Secretary for Mines noted:

> As a goldfield the Hodgkinson has ceased to command much consideration, such prosperity as the field enjoys and any attention that it receives being due to its stores of wolfram, molybdenite and antimony. 49

Demand for high grade wolfram, after the development of tungsten as a lamp filament in 1904, and for molybdenite for use in patent alloys, led to an early interest in rare metals by British firms, the most

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46. *A.R.* 1898, p.67.
47. *A.R.* 1904, p.115.
48. *A.R.* 1905, p.78; 1906, p.7.
49. *A.R.* 1910, p.8.

prominent being George G. Blackwell & Sons of Liverpool.[50] Prices for both metals were high - up to £200 per ton for molybdenite and £140 per ton for wolfram - and attracted many goldminers to "a very lucrative occupation". Of the 1,136 people on the Hodgkinson in 1904, 700 were rare metal miners working at Wolfram Camp,[51] where molybdenite and bismuth were found in association with the wolfram ore. By 1909, when the field was abolished, wolfram was returning £41,820 compared to the value of gold production at £7,089. But the rare metals industry was not as stable as statistics might indicate: there was an insecurity in unknown overseas markets where demand fluctuated erratically, and local miners were never sure of their returns. A Wolfram Co-operative Association was formed to arrange advances and shipments through intermediaries such as the New Zealand Loan & Mercantile Agency and W.J. Lempriere & Co., but generally the local industry was poorly organised.

In 1907 the Irvinebank Mining Company bought into most of the wolfram mines. As the warden recorded:

> Wolfram has undoubtedly been the saviour of this field. It has been accountable for nearly three-fourths of the value of the mineral production of the year, and has given employment to an average of 550 men. Applications by the individual miners for a claim of one man's ground are, however, becoming less frequent, and the Irvinebank Mining Company are the owners of almost the whole of Wolfram Camp. In fact, with the exception of Larkin and Party's, P. Vallely's, and the claim known as Nicholls's, there are practically no other claims of any importance in which the company named are not interested. The company has not been slow either in taking advantage of its chances, and has already erected an 8-h.p. winding plant on one of the principal claims, the Wheate. They have also erected a most effective and up-to-date plant

50. *A.R.* 1904, pp.79-80. The names Tungsten and Wolfram are interchangeable, the chemical symbol being W. See W. Alexander & A. Street, *Metals in the Service of Man* (Harmondsworth 1979), pp.275-6.

51. *A.R.* 1904, pp.79-80.

> for the treatment of their stone on the ground; and, judging by present appearances, the majority of the claims at Old Wolfram Camp seem to have fallen into very capable hands. 52

The company's output was substantially reduced in 1908-9 by a miners' strike over hours and safety,[53] coinciding with a sudden drop in the price of wolfram. After the dispute was settled, the company was obliged to spend additional funds on development before the mines could be reworked.

Just prior to World War I, new companies became involved in rare metals, with disillusioning results. In 1912, the Societe Francaise de Metaux Rares installed £50,000 worth of machinery at Wolfram Camp, only to be liquidated the following year.[54] Soon after the Irvinebank Mining Company withdrew; but the advent of the Thermo-Electric Ore Reduction Corporation sustained the district through the war years with the government paying fixed prices. The company however failed to survive the slump in metal prices after the return to free market forces in March 1920. Within weeks Wolfram Camp was almost deserted:

> It is improbable that the lessees of the richer holdings at Wolfram Camp will reopen their mines until molybdenite has increased to at least £3 per unit and a market offers for wolfram at not less than £1. The mines are full of water and the expense of recomissioning them would be heavy. 55

Wolfram was worked periodically in the interwar years and during the 1940s, with government assistance, but the scale of operations was far from impressive.[56]

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52. *A.R.* 1907, p.87.

53. For details of the dispute, see *A.R.* 1909, p.39; D.W. Hunt, "Mining Unionism in the Far North", *Lectures in North Queensland History*, Third Series, pp.35ff.

54. *A.R.* 1912, p.44; 1913, p.42.

55. *A.R.* 1920, p.49.

56. In 1926, the Queensland Rare Metal Company commenced work on the Larkin and Forget-Me-Not ground, but had not realized expectations. There was even a rush to Wolfram Camp in 1937, and the increased demand during the Second World War sustained mining for that metal. *A.R.* 1926, p.37; *A.R.* 1937, p.53; *A.R.* 1942, p.38; *A.R.* 1944, p.43.

Meanwhile, Mount Mulligan had become the centre for yet another branch of mining. The possibility of cheap local coke for the ailing base metal industry at Chillagoe and Irvinebank led to a vigorous development programme at Mount Mulligan and the construction of a railway from Dimbulah to the mine. The line passed close to Thornborough, but hopes for a gold revival were not realised, partly due to the outbreak of war in Europe, which drained the labour force of the country's mining fields. Despite the extraordinary expectations which Mount Mulligan engendered, the coal mines had relatively little impact on the surrounding district. A metallurgical coking proposal came to nothing, and the coal mine did little more than marginally reduce the cost of local railway coal. Even in its peak production period, the mine accounted for less than four percent of the state's output. The 1921 disaster was its chief historical claim, galvanising the entire Hodgkinson community in the relief work that followed.[57] The mine eventually closed in 1958, long after Thornborough, Wolfram Camp and the other settlements had been abandoned to the white-ants.

As a goldfield, the Hodgkinson had experienced a heady but brief rush and had quickly evolved into a moderately successful reefing district: its gold averaged £3/10/0 per ounce and total output aggregated 173,603 ounces to 1886. Due to its remoteness, the Hodgkinson still harbours a considerable amount of abandoned and derelict machinery, which escaped the scrap metal dealers of the interwar years, a testimony to better days long past. The Tyrconnell headframe, mill and surface plant remains seemingly in working order, and Wah Lee's Canton Hotel is still located in Thornborough, occupied by a long time resident. Plans to rework the Tyrconnell, abandoned in 1942, have proved fruitless, but typical of most North Queensland goldfields, there are always a few people with local knowledge confident that a new discovery will be made some day to restore the field to its former proportions.

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57. For details of Mount Mulligan, see Bell, Vol. 1, Chapter 9, and his monograph, *The Mount Mulligan Disaster* (Townsville 1978).

P38: Tyrconnell Headframe and engine house, 1979 [P. Bell]

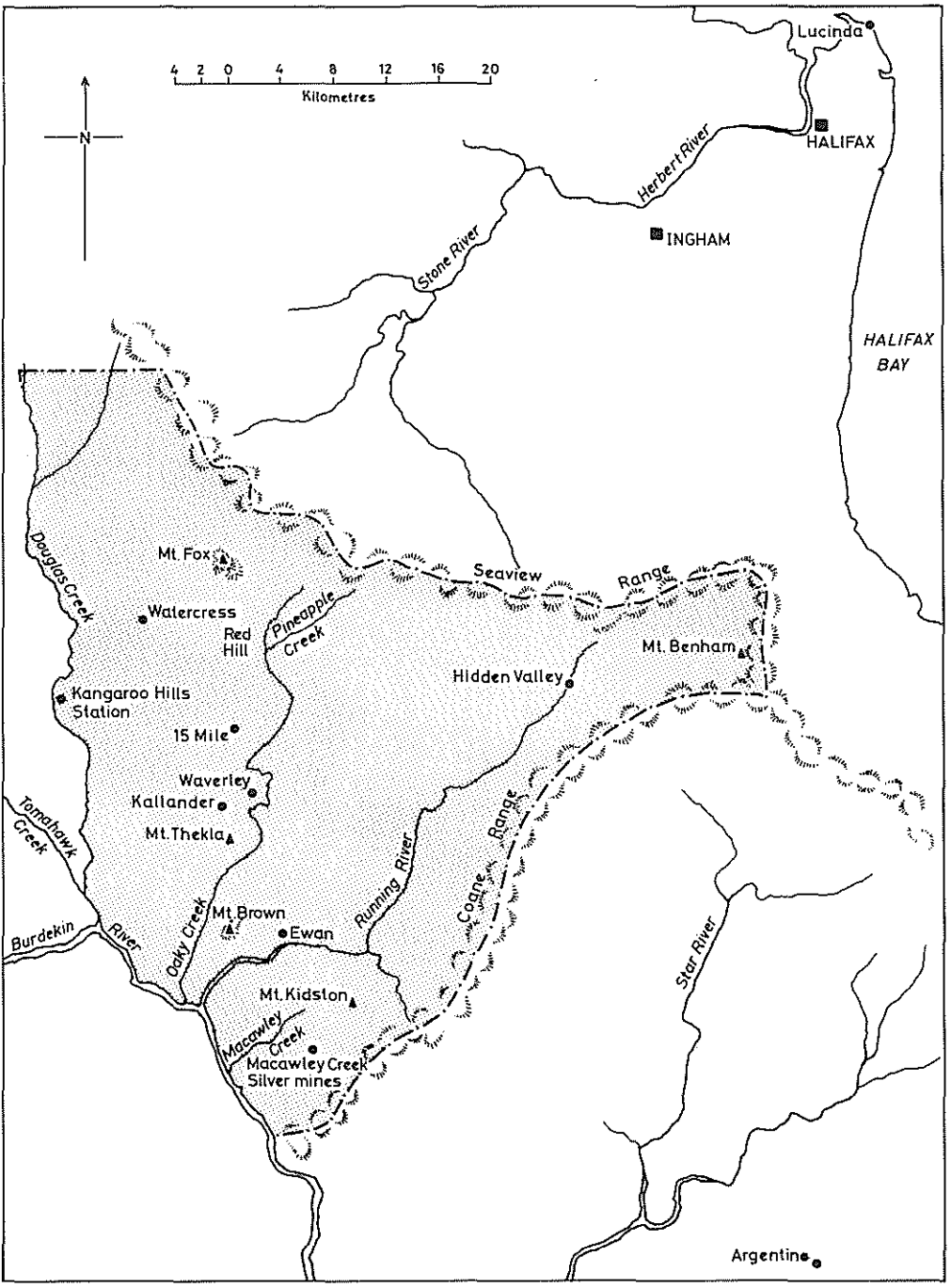

FIG 8: Kangaroo Hills Field.

KANGAROO HILLS

Janice Wegner

One of the lesser known North Queensland mineral fields is Kangaroo Hills, situated on a dissected plateau behind the Seaview Ranges inland from Halifax Bay, and bounded on the west by the Burdekin River and its tributary Douglas Creek. Though in a rainshadow, the field is traversed by creeks rising in the coastal ranges where high rainfall ensures a reasonable flow of water for most of the year. Except for the river flats, the landscape is steep and hilly. Geologically, it consists of altered and severely folded sedimentary rocks with granite intrusions and recent basalt flows. The economic minerals comprise tin, copper, silver and wolfram, while iron ore, lead, antimony, bismuth, molybdenite, zinc and gold occur in small quantities. Most of the ore-bodies worked were small and discontinuous, occuring in small shoots, pipes, lenses and veins in fissure lodes. Tin is the most widely-spread mineral and has been exploited in four forms: alluvials, lodes, deep leads covered by basalt and sandstone which cap many high areas, and extensive leads exposed by the weathering of the overburden. It is mainly cassiterite with some stannite. Copper has been located in association with other minerals,[1] but none of the deposits have proved payable below the zones of oxidisation and slight secondary enrichment at 100-150 feet. Silver was obtained from contact deposits, occuring in association with lead.[2] Kangaroo Hills was thus cursed with small patchy ore-bodies, impermanent water, difficult terrain and access problems warranting only small scale enterprise. It is understandable that every large venture on the field came to grief.

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1. Principally found as azurite, malachite, cuprite and bornite, and in association with galena and sphalerite.

2. F. de Keyser, R.S.H. Fardon, and L.G. Cattler, *Explanatory Notes on the Ingham Geological Sheet*, 1:250,000 Geological Series, 1965, pp. 6, 10, 21-24; and D.H. Wyatt, *Explanatory Notes on the Townsville Geological Sheet*, 1:250,000 Geological Series, 1972, pp.21-25.

While there were vague reports of alluvial tin and silver discoveries during the 1870s,[3] the first official notice came in 1883 when the Ravenswood warden reported finds of alluvial and lode tin on John Allingham's Kangaroo Hills Station.[4] Edward Naven and John Regner located lodes on Douglas Creek and soon after, in January 1884, the warden recommended a careful investigation of Oakey Creek and Running River to the south.[5] By June 1885 there were over a hundred miners making good wages from alluvial tin, principally around Oakey Creek. Supplies were carried by pack horse from Ingham over the ranges by the local storekeepers, Kenion and Co., who returned to Dungeness with tin for export.[6] Meanwhile, Naven, Regner and another party had taken up their ground under freehold tenure, and despatched ore to Sydney which apparently fetched high prices. A company was floated to bring in men and machinery, and following favourable assessments, the properties were reportedly floated in London in 1886, though the evidence on their activities is meagre.[7] However the Mineral Lands Commissioner noted in 1887 that no work had been done.[8] Indeed Kangaroo Hills was already being termed a

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3. *Queenslander*, 27 July 1872 and 14 November 1891, p.943; and A.G. Maitland, Geology and Mineral Resources of the Upper Burdekin, G.S.Q. publication 71, p.210.

4. *A.R.* 1883, p.31.

5. *Queenslander*, 23 May 1883, p.825. J.V. Mulligan claims to have prospected Douglas Creek and Running River in 1883. He said the deposits of tin found were too small to work, but that the location of his discoveries was afterwards rushed. J.V. Mulligan, "A Prospecting Trip to the Herbert", *Queenslander*, 12 November 1904. Tin was first reported from Running Creek, presumably Running River; but there is a Running Creek and an Oakey Creek to the south of Kangaroo Hills, tributaries of the Star River, which makes some early reports confusing. For the Warden's comments, see *Queenslander*, 12 January 1884, p.105.

6. Dungeness was Ingham's port, and was later replaced by Lucinda. In 1888 packing cost £10/ton; the Commissioner noted that supplies were reasonably priced and plentiful. *A.R.* 1888, p.79.

7. For available information see *Queenslander*, 12 January 1884, p.105; 31 October 1885, p.713; *A.R.* 1883, p.31; 1886, p.62. Macdonald Cameron was sent out from England to value the properties, but no more was heard on the subject.

8. *A.R.* 1887, p.80.

"poor man's field",[9] and by the beginning of 1890 there remained fewer than twenty miners at work.[10]

Despite this inauspicious beginning, there was no doubt that the alluvial tin was rich and finds of copper, wolfram, molybdenite and silver marked the field as a potentially lucrative area for investment. It was the silver boom of the late 1880s which ushered in the most extravagant phase of development in 1890. A prospector named Richard Moss was said to have discovered silver lodes at Running River in 1871 but made no effort to exploit them for nearly twenty years. In June 1890 a Government geologist, a Gibb Maitland, found that the only real work yet done was to Coane and Clarke's Hidden Treasure, near a camp called Donnybrook.[11] However, the interest of southern speculators and local investors was soon attracted and manifested in an attempt to take up large areas as coal prospecting leases.[12] Under the 1886 Mineral Lands (Coal-mining) Act, licencees could occupy up to 640 acres at sixpence per acre per year, but after the applications were lodged Kelly Cusack, the Ravenswood warden, detected chicanery and refused them.[13] The principal offender, the Running River Mining Syndicate, was then obliged to incorporate to work its eleven leases. A scramble for silver properties followed and over a hundred lease applications were made, mainly by syndicates from Ingham, Hughenden and Charters Towers.[14] By late 1891 the working population was estimated at 1,500 and the field was being 'boomed' by means of frequent comparisons with Broken Hill.[15]

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9. *Queenslander*, 4 June 1887, p.903.

10. *A.R.* 1889, p.84.

11. Maitland, Geology and Mineral Resources of the Upper Burdekin, pp.210-211.

12. *North Queensland Mining Annual*, 1891, p.40.

13. *A.R.* 1891, p.60. Until then Kangaroo Hills had been under the jurisdiction of the Ingham Commissioner, but from 1891-1893 the Ravenswood office supervised the field. After 1893 it was returned to the Ingham Office.

14. *A.R.* 1891, p.60; *North Queensland Mining Annual*, 1891, pp.40-41.

15. For example see J. Curtin Minns's comments in *Queenslander*, 14 November 1891, p.943.

A new township, Ewan, complete with police station and hotel, accommodated the local miners who seemed more interested in company promotion than mining.[16] A syndicate was formed to erect smelters, to be removed from Ravenswood;[17] the White Star was sold to a Sydney company with a capital of £10,000; the Hidden Treasure was floated locally,[18] and the True Blue was hawked on the Melbourne market. At the forefront was the Running River company, which was trying to sell some of its properties in Adelaide and Melbourne and was asking £500,000 for mines on a new and as yet untested field.[19] Further indications of the silver mania were the visit of representatives of Broken Hill Proprietary to the area,[20] and the examination of the field undertaken by R.L. Jack, Chief Government Geologist. But the bubble burst soon after.

There had been some indications by early November 1891 that all was not above board. The Melbourne syndicate interested in the True Blue surrendered its option; the Adelaide syndicate to which part of the Running River Company's ground had been offered broke off negotiations, purportedly on the advice of the B.H.P. experts,[21] and disaster struck. The price of Running River shares plunged dramatically, and most of the Southern shareholders defaulted on the subsequent call. The company was bankrupt, owing £700 to miners for wages and £175 in outstanding accounts.[22] It was immediately wound up with the intention of re-constructing; it applied for exemption for its properties but most were refused and were forfeited. Ironically Jack's report, which was published

16. Unfortunately the silver production figures were included with Ravenswood's and so are not available for 1890-91, but Logan Jack suggests that scarcely 200 tons of payable ore were raised. R.L. Jack, The Kangaroo Hills Silver and Tin Mines, G.S.Q. publication 82, p.2.
17. *Queenslander*, 12 September 1891, p.513.
18. *Queenslander*, 25 July 1891, p.513.
19. *Queenslander*, 7 November 1891, p.870.
20. *Queenslander*, 12 July 1891, p.1145.
21. *Queenslander*, 13 February 1892, p.320.
22. *Queenslander*, 23 January 1892, p.178.

soon after, was quite favourable, but could do little in the face of the general collapse of the silver boom.[23]

These developments had immediate local repercussions. A panic among the small syndicates depressed the field.[24] The population declined rapidly and local storekeepers found themselves in an unenviable situation. By 1892 there were only six miners working silver, and Ewan had almost disappeared.[25] Attempts to resuscitate the field all failed. The Running River Company was reformed but did no work; a Hughenden group purchased the Caledonian but then withdrew.[26] As the miners found it impossible to obtain financial support to develop the lodes, they were gradually abandoned, though men such as John Lennox and George Rannie persisted for little return.[27] The tin deposits however seemed more promising.

In the early 1890s, some lode tin properties were investigated and tested. Mines at Mt. Brown were initially attractive, but as the ore contained bismuth it was not saleable in the colony, though several tons were shipped overseas.[28] They were abandoned, at least temporarily. In 1891 alluvial miners discovered tin in the Mt. Spec, Mt. Benham and Mt. Certainty areas. Machinery was ordered and at least one company, Mt. Spec Tin Mines, was successfully floated on mainly local capital.[29]

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23. Jack, The Kangaroo Hills Silver and Tin Mines, p.2. See J.W. McCarthy, British Investment in Overseas Mining, (PhD thesis London 1960), p.32.

24. *North Queensland Mining Annual*, 1891, p.41.

25. *A.R.* 1892, p.94. In 1901 Cameron found only two houses in the town: W.E. Cameron, The Kangaroo Hills Mineral Field, G.S.Q. publication 167, p.1.

26. *Queenslander*, 2 April 1892, p.630; *A.R.* 1892, p.94.

27. *Queenslander*, 28 May 1892, p.1049; *A.R.* 1893, p.98. Lennox was the smelting manager of the Cloncurry Copper and Smelting Company in 1885, and came to Kangaroo Hills for the silver boom. He and Rannie owned one of the Mt. Brown properties and became involved in every major venture on the field thereafter. *North Queensland Register*, 7 June 1915, p.51.

28. *A.R.* 1891, pp.7, 60.

29. See *Queenslander*, 7 May 1892, p.870; *A.R.* 1891, p.98.

However the leases went under exemption because of transport difficulties, low tin prices and the hazards of mining in the dense rainforests: excessive water, leeches, fleas, scrub ticks and stinging trees made working conditions intolerable for the miners. Nearly a decade later, the lodes were taken up again by a Charters Towers company which erected a battery with great difficulty, but it too succumbed to the adversities of the terrain.[30] Aside from some alluvial mining and the brief wolfram rush to Ollera Creek,[31] the area was dormant until tin prices rose late in 1898.

Rich shoots of lode tin were discovered in 1898 on Oakey Creek by John Bowes, and soon after several companies were formed to work the area. The largest was the Waverley Tin Mines Limited, registered in Melbourne, with Joseph Cowan Syme as chairman.[32] The company spent some thousands of pounds opening mines, principally the Guy Mannering, and constructing roads. In 1900 it erected a comprehensive ten head battery and mill, equipped with rolls, jigs, buddles and Wilfley tables, at a cost of £10,000, and treated 220 tons in five weeks before the water supply failed.[33] It then built a dam across Oakey Creek and a sawmill at Mt. Fox to overcome the district's notable lack of timber. A new township, Kallanda, was established near the company's mines: by 1901 it comprised an hotel, a few stores including a post office, some Chinese gardens and a police lockup, transferred from Ewan. A visitor in 1900 described it as a "blot on the landscape", noting that he had never witnessed "such a pandemonium of fights and foul exhibitions as on

30. *North Queensland Herald,* 24 August, 1901; *A.R.* 1893, p.98; 1902, p.84.

31. *A.R.* 1894, p.106.

32. Syme was a director of Mt. Lyell and the Silverton Tramway Company. *A.R.* 1902, p.84; Supplement to the *British Australasian and New Zealand Mail,* May 1901, p.xxxviii.

33. *A.R.* 1899, p.14; 1900, p.100; *North Queensland Register,* 21 May 1900.

payday".[34] Some miners settled nearby at the site of the Waverley Company's office, where a pub, store and school were established.[35]

Though the Waverley Company had begun with a nominal capital of £150,000, shares worth £130,000 were retained by the promoters and the remainder was swallowed by the difficulties of opening new mines in an inaccessible area. As the road to Townsville was often closed for want of grass and water, much of the tin was carried to Ingham by packhorse at extra expense, and it was suggested that a "small show" like Waverley could have retained a manager for less than his £1,000 a year.[36] Even the dam soon became useless when no funds were available to repair it. Debentures were issued to secure a further £8,666 in working capital but the company still failed to return profits and the shareholders, mostly Ingham and Melbourne investors, lost their money. The debenture holders subsequently effected a reconstruction but found success to be elusive. At first the company relaxed its policy of refusing to treat public ores, and then was persuaded by Frank Fraser, the largest local shareholder, to let the mines on tribute. However even the tributors and the customs ore could not keep the mill fully occupied, due partly to the patchy nature of the ore bodies and partly to competition from Poppendorf's three stamp prospecting battery on Oakey Creek.[37] The mill finally shut down in 1908 and was advertised for sale for £500. It had produced £25,000 worth of tin but, as the government geologist, Cameron, had noted, extravagant management had spent too much on unproved mines in a remote area.[38] At least it had opened up the field by building roads and batteries.

A similarly ill-starred venture was the attempt to exploit the copper-silver deposits on Kangaroo Hills. It seemed after 1898, when

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34. *North Queensland Register*, 21 May 1900.

35. *A.R.* 1901, p.88; Report of the Department of Public Instruction for 1905.

36. *North Queensland Register*, 21 May 1900; *North Queensland Herald*, 10 June 1901, p.4.

37. *A.R.* 1901, p.90; 1903, p.89; 1904, p.83. Fraser became manager, without pay.

38. W.E. Cameron, "Kangaroo Hills" in *A.R.*1905, p.158; *A.R.* 1908, p.90.

copper prices advanced, that Lennox and Rannie's patience had been rewarded when they successfully floated old copper-silver shows such as the Iron Mountain and True Blue Tunnel, re-opened the True Blue and developed a rich copper lode, Mt. Thekla, on Oakey Creek.[39] Simultaneously at Macauley Creek, to the south, Regner, Naven and Ramsden in conjunction with John Moffat and Anthony Linedale opened out new deposits.[40] Until 1902 both groups exported ore by waggons to Townsville and thence to Aldershot, or by pack team through Ingham. Cartage costs were high and, with copper prices declining, both considered erecting smelters to reduce the tonnage of ore exports.[41] In the event, an amalgamation of the Thekla and Macauley Creek properties was arranged and a new company, Kangaroo Hills Mining and Smelting, was formed to erect smelting works on Running River.[42] Cameron had reported on the properties in 1901 and found no potential difficulties in smelting the ores, though he had examined the lodes only above the water table. Moreover the local warden had stated that there were suitable fluxes, firewood and fireclay for bricks near the site. As the board of directors included experienced men in Moffat, Lennox and Rannie, the proposition was given high chances of success: one observer even compared the Thekla to Mt. Lyell.[43]

The smelter was completed in 1904. It consisted of a waterjacket furnace with a capacity of sixty tons a day, and all the works were lit by electricity. The warden was impressed by the plant but criticised the decision to site it within the old Ewan township, which was being revived

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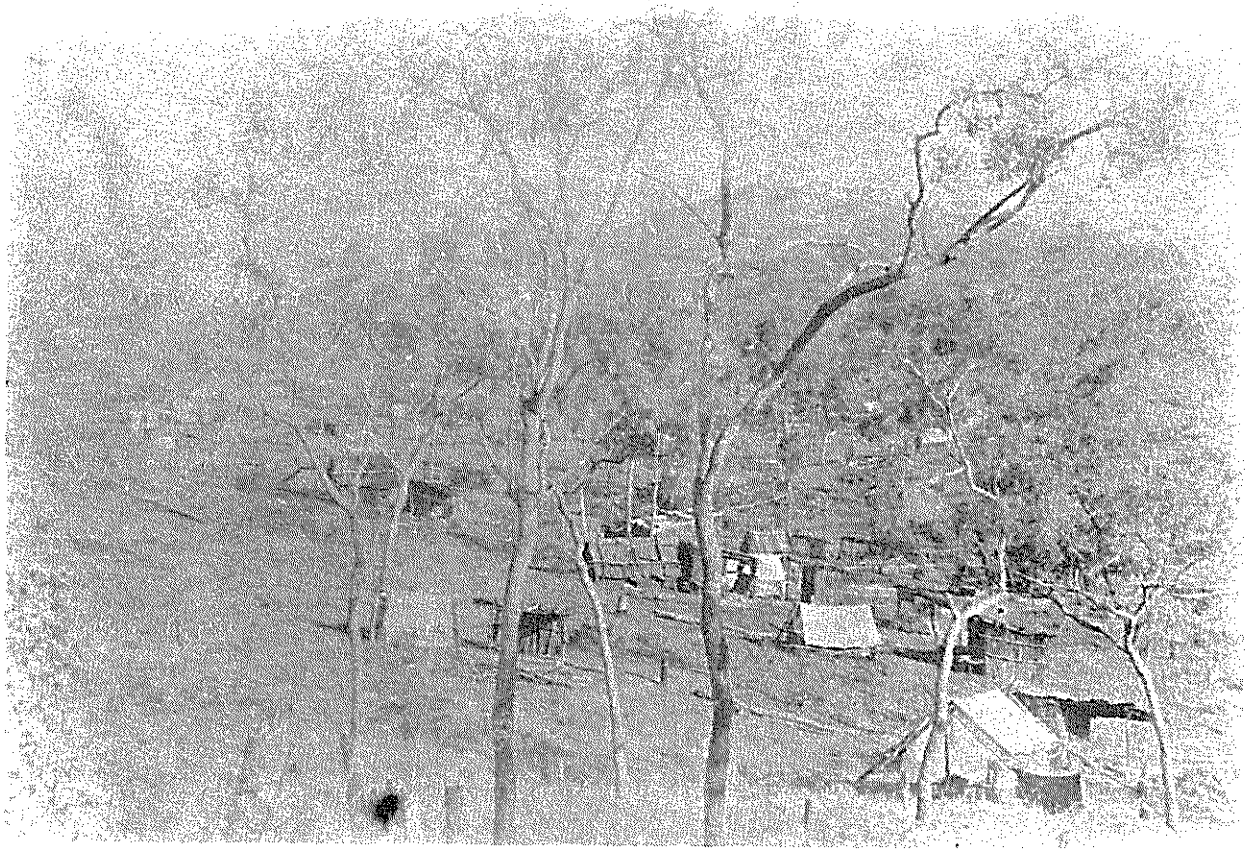
39. Cameron, The Kangaroo Hills Mineral Field, p.3; *North Queensland Register*, 21 May 1900.

40. *North Queensland Register*, 21 May 1900; Register of claims 1893-1921, Warden's office, Ingham, MWO 12A/6 *QSA*.

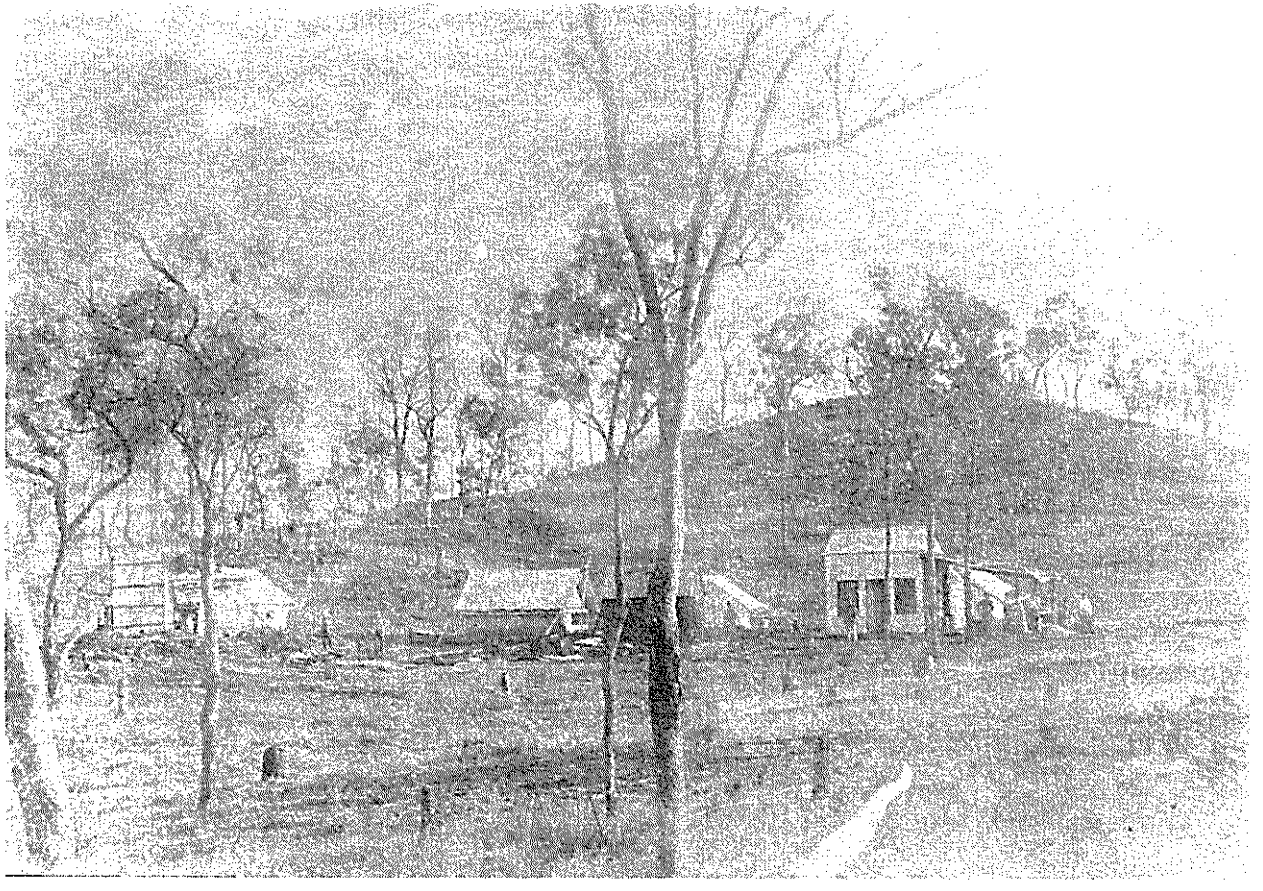
41. *A.R.* 1901, pp.14, 88-89.

42. *A.R.* 1902, pp.18, 85. The Company's registered office was in Townsville, it had a nominal capital of £30,000 in £1 shares.

43. Cameron, The Kangaroo Hills Mineral Field, pp.8-9; *A.R.* 1902, p.85; *North Queensland Register*, 21 May 1900. However Cameron had also warned that little development work had been done on the mines and the lodes gave no indication of permanence below water level.



P39: Early Settlement, Ewan District, 1891 [M. James]



P40: Osborne's Camp near Ewan, 1891 [M. James]

by the drift of wages miners from Kallanda and Waverley.[44] In its first campaign the smelter produced £1,864 worth of copper, silver and lead, but shortage of working capital caused operations to be suspended before the end of the year. Like the Waverley group, the company had spent too much on capital plant rather than mine development. In addition it had to contend with the added difficulties of interruptions to the supply of coke, smelting problems with the refractory ores, and a strike over wage reductions.[45] Two attempts to reconstruct were abortive before Moffat assumed the properties on tribute. A southern smelting manager, J.W. Ashcroft, was hired and work resumed in April 1905, but to no avail. As Cameron had cautioned, the oxidised ores gave way to low grade primary sulphides.[46] After working intermittently the smelter finally closed down in 1906; it was dismantled and removed to the Cloncurry field.[47] Lennox and Rannie continued producing for a few years more, sending their firsts to London and concentrating their seconds at a battery at Mt. Brown, but abandoned work in 1908 after metal prices slumped.[48] With a few minor exceptions, copper and silver have been virtually ignored on the field ever since.

While the Waverley Company and the copper concerns were running their course, several smaller shows were being developed. Ventures attracted by the Waverley Company's involvement in the Oakey Creek district took up

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44. *A.R.* 1903, p.90. A population of 200 supported two hotels, three stores, and two butcher's shops. In 1904 the Kallanda police station, including the assistant mining registrar's office, was returned to Ewan. In 1905 a school was built and opened in 1907, the same year the Waverley school closed. Report of the Department of Public Instruction for 1907; see also Report of the Commissioner of Police for 1904.

45. *A.R.* 1904, p.83. The ore apparently had a deficiency of sulphur and iron, used in the smelting process as fuel and chemical reagents to liberate the metals. It was hoped that rich sulphides at deeper levels would redress the shortage. *A.R.* 1905, p.14; Cameron, "Kangaroo Hills", p.161.

46. *A.R.* 1904, p.83; 1905, pp.14, 82; *Herbert River Express*, 18 September 1905; Cameron, The Kangaroo Hills Mineral Field, p.10.

47. *A.R.* 1906, p.90.

48. *A.R.* 1907, p.90; 1908, p.90.

the Planet, Volcanic and Douglas groups of leases,[49] and commenced work in 1900. However the small and patchy ore-bodies were uneconomic, and the leases were forfeited within two years.[50] Even the old freehold properties were floated as the Kangaroo Hills Freehold Tin Mining Company though it too languished for want of capital and a mill.[51] In 1903 the Gorringe Brothers, major shareholders in the old Mt. Spec Company, moved their mill to Ewan and then re-opened the Mt. Brown lodes by forming the Mt. Brown Tin Mining Company.[52] This latter company set about developing its properties with twenty miners and crushed for the public when convenient. When it was determined in 1905 that the ore bodies did not persist into deeper ground, the mines were let on tribute, to be worked intermittently for several years. The battery however continued custom crushing, and though its charges were considered excessive they were offset by high tin prices.[53] In fact the Mt. Brown Company paid a dividend in 1906, and in the following year not only expanded its battery but also took up another deposit at Mt. Kidston, eight miles to the south-east, where it erected a mill acquired from the recently liquidated Waverley Company.[54] As tin prices were depressed between 1908 and 1911 the search for capital proved difficult. The battery and dam at Mt. Kidston were not finished until 1911, and despite a series of favourable reports on the Mt. Brown Company's operations up to 1915, it was clear that the enterprise was struggling. In 1915 the Mt. Brown mill was sold to McIntyre Brothers; though the Mt. Kidston operation was bolstered by £1,000 in government aid for deep sinking and mining machinery during the

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49. The Planet Company's capital was £100,000 in £1 shares. *North Queensland Register*, 21 May 1900. It appears that Lennox and Rannie were responsible for promoting the Planet properties and Lennox was one of the prospectors of the Douglas. Cameron, The Kangaroo Hills Mineral Field, p.5.

50. *A.R.* 1900, p.100; Register of mineral leases 1891-1900, A/22691, *QSA*.

51. Its nominal capital was only £7,000 in 4,000 fully paid up and 3,000 contributing shares.

52. *A.R.* 1903, p.89. Registered office: Gympie; nominal capital: £3,000 in shares of 2/6 each.

53. *A.R.* 1904, pp.82-83; 1905, p.11; Cameron, "Kangaroo Hills", p.159.

54. *A.R.* 1906, p.10; 1907, pp.12, 90.

war years, the plant was finally sold to the Kangaroo Hills Tin Mining Syndicate which transferred it to Ewan in 1918.[55] The only other undertaking of significance was the Black Cap Tin Mining Company which operated a mill in the Hidden Valley area between 1905 and 1912.[56]

After 1910, mining revolved around small scale prospectors and gougers. Alluvial tin mining had waned: 200 men searched for stream tin in 1905 but by 1909 only 48 remained and the warden noted that the deposits were being rapidly exhausted. More effort was required of the miners to work poorer or previously inaccessible ground. Many of the rock bars holding back reaches of water were blasted to get at the creek beds and elaborate provisions were made for sluicing. Dams and long races replaced sluice boxes and pans; pumps were used to drain those smaller reaches of creeks not worth blasting.[57] Unfortunately miners could spend up to two years constructing dams and races only to see them destroyed in the summer floods, such as those of 1911. There were attempts by southern investors to test the dredging prospects of Running River and Oakey Creek. In 1907, fifteen applications for areas were lodged but local miners petitioned the Mines Department not to allow the leases.[58] As it eventuated, only one dredge - a sluicing plant rather

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55. *A.R.* 1910, p.97; 1911, p.104; 1918, p.107; *North Queensland Register*, 19 April 1915, p.13. One of the Mt. Kidston mines, the Dawn of Hope, was floated in 1917 as the Mt. Crystal Tin Mining Company with a nominal capital of £7,500. It was wound up in 1920 because of its small capital and problems experienced in putting a mill on site. *A.R.* 1917, p.108; 1918, p.18; 1920, p.98.

56. *A.R.* 1905, p.82. It was registered in Townsville in 1905 with a nominal capital of £5,000 in 20,000 shares.

57. *A.R.* 1909, pp.15, 90-91. One sluicing claim on Pineapple Creek diverted water from further up the creek into a race, thus dispensing with an unstable dam. While the ground was not rich, work consisted simply of forking the stones from the sluice, and as a considerable quantity could be sluiced in a day it proved very remunerative. Another consisted of a race diverting creek waters into a flume nine feet above the claim so that water for sluicing could be delivered to any part of the ground; it even supplied water for domestic use and irrigation. *North Queensland Register*, 6 April 1914, p.57; *A.R.* 1910, p.98.

58. *A.R.* 1911, p.103; 1907, p.171. Cameron found that in most cases the areas were not suited to ordinary alluvial mining because of the depth of ground.

than a bucket dredge - operated after Gorringe Brothers formed the Pilot Sluicing Company to work Sandy and Prospector Creeks. The plant cost £1,500 but when tin prices slumped it was abandoned and fell into disrepair.[59] Thereafter occasional applications for dredging leases were reported, but with no results.[60] However smaller sluicing propositions in this period were quite successful.

Large scale attempts to work the deep leads capping the high country at Red Hill and the Fifteen-mile were equally unrewarding. Cameron had noted in 1905 that the deposits, usually in conglomerate or decomposed granite, only required sufficient resources to cart the wash to water where it could be treated by conventional alluvial methods. In fact many sluices were set up specifically for these gravels, and those that were in cement were sent to Frank Fraser's Red Hill battery.[61] The deposits were often worked by tunnelling or in combination with shafts down to the leads, and occasionally open cuts to remove the entire overburden. However the rugged terrain rendered both cartage and water supplies major problems: the warden also noted that the ground was often wet and treacherous, requiring heavy timbering. Still, sufficient tonnage was won from mines such as the Long Tunnel and Castle's Phoenix to keep the Red Hill battery operational. The government assisted miners in the area by offering a boring plant to test the deeper ground, but it proved too cumbersome in the hilly country.[62] In 1912 a grant of £500

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59. *A.R.* 1907, pp.12, 90; 1909, p.90.

60. High prices in 1918 encouraged a British company to take up leases on the Upper Burdekin and institute a testing program, but it was not heard from again. A proposal to dredge the Five-mile Creek near Cardwell in 1927 met with an equal lack of success: assays showed only 1.01 ounces of tin oxide per cubic yard. Brief intervals between 1929 and 1949 saw dredging claims taken up on Camel Creek, Running River and Garrawalt Creek by the Adelaide Tin Exploration Company, Austral Malay Ltd. and B.H.P., with no result. *A.R.* 1918, p.107; 1934, p.114; 1936, p.89; 1938, p.94; 1939, p.96; 1941, p.80. Even today there are dredging leases on Running River near the township.

61. Cameron, "Kangaroo Hills", p.160.

62. *A.R.* 1920, p.98; 1908, p.90; 1909, p.90.

was voted to test deep leads at the Fifteen-mile, Red Hill and Graveyard Hill under the supervision of the Ingham Chamber of Commerce, which had taken an interest in the field's development. They purchased a boring plant and met with some success, but their efforts were overshadowed by a sluicing proposition set up by Frank Fraser at Red Hill.[63] He had purchased a powerful plant including pump, 300 feet of piping and 100 feet of sluice-boxes for £2,000. However dry weather, lack of skilled labour and industrial troubles sabotaged the scheme. Further work in the deep leads has been undertaken only on a very small scale.[64]

The gougers were able to make a living in the decade between the world slump in metal prices and the end of the Great War, but at the cost of considerable physical effort. In 1912 there was a rush to Watercress: large areas of granite were impregnated with specks and small veins of tin, but the prospectors were forced to dolly their ore in the absence of machinery.[65] The warden noted that all over the field men usually picked out the richer ore with little thought to future development and abandoned their shows as the shoots pinched out. Their methods were understandable; the Kangaroo Hills lodes were notorious for their small and patchy ore-bodies and erratic occurence, and as the area had been subjected to significant sliding and faulting, mining was precarious.[66] Moreover there were shortages of explosives, building materials and manpower during the war years.[67] The Inspector of Mines noted that

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63. *A.R.* 1913, p.120; *North Queensland Register*, 10 February 1913, Supplement. The Chamber had also supported an application by the Mt. Kidston mine for assistance. *Ibid.*, 22 November 1915, p.80.

64. *A.R.* 1913, p.120, see also annual reports 1915-1918. Castles Brothers adopted the idea at their Three Castles mine and with Government assistance in 1919 put in a sluicing plant and a dam on Fifteen-mile Creek. It was called the most promising show on the field in 1924 but the failure of the Magnum Tin Exploration Company to successfully work similar low-grade deposits in the vicinity proved prophetic. After a two year delay because of drought, the Three Castles Dredging Company found that a trial run of 30,000 cubic yards would not repay the cost of pumping and sluicing. *A.R.* 1919, p.95; 1922, p.78; 1924, p.84; 1927, p.15.

65. *North Queensland Register*, 19 August 1912.

66. *A.R.* 1920, p.97; Cameron, "Kangaroo Hills", p.159.

67. *A.R.* 1916, p.107; 1919, pp.142, 94.

high wages in the meatworks and canefields were luring miners away, though several did return when they had accumulated sufficient money for further prospecting.[68] It was postwar optimism which was to confer a new period of ephemeral prosperity.

In 1918 many of the old mines around Ewan were re-opened. At the Terrible Whale on Oakey Creek the Ewan Tin Syndicate planned a battery, but following the discovery of the Shrimp lode by one of the syndicate members, attention was diverted. The mine proved promising and was sold to the Oakey Creek Tin Mining Syndicate which erected a modern battery with 1,250 pound stamps.[69] Further discoveries nearby, the Sardine and the Salmon, attracted Charters Towers investors. A syndicate floated the Sardine, the company purchasing the mine for £15,000 cash and a controlling interest in shares to the vendors.[70] The Brilliant Extended Gold Mining Company took an option on the Salmon, though it abandoned the mine as a low-grade proposition the following year.[71] The Sardine North drew Brisbane and Charters Towers money; the Canary, discovered in 1921, was sold by a Charters Towers syndicate to the newly formed Canary Tin Mines No Liability; and the Shrimp was marketed to the Towers Tin Mining No

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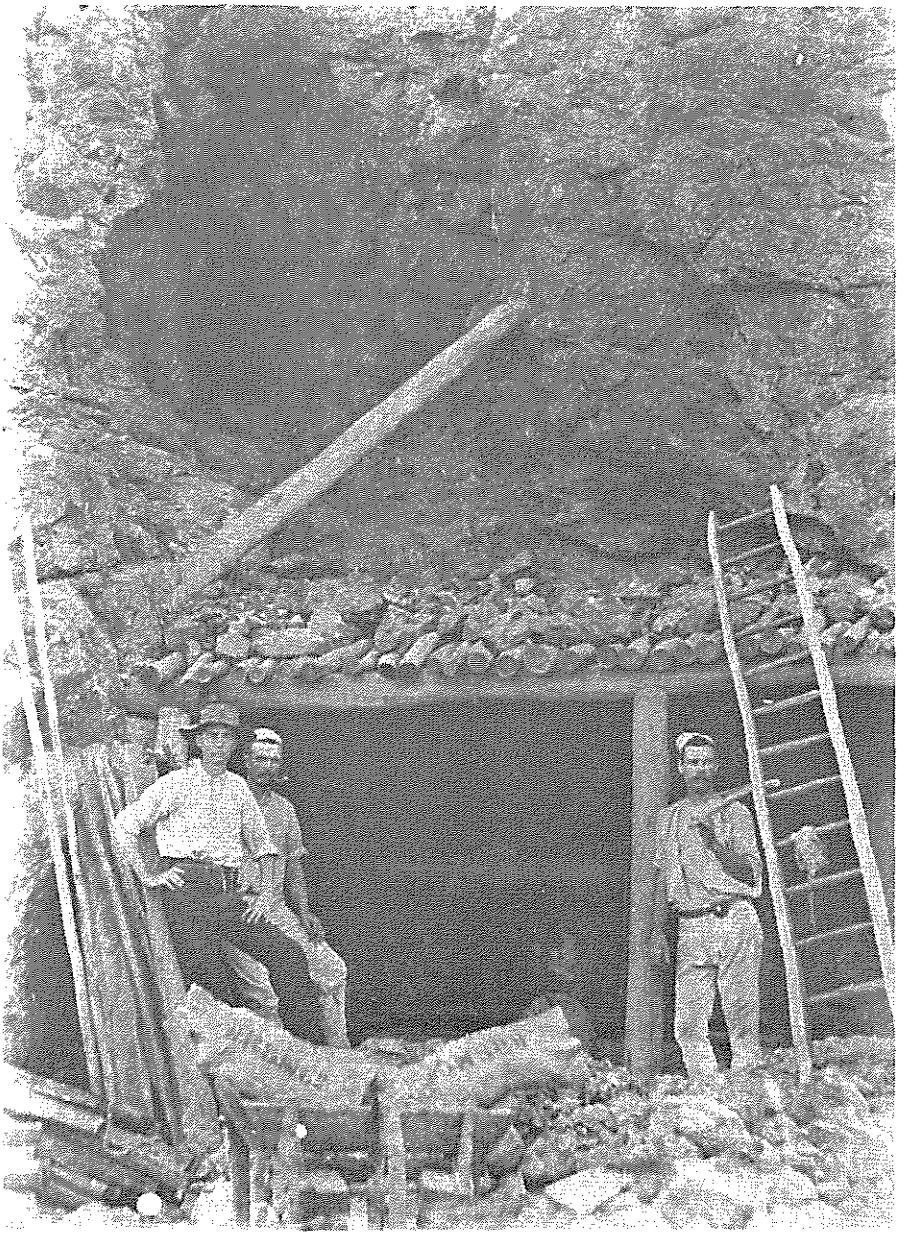
68. *A.R.* 1917, p.108; 1918, p.179.

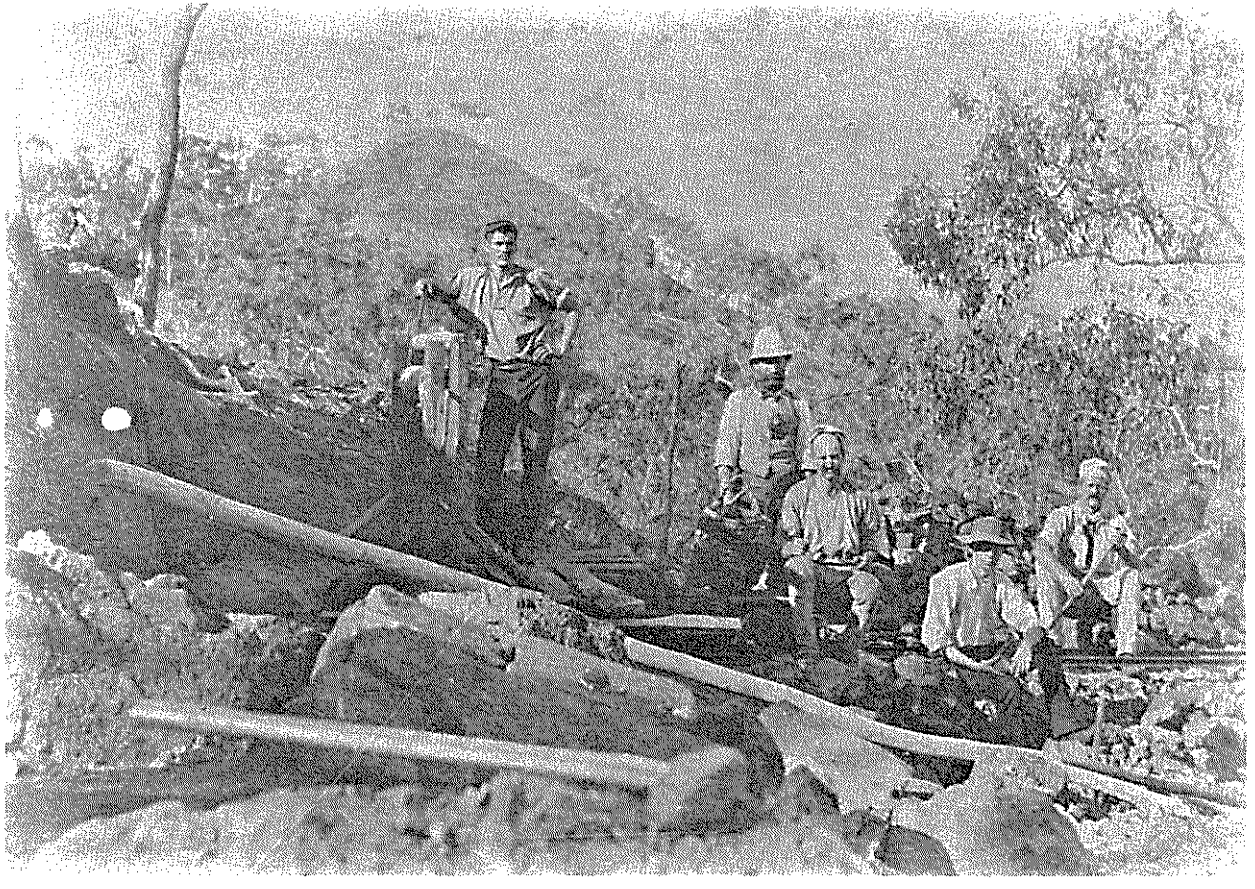
69. *A.R.* 1920, p.148; E.C. Saint-Smith, "The Ewan Tin Syndicate", *Q.G.M.J.*, 22 (September 1921), p.355.

70. *A.R.* 1919, pp.15, 95. Lennox took over as managing director in 1922. E.C. Saint-Smith, "The Geology and mineral resources of portion of the southern section of the Oakey Creek district, part 2", *Q.G.M.J.*, 23 (September 1922), p.350.

71. *A.R.* 1920, p.98. It then took up the Titanic for £3,000, and £2,000 of ore at grass, where it mined a pipe of rich ore to 95 feet. Falling tin prices in 1921 terminated the Company's interest in the field. In fact it was wound up in 1923, having been losing money on its Charters Towers mine since 1916. J.H. Reid, "Charters Towers Gold Mines", *Q.G.M.J.*, 18 (May 1917), p.223; Register of Companies, Charters Towers, MWO 11A/T3 *QSA*.



P41: Running River Company's mine, 1891 [M. James]



P42: Hard rock miners, Kangaroo Hills, 1891 [M. James]

Liability.[72] Several smaller mines were also opened in the vicinity, sending ore by drays and pack mules to the Shrimp battery or to Ewan.[73]

As the countryside around Oakey Creek was unsuitable for a townsite and the Ewan battery was within five miles, the mines benefited the old settlement. In 1922 Ewan had a school, hall, hotel, police station, butcher's shop and store. A post office was included within the school, and a telephone line was being strung from Hillgrove station. A branch of the C.W.A. was formed in 1923 and a site for an airstrip chosen, and in 1924 a School of Arts was established.[74] As a road trafficable for vehicles had been built from Ingham to Mt. Fox in 1911, the Ingham ambulance was able to attend emergencies. Even a Progress Association was active, agitating for better roads, mail services and government assistance for mining. Small scale mining on other parts of the field also supported scattered businesses: Hidden Valley had a store, butcher and hotel, Waverley boasted a store, hotel and boarding house, and Prospector's Creek had a store.[75]

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72. Sardine Tin Mines NL, registered Charters Towers, 9 February 1920 with a nominal capital of £40,000 in £1 shares; Sardine North Tin Mines NL, registered Charters Towers 28 September 1920 with a nominal capital of £12,400 in 50,000 shares; Canary Tin Mines NL, registered Charters Towers, 27 November 1922 with a nominal capital of £24,000 in 60,000 shares; and Towers Tin Mining NL, registered Charters Towers with a nominal capital of £40,000 in 80,000 shares. Saint-Smith, "The Oakey Creek District, part 2", pp.349, 352; *A.R.* 1921, p.12; E.C. Saint-Smith, "The present condition of certain Kangaroo Hills tin mines, North Queensland", *Q.G.M.J.*, 24 (June 1923), p.203.

73. The revival attracted other interests to the field, and a company purchased the Birthday at Waverley to be worked as a large low-grade mine with a mill on site. The Mt. Brown mines were re-opened, though they were abandoned again within a year. *A.R.* 1922, p.78; 1924, p.85; 1927, p.15.

74. The airstrip had not been cleared by 1939 and was probably built during the war. There is even mention of a "De Luxe Theatre" for Ewan, probably in the Hall. *Herbert River Express*, 18 October 1929; 2 November 1939; *Sixth Annual Report of the C.W.A., Northern Division*, (Townsville 1929), p.155; E.C. Saint-Smith, "The geology and mineral resources of portion of the southern section of the Oakey Creek district, part 1", *Q.G.M.J.*, 23 (August 1922), pp.309, 311.

75. *Herbert River Express*, 23 May 1928; *A.R.* 1909, p.90; 1910, p.99.

Of the Oakey Creek mines, the Sardine soon earned the accolade of the best mine on the field. Besides having several large lenses of rich ore, it also received more careful and systematic development than most mines on Kangaroo Hills. In 1923 its production was worth £14,160.[76] Despite a slump in tin prices, it was fortunate to yield profits from a new rich discovery and continued as the mainstay of the field until 1929 when the lenses were exhausted, and the mine went under exemption. Between 1920 and 1930, it had supplied 10,186 tons of ore for 1,443 tons of tin worth £174,395, and had remitted £62,000 in dividends to the shareholders.[77] As for the other mines, the lower-grade Shrimp was developed by an economical combination of tunnels, shafts and open-cuts, but decreased yield and declining prices forced the Towers Tin Mining Company into liquidation in 1924, at the same time as the Canary company. The Sardine North simultaneously suspended operations but was induced to resume work in 1926 following the Sardine's success. However even with government subsidies, further development failed to produce payable orebodies.[78]

The Depression brought about a period of greatly reduced tin prices, and the population of the field declined dramatically. Despite the suspension of the mining awards and prospecting unemployment relief payments from the State, tin was simply not payable at £40 per ton, and men left for the goldfields or to work on the roads. Indeed the warden noted that possum hunting was more lucrative than mining.[79] However, the Reddie Brothers showed faith in the potential of the field: in 1930 they purchased the Shrimp and within three years had added the Sardine and Sardine North. They leased the Shrimp battery, which the Department of Mines had owned since 1924, and with Departmental assistance kept the mill open and crushing for the public throughout the Depression. Despite

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76. *A.R.* 1923, pp.83, 84.
77. *A.R.* 1925, p.12; 1929, p.70; 1939, p.95.
78. *A.R.* 1925, p.12; 1926, p.12; 1928, p.67; 1929, p.14.
79. *A.R.* 1929, p.70; 1930, p.103; 1931, p.72.

recurring shortages of water[80] they persevered, being the only mill on the field until 1933, and maintained crushing charges at a low level.[81] After 1934 the demand for industrial metals increased. The field experienced a quiet revival, but since then mining has declined to relative insignificance.

While World War II caused high prices for base metals, petrol rationing offset profits except on the richest ores. Moreover, because of low levels of productivity, the local miners were not exempted from conscription and manpower regulations. When meat rationing was introduced the butchers at Ewan and Running River finally closed and the township gradually dwindled.[82] Today, Ewan is totally abandoned; Waverley comprises a single small homestead, and only Running River still holds population sufficient to warrant a school and post office. The Reddie enterprise has been the mainstay of the field for nearly fifty years, and despite periodic interest[83] Kangaroo Hills has remained

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80. *A.R.* 1930, p.68; 1933, pp.101-102; 1932, p.13. Because it was considered uneconomic, the Department refused to construct a dam. Inspector of Mines to Warden, Charters Towers, 28 July 1937, A/8312 *QSA*.

81. Inspector of Mines to State Mining Engineer, 26 July 1934, inletter 997, and J. and W. Reddie to Under Secretary for Mines, 20 November 1935, inletter 435, A/22217 *QSA*. Reddie Brothers were also agents for the ore-buyers, Kelley's Tin Smelters of Sydney, and were licensed to sell explosives. Inspector of Mines to Warden, Charters Towers, 17 February 1934, and Reddie Brothers to Under Secretary for Mines, 20 November 1935, inletter 435, *ibid.* They purchased the mill in 1943. *A.R.* 1943, p.163.

82. *Herbert River Express*, 25 August 1942, 9 January 1943; *A.R.* 1942-1945, pp.110-111.

83. Only one new tin discovery was made after 1939, at Helen's Hill on the coastal plain. However the mine was in the ludicrous position of having to send ore to be crushed at the Ewan mill, and did not last beyond a few years. A revival of the copper and silver mines in 1947 was equally brief, though the Sardine has developed as a consistent producer of copper. More recently Metals Exploration North Ltd. and their subsidiary, South Alligator Uranium, have taken an interest and currently the field is covered by Authorities to Prospect and over a hundred leases. *A.R.* 1947, p.9; 1948, pp.51-52; 1979, p.100.

moribund though seemingly always set for a revival on a large scale. That small time mining is still firmly entrenched on the field and is moderately successful shows that mining can pay at Kangaroo Hills. Company mining had made the same mistakes as on many other North Queensland fields: lack of development work before expending heavily on surface works and treatment plants, and over estimation of ore reserves. However the drawbacks of this particular field - its isolation, the character of the lodes and the absence of good access roads[84] - made it less forgiving of error.

84. The field was served by a maze of pack-tracks from Ingham until 1911 when a steep road was built to Mt. Fox. The best access has been provided by the Mt. Spec road, built as an unemployment relief and tourism scheme in 1935. Roads also connected Ewan with Argentine, Ravenswood Junction (Mingela) and Townsville, though little has been done to improve them. Schemes were mooted for branch railways from the North Coast line in 1928, the Stone River tramway in 1899, and the Townsville railway at Ravenswood Junction, but except for a trial survey between Ravenswood Junction and Ewan in 1900, nothing concrete ever eventuated. *Queenslander*, 4 March 1899, p.419; *Herbert River Express*, 10 September 1928; *North Queensland Herald*, 10 June 1901.

J.S. REID AND THE CHILLAGOE COMPANY

Dr. K.H. Kennedy

Folklore in the former mining towns of North Queensland reveres the names of mining men such as Mulligan, Moffat, Wilson, Plant, Mills and Cuthbert. They lived and worked in the region for decades; they made relative fortunes, and most often lost very large sums on speculative ventures. Their enterprises kept many miners in jobs, even when times were bad, and most of all, they retained faith in the industry. But there is no folklore, no legend, for James Smith Reid, despite the fact that he was responsible for more investment capital, for more jobs and developments of lasting significance than any other individual mining entrepreneur in the years before the Great War. Partly because Reid made his fortune with his pen rather than with a pick, first as a newspaperman and then as a railway and company promoter, and partly because he was an absentee capitalist, operating from an office in Queen Street, Melbourne, or from his Rostrevor mansion outside Adelaide for the bulk of his business career, he was an enigma. Only a handful of his fifty years' association with the Australian mining industry were spent in the North, and he revisited but a few times on corporate inspection tours after 1880. Yet his contribution, especially in the Chillagoe district, was probably unrivalled.

J.S. Reid was born in Rathmelton, County Donegal, the second son of James Reid, a Presbyterian minister, and Eliza Smith. In 1863, at the age of fourteen, he arrived in Bowen. Soon after, he was apprenticed at the *Port Denison Times*. Confident, and ambitious, he struck out for Ravenswood in 1870 where he established the *Ravenswood Miner*. This was followed by a succession of newspaper ventures in which he demonstrated a propensity for making money, if not for recklessness. He launched the *Northern Miner* in 1872, the *Cooktown Courier* two years later, and the *Hodgkinson Mining News* in 1877.[1] By 1880, Reid had departed Queensland

1. For Reid's early years, see K.H. Kennedy, "Sons of the Manse: The Reid Brothers in Early North Queensland", Typescript, History Department, James Cook University.

for western New South Wales, and four years later produced the *Silver Age* which chronicled the rise of Broken Hill. At a time when "silver fever" was rife, Reid soon made his mark. He was elected to the board of directors of the Broken Hill Proprietary in 1888, and over the next decade was the main force behind the flotation of the Silverton Tramway, the Tarrawingee Flux Company, Euriowie tinfields, Mt. Burgess Gold Mines, the Sulphide Corporation and the Emu Bay Railway Company.[2] In 1897, he turned his attention to the remote copper-lead deposits at Chillagoe, west from Cairns, and within only three years created one of the country's most ambitious mining establishments.

The Chillagoe mineral lodes attracted official attention in 1888 following a report by the Mineral Lands Commissioner, A.H. Zillman, that John Moffat had engaged seventy-five men to prospect some 260 acres of leases.[3] Zillman's report listed nine mines in the early stage of development - Penzance, McIlwraith, Nellie, Griffith, Dorothy, Girofla, Atherton, Hensey and Mollie, and disclosed that Moffat intended to finance a tramway from Montalbion to Chillagoe to redress the isolation and lack of transport facilities.[4] But there were other disadvantages to be surmounted: copper prices were depressed, the capital market both locally and overseas was contracting, and there was no reliable geological opinion on which to float the properties. When Moffat's attention was diverted to the silver deposits at Muldiva after 1889, work at Chillagoe was restricted to "little more than a basic compliance with labour conditions".[5] However the Muldiva venture was short-lived: a smelter was erected in 1891, but with silver prices tumbling to

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2. Reid's activities can be gauged from G. Blainey, *The Rise of Broken Hill* (Melbourne 1968), and *The Peaks of Lyell* (Melbourne 1954).

3. *A.R.* 1888, pp.70 & 73.

4. William Nicholas, a consulting mining engineer, inspected the mines and location at Moffat's behest, and pronounced that "Chillagoe will become a large and important copperfield" if suitable transport and treatment were arranged.

5. *A.R.* 1891, p.84. For details on Muldiva, see F. de Keyser & K.W. Wolff, The Geology and Mineral Deposits of the Chillagoe Area, Queensland, G.S.Q. publication 317.

thirty-two pence an ounce in 1893, the operation was shut down. The first publicly capitalised mines in the district, Muldiva presaged the character of company activity after 1900. The promoters, Moffat and Anthony Linedale, profited from the flotation and dispensed with their large shareholdings; the shareholders were called on to provide capital for extravagant infrastructure; and the mines failed to live up to promise.

In 1894 Moffat renewed his interest in the Chillagoe properties, and over the subsequent twenty months equipped two groups of mines with small furnaces. At Calcifer, a second-hand smelter from Newellton serviced the new Harper, Boomerang and Hobson mines, and at Girofla (soon to be known as Mungana) the Muldiva smelters were re-erected to treat ores from the Girofla, Lady Jane, Dorothy, Griffith and Magazine Face. Early assays were so encouraging that the Mineral Lands Commissioner predicted that with cheap transport "this will be the premier mineral producing field in Australia".[6] With new ore bodies located at Zillmanton, Ruddygore and Ti-Tree, and rumours of rich surface shows at Arbouin and Ashtonville, it seemed only a matter of time before the field was fully appraised. In 1897, in separate reports, government geologists, S.B.J. Skertchley and R.L. Jack, acclaimed the district, concluding that only want of capital for mining and rail communications was retarding development.[7] As it eventuated, their reports coincided with negotiations in Melbourne between Moffat and J.S. Reid and C.W.

6. The forecast was based upon some very tentative observations by R.L. Jack in 1891 (On the Chillagoe and Koorboora Mining Districts, G.S.Q. publication 69); on reports by a Melbourne syndicate that they had tapped substantial lodes at Mount Redcap, and the Calcifer smelter returns of 1,500 tons of copper for £13,160. *A.R.* 1896, p.106.

7. See S.B.J. Skertchley, On the Tin Mines of Watsonville, and on various Tin, Silver, Gold and Copper Mines at Herberton, Mount Albion, Irvinebank, Muldiva, Calcifer, Chillagoe, California Creek, the Tate River, Mareeba, etc, G.S.Q. publication 119; R.L. Jack, On the Chillagoe District and Projected Railway, G.S.Q. publication 134.

Chapman.[8] While the Mount Lyell boom was exciting Melbourne and London speculators,[9] these three men devised a grandiose scheme for the exploitation of the Chillagoe district.

The vehicle for floating the Chillagoe properties was the Chillagoe Proprietary Company for which Reid secured some of the most reputable men in Australian mining as subscribers. These included William Knox, president of the Victorian Chamber of Mines and a director of the B.H.P. and the Mount Lyell Mining and Railway Company; Malcolm McEacharn, chairman of McIlwraith, McEacharn shipping line, and director of Cobar Chesney Copper and Gold and of Burns Philp; Alfred Tolhurst, a leading Melbourne broker, and Herman Schlapp, the celebrated American metallurgist of Broken Hill fame. The company had a nominal capital of £96,000 divided into 480 shares, and by an agreement dated 29 October 1897 acquired Moffat's properties for £20,000 and 160 shares. Reid and Chapman were to be compensated for their part with 120 fully paid shares and 200 paid to £100.[10] Their scheme entailed the construction of a railway from Mareeba to Chillagoe, the erection of central smelters and a mining programme, estimated to cost over £300,000. Only one obstacle stood in their way: the approval of the Queensland government was required as existing colonial mining laws and railway policies could not countenance such a proposal.

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8. Charles William Chapman, son of a New Zealand judge, studied at the Bendigo School of Mines. In the late 1880s he launched the firm Chapman Wakley-Mining Promoters, which operated the Dry Creek metallurgical works in South Australia. Chapman's business interests also included the Cascade brewery in Tasmania, extensive pastoral holdings, and a directorship of the Union Mortgage and Agency Company.

9. For details of the boom, see Blainey, *The Peaks of Lyell*, Chapter 10; A.R. Hall, *The Stock Exchange of Melbourne* (Canberra 1968), pp.225-29. Moffat probably knew Chapman from dealings with the Dry Creek works. As for Reid, he was acknowledged by now as the most daring mining promoter in the country following his 'coup' in late 1895 in floating the Sulphide Corporation.

10. See company file, 3244, Victorian Public Records Office for details of the agreement.

Accordingly, Reid and Chapman departed for Brisbane, as parliament was scheduled to adjourn at the end of November. With so much to gain if the scheme was favourably received by the government, they bargained on the ministry giving it immediate sanction, calculating that the project would redeem the premier's 1896 election pledge of a programme of railway and harbour construction and would dissipate the political discord of the Queensland National Bank scandal.[11] The tactic was successful, and, within twenty-four hours of arriving, Reid confided in a private letter that they had "pushed matters with such urgency and such effort that the business is already half done", and that the ministry "have decided to make the matter a government question". Further, a bill would be introduced "without the usual formalities" and the government would "use their power to force it through before the House adjourns". Reid's self-satisfaction was obvious when he noted that Chapman was "delighted", as he "has not had much experience in matters of this kind, and like a wise man has allowed me to boss the show".[12] Political connections in the persons of Lissner, Philp, Newell and Thynne were clearly beneficial.[13]

The enabling legislation was drafted by 25 November, only ten days after Reid disembarked at Brisbane. Entitled the Mareeba to Chillagoe Railway Bill, it authorised Reid, Chapman and Moffat to construct and

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11. See T. Gough, "Tom McIlwraith, Ted Drury, Hugh Nelson and the Queensland National Bank 1896-1897", *Queensland Heritage*, 3 (November 1978), pp.3-13.

12. J.S. Reid to M. Reid, 16 November 1897, J.S. Reid Papers, University of Melbourne Archives.

13. Isidor Lissner, former Secretary for Mines, was praised for his part in the negotiations: "Lissner has been a great help and is working like a Trojan. He seems to take particular pride in my coming back to give our old Country in the North such a lift." *Ibid.* Robert Philp, the incumbent Secretary for Mines aside from his close connections with Moffat, was a member of a syndicate which included Reid that sought to float the Mitchell River Antimony Mines in London in 1892. See *Queenslander*, 21 November 1891. John Newell, the member for Woothakata, and A.J. Thynne, a leading Legislative Councillor, were connected with the Chillagoe Proprietary as shareholder and legal representative respectively.

operate a private railway through mineral lands in return for an additional 1,800 acres of leases. Not unexpectedly, it encountered, in Reid's words, "stormy opposition from the Labor crowd". Indeed, he complained bitterly about Labor's objections:

> It is really wonderful how or why the working man puts up with these senseless demagogs [sic]. They are supposed to watch his interests; yet here is a scheme from which the workman of all people must be most benefited - which would give work to at least 3000 men where 150 are now employed; and the only people to object to it are the workmen's representatives! 14

By 4 December, Reid was confident of success once the committee stage had been passed, and did "not anticipate any opposition" after the bill reached the Legislative Council. Indeed on the second reading debate the bill had been assailed for over nine hours by both Labor members, who claimed that it was a land grant railway, and the Independent, James Drake, who pointed out that it was a major departure from government policy.[15] However, as Reid forecast, the bill became law by mid-December and was welcomed by northern editorial writers.[16]

Though the government had strongly urged the measure, Reid and his fellow promoters soon found the public service less malleable. On 14 December, Chapman applied for a twenty-five acres lease over thirty years on the Barron River, adjacent the falls, on which it was proposed to erect a smelter to be powered by hydro-electricity. The Under-Secretary for Public Lands referred the matter to the Lands Commissioner in Cairns who reported adversely, that it "would greatly impair the beauty of the place and spoil the reserve as a public park". A public meeting in Cairns supported the recommendation and called for the area to be proclaimed a water supply reserve. Reid despatched an hydraulic

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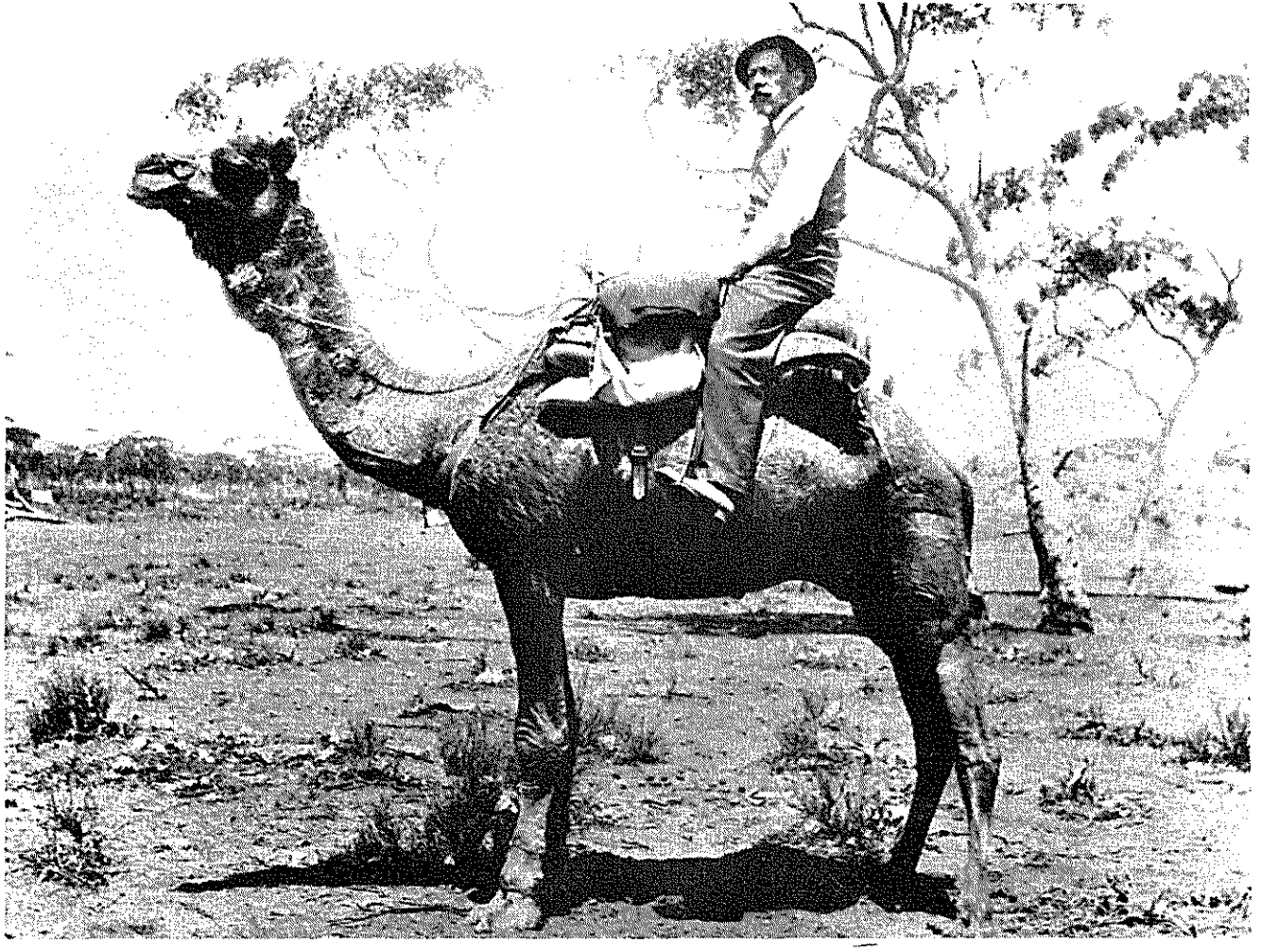
14. J.S. Reid to M. Reid, 1 December 1897, J.S. Reid Papers.

15. See *Q.P.D.* LXXVIII, p.1823f.

16. The Act extended to fifty years the tenure of the mining leases taken over from Moffat; exempted the company from labour conditions; transferred Crown Lands required for the railway; permitted the company to set its own tariffs; and provided for the government to take over after fifty years. See 61 VIC No. 19.



P43: J.S. Reid on the West Australian Goldfields, 1894
[Melbourne University Archives]

P44: Construction train, Chillagoe railway c.1900
[Cairns Historical Society]

engineer to the site, and in May 1898 Chapman submitted an amended application in which it was stated that the smelter would be sited near Mareeba and would be fed by aquaduct from the falls. Meanwhile Reid also prevailed on the Commissioner for Railways to acquire land under his authority, but due to bureaucratic delays the Commissioner's request was not acted upon until February 1899 when Moffat personally appealed to the Lands Minister, who in turn promised to alienate the required sites. An agreement was eventually drawn up by the Crown Solicitor under which the Commissioner for Railways let two sites totalling twenty acres for a period of forty-eight years from 1 January 1900. However, with less than four weeks to run until Reid took possession of these leases, the scheme was dashed. On 6 December, Herbert Hardacre, a vigorous opponent of the Mareeba to Chillagoe Railway Act, was now Secretary for Public lands in the short-lived Dawson Labor ministry; he referred the document to Charles Powers, the new Crown Solicitor. Powers reported that "the Commissioner for Railways was not legally authorised to grant the lease referred to for the term stated, or for any term; and that the Executive Minute alone could not legally give the power to lease these lands for more than 30 years".[17] This set-back was to prove costly, as experience showed over the next decade with the rising cost of coke and fuel.

In the interval, Reid had been fully occupied with corporate details to finance the railway and mining infrastructure. No sooner had the Act been passed than he floated a new company, Chillagoe Railway and Mines Limited, to acquire the assets of the Chillagoe Proprietary Company. Of the 900,000 shares of £2 each, the vendors required 480,000 fully paid up and an additional 100,000 paid to £1 giving the company £100,000 working capital before any public subscription. However, of the balance, only 20,000 shares were issued, whereupon Reid successfully sought approval to reduce the nominal amount of each share to £1 and issue 100,000 new shares, making it a million pounds company.[18] Clearly his

17. The full correspondence is contained in Lease of Barron Falls to the Chillagoe Railway and Mines, Limited, *Votes and Proceedings*, 1899, III, p.83f.

18. For details on the reconstruction, see Company file 129, Book 9, *Q.S.A.*

intention was to boom the shares and secure a debenture issue over the railway and treatment plant. To effect this, he secured the services of Alex Stewart, then general manager of B.H.P., to furnish a report on the mines. When Stewart estimated that there were 500,000 tons of ten percent ore available, which would not present metallurgical treatment difficulties and which could be smelted for only thirty-five shillings a ton, Chillagoe stock seemed an ideal investment.[19] Accompanying Stewart was a Melbourne broker, Ralph Johnson, who publicly prophesied that the lodes were "enormous" and that the district was "destined to be one of the largest contributors to the copper output of the world".[20] In a private letter to the Commissioner for Railways, Reid related that as a result of "Mr. Stewart's admirable report" the call on shareholders for £200,000 "has been admirably responded to", and "overtures are already coming to us from England and the continent for the proposed Deb[enture] issue en bloc".[21] Their ploy succeeded: debentures worth £400,000 were arranged in early 1899 to complete the capital works.

Probably the appointment of Alex Stewart as general manager was Reid's most significant decision in 1899. By engaging Stewart on a salary of £5,000 per annum - £1,500 more than he received with B.H.P. - Reid calculated that his reputation would entice more outside capital. This design was apparent in a confidential letter to Robert Philp, the Treasurer and Secretary for Mines:

> For some weeks Chillagoe had been in much demand, on an exceptionally strong market and quite 100,000 shares, I should think, have found new owners, without quite satisfying buyers. Adelaide and London have been taking the shares, particularly Adelaide where, I am told, rich Broken Hill men have followed Stewart by buying into Chillagoe. This was clearly to be expected and was foreseen by me when I advised Stewart's engagement. The same following in England will come in, for the same reason, on a larger scale, as soon as it is

19. *Australian Mining Standard*, 14 July 1898.

20. *Ibid.*, 7 July 1898.

21. J.S. Reid to R. Gray, 9 July 1898, RLYS A/9222, *Q.S.A.*

> realised on the other side that Stewart has really left the Hill and is with us.

Reid's letter, ostensibly written to relate "how matters are going, and also as it is already some fulfilment of our predictions of what would follow when we came to you for the concessions",[22] not only reveals the extent of the company's reliance on bullish speculation both in southern capitals and London, but also betrays an unusual confidence beyond informally acquainting a colonial minister with company activities. That Reid should enumerate reasons "tending to make Chillagoe shares still more valuable",[23] adds substance to Labor criticisms that Philp was the "patron of the land-grant railway syndicate".[24]

In July 1899, Reid left Melbourne for discussions in Brisbane with Philp and the Premier, James Dickson, over a proposal to construct a railway extension to service the Mount Garnet mine, which had been promoted by the same principals as the Chillagoe company. As he wrote to his wife, Chapman and Harvey Patterson had scrutinised his proposals and "have agreed to leave the whole business to Rigall [Reid's solicitor] and myself".[25] Again he won out, and an agreement authorised the construction of the branch line with a seven years' freight monopoly for the Chillagoe company.[26] Reid immediately journeyed to Cairns to

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22. "The English market will also be opened and stimulated by distribution of the 60,000 shares under option, for delivery this month, to leading London brokers, who notify they will execute. This and another option due in September (and sure to be taken) will give us an additional £112,000 so that there will be no shortness of money - which is always satisfactory, particularly in permitting the most to be made of a thing without waiting." J.S. Reid to R. Philp, 9 June 1899, Philp Papers, 3/1371-3, John Oxley Library.

23. Reid informed Philp of his own position: "I have not sold a share on the rise myself, being convinced that the shares are far below real value, and also the price the market will put on them once heavy sellers disappear, which they are already beginning to do so". Philp's name does not appear on the share register, though his connection with Moffat and mining extended beyond just friendship.

24. *Worker*, 4 March 1899.

25. J.S. Reid to M. Reid, 11 July 1899, J.S. Reid Papers.

26. See Vol. 1, Chapter 7, pp.190-201 for details of the Mount Garnet venture.

inspect the wharf site which he had leased for his company,[27] and then moved on towards Chillagoe, surveying the entire area of the concessions. While at Moffat's home at Irvinebank, he recorded his impressions of his tour:

> The trip has been fairly rough, particularly as regards food, but we are now over the worst of it. ... During our stay at Chillagoe we devoted every hour of daylight to visiting and carefully examining the Co's mines, with the result that the party has come away well satisfied with the prospects. The indications are that several of the properties are of unusual magnitude, and only require energetic systematic work to prove things to be of great value. Our visit will do a great deal of good in this direction by forcing on such work with much more vigor than has yet been shown. Frew has made great progress with the railway, but the same energy does not appear to have been exerted at the mines, where caution rather than courage has controlled operations....

He concluded that as the railway still required twelve months to complete he anticipated "having all in readiness by then".[28]

Reid's satisfaction with railway construction was understandable: he had a hand in so many of the detailed arrangements. A.S. Frew, the engineer in charge, was sent to Mareeba by Reid in July 1898 with instructions "for pushing the work with all possible vigor". Simultaneously Reid asked the Railways' Commissioner "if you can spare us five or ten miles of rails and fastenings" as the company's track was still to be shipped from England. The Commissioner could hardly refuse, as Reid argued rather bluntly:

> My excuse for coming to you with such requests is that I feel you already recognise that your Department is almost as closely concerned as my company is in the early completion of the Chillagoe line, as it must bring an increase in traffic to your unprofitable Cairns-Mareeba line, sufficient at least to affect a substantial reduction in your present annual loss on that line, if it does not

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27. *A.R.* 1899, p.71.

28. J.S. Reid to M. Reid, 3 August 1899, J.S. Reid Papers.

> actually convert the loss to a profit, and that for this reason you will be willing to assist us as far as possible particularly at the initiation of the work. [29]

In fact, the Commissioner was more than obliging. He provided free passes for survey teams; ordered that two B15 locomotives under construction at Walker's Maryborough foundry for the government be sold to the company for £2,629 each;[30] arranged for the Queensland Agent-General's office to purchase axles, springs, buffers and materials required for building the company's wagons;[31] and arbitrated on land resumption compensation disputes.[32]

In contrast to the Commissioner, the Chief Engineer, Henry Stanley, was less accommodating and was determined to comply with the letter of the Railway Act and its regulations. By mid-1899, a running battle had developed between Frew and Stanley. The latter objected to use of blue gum in bridge girders, cypress pine sleepers and narrow cuttings; he claimed that gradients were too steep, the formation was too narrow, the gauge was irregular, and that the iron bridge work had weak spots.[33] Reid intervened on Frew's behalf with some success, but when the Walsh River bridge foundations were laid before the plans had been approved, the Commissioner rebuked Frew for being "unnecessarily precipitate", as Stanley had complained: "I can only come to the conclusion that the Company desire to avoid all criticism and practically evade the spirit

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29. J.S. Reid to Commissioner for Railways, 9 July 1898, RLYS A/9222 *Q.S.A.*

30. Secretary to Commissioner to J.S. Reid, 17 April 1899, *ibid.*

31. Secretary, Chillagoe Railways and Mines Ltd to Secretary to Commissioner, 26 April 1899, *ibid.*

32. Secretary to Commissioner to Justice Department, 26 May 1899; Declaration by Joseph Masterman, 29 June 1899, RLYS A/9222, *Q.S.A.* In this instance, Masterman claimed £370 for resumption of portion of a mineral homestead lease; the company offered £10; a compromise of £60 eventuated.

33. Memo: H. Stanley to Secretary to Commissioner, 17 August 1899, *ibid.* The iron spans were acquired from the old Victoria Bridge in Brisbane.

act".[34] Soon after Reid's first visit to Chillagoe, the initial three-five miles were completed and plans for the subsequent sections were approved.

At the mines however, little work was done until the end of 1899. A survey of the leases designated the mines into nine groups: Mungana, Redcap, Zillmanton, Ruddygore, Otho, Ti-Tree, Fortunata, Calcifer and Harper.[35] As Stewart explained:

> During the first half of the past year the mining work was very limited in scope, owing to a protracted wet season, which in the absence of any roadway from the terminus of the railway practicable during the rain, rendered the delivery of materials costly and uncertain, and also to the absence of the necessary skilled labour from the district....Towards the close of the year, the necessary machinery commenced to arrive on the field, and sinking at a number of points was resumed. The shafts are being sunk vertically, so that they may be of the maximum value for future operations. 36

Reid's expressed impatience with progress at the mines may have been dictated more by other business interests than the Chillagoe company's, for it would have been financially unsound to develop the mines to an advanced stage before the railway arrived and before a site for the smelters had been selected. It would be reasonable to suggest that Reid was concerned about the prospect of floating the Arbouin properties. In 1898 Moffat offered Reid and Chapman some leases twenty miles west from Chillagoe. These were acquired by the Linedale West Chillagoe Limited, of which Reid, Chapman and Moffat were the directors. Considerable capital was expended, and 1,500 tons of copper carbonates were stacked at grass.[37] Considering Reid's record, it was most likely that

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34. Commissioner for Railways to A.S. Frew, 10 October 1899; Chief Engineer to Secretary to Commissioner, 17 August, 4 October, 1899.

35. The contemporary plans of the leases are held in the La Trobe Library, Victoria.

36. Annual Report to 31 December 1899, Chillagoe Railway and Mines Limited.

37. See Company File 149 Book 9, *Q.S.A.*, and *A.R.* 1899, p.71.

he was anxious to off-load the mines as soon as practicable, which of course was related to developments at Chillagoe.

By mid-1900, the Chillagoe venture was attracting widespread publicity. The appointment of J.M. Higgins from the Dry Creek Works as superintendent of the proposed smelters, and Richard Shepherd from Mount Lyell as construction engineer, was consistent with Reid's attitude of employing the most reputable men available. A site for the smelters was chosen on Chillagoe Creek, convenient to the company's mines and with a permanent water supply now that the Barron Falls scheme had been torpedoed. As Chapman reported to shareholders in late June:

> Contracts have been placed in the United States for the necessary boilers and blowers, and in England for engines of modern type. A brick-making plant is already on the field, and it is intended to vigorously push forward the erection of the furnaces so as to have part of the first section ready to blow in by the time the railway is through. 38

The prospects of the enterprise were reflected not only in share prices which stood at nearly double par value, but in the flurry of activity on other leases in the district. A number of small companies with "Chillagoe" in the title were registered to attract mining investors, and one in particular, the Admiral Sampson Chillagoe Company No Liability, was to have a profound impact on Reid and his associates, bursting the speculative bubble which they had systematically nurtured.

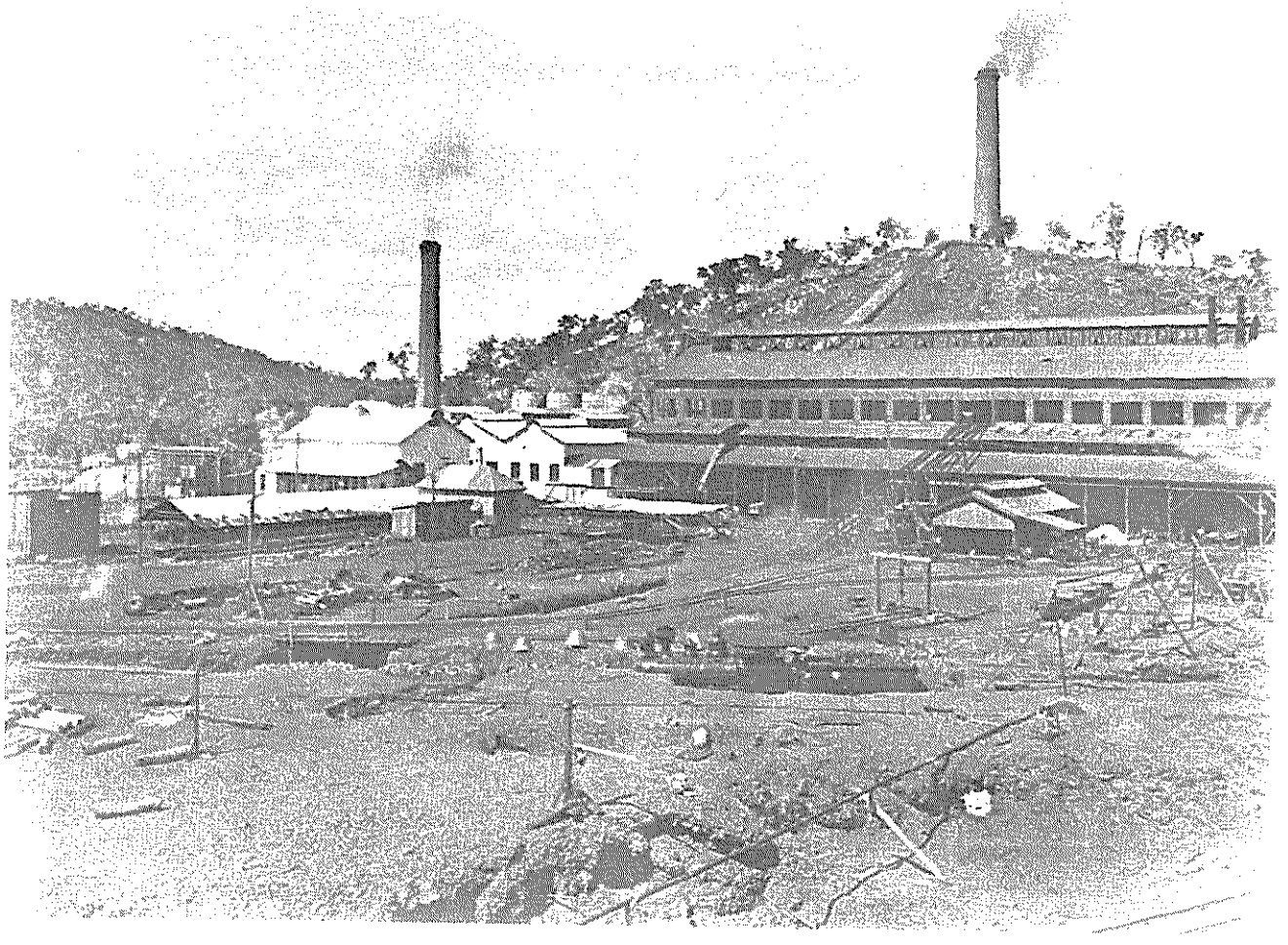
The Admiral Sampson Chillagoe Company was registered in Sydney in October 1898 with the meagre capital of £2,400. It held 230 acres of leases to the west of Chillagoe. In July 1900, a prospectus was issued to float North Chillagoe Mines No Liability, with the Admiral Sampson Chillagoe Company as vendor. In the prospectus, aside from glowing praise of the region, there were two significant features: first, a report by the Assistant Government Geologist, Benjamin Dunstan; second, the names of the provisional directors of North Chillagoe Mines, two of

38. Annual Report to 31 December 1899, Chillagoe Railway and Mines Limited.

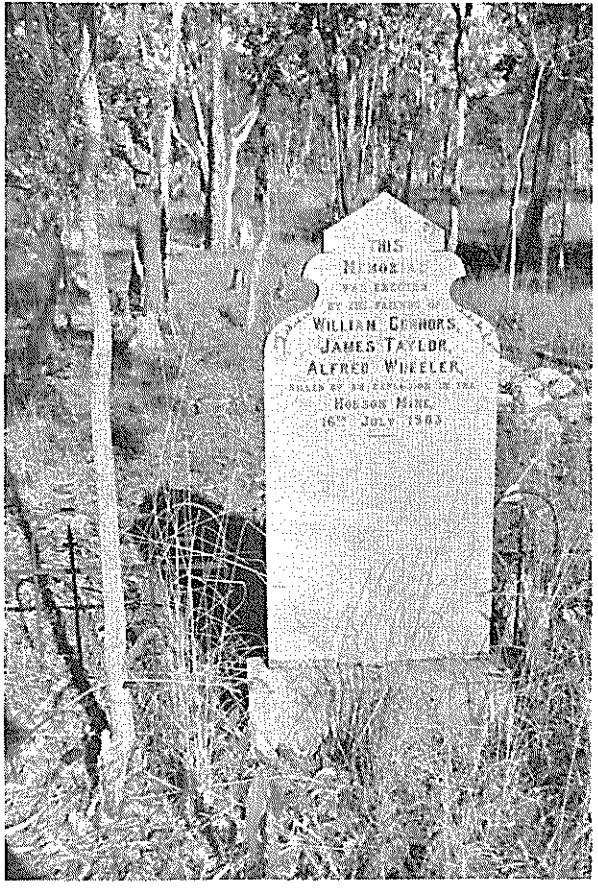
whom were Queensland Legislative Councillors. A whiff of scandal was detected when the two politicians resigned from the provisional board on the grounds that the geological summary in the prospectus "was not a full and true copy" of Dunstan's official report. Indeed close study of the prospectus revealed that grossly inflated values and projected yields had been substituted for Dunstan's estimates, and adverse comment had been deleted. When the Admiral Sampson Chillagoe Company withdrew the prospectus, it admitted that chicanery had occurred but announced that the perpetrator of the "stupid and unnecessary alterations" was unknown to the directors. However, in addition to blatant fraudulence, there were the issues of the behaviour of Mines Department officers and the role of the Legislative Councillors. In parliament, Philp tried to silence critics by tabling correspondence between the promoters and his department, the texts of which cast doubts on the honesty of certain public servants.

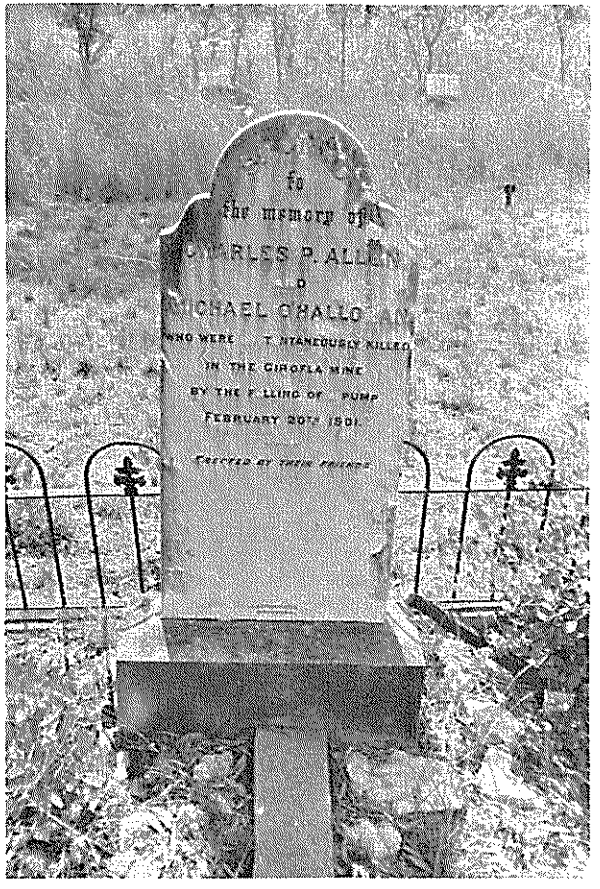
The letters confirmed that, following an approach by the promoters, Philp had agreed to send Dunstan to report officially on the properties, but that when the report was furnished, pressure was exerted on Dunstan to comment on certain aspects which would give his report a more favourable content.[39] Next, Dunstan was offered the management of the proposed company, and his superior, Rands, was allotted a parcel of shares to reconsider the report. That they did not disclose these attempts to procure their co-operation, choosing merely to ignore them, caused both parliamentarians and journalists to question their sense of duty. However, attention focused on the individuals directly connected with the falsified prospectus; the *Brisbane Courier* provocatively suggested that "when the chance occurs of nailing a few rogues' ears to the posts of the public pillory there should be no shrinking from the task". After a mud-slinging debate in the Legislative Assembly and after the Crown Law Office advised that the evidence disclosed a prima

39. William Rands, the Government Geologist, complained that they were "actually dictat[ing] statements which they wish Mr. Dunstan to put his name to for the purpose of 'puffing' the property".



P45: Chillagoe smelters [Cairns Historical Society]





P46: Headstones in Calcifer and Chillagoe Cemeteries [K.H. Kennedy]

facie conspiracy to defraud, Philp issued terms of reference for a Royal Commission.

It was subsequently shown that Dunstan had detected the falsified prospectus and had informed Rands. The latter then drew the prospectus to Philp's notice; in turn, he advised the Legislative Councillors who publicly withdrew from the provisional board of North Chillagoe Mines. After taking evidence for ten days, the Commissioner concluded that sole responsibility for the falsification of the prospectus rested with Patrick Duffy, a director of the Admiral Sampson Chillagoe Company and the most vigorous of the promoters. The verdict however was dubious in the extreme, though the government and investing public seemed satisfied.[40] But of longer term significance, the scandal generated adverse publicity in London where the influential *Mining Journal* implied "disgracefully shady" dealings, that the Mines department was susceptible to "political or financial influence", and that British shareholders would be wise not to "place too much confidence in reports bearing the impress of [the Queensland] Mines Department". Predictably the *Queensland Government Mining Journal* labelled the inference "a distorted account", and went to considerable length to refute impressions of maladministration in the Chillagoe district.[41]

Indeed the Commissioner's report had coincided with rumours that all was not well with Chillagoe Railway and Mines, and that the ore reserves had been over-estimated by Stewart. Heavy selling, especially in London prompted Reid to promise that another opinion on the company's leases would be sought, though the survey could not be undertaken until after the "wet season". Meanwhile, Reid persuaded his colleagues to emulate the Broken Hill example of segregating selected properties and floating them as independent companies. Initially three groups of mines were earmarked: Redcap, Mungana and Ruddygore. But due to the contract-

40. For a full discussion of the affair and the Royal Commissioner's conclusions, see K.H. Kennedy, "The North Chillagoe Mines Scandal", *North Australian Research Bulletin* 3 (November 1978), pp.125-175.

41. *Q.G.M.J.* 2 (January 1901), p.2; (February 1901), p.48.

ing money market in London, it was decided to proceed only with Mungana. Stewart was despatched to England in December 1900 and within only weeks concluded the transaction, with the consent of the trustees for the Chillagoe debenture-holders.

A new company, Mungana (Chillagoe) Mining Company Limited, was formed with a registered capital of £125,000 in 500,000 shares of five shillings each. Reid, Chapman, Knox, Moffat and Patterson were the initial directors, who, by an agreement, acquired from the Chillagoe company the Mungana leases for £60,000 in cash and 100,000 fully paid shares. Further, because the mines were included in the debenture schedule, the Chillagoe company agreed to indemnify the Mungana shareholders against any such claim.[42] The exercise served two purposes: it gave the parent company £60,000 in cash to offset the cost of its capital works programme; and it provided £40,000 extra from share issues to develop the Mungana properties. But it also perturbed two other parties: the debenture-holders and the Chillagoe shareholders. Quite correctly, the *Australian Mining Standard* reported: "What has troubled the minds of certain among the debenture-holders is that the property applied to this purpose, and so alienated from the assets of the company, is part of their security, and as such is not available for the purpose for which it has been applied."[43] Similarly, one Brisbane shareholder complained, "it is simply an expensive demand on shareholders, for to protect their own interests they must take up the shares that are offered; and not only so, but someone in London must be paid for having guaranteed the issue."[44] However any irascibility towards the board was quelled by progress at Chillagoe, now that the North Chillagoe Mines scandal appeared forgotten.

By April 1901, the completion of the company's infrastructure was in sight. The railway had been laid to Chillagoe, though not to the

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42. Company file 172 Book 10, *Q.S.A.*
43. *Australian Mining Standard,* 7 March 1901.
44. *Ibid.*, 21 March 1901.

Mungana terminus. Branch lines to the smelters and to the Zillmanton, Griffith and Ti-Tree mines were underway, and all station accommodation was erected. All told, more than £380,000 had been expended on the railway and rolling stock. The smelters, comprising six furnaces for separate lead and copper treatment, were well advanced, and the general office, store, locomotives' shed, machine shops, ore bins and assay office were ready for use. The main smelter stack, 113 feet high and nine feet internal diameter, was sited on a nearby hill and connected to the back of the furnaces by a brick flue running 350 feet to the summit. The works had absorbed some £75,000. But despite outlays aggregating £140,000, the mining department was causing concern. Development work and ore grades were far from encouraging, particularly in view of a downturn in base metal prices and a drop in Chillagoe share quotations.[45] No sooner had Stewart returned to Australia than he tendered his resignation because of ill-health. Reid accordingly appointed an American, E.A. Weinberg, as general manager and metallurgist and instructed him to furnish the report on ore reserves; Fred Back, late Commissioner for Railways in Tasmania was enlisted as managing director.[46]

Weinberg's survey was completed in early June 1901: it concluded that Stewart had indeed miscalculated the available ore reserves. Though allowances had to be made for the Mungana segregation, Weinberg's estimates came as a shock to the directors. Excluding Mungana, Stewart claimed there were 444,000 tons of ore in sight, with an estimated metallic content of 15,640 tons copper, 530,000 ounces silver and 7,000 tons lead. Weinberg now reported only 175,983 tons of ore available, with projected yields of 5,122 tons copper, 194,461 ounces silver and 476 tons lead. As Reid later confessed: "This information came upon your Directors as a surprise - all the greater because, recognising Mr. Stewart's habitual caution, they had invariably regarded his estimates

45. Quoted at 31/6 per £1 share in February 1901, ordinary shares lost over 20/- in only six months.

46. Sixth Half Yearly Report, p.7.

as likely to err on the safe side, if at all".[47] In fact, so stunned were the directors by the report that they resolved to veil it in absolute secrecy, and hurried to Chillagoe to inspect mining work. The whispers and rumours intensified and Chillagoe shares wavered. Reid accordingly issued a circular dated 11 July 1901, announcing that Stewart, who was in Hong Kong, expressed "unshaken confidence in his estimates" and that an independent, third report would be undertaken by Francis Danvers Power, an eminent consultant who had been educated at the Royal School of Mines and the Royal Mining Academy in Clausthal.

The circular was a mistake: rather than arresting share market jitters, it sparked a run, halving values within a few days. Still Reid and his fellow directors remained tight-lipped, awaiting Power's report and urging that operations commence at the earliest possible date. The railway was completed and opened in August 1901 and the smelters were geared for blowing in early the following month. Coinciding with the completion of the infrastructure was the *Australian Mining Standard's* editorial comment that the mining industry was currently experiencing "a very bad time", and in Queensland the declining gold yield "has accented the general trouble caused by the fall in copper, and the special trouble indicated by the unfavourable reports from Chillagoe".[48] Turning specifically to the recent circular, the editorial claimed that shareholders should be informed how matters stood:

> This matter is likely to evoke some strong and very decided expressions of opinion, for in such affairs undue reticence is the most unwise policy to pursue. The anticipation of evil is always worse than the realisation, and as it is certain that sufficient is known by others to produce the present slump in shares, for their own protection the holders of the stock are entitled to know from the directors exactly where they stand. If the discrepancy is not such as to justify the panic they should know it. If half or all their ore reserves have mysteriously vanished it is right they should be so informed. 49

47. *Ibid.*, p.8.

48. *Australian Mining Standard*, 22 August 1901.

49. *Ibid.*

At a shareholders meeting on 3 September, however, the board withheld Weinberg's report despite loud protests: Reid insisted that disclosure would be premature and that as soon as Power reported, shareholders would be informed of the position.[50] Their anxieties were exacerbated further by Reid's financial summary. Nearly £600,000 had been spent by the company before a single ton of ore had been treated, and an advance of £50,000 had to be arranged with the Bank of Australasia to carry on.

Power's report was furnished in early November 1901. It suggested an even gloomier situation than Weinberg had calculated. Excluding Mungana, Power estimated that there were only 94,792 tons available with metallic contents of 3,304 tons copper, 135,960 ounces silver and 360 tons lead.[51] Moreover, it showed that the company had outlayed well over half a million pounds already on the basis of Stewart's estimate that minerals worth £1,383,500 were in sight, but now only £505,685 worth of minerals could be confirmed, and that included Mungana which had been alienated from the company's assets.[52] Clearly the board would come under fire at the next meeting of shareholders: the financial journals were calling for blood on the carpet, as "the directors with this report in their hands accepted the grave responsibility of withholding its information from shareholders, while over the whole time astute market operators, prescient of the position, turned it to their own account and the shareholders prejudice."[53] The collapse was complete,

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50. The *Australian Mining Standard* reflected on the meeting: "As however, the directors are for the time being masters of the situation, the dissenters must perforce submit to be denied all knowledge of their own affairs; but, at the same time, the action of the board herein cannot be logically defended. At best it can only be regarded as an example of belated discretion....[S]ecrecy always engenders suspicion, and the less occasion given for this, the better." 12 September 1901.

51. The Mungana mines were the least affected: Stewart estimated 1,360 tons copper, 470,000 oz. silver and 8,000 tons lead; Power claimed 2,392 tons copper 205,977 oz. silver and 2,420 tons lead.

52. See *Australian Mining Standard*, 21 November 1901. *Q.G.M.J.* 2 (December 1901), p.578.

53. *Ibid.*, 21 November 1901.

though Reid and his fellow directors grappled to salvage something from the wreck by calling an extra-ordinary meeting in early December.

"Though the temper of the Chillagoe meeting...was decidedly electrical", reported the *Australian Mining Standard*, "the directors have reason to be thankful for a respite, if not for an escape."[54] Shareholders urged that £100,000 be raised, the directors finding half and the shareholders the balance, to prospect for more ore and meet impending financial obligations. Realising that the proposal gave them leeway to consider their options, Reid said his board would investigate its feasibility. What he really wanted was time to formulate a reconstruction scheme.[55] As it eventuated, the board advanced such a scheme early in the New Year. Another company, New Chillagoe Railway and Mines Limited, would be floated to acquire the existing company's

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54. *Ibid.*, 5 December 1901.

55. The seriousness of the collapse was summed up by the *Australian Mining Standard*: "Few meetings, if any, have been more fraught with meaning for the Australian mining industry than that held in Melbourne last week, involving the collapse of the Chillagoe Company. The position is without parallel. From time to time there have been many unpleasant developments in connection with Australian mining enterprises, but never before has a company spent over half a million sterling in railway and wharf construction, in non-effective mining work, in smelters, buildings, salaries, etc., and collapsed without testing the paying possibilities of the property. The debacle is the worse because of the pinnacle upon which preliminary assurances set the all but realised prospects of the company, and the extent to which these assurances were accepted both within and without Australian bounds sufficiently suggests how widely the failure will be felt. The effect upon Australian mining interests must therefore be most serious, and especially will it act as a set back to the mineral development of Northern Queensland. Broadly stated the causes, as everyone now knows, are miscalculation and mismanagement, the one being very sharply accented by the other; and, seeing the point to which they had brought the enterprise, the position directors took up at last Thursday's meeting cannot be regarded as one redounding to their credit. They were asked, as men upon whose initiative others had invested largely, to show their faith in the soundness of an enterprise out of which some of them have already made large stock-exchange profits by putting a sufficient proportion of these profits back into the concern to assure that their fellow shareholders should at least have a run for their money; and they refused."

assets; all shares issued would be exchanged for new scrip but would carry a liability of four shillings each.[56] This exercise would raise nearly £135,000 from shareholders, who had no alternative but to pay the calls or forfeit their shares. As one mining editor commented:

> At present, however, it only tends to make the Chillagoe outlook darker, and to accent the worst failure of which Australian mining history holds record. The directors are in one sense men to be envied if they can regard themselves as being in nowise responsible for the collapse of this great enterprise before ever the value of the property has been tested. Regarded from another stand point, however, their position is anything but enviable, since the shareholders and the public hold a totally different opinion respecting this question of responsibility. 57

It was nearly a year after the collapse before Stewart made a public statement on his role. As might be expected, he defended his management and criticised the directors. Stewart claimed that board meetings were farcical, that Reid was the only director conversant with the enterprise. "He was then (and presumably has been from the commencement), to all intents, the sole controller of the Company", wrote Stewart. He alleged that the board had splurged money "to maintain share values", and had misused his "general estimate of the whole field" to dupe shareholders.[58] Stewart's statement was accompanied by a detailed letter by George Smith, late Mining Manager of the company. Smith similarly blamed the board for misrepresenting Stewart's estimate; he was confident that in time the half a million tons would be realised. He suggested that the work undertaken by Moffat up to the date of

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56. *Ibid.*, 9 January 1902. The editorial commented: "The scheme...cannot be viewed with unmixed favor. Indeed, if the shareholders can find in it one crumb of comfort they must be optimists of a peculiarly transcendental type."

57. *Ibid.*

58. *Ibid.*, 20 November 1902. "A peculiarity in connection with this Chillagoe Company was that throughout the times of difficulty...unauthorised rumours and statements circulated freely, giving views of the position contrary to the facts at the time".

Stewart's appointment - "Moffat's burrows" - was haphazard, wasteful and an obstacle to exposing greater quantities of ore. Likewise, Weinberg and Power did not understand the company's mining policy which was not to undertake permanent development but to prospect leases, and test the ore bodies, to facilitate subsequent exploitation by independent companies after the properties had been individually segregated. He argued that over-expenditure on the railway and the smelters "was the primary cause which led to the collapse of the Company". Had the directors provided sufficient funds for permanent mining work and more exploration, Chillagoe could have been a viable venture:

> That it [expenditure on the mines] was quite inadequate for the development of such a gigantic mining enterprise will be generally admitted and I cannot believe that Mr. Stewart would have attempted to carry on at all had he known how restricted the resources of the Company as applied to its mining policy were to be.

Rather than allowing Stewart "to remain so long under the stigma of being in any way responsible for the financial position", Smith contended that the board should accept the onus for the disaster and for not taking "shareholders into their confidence".[59] Clearly their belated statements were linked to vague allegations, unable to be substantiated at the time, that the directors were guilty of trafficking in shares throughout 1901.[60] However, as the Chillagoe enterprise was in full

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59. *Ibid.*

60. The allegation was never fully investigated. The interests of the directors in Chillagoe Railway and Mines at 11 August 1898 - 580,000 shares having been issued - were Chapman 39,968; Knox 48,320; Reid 62,198; Moffat 10,000, and his Irvinebank Mining Company 119,000. Their interests after the exchange arising from the reconstruction stood, by 8 April 1902, at Chapman 1,000; Knox 4,000; Reid 6,838 and Moffat 25,400, though there was no entry for the Irvinebank Mining Company. Similarly, the share registers of Mungana (Chillagoe) Mining Company record that up to 10 September 1901, when the Weinberg and Power reports were being compiled, Chapman off loaded 1,000 shares, Knox 300, Reid 36,392 and Moffat 23,590. The suggestion that Moffat was the only director not to profit from the Chillagoe boom is nonsense. See G. Blainey, *The Rush That Never Ended*, p.132 and G. Bolton, *A Thousand Miles Away*, pp.284-5 for the perpetuation of the "old honest John Moffat" theme.

production by the second half of 1902, little heed was paid to their version of the collapse.

II

Only 8,129 tons of ore, with metal contents valued at £23,792, had been treated at Chillagoe when the smelters closed down in December 1901. The ramshackle settlements at Chillagoe, Mungana, Calcifer and Redcap were soon deserted as miners and smelterers followed the itinerant railway navvies to Mount Garnet in search of work.[61] The abandonment of the area, however, was temporary. Once Reid's reconstruction scheme had been approved by shareholders, the new company advertised for experienced miners. By May 1902, there

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61. Railway navvies had earned a reputation for rowdiness. The *Wild River Times* reported a shooting in an hotel brawl in February 1901 involving "a couple of suspicious characters with which, since the advent of the Chillagoe Railway, this district is swarming". A fortnight later it repeated a call for additional police following an attempted arson at Wade's Hotel when a navvie was refused a drink: "The present force in the district is totally inadequate to deal with the ruffianism...since the advent of the Chillagoe Railway." 1 & 15 February 1901. Randolph Bedford described the activity of the district during 1901: "Hundreds of men worked at railways and smelters and other surface work. Construction trains steamed over unballasted lines; men dug cuttings and tied a bank to a spur with the spoil of the cut; rakes of ballast moved from ballast pit to permanent way, and the navvies spread the ballast as they travelled. A gorilla of a man led this roving mass of energy, making the pace so that the weaker of their trade must keep to his standard. His only name on the records and the pay sheets was Tommy the Dog. He was unbeatable and tireless." *Naught to Thirty-Three* (Melbourne 1976), p.273.

were 190 men on the payroll of the company's mining department[62] and a full staff of 75 on the railway. A new general manager, T.J. Greenway from the Broken Hill Junction Company, was recruited, and towards the end of the year, 155 jobs were created at the smelters. A short campaign, in which 7,836 tons of ore was treated, yielded £22,519. At first glance, the year's results seemed far from impressive, but considerable ore had been raised and mine development was well-advanced. Moreover, there was a new flush of optimism with the opening up of the O.K. mines at the northern perimeter of the district.[63] This was, in turn, reflected in the building programme at Chillagoe and Mungana and the increased population which now numbered over a thousand.[64]

While the company had earned a profit in 1902, results for the subsequent year were most disappointing, especially for Reid. In his annual address to shareholders, he explained that although the smelters had treated over sixty thousand tons of ore, low values and outlays on the mines resulted in a loss on operations for the year. The railways had earned a profit of more than £25,000, but because of the flooding of the Zillmanton, the amount of dead-work in open cutting the Ruddygore and Calcifer mines and high smelting costs, the company was confronted with financial difficulties that even the most vigilant management could not have avoided. The loss of rail traffic following the closure of Mount Garnet and the cessation of ore supplies from the Mungana company's Lady Jane mine had compounded matters. The Board, said Reid,

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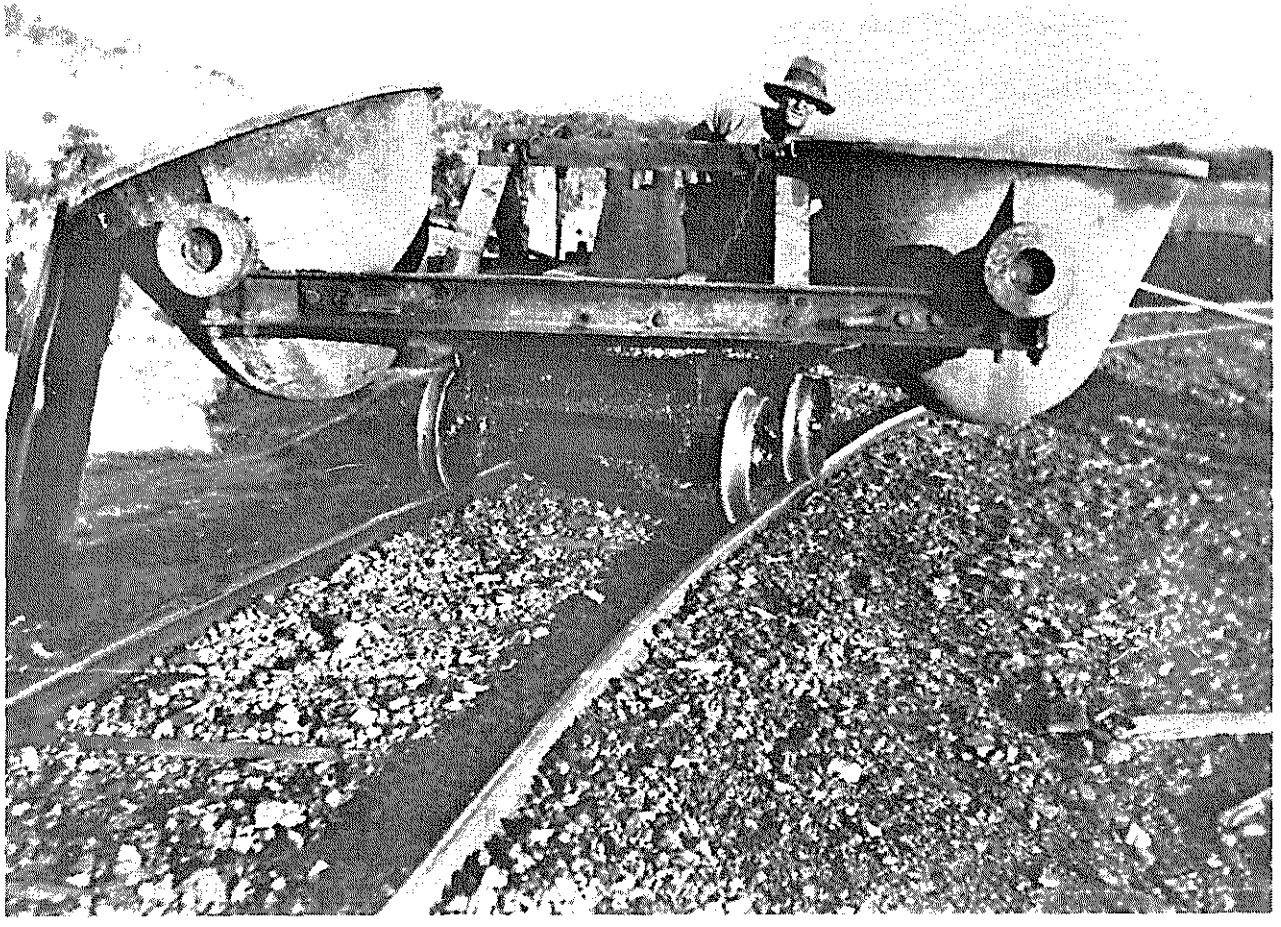
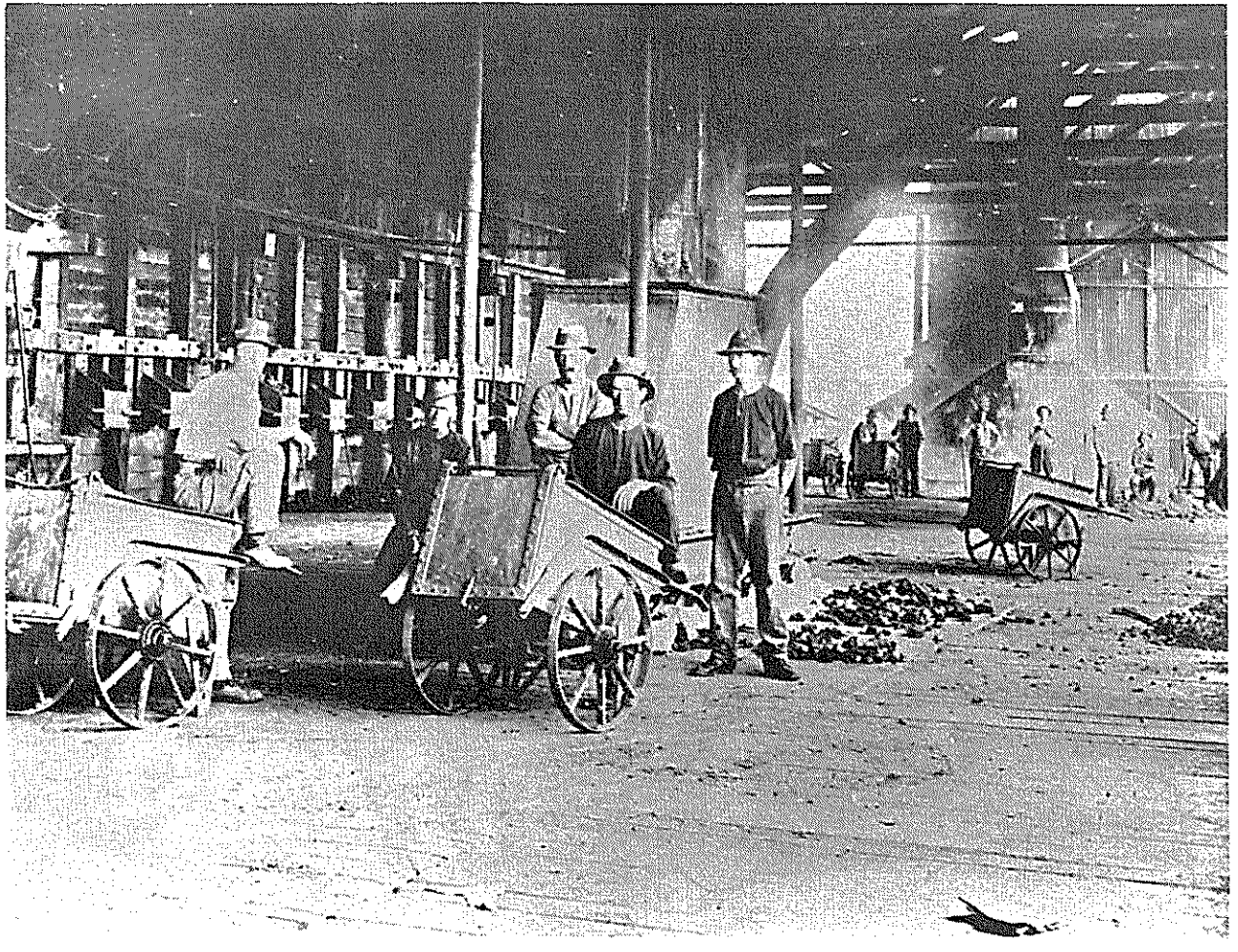
62. Corresponding with the upsurge in mining was a spate of accidents, especially at the company's Hobson mine. In July 1903, three miners, William Connor, Alf Wheeler and John Taylor were killed in an explosion; the "shift-boss", Edward Thomas was subsequently prosecuted for breach of mining safety regulations and fined £10 with costs of £11.2.8. Fourteen weeks later Martin Murphy suffered severely lacerated testicles from an ignited primer. At the sister company's Mungana mines, no fewer than seven men were victims of mining accidents, though none were fatal. *A.R.* 1903, pp.158-59.

63. For details, see Volume I, Chapter VII.

64. *Pugh's Almanac*, 1902, p.637 lists the services of the district, including the nine hotels and six general stores.



P47: Slagpots, Chillagoe smelters [L. Hardaker]



P48: Charge-floor, Chillagoe smelters [Cairns Historical Society]

had no option but to effect cuts in all wages and salaries, and to notify debenture-holders that the company could not meet its interest obligations in 1904.[65]

Reid's statement of results for 1903 was termed "a doleful story", "a narrative of adverse happenings and disheartening failure" and "a record of unrealised hopes, the more disappointing to shareholders because of the over-confident forecasts by which it had been preceeded".[66] But he refused to concede defeat; instead he conceived a scheme to open up the Etheridge district as a new source of ores. At Reid's request,[67] Thynne approached the Queensland government, but was received coldly by the premier, Arthur Morgan. Fortunately for Reid, the Morgan government was embroiled in a political crisis in mid-June 1904. Morgan resigned, but was denied a dissolution. Arthur Rutledge was commissioned but, even after five weeks, was unable to form a ministry, whereupon Morgan returned to office. Reid exploited the political impasse to the company's advantage. He telegramed Greenway to close down operations at Chillagoe if the government persisted in its attitude to the company. It was nothing short of political blackmail, as northern editorial writers and a number of public meetings in Georgetown and Cairns came out strongly on the side of the directors. During the election campaign, Morgan gave way and opened negotiations for a railway to the Etheridge. That the talks were to drag on for nearly two years was the consequence of Morgan's improved bargaining position, for at the end of the year the company announced further losses. In fact, the deficit was finally audited at £35,617 despite profits on the railway.

In early 1905, Reid decided to push for a second reconstruction of the company. The most obvious factor in the 1904 loss was the low

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65. *Australian Mining Standard*, 7 April 1904.

66. *Ibid.*

67. See J.S. Reid to A.J. Thynne, 2 March 1904, *Q.P.D.* CXXV, p.2414.

grade of ore passed through the furnaces. Accordingly the board resolved to install new concentrating machinery, but to pay for it, fresh funds had to be obtained. If the debenture-holders would make concessions, Reid argued, the shareholders would respond favourably to fresh calls. On 18 April an agreement was reached in London: the debenture holders accepted deferred coupons totalling nearly £45,000 for accumulated overdue interest and a reduced rate. Reid acceded to their request that the British shareholders, now holding majority equity,[68] also be represented by two London-based directors; conveniently his brother William Douglas Reid was appointed by the Melbourne board. In the following month, Reid told an extraordinary general meeting that a reconstruction had been inevitable for some time, and that improvements in metal prices, new mines at O.K. and elsewhere, and the resumption of output from their own flooded mines, promised "a better position financially". He therefore proposed the raising of £70,000 "to prosecute development with greater vigor".[69] By creating a new company of 700,000 ten shillings' shares issued as paid to 7/6, the nominal capital was thus written down to £350,000 from one million pounds. Given shareholders' approval, Reid registered Chillagoe Company Limited in early June 1905.[70]

At the company's mines and smelters, work was resumed with a new sense of purpose. The board then decided to test the Huntington Heberlein process on local lead ores, rather than install a conventional concentration mill.[71] Though successfully adopted at Broken Hill, the

68. *Australian Mining Standard*, 24 May 1905. By mid-1905, of the 688,983 shares issued in New Chillagoe Railway and Mines, the London register accounted for 402,607 shares.

69. *Ibid.*

70. See Company file 277 Book 11.

71. The H & H process entailed blast roasting; its main advantage was in desulphurising the ore, and though in vogue prior to 1910, was subsequently overshadowed by the Dwight-Lloyd process. For details see W.H. Dennis, *A Hundred Years of Metallurgy* (London 1963), pp.59-61.

process was deemed wasteful by Greenway who was aware that some British debenture-holders had influenced the decision as they had interests in the patent and would receive three shillings a ton royalty payments. Greenway resigned; he was replaced by his subordinate Peter Brander as mining manager, and a German metallurgist, Kunze, was recruited from Zeehan as manager of the smelters. By December, Reid was able to inform shareholders that the enterprise anticipated a solid profit for the year, and more important, the protracted negotiations with the Queensland government over the Etheridge railway had been successfully concluded.[72]

The high world metal prices of 1906-07 conferred a short-lived era of prosperity on Chillagoe. The company earned successive profits on both the railway and the smelting departments. They were palmy days for the base metals industry of North Queensland, and it came as no surprise that the local warden should remark at the close of 1907 that Chillagoe exuded "a more prosperous and contented feeling among the community...a feeling of permanency".[73] Little could he know, not being privy to the Chillagoe company's affairs, how misplaced his faith was. For in the Melbourne boardroom, the directors were confronted with a series of problems and misfortunes. Having successfully placed a new share issue and secured another debenture issue, all underwritten in London by Keats and Tolhurst, to finance the Etheridge railway, the directors had committed nearly £75,000 to new plant.[74] But metal prices were falling rapidly. From £112 per ton in March, copper plunged to £62 in December; lead was down from £22 to £14 in the same period. Financially the company was again at the edge of a precipice. Moreover, the first manifestations of militant unionism were emerging on the northern mineral fields, and already the Irvinebank company was troubled by labour discontent.

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72. *Q.G.M.J.* 7 (January 1906), p.488. See J. Kerr, Volume 1, Chapter X, for details.

73. *A.R.* 1907, p.70.

74. For a full summary, see *Q.G.M.J.* 8 (January 1907), pp.13-14.

It was clear by mid-1907 that the profits of more than £90,000 recorded in 1906 would not be repeated as ore grades were disappointing. Consequently Reid urged that the Etheridge railway be diverted from Georgetown to connect with the Einasleigh mine and terminate at Charleston. This route, he wrote to the Railway Commissioner, "will probably be shorter and cost less"; traffic "would be ensured of a very much larger business" as "lead and copper exist apparently in considerable abundance whereas at the Georgetown end there is nothing but gold". Clearly the mineral traffic would be the mainstay of the railway, and his reasoning was sound. As he concluded: "Neither the Government or the Company, I take it, are building the Etheridge railway for sentiment or philanthropy."[75] The Commissioner subsequently travelled to Victoria for discussions with Reid at his Mount Macedon house, and was instrumental in having the surveys and plans changed and approved. This ensured that the company could tap the Einasleigh mine and others around Charleston, rather than relying so heavily on Mungana ores.[76]

When the accounts for 1907 were completed, Reid was pleased that profits had not decreased as much as he anticipated. Reflecting his relief, he wrote:

> Things do not seem so bad with the Co. as I feared they might be. I am in good hope of an early improvement when the additions to the plant get fairly to work. There seems to be a super abundance of very good ore, particularly from Mungana, and if we were, as we should be, in a

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75. J.S. Reid to Commissioner for Railways, 14 August 1907, RLYS/A9218, *Q.S.A.*

76. The prospect of new ore supplies gave the board breathing space. As Reid wrote to his wife: "Mr. Keats lunched with me here and we afterwards went out to Mr. Weinberg's where I spent the afternoon and evening. Weinberg appears to be very well satisfied with his visit to Chillagoe and assures me that the Co. will now make good progress despite the serious fall in copper - Keats is of course, as usual, most enthusiastic, and is full of wild predictions of the profits that we will be making in a year or two - I hope he may prove a reliable prophet". J.S. Reid to Martha Reid, 16 September 1908, J.S. Reid Papers.

> position to treat it properly and turn it into money this would very soon be a satisfactory change in Chillagoe affairs and a complete ending to any cause for worry. 77

At the annual meeting in late July, he reassured shareholders that expenditure on capital works at the smelters and mines was not at an end, and that the railway had almost advanced as far as Einasleigh. He made light of the delay occasioned by an industrial dispute; the union involved, the Amalgamated Workers' Association, was less than twelve months old, and its officials were completely inexperienced.

In July 1908, the union organiser, E.G. Theodore, declared support for disgruntled railway navvies, who were claiming an additional shilling per day, and enrolled them as members. The basis of their claim was the conditions of work. As the *Worker* reported: "The sanitation of camps has been bad - scores of men have died on this line, some of the camps being veritable fever beds".[78] Reid decided to hold out: his hostility to unionism dated back to Broken Hill in the late 1880s and partly had influenced his resignation from the B.H.P. board in 1889. On a rough calculation the cost of the increase demanded would add more than £5,000 to the construction bill in twelve months. As it eventuated, the navvies stood solid for over three months before the company capitulated. Their victory was a significant watershed in industrial relations in the northern mining industry, as over the following five years hostility between management and labour intensified. Wisely, however, the union tended to avoid confrontations with the Chillagoe company, preferring to concentrate on smaller, more vulnerable concerns, and, in July 1910, enthusiastically concluded an agreement with Chillagoe management for wage increases in exchange for a pledge of industrial peace for two years.[79]

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77. J.S. Reid to Martha Reid, 25 May 1908; *ibid.* The directors optimism was subsequently bolstered by a demand for shares among German investors.

78. *Worker*, 25 July 1908.

79. For a full treatment of the subject, see D.W. Hunt, "Mining Unionism in the Far North, 1907-1910", *Lectures in North Queensland History, Third Series*, pp.35-67.

Meanwhile, the Chillagoe company appeared to have consolidated its financial position. The statements for 1908 were tabled at the annual meeting on 27 July 1909. As Reid confided: "I had also much better material this year to work on - a good substantial profit and nothing requiring any apology to shareholders - that makes pleasant work and the difference".[80] £94,507 was carried to the credit of the profit and loss account - £30,000 up on the previous year - while the railway recorded net earnings of £67,913, down £10,000 due to industrial dislocation in centres serviced by the line. Despite a slide in the Zillmanton mine, and a recent fire in the Lady Jane at Mungana, Reid was optimistic that when the railway was completed later that year, Etheridge ores would compensate any shortfall in supplies for the smelters.[81]

Reid was out of the country when the 1909 results were disclosed.[82] These revealed a down-turn in the company's profits as a result of continued strike activity at Mungana, O.K. and other mines. Moreover, the cessation of coal and coke shipments from Newcastle due to industrial problems affected receipts, and had it not been for the tonnages shipped from Einasleigh for smelting, the furnaces would have been temporarily shut down. Clearly, great faith was being placed on the prospects of the Etheridge, especially at Charleston and Percyville. Rather than finding the funds to equip the Charleston group, the board had empowered Reid to promote a new company in London. Largely through Reid's capacity to draft attractive prospectuses, their efforts were successful.[83]

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80. J.S. Reid to Martha Reid, 7 July 1909, J.S. Reid Papers.

81. *Australian Mining Standard,* 4 August 1909.

82. *Ibid.,* 7 August 1910.

83. For details see J. Wegner, Volume 1, Chapter III, pp.104-5; *Australian Mining Standard,* 28 September 1910, 18 January 1911.

On his return to Melbourne, Reid was confronted with the grim news that substantial expenditure on a new shaft at the Zillmanton - named in his honour - was wasted as the ore grade was too poor to warrant treatment; that heavy flooding in April 1911, as a consequence of a late season cyclone which wrecked havoc in the township, necessitated additional deadwork at the mines; and that several options on copper shows on the Etheridge were not exercised after disappointing assay returns. Though the company had been profitable in 1910, the outlook was not good as metal prices remained depressed. Moreover, debenture interest and other charges, and heavy depreciation write-offs had appropriated a considerable proportion of the profits.[84]

Coinciding with the annual reconciliation of accounts was a visit to Chillagoe by the Royal Commission into miners' health. The evidence given before the Commissioners provided interesting comparisons between the company's policies and workers' attitudes to the issues. Two employees were delegated by the smelterers to attend the hearings; they concurred that the company was attentive to health problems and was constantly improving working conditions. Their sole grievance was the lead furnace which they argued required a more efficient sprinkler system to alleviate dust. The installation of hoods to control fumes had only partially satisfied complaining furnacemen. The new general manager, James Horsburgh, pointed out that there had been no recent cases of lead poisoning,[85] but was disturbed that the workmen were not

84. £99,826 was carried forward, in addition to net earnings on the railways of £78,398 - the Etheridge line contributing £15,639.

85. See *Q.P.P.* 1911-12, III, p.570f for a transcript of the evidence. Christopher Green boasted that he had never visited a medical practitioner while at Chillagoe and advised that men should wash their hands and clean their teeth twice daily. Moreover, "if a man can keep his bowels well open the fumes will not hurt him."

ablution conscious.[86] On the question of sanitation, he claimed that the closet and pan innovation had reduced the incidence of fever substantially, but that there was laxity on the part of individuals.[87] The disdain of workers for apparatus introduced to safeguard their health was reflected in the evidence of the manager of the Mungana mines, who stated that men were reluctant to use respirators: "They cannot talk, and they cannot smoke, and they cannot chew tobacco and spit." His claim was supported by the Chillagoe medical officer, Ricardo Moni, who also confirmed that there were cases of fibrosis among machinists below ground, but few instances of tuberculosis.[88] Moni suggested that the greatest local health hazard was alcoholism. Significantly the Amalgamated Workers' Association declined to give evidence. It may have been that their officials were preoccupied with strategies for the 1911 sugar strike soon to be staged. More likely, it may have been that the union was loath to publicly acknowledge the company's even-handed approach to health issues and that it would be hard-pressed to substan-

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86. Horsburgh stated: "I do not know whether they bathe afterwards or not, but I know that the men go and eat their crib without washing their hands. They hold their crib in their hands while their hands are quite black". S.N. Rodda urged legislation "to make the men wash themselves when they come off shift. They come up covered with lead dust, and go home dirty. I do not know whether they wash or not, but they go away in their dirty clothes, and come back again in the same clothes next morning".

87. Horsburgh impressed the company's concern for sanitation as "Chillagoe had an awful name...owing to lack of sanitation" which resulted in dengue and "serious outbreaks of typhoid". It was difficult, nevertheless, to police: "At times instead of sending the cart over to change the pan, a man takes the full pan out and leaves it at the back of the closet, and an empty pan is put in its place. I have seen the tins overflowing in the closets". In addition to sanitation improvements, the company treated drinking water from Chillagoe Creek in deliming vats.

88. As one miner of twenty-five years experience reflected: "Sometimes I bring up a little phlegm. It does not affect my work. I suppose when a man is getting old, he naturally gets short-winded".

tiate a case of ruthless monopoly capitalism exploiting employees, which its propaganda had stressed in preceding years.[89]

By mid-1911 Reid was becoming anxious over the Etheridge prospects and the soaring cost of fuel for the smelters. In desperation he arranged for the purchase of the Einasleigh mine,[90] and focused on the Mount Mulligan coal deposits as a source of local fuel. The company pegged leases and devised a campaign to persuade the government to construct a railway to Mount Mulligan.[91] But disaster struck. On Christmas eve, a spectacular fire engulfed the old smelter building seriously damaging two copper furnaces, the elevated railway leading to the furnace floors and a new mobile electric crane.[92] Having committed funds to the Einasleigh mine, to new machinery on the Etheridge and to developing Mount Mulligan, the coffers were bare. With no alternative, Reid decided to call up all outstanding capital on contributing shares to overcome the liquidity crisis. In a knee-jerk reaction, Chillagoe shares tumbled, much to the *Australian Mining Standard's* perplexity:

> It is difficult to understand, however, why the calling up of the balance of the capital should have a prejudicial effect on the paid up shares.

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89. The record of the union in industrial disputes reveals its single-mindedness on the issues of wage increases and reduced working hours. From the very outset of the Etheridge railway strike, where the issues of sanitation and conditions were crucial, the union was content with a wage increase but no guarantee to remedy the health or work conditions. At Mungana in 1909 a strike flared over dangerous underground workings. The union claimed victory and the men returned to work as soon as the company had conceded an additional shilling per man per shift.

90. See Volume 1, Chapter VII, pp.204-5. The O.K. mines and several smaller tributors had shut down in 1910, depriving the smelters of custom supplies.

91. The *Australian Mining Standard*, 24 August 1911, commented: "The Mount Mulligan coalfield, too, may prove a good one, and, if railway communication with it be established, may help to reduce the working costs at the Chillagoe smelters; but taking all the position into consideration, there does not seem much reason at present to expect that the Australian public will put up the price of these shares, though London may do so, if the metal market improves".

92. *Q.G.M.J.* 13 (January 1912), p.39.

> As a matter of reason, they should have improved, as the two calls of sixpence each should enable the liquidation of some outstanding liabilities and make possible an era of profit earning.... The company has had a crop of troubles, and it will be generally admitted that the directors are adopting the most prudent course open to them; and it is this fact which justifies a hope that the company may presently share to some extent in the general prosperity. 93

What the journalist could not know was the financial results for the year to 31 March 1912 would show a drastic drop in profits and that Chillagoe's offshoot, Mungana (Chillagoe) Mining Company, was about to reconstruct.[94] When the accounts became available it was revealed that gross receipts were only half the preceding year's figures, that although a working profit of £18,000 was earned, it was insufficient to cover the year's debenture interest, and that the railways had also experienced their worst year for a decade.

Reid's address to shareholders listed severe floods, the fire, labour dislocation, unproductive expenditure at the mines and the cost of installing a Dwight-Lloyd sinterer as the chief imposts. He confessed that although shareholders had responded favourably to the calls on contributing shares, the company had been compelled to seek "a heavy bank advance". He was confident, however, that Mount Mulligan would be developed with government aid and, together with improving world metal prices, would contribute to improved earnings in the current year. The financial journals had had enough. The *Australian Mining Standard* in particular was no longer inclined to temporise the company's performance. Chillagoe was "a sink for very large sums of money which it is doubtful shareholders will ever have returned to them", "a company

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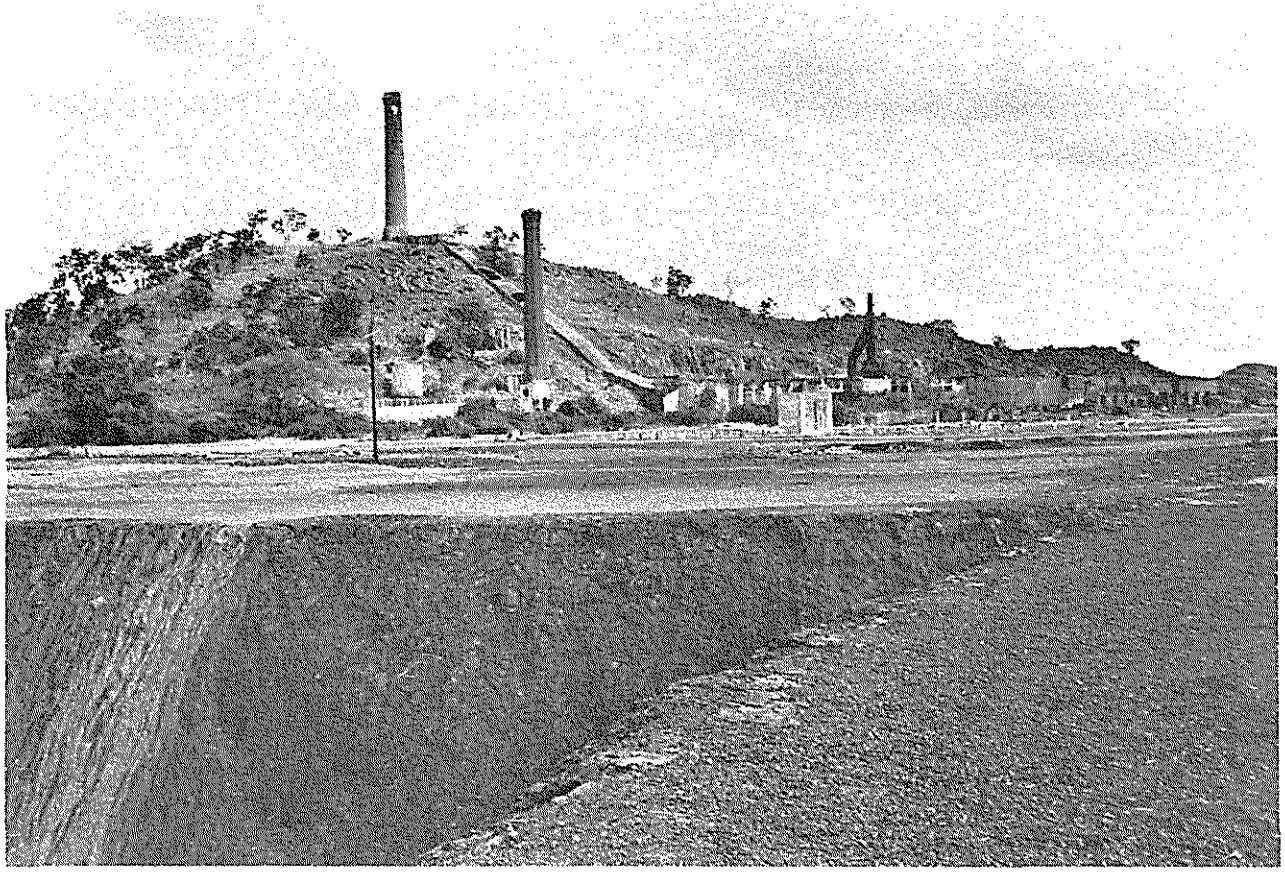
93. *Australian Mining Standard,* 7 March 1912.

94. For the Mungana reconstruction see *Q.G.M.J.* 13 (May 1912), p.202. The shares were written up to 6/- and an immediate call was made for the additional shilling, thus effectively raising £25,000 from shareholders.

P49: J.S. Reid, circa World War I [Melbourne University Archives]



P50: Chillagoe smelter remains, from slag dump, 1979 [K.H. Kennedy]

of a thousand disappointments, and many more of these are yet in store".[95]

By October, Reid was despondent. Writing to Thynne, he confided the extent of the company's difficulties:

> The position has not improved since I saw you, nor is it likely to under existing circumstances and unless the government immediately puts us in a position to approach shareholders with the undoubted benefits and attraction which Mt. Muligan [sic] would present to them, I can see nothing for it but to shut down. To continue as we are now doing, only to flounder deeper into difficulty, would be unjustifiable.
>
> ...if it was a matter of personal choice I should not hesitate to abandon the concern rather than encounter the odium sure to attach to another application for fresh capital.
>
> ...to write 'finis' to the undertaking...might be a relief to some of them as it certainly would be to me. 96

Soon after he urged that Thynne speed up negotiations with the government over the construction of a railway line to the coal mine, and in November 1912 welcomed the government's affirmative decision.[97] Construction commenced six months later.

In the interim, Reid called an extra-ordinary meeting of shareholders to approve yet another reconstruction scheme. He proposed a new company of 1,200,000 shares of 10/-, part of which would be required to service the £80,000 bank overdraft on which the company was working.

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95. *Australian Mining Standard*, 15 & 22 August, 1912. As a palliative, it added that the report "is one which shows a brave endeavour to make the best of a number of misfortunes sufficient to cast down the hopes of any management".

96. J.S. Reid to A.J. Thynne, 18 October 1912, RLYS/A9230 *Q.S.A.*

97. Estimated to cost £114,000, the railway would be constructed by the state in return for the company's purchase of Treasury Bills carrying 4% interest. For details, see P. Bell, *The Mount Mulligan Disaster*, pp.30-40.

The scheme was adopted unanimously.[98] Soon after Reid decided to approach the government again with a proposition that the Etheridge railway be extended to the Gilberton district where the company was working the Percyville copper mines. Reid argued that unless higher grade ores could be obtained, the smelters would operate at a loss until Mount Mulligan was fully developed. But he found the government less receptive: in fact the premier, Digby Denham, bluntly stated that further financial assistance would be a waste.[99] Reid's fears were confirmed by the balance sheets to 31 March 1913, delayed because of the reconstruction, and those for the subsequent nine months to 31 December. They told a story of impending financial disaster - the losses for the new company had already totalled £32,519 on the trading account.[100]

When Reid approached the government in February 1914 for temporary accommodation to the tune of £30,000, he was refused on the grounds that the company had no security to offer. With no alternative available, he instructed Horsburgh to close down the smelters. Calculated to spur the government into expedient measures to placate northern business interests, the manoeuvre misfired. The government held firm in its determination not to advance further financial assistance; it resented the role of scapegoat into which Reid had cast it. As a compromise, Reid subsequently made overtures to the Acting-Premier, Walter Barnes. He extolled the advantages to the state of the undertaking, and the "indirect national benefits due to the company's enterprise in the settlement and development of the territory", and suggested that "if effort is to be made to retrieve lost ground", it "must be mutual". Reid proposed that the company would extend the railway to Gilberton and give the government the right to acquire it, should Cabinet agree to purchase the existing lines. Alternatively, the company would raise capital of £150,000 to recommence operations, if the government extended the railway

98. See Company file 23 Book 13, *Q.S.A.*

99. Minute on letter, A.J. Thynne to D. Denham, 1 August 1913, *Q.P.D.* CXXV, p.2415.

100. See *Australian Mining Standard*, 23 June 1914 for a full breakdown of accounts.

to Gilberton and guaranteed a return on freight charges.[101] Again Denham intervened and dismissed the proposition. A deadlock resulted.

The mining and financial journals lamented the state of affairs at Chillagoe. "Failure after failure has characterised the mournful history of this concern", claimed the *Australian Mining Standard*. "Like a sponge sucking up water to satiation, it has greedily absorbed shareholders cash, but never appears able to do more than suck".[102] Five weeks later it commented that the company was "desperate", that the government "will have to take a hand in the matter": "Practically insolvent, all its interests idle, with a maintenance bill which remains through hail and shine - what hope can there be?" It was presentient in suggesting that the government would probably intervene, "if for no other reason than to maintain the interests already involved and at stake, but it won't be at the company's price."[103] Not least among the interest was the Mount Mulligan railway which was completed to the now deserted coalfield in August 1914. Only under pressure from the Denham government was the coal mine reopened in April 1915 to fulfil contractual obligations to the Queensland Railways. Reid was content to wait, moreso because with war now enveloping Europe, the company would be hard pressed to raise additional funds from its predominantly British shareholders.[104] When the Ryan Labor government was elected in 1915, partly on a policy of state assistance to the ailing mining industry, the Chillagoe board's hopes for government assistance rose.

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101. J.S. Reid to W. Barnes, 1 May 1914, *Q.P.D.* CXXV, p.2415.

102. *Australian Mining Standard*, 25 June 1914.

103. *Ibid.*, 6 August 1914.

104. By 7 July 1914, following the completion of transfers to Chillagoe Limited, the 1,200,000 shares were held as follows: Melbourne register 169,588; London register 1,028,290; in transit 1,700; unissued 222; forfeited 200.

Thynne approached Ryan in early July 1915 to ascertain his attitude towards the sale of the Chillagoe railway; he was referred to Adamson, the Railways Minister, and Theodore, the Treasurer and former protagonist for the A.W.A., who requested up-to-date information from the company. Reid furnished details on the prospects of the Zillmanton mine, the progress at Mount Mulligan and the impost of coke and freight prices which had forced the smelter's closure. He added: "No company that I know of has surmounted greater difficulties or ever experienced more setbacks than we; but had it not been for the war, which upset so many plans, the company before now would again have been at work with adequate fresh capital at its command....We have already spent too much in the North to think of abandoning it...".[105] A formal proposal was subsequently lodged on 23 July, outlining the financial difficulties of recent years and enumerating the benefits which would accrue to the State if it purchased the railway. The sale price was £900,000, acceptable in 4½% government stock, in return for which the company pledged to spend £200,000 on the mines at Chillagoe.[106] Adamson asked for a departmental assessment which was lodged on 7 October. In his report, the Commissioner pointed out that to build the Chillagoe railway at current prices would cost nearly £500,000, and that if the "resumption and continuance of the mining and smelting operations" was guaranteed, "the acquisition of this and all other privately owned lines in the district is desirable". In short, it was a bargain if the Etheridge railway could also be included by way of a "compromise with the company".[107] Less than a fortnight later, Cabinet recommended that the Chillagoe railway "be taken over at a reasonable price, not necessarily £900,000", and that the Etheridge line "be also taken over at a fair and

105. J.S. Reid to A.J. Thynne, 13 July 1915, *Q.P.P.*, 1917, III, pp.429-31.

106. A.J. Thynne to J. Adamson, 23 July 1915, *ibid.*, pp.409-10.

107. C. Evans to J. Adamson, 7 October 1915, *ibid.*, 481-83.

equitable price". Theodore was designated to travel to Melbourne to negotiate with Reid.

It was at this stage however that Ryan involved himself personally in the issue. He cabled the Agent-General in London requesting the "face and market values of Chillagoe Company's debentures"; Theodore knew nothing of his action. Reid and Theodore subsequently met for two hours, and the same day Reid confirmed in writing that "I have met my colleagues and informed them of the price named by you for the Chillagoe Railway and the Company's interest in the Etheridge Railway, £950,000, payable in Queensland 4½ per cent. Treasury Bills at par".[108] By mid-November 1915 the trustees for the debenture-holders had approved the scheme. For Reid, it seemed that a government takeover of the railways was only a matter of time. On 22 November, Thynne told Theodore of the trustees' decision; Theodore confided that there was "difficulty with his party", and that Ryan wanted a lower price.[109] Eight days later, Thynne informed Ryan that the company could reduce the price only to £900,000 if it had to spend money on the Mount Mulligan development and the Chillagoe mines. Ryan would not commit himself. Instead, he asked the extent of Reid's financial involvement with the company, but was assured that Reid held only shares, not debentures. Indeed Reid's comments on Ryan's inquisitiveness reflected why he was desirous that the sale should be finalised:

> ...Whatever the result of our business with the Government may be, I am glad Mr. Ryan now knows that my desire for its accomplishment is not instigated by pecuniary interest. I hold some shares in the company, but nothing more, and whether the sale is on or off is a matter of small moment to me as far as money is concerned. But I would take great pride in making the company the success which I think it should be, as I have stuck to it and brought it through the troubles of the

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108. J.S. Reid to E.G. Theodore, 25 October 1915, *ibid.*, p.432. Writing to Thynne soon after, Reid disclosed that Theodore "considered this price a reasonable one, and thought it would be acceptable to his Government."

109. See A.J. Thynne to J.S. Reid, 22 November 1915, *ibid.*, pp.478-79.

> past twelve or thirteen years when it was abandoned by others upon whom it had at least an equal claim. 110

On Christmas eve, Ryan suggested "an alternative proposal to obtain from the Government the capital required for the works at Mount Mulligan and the development of the works at Chillagoe, by way of an advance from the Government on the security of the Chillagoe Railway by way of first mortgage".[111] Though Reid confesed he would "jump at the alternative if I felt it could be arranged", he considered that "the suggestion is not practicable", as the debenture-holders would hardly agree to forego "their chief security".[112] He therefore sought an interview with Ryan, which was arranged for mid-January. But no agreement was reached. Reid conveyed his impressions to Thynne, suggesting "there is no doubt Mr. Ryan wants the Railways, but he wants them at his own price":

> I spent an hour and a half with Mr. Ryan on Saturday, chiefly combating his absurd contention that upon the present marketable value of the Chillagoe debentures the value of the railway should be fixed. Mr. Ryan's tone indicated that he regarded our position as a helpless one and that he meant to make the most of it. He said he thought that if the debenture-holders got about the equivalent of the present market price, they should be very well satisfied, and that on this basis a purchase should be possible at about the amount owing to them, which he took to be about £700,000. 113

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110. J.S. Reid to A.J. Thynne, 7 December 1915, *ibid.*, p.441.

111. A.J. Thynne to J.S. Reid, 24 December 1915, *ibid.*, p.461.

112. J.S. Reid to A.J. Thynne, 31 December 1915, *ibid.*

113. J.S. Reid to A.J. Thynne, 18 January 1916, *ibid.*, p.453. Reid claimed that Ryan "was suprised to learn of the existence of the Etheridge debenture debt", and "even asked me whether the Mulligan line belonged to the Government or the company!"

At this juncture Reid seemed to hold the upper hand: the government intended rectifying the depression in the Chillagoe district; the Commissioner for Railways was urging the purchase of all private lines; and a moratorium on British financial instruments for the duration of the war protected the company against foreclosure by the debenture-holders. Accordingly Reid and his co-directors reconsidered their price, believing "the debenture-holders would probably accept 90 per cent for the debt and interest owing to them if we had to reduce our price", which could be made a condition of sale.[114] They were prepared to accept £800,000 immediately, with a reduction of their expenditure obligation to £150,000, though this was later raised to £850,000 with debentures discounted to eighty percent.[115] A scheme to wait out the war and then call up three shillings per share, which he put to Ryan, was bluff: not only would the company miss out on high wartime metal prices and have to devote extra funds to maintenance in the interim (funds which they did not have), but it was unlikely that shareholders would tolerate another call, especially with labour and material costs rising alarmingly (which Reid had earlier acknowledged).

Ryan left for England in early April 1916. Later the same month, Thynne advised that Ryan had not communicated with his ministers: "There appears to be nothing for it but to let Mr. Theodore take the course he has decided on, in the hope that the views of the rest of the Cabinet are less antagonistic than those of Mr. Ryan." Theodore's compromise was a price of £750,000 with a twenty percent reduction on debenture debt which would still leave the company more than £200,000; but Reid

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114. *Ibid.*

115. See J.S. Reid to A.J. Thynne, 25 January 1916, *ibid.*, p.462. This would give the company some £200,000 surplus: debentures on issue and accrued interest totalled £662,000, and if discounted 10% would entail an obligation of £595,200 to clear the Chillagoe debt (excluding the Etheridge railway). A.J. Thynne to J.S. Reid, 20 April 1916, *ibid.*, p.463. The later price would give the company an additional £116,200, while the debenture holders would receive only £529,000.

stood firm on his previous offer.[116] However, Ryan suddenly took the initiative by meeting with the trustees and the three largest debenture-holders in London. A cable from the company's London secretary conveyed the shock of Ryan's tactics:

> ...Disparaged value railway, and company's undertaking generally, and vaguely hinted at confiscation by Government of company's mines, etcetera. Eventually stated Government prepared purchase railway about original cost construction, less depreciation, and invited proposals from debenture-holders....Trustees and debenture-holders regard Ryan's attitude and endeavours as discreditable and are certainly unsympathetic.... 117

What the Premier had done was to by-pass the company and its shareholders. Reid was furious with Ryan's "ill-advised interference", and arranged to see Theodore, who was passing through Melbourne, and who "knew nothing about what had taken place".[118] Now Reid could only await the debenture-holders decision.

Unbeknown to the Melbourne board, Ryan had successfully concluded an agreement with the major debenture-holders on 7 July 1916. They would recommend the exchange of debentures for £450,000 to a general meeting scheduled for 31 August. When Ryan returned to Brisbane in mid-August,

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116. A.J. Thynne to J.S. Reid, 20 & 27 April 1916, *ibid.*, pp.463-64; J.S. Reid to A.J. Thynne, 2 May 1916, *ibid.*, pp.464-65.

117. E. Habben to J.S. Reid, 18 May 1916, *ibid.*, p.465.

118. J.S. Reid to E. Habben, 1 May 1916, *ibid.*, p.466. Understandably, Reid's comments reflected his anger: "...I am not so surprised as you might expect to learn of Mr. Ryan's attitude with the trustees, as during our negotiations with the Government it was my misfortune to be brought into personal touch with that gentleman, nor am I altogether sorry at what has happened, for it will show the trustees the sort of man we have had in him to deal with in this business. Our Brisbane representative rightly described him as a huxter, and he might well have added a most uncomplimentary adjective to the title. He lied deliberately to the trustees, and that is all I think need be said about him."

Thynne requested an interview. This lasted for nearly two hours, after which Thynne wrote to Reid that all seemed lost:

> If the result of the coming meeting is the acceptance of that price [£450,000], an entirely new situation will arise, in which the company will stand shorn of its assets, and their future connection with the enterprise will depend on whether the company is willing to continue and can arrange with the Government for the future working of the field. It is upon this that the Premier expresses his willingness to receive such representations as the company may wish to make.

The old corporate lawyer was disgusted by Ryan's tactics, and told him so: "it reminded me of the Irish landlords who, when they got a man on their estates, allowed their agents to skin him of everything and keep him a slave all his life."[119]

As it eventuated, the London meeting of debenture-holders resolved to sell.[120] Reid was down-cast; he looked to Theodore for fair dealings on the part of shareholders, but Theodore's hands were tied. Certainly the latter favoured government intervention to arrest the decline of the Chillagoe region, but also he was embarrassed by the way Ryan went about it. Later he publicly admitted that he was anxious for the government

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119. A.J. Thynne to J.S. Reid, 25 August 1916.

120. Both sides of the case were elaborated. As the chairman stated: "Some of you may take the view that the mining properties covered by the trust deed are of great importance, great value, and, indeed, increasing value, that it is a matter of great importance to the Government of Queensland that these extensive properties should be developed, that the railway which connects the mine-fields with the coast is an important national interest, that the price suggested by the Government is under all these circumstances totally inadequate, that by patient, dogged holding you will get better terms, and that in any case you will prefer to continue to hold your securities for some time longer, even though the interest should remain in default, with the expectation that something better would accrue to you later". On the other hand he said: "I readily admit the treatment which we have received is not too generous, and the price is possibly inadequate, but I have no reason to suppose that there is any probability whatever of that price being increased, and you will, perhaps, prefer to accept it, so that your capital may be invested in a better class of security, and at once become interest-bearing rather than derelict."

to come to terms along the lines he had discussed with Reid in late 1915, as it was imperative that mining and smelting was continued on a large scale, otherwise the railway would be useless to the government. Ryan's biographer has attempted to vindicate the back-door negotiations as a genuine attempt to solve local unemployment on the northern mining fields and to assist the allied war effort by supplying Queensland copper to the Imperial government. Surely the same ends could have been achieved by further advances to the Chillagoe company which was certainly much better equipped than the state to direct operations. Clearly, Ryan was determined to confront British capitalists operating in Queensland; he was intent on securing a state enterprise to redeem his election pledge. What he managed to achieve, however, was the enmity of powerful financial groups both inside and outside Australia, and the opposition of the Legislative Council which was to frustrate his scheme for nearly three years, by which time, the war was over.

Ryan introduced legislation to validate the agreement with the Chillagoe debenture-holders on 8 December 1916; the bill passed all stages in the Assembly by virtue of the government's majority, but was held up in the Legislative Council and was referred to a select committee of inquiry. Unsatisfied "that payable ores exist in sufficient quantity to justify the State in embarking on what may be considered a speculative enterprise", the committee recommended against the bill, which was returned to the lower house.[121] While this bill was under scrutiny, Reid made his final protest public. Claiming that Ryan had deliberately set about securing the company's assets "at a wrecker's price", he bitterly assailed the government's integrity:

> I would follow the example of our astute London friends, to cut the loss, whatever it may be, and get out of Queensland. It is a satisfaction to feel that we still have this liberty - that we can go away unmolested provided we leave no money behind. 122

121. For details see *Q.P.D.* CXXV, p.2497f; Report of the Select Committee, *Q.P.P.* 1916-17, III, pp.387-486.

122. Address to Shareholders in December 1916, reported in *Telegraph*, 25 May 1917.

They were the embittered remarks of a dispirited man who had devoted twenty years to the Chillagoe undertaking, which he had envisaged as one of the country's great enterprises, only to have it taken over by the Labor government, to which he had turned for help.

A second bill was introduced in November 1917 to acquire all assets except the Mount Mulligan mine and provided for a loan to the company of £90,000 for capital and development programmes. It, too, suffered at the hands of the Legislative Council. On this occasion the select committee was much more exhaustive in its inquiry and reached its conclusions solely on financial considerations. However pressure to resuscitate the northern mineral fields was mounting, and given leave to make further investigations the select committee revised its recommendations but inserted a provision precluding state mining operations except at Einasleigh.[123] Finally in November 1918, Ryan rushed the amended bill through both houses. The government was thus given warrant of title to the railways for £661,000, the smelters for £30,000, the Einasleigh mine for £9,000, and mining plant and machinery for £1,000. Chillagoe Limited, once the proud operators of the largest mining enterprise in north Australia, boasted only a small developing coal mine as its major asset.

Over the ensuing thirty months, during which time the state was gearing up for smelting operations at Chillagoe, the company went further into debt at Mount Mulligan. The cost of infrastructure and new underground machinery left it heavily mortgaged to the government. The explosion which wrecked the mine in September 1921 was the *coup de grâce*, finally releasing the company from its financial agony.[124] From Scotland Reid's brother conveyed his sympathy and relief that the end was at hand:

> The papers have published cables announcing the utter destruction of the Mount Mulligan coal workings. And I take it that if their statements

123. See *Q.P.P.* 1918, II, pp.1371-1562.

124. For full details on the company's involvement at Mount Mulligan, see P. Bell, *The Mount Mulligan Disaster*.

> are in accordance with the facts, this terrible convulsion, which has killed and wrecked all within reach, means the end of the Chillagoe Co. I am very sorry to think so, for a very selfish reason, but my regret I think is chiefly on your account, knowing that it will be a very bitter disappointment to you, after the brave and long-sustained effort you have made, really against fate, to turn defeat into success. And yet it may prove to be a good thing for you. If it does really mean the end of Chillagoe and you can accept the inevitable, a crushing load of worry and anxiety will have been removed from your shoulders and you will be the gainer in improved health. That is what I hope, and I believe it will prove to be so, if you give up this most unfortunate concern. 125

Just over three months later, on 15 January 1922, James Smith Reid died, aged seventy-three. The winding up resolution of the company was effected on 26 November 1923 and, on application, all the records of the once powerful corporation were destroyed.

The Chillagoe smelters operated for more than twenty years after Reid's death. Ryan's successor, Theodore, removed the legislative restrictions on state mining in the region in an endeavour to make the enterprise a viable proposition. The government purchased a number of mines, including the Mungana group, a deal which was to be the subject of a royal commission in 1930 and which shattered the careers of two Queensland premiers after they were declared guilty of financial impropriety over the transactions.[126] In 1927, William McCormack ordered the smelters closed after it was disclosed that over-valuation of assets and dubious financial practices on the part of the general manager had boosted losses to over a million pounds.[127] The works were

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125. W.D. Reid to J.S. Reid, 2 October 1921, J.S. Reid Papers.

126. See K.H. Kennedy, *The Mungana Affair* (Brisbane 1978).

127. Special Report of Auditor-General on State Smelters, Ore Reduction and Treatment Works and Mines, Chillagoe, *Q.P.P.* 1927, I, pp.1399-1433.

reopened in 1930, taking local ores on tribute and shipments from the Cloncurry field. Finally in 1943, when Mount Isa commenced copper smelting for war purposes, Chillagoe was closed down and later sold for scrap. The irony was that had Ryan conceded the advances and railway purchase proposed by Reid, the Legislative Council would have agreed to any enabling legislation; the Chillagoe company would have been able to take advantage of the high wartime metals' prices and probably would have maintained a development programme at least up until 1927. But in his desire to save £200,000 by short-changing the company and to create a state enterprise out of the Chillagoe operations, he committed the Labor government to a course of action in which ideology transcended reason, resulting in a loss of public funds six times that amount.[128]

Between 1902 and 1914, the Chillagoe smelters treated approximately 600,000 tons of ore, peaking at 77,912 tons in 1909. The metallic yield was 23,272 tons copper, 31,758 tons lead, 4,345,309 ounces silver and 28,911 ounces gold. Such results should have returned handsome profits despite high smelting costs, outlays on new treatment plant and erratic world metal prices. However the bulk of the ores did not come from the company's mines, rather from Einasleigh, Mungana and O.K. and the profits made on custom smelting were absorbed by its own mines at Zillmanton, Ruddygore, Calcifer and elsewhere. Indeed the Chillagoe company's properties were worked with disasterous financial consequences, requiring capital many times more than the value of the ore deposits, but without that ore the smelters would have shut down for several months each year. At least it vindicated Power's estimates of reserves in 1901.

Prior to 1914, investment in the Australian base metals industry was essentially risk capital. British speculators lost millions of pounds gambling on another Broken Hill or Mount Lyell. Chillagoe was a lure many could not resist, and the record shows that it was the most notorious

128. *Ibid.* £541,308 was expended on fixed assets, which had to be written off, and £623,770 was attributed to losses on operations.

example of a base metals' proposition failing to fulfill the promoters' acclaim. Collectively the losses at Chillagoe, mainly British money, came to £5,200,000, comprising capital called up from shareholders or foregone by debenture-holders and profits from the railways and smelters re-invested in the undertaking.

For his part, Reid was one of the few men to make money out of Chillagoe at the time of the speculative boom in 1901. Thereafter he was never a large shareholder except briefly in 1911 when he purchased several thousand of the new shares created to acquire the Einasleigh property, thus ensuring that the placement was fully subscribed. Notwithstanding the controversy of the early years over directors' trafficking in shares, there is no reason to doubt Reid's genuine determination to make the venture a success: he had sold out of Broken Hill too early, missed his opportunities in the Mount Lyell flotation, and failed with his promotion of the Ashcroft Process.[129] Accordingly, on the fortunes of the Chillagoe company rested his reputation as a mining and railway promoter, and it was no coincidence that it was the last major project with which he was associated. But there are other yardsticks to measure his contribution to North Queensland mineral developments. His companies prospected and opened up vast tracts of sparsely inhabited terrain, constructed the largest network of private railways in the country which are still in use today,[130] and created jobs for over five thousand people in a region stagnating for want of investment capital. As the *Cairns Post* editorialised in late 1917, the major beneficiary of the Chillagoe company's activities was the wage earner.[131] Therein lay the paradox of the schemes initiated and carried on by Reid, one of Australia's leading mining capitalists.

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129. See K.H. Kennedy, "The Formation of the Sulphide Corporation", typescript, History Department, James Cook University.

130. The network comprised 110 miles Mareeba to Mungana, 145 miles Almaden to Charleston, the Mount Garnet section and light railways to the various mines. Only the railways to the Pilbarra can rival the Chillagoe company's system.

131. *Cairns Post*, 15 November 1917.

P51: Ebagoolah, Hamilton Goldfield, Cape York peninsula, 1901 [Q.G.M.J. May 1901]

P52: Reefing in Cape York rainforest, Claudie River, 1930s [Oxley Library]

INTERNATIONAL INVESTMENT IN EARLY MOUNT ISA

Peter Bell

When in June 1981, MIM Holdings announced it intended to acquire a 16% shareholding in the American corporation, Asarco, the move created interest for the effects it would have in increasing Australian equity in MIM, and in diversifying the company's interests into mining projects on the American continents. Probably few people realised the historical irony involved as Australia's second largest corporation bought into the foreign concern which fifty years earlier had provided the capital which saved the struggling Mount Isa operation. The strength and confidence of MIM today belies the difficulties of its early years: the repeated financial and technical setbacks, the ever-increasing expenditure and the receding prospects of success. Even the modern company's own chroniclers have wonderingly observed that if the true magnitude of the mine's difficulties had been understood by its early developers, it would have been abandoned in despair.[1] The history of Mount Isa has been written,[2] and is familiar in outline to many Australians. This account deals with one aspect of its development: the eight-year search for the capital necessary to bring to successful production one of the world's largest and most obstinate mineral deposits.

Mount Isa lies on the western fringe of the Cloncurry mineral field, in an area whose remoteness, broken topography and arid climate discouraged both pastoralists and prospectors for decades. The north-west region is extensively mineralised, and sporadic mining activity has occurred there since the 1860s. Gold, silver, lead, zinc, uranium, cobalt and phosphates have been produced in commercial quantities, but the field's early mainstay was copper. The Cloncurry gold and mineral field had first attracted serious mining in the 1880s, and risen and fallen as the copper price dictated, reaching a prosperous crescendo

1. MIM Holdings Limited, *A Short History of the Company*, n.d., p.2.
2. G. Blainey, *Mines in the Spinifex: the Story of Mount Isa Mines*, (Sydney 1960).

with the heady metal values of the first world war. But its mines languished after 1918, and the last closed in 1922.[3]

This hiatus in the northwest was brief, for it was early in the following year - February or March of 1923 - that the ores of Mount Isa were discovered. Such a late find on a field closely prospected for nearly sixty years seems to require explanation, but the truth may be that the discovery was first *acknowledged* in 1923, for the outcrops at Mount Isa were lead carbonate, and lead mining was a tradition alien to the gold and copper orthodoxy of the Queensland prospector. It is not improbable that Mount Isa was long known, and ignored.[4]

The Mount Isa ore deposits lie in an extensive Precambrian inlier which hosts all the minerals of northwest Queensland. Surface mineralization at Mount Isa is in the form of thin bands of lead carbonate bedded between steeply dipping shale and quartzite: the outcrops were near-vertical, parallel ridges of resistant mineralised rock, although not always as conspicuous as this description implies. These lenses of ore vary in size, the largest the Black Star, 2,000 ft in length and 200 ft wide. Below the oxidised zone at 180-200 ft from the surface, leached zinc appears, and sulphide ores predominate, principally galena and sphalerite mixed with pyrite. The principal mineralised zone is about 1,300 ft in width, but extends to great depth and for a considerable

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3. K.H. Kennedy, "The Profits of Boom: a Short History of the Cloncurry Copper Field", *Lectures on North Queensland History*, Third Series, James Cook University 1979, pp.1-34.

4. High silver values had been assayed in copper ores from Mount Isa outcrops about 1919: *Q.G.M.J.* 25 (January 1924), p.9. See also G. Blainey, "A Theory of Mineral Discovery: Australia in the Nineteenth Century", *Economic History Review* XXIII, 2 (1970), pp.298-313.

distance along the strike of the shales; the full extent of the commercial ores remains unknown, but vast.[5]

With the discovery of the lead outcrops by John Campbell Miles early in 1923, the local mining community reacted much as the international mining industry was to do for nearly a decade to come. There was great interest, eager prospecting and much pegging of leases, but little development and no significant production. The Mount Isa deposits were spread over an enormous area, so large that they were daunting; the only find comparable in scale on the Australian continent was the Barrier, and few at Mount Isa in 1923 were prepared to undertake the leap of faith implicit in believing it a second Broken Hill, for extensive as the outcrops were, they were mostly low grade and squeezed between barren shales. The first men on the field were schooled in the gouger tradition, and they looked vainly for the rich shoots that would pay low-capital surface mining.[6]

Even so, there was a small rush to the Mount Isa field in the winter months of 1923, and 118 leases were pegged that year. The more hard-headed prospectors knew enough of mining developments elsewhere to recognise that if the deposits were large and deep they might prove payable to high-capital miners, regardless of their poor grade. These were men of little capital and confidence, who had never seen large-scale mining, for the biggest mines of the old Cloncurry field were little more than gougers' holes expanded by time and experiment. However they reasoned that the large-scale miners to come must first buy the leases from the men who pegged them. Within the first months their leases were

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5. See R. Blanchard, "Mount Isa Geology" in W.H. Newhouse (ed.), *Ore Deposits as Related to Structural Features* (Princeton 1942), pp.148-154; E.K. Carter, J.H. Brookes and K.R. Walker, *The Precambrian Mineral Belt of North-Western Queensland*, B.M.R. Bulletin No. 51, 1961.

6. Since the collapse of the Cloncurry companies, the district was worked by small miners for rich ores which would repay railing in small parcels to the state smelters at Chillagoe.

being sold, not to the high-capital miners who were still years in the future, but to men who were locally identified with substantial capital, and who themselves were merely the promoters who would go in search of development funds.

The men who seem first to have grasped the potential of Mount Isa and set about orderly development there were Douglas MacGillivray and William Corbould.[7] MacGillivray was a local man, with little capital or influence beyond the field, and the leases he acquired were soon in turn passed to his partner. Corbould was that indispensible middle-man of mining, one with sound working knowledge and great experience in the industry, who had turned promoter. Although he had been both miner and financier in a small way, he knew he was not qualified to be either at Mount Isa. But his experience as manager of Mount Elliott had convinced him of the need to consolidate operations on such an isolated field, to avoid wasteful competition among companies. Thus his contribution lay in recognising what scale of investment was required to bring Mount Isa to production, and seeking out that investment capital. As it happened, his estimate was hopelessly short of the reality, but that error was one shared by everyone else involved in the field, not Corbould alone.

Late in November, Corbould had acquired fifty-one leases on the Mount Isa outcrops, and issued his own geological reports preparatory to floating a company in Sydney. Subscribers did not have to take his word for the nature of the ore deposits. E.C. Saint-Smith, a Government Geologist, twice visited the field late in 1923, and his published reports substantially confirmed Corbould's. Indeed Saint-Smith's understanding of the confused and extensive surface indications was profound, for before a single drill test was done he predicted almost unerringly which outcrops would later prove valuable at depth.[8]

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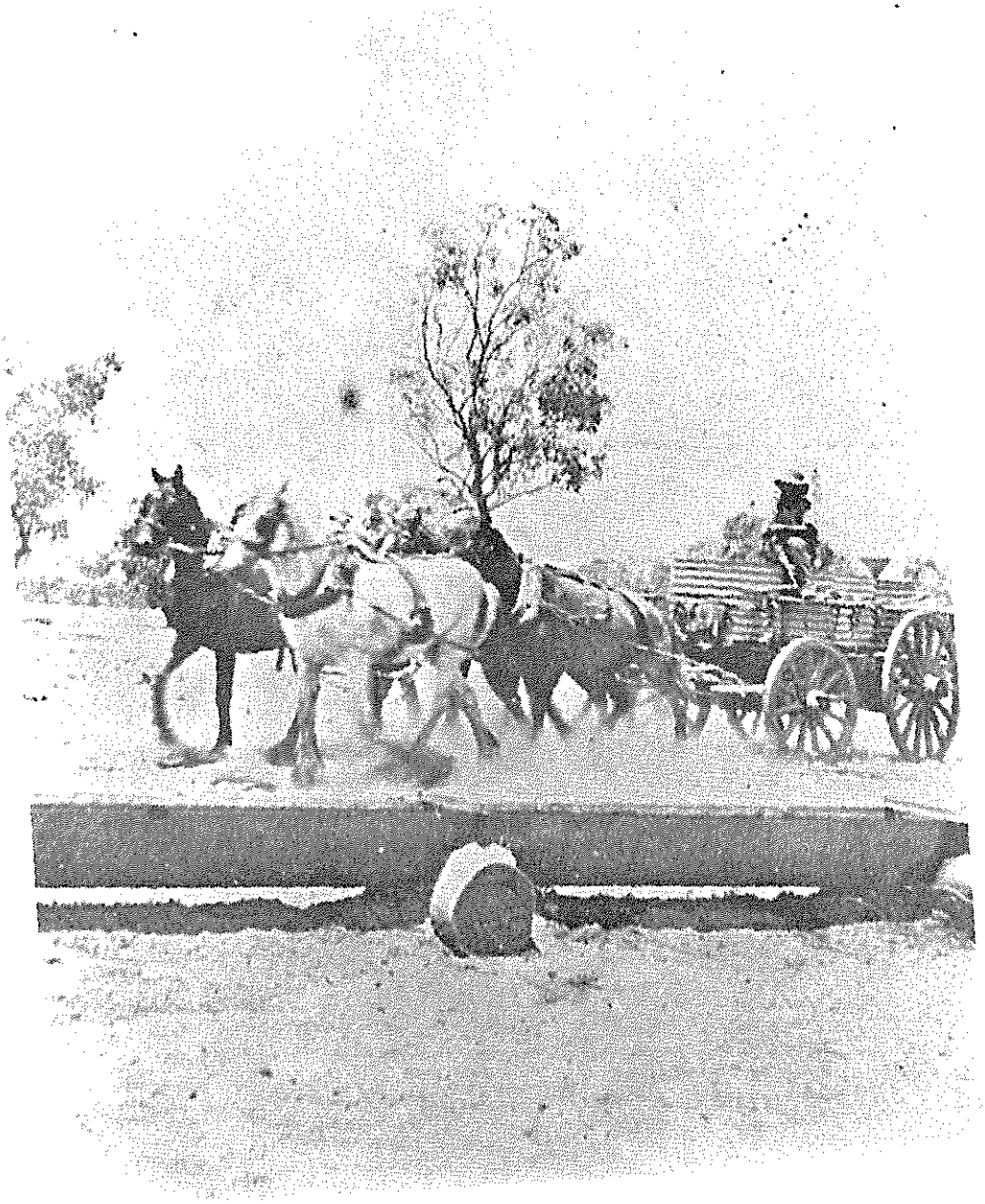
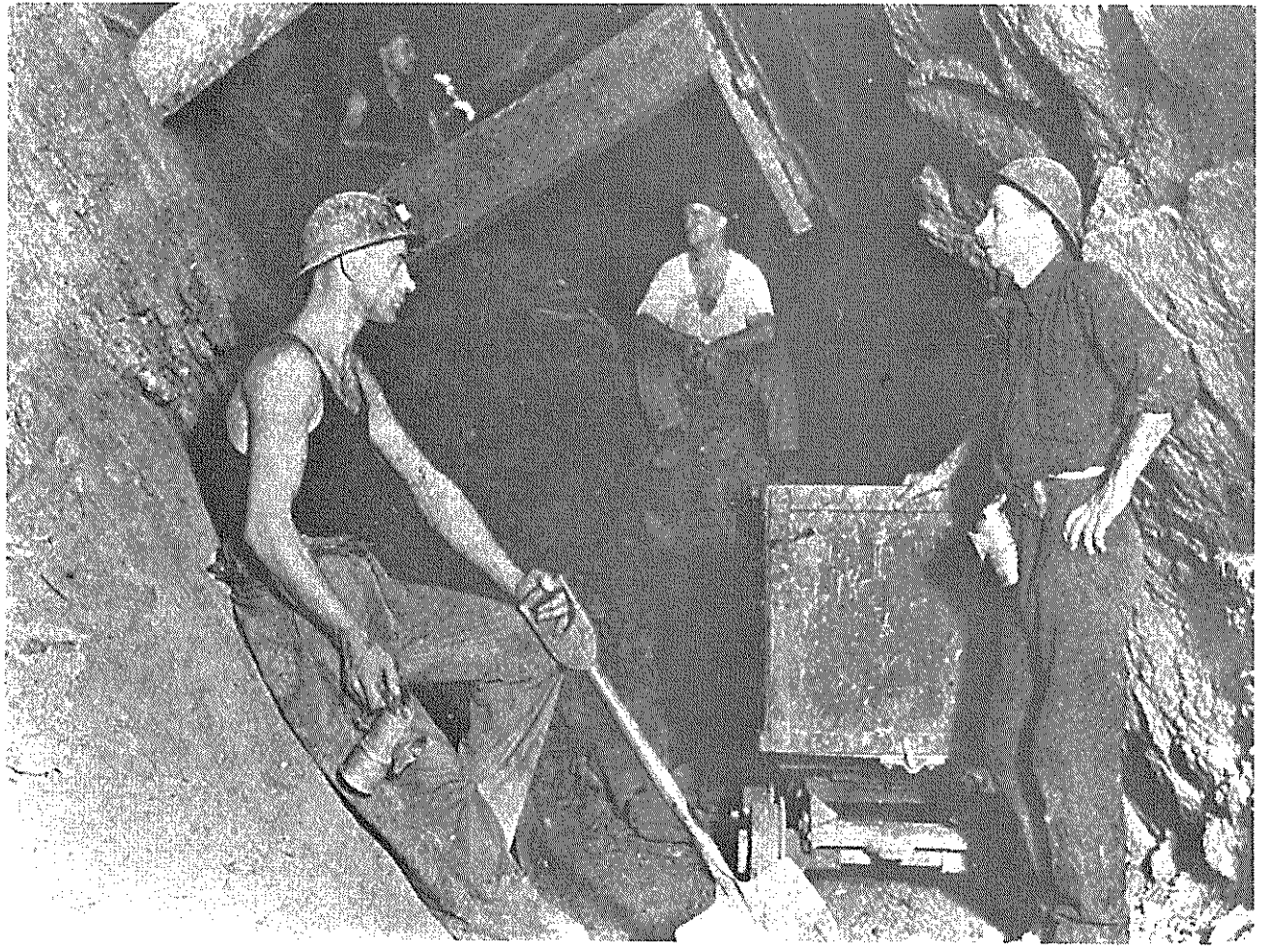
7. For Corbould, see *Australian Dictionary of Biography* 8 (Melbourne 1981), p.113; I. Hore-Lacy (ed.), *Broken Hill to Mount Isa: the Mining Odyssey of W.H. Corbould* (Melbourne 1981).

8. *Q.G.M.J.* 24 (November 1923), pp.412-418, 25 (January 1924), p.9.



P53: Carting Water, Cloncurry field
[*A.R.* 1906]



P54: Mucking and tramming ore - Rio Grande, level 2 [M.I.M. Holdings]

Corbould's company, Mount Isa Mines Limited, was registered in New South Wales in January 1924.[9] Its other directors were financiers and lawyers, with the single exception of MacGillivray, whose term on the board was brief. Until the appointment of Frank Hambridge, another experienced Cloncurry mining man, in 1926, Corbould represented the company's entire technical expertise at senior level. Within weeks, two other companies were floated: Mount Isa Silver-Lead Proprietary in February, whose principal was Randolph Bedford;[10] and Mount Isa South in April, which held leases taken up by another old Cloncurry hand, William Orr.[11] Neither company was to last long: Mount Isa South sold its leases to Mount Isa Mines in July for £65,000 in shares. The Silver-Lead Proprietary, whose leases were more centrally located and clearly of greater value, held out much longer; but in December 1925 its leases too were bought by Mount Isa Mines for £125,000 in shares, and both smaller companies were wound up. Thus by late 1925, Corbould's company had achieved an astonishing coup, unprecedented in Australian mining: virtually the entire mineralised area of what promised to be a major field was held by a single company.[12]

Nor had Mount Isa Mines been idle in other directions. Corbould obtained considerable support for his venture from the Queensland government, which was anxious to restore the mining industry to its

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9. The first board of directors was: E.E. Fosbery (Chairman), W.H. Corbould, W. McRae, A.M. Hemsley and T.R. McCulloch in Sydney, D.S. MacGillivray, Cloncurry director. A copy of the original prospectus is held at the John Oxley Library.

10. For Bedford - characterised by W.S. Robinson as "Randolph the Reckless" - see *Australian Dictionary of Biography* 7 (Melbourne 1979), pp.241-42; R. Bedford, *Naught to Thirty-three* (Melbourne 1976).

11. Something of Orr's background is given in G. Blainey, *The Peaks of Lyell* (Melbourne 1954) and *The Rise of Broken Hill* (Melbourne 1968).

12. The Chillagoe Company had attempted this, but the mineralization of the field was patchy, and it never proved valuable. Chillagoe was floated by former Mt. Lyell and Broken Hill directors who saw the need for consolidation.

former prominence.[13] Saint-Smith was granted leave to act as general manager at Mount Isa from March to August of 1924, and in September the state geological survey undertook Australia's first aerial photographic survey for geological purposes, over six square miles at Mount Isa.[14] More significantly, the companies jointly had lobbied successfully in 1925 for the construction of a state railway from Duchess to Mount Isa, which would connect the mines by rail to the port of Townsville. The Duchess to Mount Isa Railway Act was passed by the Queensland Legislative Assembly in October 1925, and received assent the following month. Under its terms Mount Isa Mines and Mount Isa Silver-Lead agreed to repay the Commissioner for Railways any annual loss on working the line; and a mortgage and bill of sale were taken over the Mount Isa leases and any plant to be installed on them.

During debate on the bill, opposition members hinted darkly at financial involvement in Mount Isa by members of the Labor government, but none was named other than Randolph Bedford, MLA for Warrego at that time, who cheerfully disclosed his own interest. For the rest, the Secretary for Railways told the chamber: "No Government in the world have ever been freer from the suggestion...than the present administration."[15] The opposition was grasping at straws; it had no tangible evidence to sustain its charges, but four years later the connection of Labor ministers with Mount Isa would become a burning political issue.

Mount Isa Mines sank thirty-three shafts in 1924, which found that ore grade persisted at depth, and which indicated reserves to be over 1,000,000 tons per hundred feet of vertical sinking. The scale of the workings necessary to exploit these quantities of ore would require enormous capital. The company had increased its nominal capital from £550,000 to £800,000 in July, after the acquisition of Mount Isa South,

13. The state mining program, initiated in 1915, was by 1924 proving a costly failure.

14. *A.R.* 1924, pp.140 and 143.

15. *Q.P.D.* CXLVI, 1925, p.1512.

though only £421,180 in shares was issued at the end of the year. Corbould spent much of 1924 in London, seeking investment funds. He first attracted the attention of W.S. Robinson,[16] managing director of the Burma Corporation; Corbould negotiated an agreement with Robinson's smaller Austral Metals for £500,000 capital on condition that Mount Isa Mines first spend £100,000 on development, which the Sydney board approved soon after.[17] The precise terms of the agreement are unknown, for no copy of it survives, and Corbould and Robinson's memoirs diverge in their descriptions of what was negotiated. Perhaps this is due in part to the agreement's loose wording, for in the early months of 1925 a dispute arose between Mount Isa Mines and Austral Metals over whether the £100,000 expenditure was to be the total incurred since development began or from the date of commencement of negotiations: a point apparently not stipulated. In any case, the option was never exercised, and led instead to an acrimonious break between Corbould and Robinson. Corbould later claimed that Robinson quibbled over his right to appoint directors to the Mount Isa Mines board, and withdrew from the agreement,[18] whereas Robinson's interpretation was that Corbould reneged, approaching alternative backers while the option was still open.[19]

The arrangement persisted into 1926, but Corbould never pressed Robinson for the £500,000, nor is it certain Robinson could have raised it. By the middle of that year, Corbould was back in London, perhaps to negotiate with Robinson, certainly to approach other backers. A proposal by Francis Govett[20] was turned down because it involved dividing the

16. See G. Blainey (ed.), *If I Remember Rightly: the Memoirs of W.S. Robinson 1876-1963* (Melbourne 1967). Robinson had been an associate of Lionel Robinson, Clark & Co., active in channelling London capital into Australian mining.

17. Mount Isa Mines Board Minutes, 20 November 1924, held by MIM Holdings Corporate Archives, Brisbane.

18. Hore-Lacy (ed.), *Broken Hill to Mount Isa*, p.194.

19. Blainey (ed.), *If I Remember Rightly*, pp.141-143.

20. Another member of the group Robinson calls the "Anglo-Australian" financiers: see *ibid.*, p.119.

field.[21] By October it seemed Corbould had succeeded; he negotiated an agreement with the Anglo-American Corporation of South Africa, representing a syndicate which included the Selection Trust, the British Metal Corporation and Morgan Grenfell & Coy.[22] Anglo-American took 50,000 shares in Mount Isa Mines, with a five months option on a further 500,000, subject to an inspection of the ore bodies.[23] In December, Mount Isa Mines raised its nominal capital to £1,500,000 in expectation of accommodating this offer the following April.

Corbould accompanied Carl Davis of Anglo-American and a team of engineers to Mount Isa in January 1927 and confidently awaited the outcome of their inspection. Construction of the railway had commenced, and underground development on the Black Star lease was advancing. But in April, Anglo-American rejected its option, and the mine was again without backing. Corbould claimed the findings at the mine had fully confirmed his opinions, and that Anglo-American was only deterred by the Queensland government's proposed railway freights.[24] In fact, Davis' report was highly equivocal, he was impressed by the size of the deposits and by the sustained ore grades at depth; but he was concerned at difficulties already experienced in treating samples of sulphide ore. Davis considered Mount Isa not worth working for the oxidised ore alone, and concluded that without a rise in the price of lead, the return from the sulphides would be too marginal to justify their exploitation. His reservations were promptly cabled to Anglo-American:

> I feel exploitation Blackstar sulphide will not materially improve grade in which case their value doubtful....return on £25 lead too small justify

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21. Hore-Lacy (ed.), *Broken Hill to Mount Isa*, p.195.

22. For details of these companies, see W.R. Skinner, *Mining Manual and Mining Yearbook* (London 1926).

23. Anglo American Corporation of South Africa, Limited to Morgan, Grenfell & Co., 16 November 1926, W.S. Robinson collection, University of Melbourne Archives.

24. Hore-Lacy (ed.), *Broken Hill to Mount Isa*, p.197.

> risk of...development especially considering eventual capital required especially as treatment looks very difficult, so final advice drop whole business. 25

Again disappointed by the withdrawal of the second prospective financier, Corbould returned to London for yet another round of the City. Shortly after his arrival in May 1927 he opened negotiations with five different Houses.[26] Interest in Mount Isa seemed little dampened by Anglo-American's rejection, although prospective investors were generally still cautious. The identities of the five London financiers are not certain; it is likely Corbould re-opened talks with Robinson, and rumour in Australia said that a syndicate formed by W.L. Baillieu[27] and Chester Beatty[28] was considering an option similar to Anglo-American's.[29] Two other of Corbould's contacts are unknown, but the fifth was Leslie Urquhart, chairman of Russo-Asiatic Consolidated.[30]

On whose initiative and in what circumstances Russo-Asiatic first became interested in Mount Isa is not clear. Corbould gives the

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25. Copy of Davis' cable quoted in Anglo-American to J.S. Wetzlar, 19 April 1927, Robinson collection.

26. Corbould to American Smelting and Refining Company, 28 May 1927, in correspondence and other matters relating to Mount Isa Mines, supplied by Asarco, New York.

27. For Baillieu, see *Australian Dictionary of Biography* 7, pp.138-145.

28. Beatty was an influential figure in African mining investment: see Skinner, *Mining Manual*, 1933, p.610; F.I. Coleman, *The Northern Rhodesia Copperbelt 1899-1962* (Manchester 1971), p.32.

29. *Q.G.M.J.* 28 (June 1927), p.213.

30. Urquhart had held substantial mining interests in the Russian Empire; after their confiscation by the Bolsheviks in 1917 he combined his companies into Russo-Asiatic Consolidated, which besides pursuing a claim for compensation by the Soviet Union through diplomatic channels, financed mining operations in France and elsewhere.

impression that he approached Urquhart in London after the Anglo-American rejection,[31] whereas Robinson believed Urquhart had "somehow or other" obtained a copy of Davis' report, independently of Corbould's approach.[32] Urquhart's own papers do not clarify the matter, but there is good reason to believe he was following developments at Mount Isa much earlier, and was ready to make a move immediately an opportunity offered.[33] High up in mining and financial circles in London, Urquhart must have been closely acquainted with Corbould's repeated visits and the various projects under negotiation.

As soon as the field was unencumbered, Urquhart pounced. Davis' letter to Mount Isa Mines rejecting the Anglo-American option was written on 21 April 1927; Urquhart's offer on behalf of Russo-Asiatic Consolidated was written the following day.[34] The timing suggests the initiative was Urquhart's, and made even before Corbould approached him. Corbould's own account does not shed much light on the sequence of events, but implies that he left for London only after Davis' rejection, and thus arrived well after Urquhart's offer. It is not unlikely, of course, that Corbould had approached Urquhart on an earlier visit, but there is no documentary indication of this.

Corbould and Urquhart negotiated during May, and by early June had reached a confidential arrangement for major immediate investment in Mount Isa Mines, a far more favourable proposal than the conditional options Corbould had managed in the past. Aside from a brief reference to "the possibilities offered by several interesting mining propositions which are under consideration",[35] Urquhart did not even mention Mount Isa to his shareholders and gave no hint of what was planned. Indeed, the

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31. Hore-Lacy (ed.), *Broken Hill to Mount Isa*, p.198.

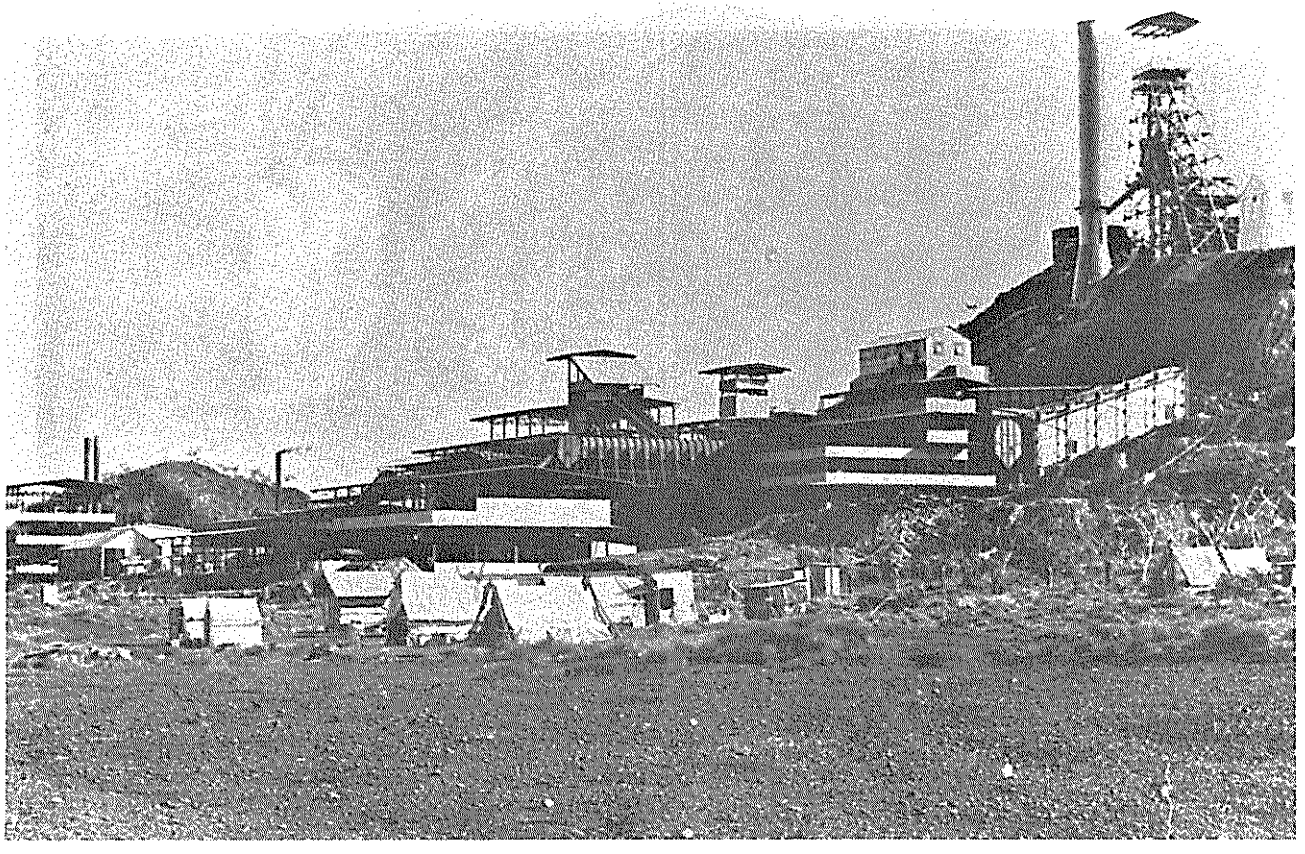
32. Robinson to G.R. Fisher, 18 February 1962, Robinson collection.

33. Urquhart had an arrangement with Russo-Asiatic whereby he was personally entitled to 20% of any propositions he brought their way.

34. MIM Board Minutes, 5 May 1927.

35. *Financial Times*, 15 June 1927.

P55: Leslie Urquhart [J. Foster]



P56: Urquhart shaft, smelter and workers tents, 1932 [M.I.M. Holdings]

secret was remarkably well kept; neither the financial press nor other big mining concerns knew of the deal, although it was common knowledge that Russo-Asiatic was undergoing reconstruction to make available funds for some major project. Only in distant Queensland had a rumour surfaced, for in the very week the Russo-Asiatic shareholders met to approve their company's reconstruction, the *Government Mining Journal* tentatively linked Urquhart's name with Mount Isa for the first time.[36]

On 23 June Russo-Asiatic's proposal was formally taken up by Mount Isa Mines, and the press had the story the following day. Russo-Asiatic agreed to buy 550,000 shares in Mount Isa, with a bonus issue of 50,000, and a two year option on a further 200,000, thus placing control in Russo-Asiatic's hands. Consulting engineers from London were to advise on developments at Mount Isa, and design treatment works. Three Mount Isa directors including Corbould resigned; they were replaced by Urquhart, Cater Scott and Reid Scott of Russo-Asiatic Consolidated.[37] Corbould retained a non-voting seat as honorary advisory director in London, but Russo-Asiatic's intervention effectively ended his contribution to Mount Isa's development. Corbould's role had been decisive insofar as he had consolidated the Mount Isa field into one large proposition, and secured a developer with the financial capacity to conduct large-scale operations.

The resources of Russo-Asiatic were quickly brought to bear at Mount Isa. H.H. Knox[38] produced a plan for exploration and development of the Black Star, which was commenced in July. His colleague J.H. Allen in New York was testing samples of Mount Isa ore to devise a treatment process. To further consolidate the field, Russo-Asiatic took options on the Deeps leases, whose lessee was Edward Theodore, former Queensland

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36. *Q.G.M.J.* 28 (June 1927), p.213.

37. MIM Board Minutes, 14 July 1927.

38. The New York firm of Knox and Allen were long-standing consulting engineers to Urquhart's enterprises.

premier.[39] The association of Queensland political identities with Mount Isa was to take on a new public significance after William McCormack, the Labor premier, called on Urquhart in London in mid-1927. The substance of their talks is shown in Urquhart's later correspondence with McCormack; though the premier had welcomed Russo-Asiatic's entry into the Queensland mining industry, Urquhart not only impressed on him the scale of the Mount Isa orebodies and the need for large economical working, but also expressed apprehension about the effects of railway freights and other government charges on the project's viability:

> It was your encouraging attitude on all the various points which I have enumerated when you were in London as Premier of Queensland, which gave me the courage to risk the greater part of the Russo-Asiatic Company's fortunes in a Queensland venture. It was my absolute faith in you and your Government's goodwill that enabled me to take this supreme step. We are being criticised for having taken this risk, particularly after the Mount Isa business had been turned down after a thorough and careful investigation by one of the most powerful financial groups in London. Mainly, this criticism asserts that the property was turned down by that group because of economic conditions and excessive costs due to transport rates. Now, of course, the fall in the world's metal prices of lead and zinc lends point to this criticism and permits the pessimists to have greater influence on public opinion than we believe the intrinsic merits of the position warrant.
>
> However, I feel that some tangible proof of the goodwill of the Queensland Government by establishing railway freight rates which would permit the Mount Isa Mines to take their rightful place as one of the greatest world producers, would be a most important step towards inducing a further flow of British Capital into Queensland. 40

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39. Agreement between Edward Granville Theodore and Russo-Asiatic Consolidated, Limited, 1 August 1927, J.L. Urquhart papers, by courtesy MIM Holdings.

40. Urquhart to McCormack, 6 September 1927, Chief Secretary's Batch No. 190: Mount Isa, Premier's Department, Brisbane.

Urquhart sailed for Australia in December 1927, to inspect Mount Isa. In Sydney on 13 January he attended a meeting of the Mount Isa Mines board. The directors reviewed progress at the mine and the state of the share market, and moved to an examination of the obstacles confronting the Mount Isa operation: "the effect of Queensland income tax with regard to ratio of profits to share capital; railway freights; the incidence of taxation, Federal and State, and duties on machines and plant, not manufactured in Australia."[41] One further private reservation of Urquhart's was the power of Australian trade unions, and the high wages and short working week that would obviously influence the conduct of operations at Mount Isa. As he confided to his wife:

> I am going to take no risks in this connection & will use labour saving machinery whenever it is possible even if it costs no less to handle than by labour - it makes one determined to so arrange matters as not to be dependent on conscienceless skulking loafers. 42

While still in Sydney, Urquhart met Theodore, and later in Brisbane renewed his acquaintance with Premier McCormack. Despite the ideological gulf which separated Urquhart and the two Labor leaders he rapidly formed a favourable impression of them. "I like the man", Urquhart wrote of Theodore, "and feel that if they are all as broadminded as Theodore and McCormick [sic] the present P.M. of Queensland we will make good."[43] He had already learned of McCormack's deliberate policy to jettison uneconomic state enterprises, especially in mining, and to reinvigorate the industry by attractive concessions to private capital and working miners. Commenting on the failure of Queensland's state enterprises, Urquhart wrote:

> All this taught Labour a lesson & has made them sensible & indeed conservative in their outlook - For instance the working hours in Queensland are 44 per week as against 36 only at Broken Hill in New South Wales. During the past year Queensland cut down expenses to such an extent that they now have

41. MIM Board Minutes, 13 January 1928.

42. Leslie Urquhart to Beryl Urquhart, 6 January 1928, Urquhart papers.

43. *Ibid*, 14 January 1928.

> a surplus of over £3,000,000 and for a state with under a million population this is a good record. 44

In Townsville there were discussions with the Harbour Board, whose cooperation would be essential when the mine reached production, and the Commissioner for Railways, who would oversee the freight charges and cost guarantee imposed on the company. Urquhart's party spent a fortnight at Mount Isa, still a raw-edged township, with its railway as yet unfinished. But the plans which had been devised to develop Mount Isa were all-embracing; they included a scheme for a dam and pipeline to provide the water supply essential in that parched landscape, a building program to provide quality housing for employees, and a development schedule for mining, milling and treatment. Although their design still lay ahead, their scale was apparent; the cost would run to millions of pounds. The magnitude of the undertaking and Urquhart's optimism were revealed in a letter to his wife:

> I have provided the greatest part of the difficult initial finance and in three years time if not less Mount Isa should be earning big profits. The Black Star Mine is the most impressive ore body I have ever seen, the cross cuts are over 200 feet in ore all the time and the length and depth already proven provides some 20 million tons of good commercial lead silver zinc ore....But we must be patient, we shall have many difficulties to overcome but the end is certain in three years time the world will know and feel sure that all our hopes and anticipations are not chimeras or possibilities but accomplished realities... 45

Returning to Brisbane in early February, Urquhart met McCormack to resolve several points affecting Mount Isa's future. Established in the Queensland Club, only a few paces from Parliament House, he sought government concessions on taxation and duty, again raised the matter of railway freight, and most important, queried the necessity for the mortgage clause in the Duchess to Mount Isa Railway Act. What in 1925 had seemed a reasonable measure was now looming as a serious obstacle, for it was clear that far greater capital must be raised to build Mount

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44. *Ibid*, 20 January 1928.

45. *Ibid*, 26 January 1928.

Isa's treatment plant, and the government mortgage on its assets prevented the company issuing debentures. Russo-Asiatic intended to locate the entire processing of Mount Isa ore in Queensland, even to the refining of zinc, utilising hydroelectric power generated by one of the east coast rivers. McCormack responded sympathetically, and acceded at least in principle to Mount Isa's case.

By March 1928, the Russo-Asiatic technical team, drawing on international expertise, began to recruit renowned engineers to design the Mount Isa treatment plant. Knox went to Mount Isa in April, and was joined there by two fellow Americans, C.A. Mitke, an authority on large scale underground mining methods, and J.M. Callow, a consultant well regarded in ore treatment design. The remaining months of 1928 were spent in testing and development: Mitke devised mining techniques previously untried in Australia, proposing "glory-holing" the Black Star. From May onward, experimental shrinkage stopes were being cut to test the deeper ore's properties for large scale production.[46] Callow designed a test mill and flotation plant for experimental treatment of ores. Simultaneously work commenced on a concrete dam at Rifle Creek, twenty miles from the mine. Developments were encouraging by early 1929. The Mount Isa railway opened in April - its construction had been delayed at the company's request to defer the guarantee of working costs - and machinery for Callow's treatment works was en route for Townsville by sea.

In many ways Mount Isa was an anomaly on the Queensland mining scene; it was a fundamental contradiction to the conditions envisaged by Queensland's early legislators. The regulation of mines in the state was under legislation largely inherited from the goldrushes of the nineteenth century, which envisaged small-scale shallow mining on a multitude of independent leases: a situation which had probably done

46. C.A. Mitke, "An Experimental Shrinkage Stope", 7 May 1928, Mount Isa Mines Historical Records, Mount Isa; and see Mitke, "Mining Methods at Mount Isa", *Mining Magazine* XLI (December 1929), pp.329-335.

much to encourage the gouger tradition. Large-scale long-term development to work a massive deposit of low-grade ore was something undreamt of in the goldrush era, and Mount Isa Mines already had received special consideration for its consolidated lease area, water supply and scale of men employed to area held. But other problems lay ahead, entrenched in financial provisions which assumed that large wealthy organisations were in a position to pay taxes in proportion to their capital rather than their earnings. Import duties, income tax, railway freights and the associated guarantee all threatened Mount Isa's short term viability. Now Urquhart's relationship with McCormack began to bear fruit.

In 1929 these matters were addressed by a Queensland Royal Commission into the administration of the mining industry. Its report, released in 1930, recommended considerable liberalisation of existing regulations, and amendments were effected in that year, greatly increasing lease areas, offering greater protection to leaseholders and relaxing labour conditions. That these measures directly contributed to Mount Isa's development is unsurprising, for McCormack had appointed the Royal Commission with the specific intention of assisting the company.[47] Further, the terms of reference of the enquiry conform so closely to the matters raised by Urquhart in his talks with McCormack in 1928 that it seems not unlikely that Urquhart was a persuasive influence in the formation of the Royal Commission. The company made the most of the opportunities to give evidence. Submissions were made by both F.W. Draper[48] and Mitke, and Mount Isa Mines clearly played a major role in the formulation of a submission by the North Queensland Employers' Association. Draper also appeared before the Royal Commission and suggested to London that it was sufficiently important to warrant sending a British director out to give evidence. London evidently agreed on the enquiry's importance, for in the event it was Urquhart himself who

47. Mount Isa Mines Sydney office to Secretary, Russo-Asiatic Consolidated, 2 April 1929, MIM Historical Records.

48. Draper, an American, was Russo-Asiatic's Chief Engineer, resident for a time at Mount Isa.

addressed the royal commissioners, on his second visit to Queensland in mid-1929.

McCormack had also agreed to two other legislative actions to assist the company's operations: an amendment to the 1925 railway act, at Urquhart's specific request, to remove the state's first mortgage on the Mount Isa property; and special legislation to grant the company rights to another silver-lead deposit at Lawn Hills, 150 miles north-northwest of Mount Isa. This cooperation was severely jeopardised in May 1929 when McCormack's Labor government was resoundingly defeated, and the Country-Nationalist coalition under Arthur Moore formed a new government in Brisbane. The Moore cabinet was by no means so benignly disposed as McCormack's had been, and indeed held an ingrained suspicion of the mining industry, with which so many Labor members had long-standing connections. Relations between Mount Isa Mines and the Queensland government accordingly cooled, but Moore honoured McCormack's undertakings, and the Royal Commission into the mining industry and the two pieces of legislation in train all proceeded.

By 1929, Russo-Asiatic found itself committed to Mount Isa beyond the extent it had initially foreseen. The 1927 rationalisation of the company's capital now had to be taken a step further; accordingly the proposal was put to Russo-Asiatic's shareholders on 20 June 1929 that the whole of the company's non-Russian assets be transferred to the Mining Trust Limited, together with the properties held by Urquhart and his associates personally; thereby concentrating all the working assets of the Urquhart group under one board of directors.[49] Under the 1929 reconstruction, the Mining Trust acquired 847,690 shares in Mount Isa, together with options on a further 194,195 at £2, and the right to subscribe up to £1,000,000 in debenture capital for the construction of surface plant. The formation of the Mining Trust had been in Urquhart's

49. Russo-Asiatic's only remaining asset was its claim on the Soviet Union for return of the Russian properties. The Mining Trust acquired Mount Isa, lead mines in France, gold mines in New Guinea, and an extensive copper concession in Rhodesia (Zambia).

mind for a considerable time, at least from early 1926,[50] and it seems he had long nurtured the idea of attracting American capital to participate. In 1928 he had told Russo-Asiatic's shareholders, "we were approached recently by one of the principal American financial and mining groups", but did not identify them, nor did anything eventuate, for Urquhart gauged that British shareholders were sensitive to American incursions:

> I have made up my mind definitely that the Mining Trust and its subsidiary interests will remain a British concern. I have no objection whatsoever to the subscription of American Capital should it be desired, but it must be simply as shareholders without the corollary of share control of these enterprises. We are, fortunately, in the position of being able to provide all the Capital necessary for the business ourselves. 51

It was in the aftermath of this resolution that Urquhart was approached by H.A. Kursell on behalf of Asarco. While Asarco's offer was turned down Urquhart did not close the door, and informal contact was maintained in the following months.[52]

As mine development, construction of Callow's mill and smelters and the Rifle Creek dam proceeded at Mount Isa, the burden of expenses mounted; the provision of workers housing, the dam and pipeline and the construction of treatment works were exceeding estimates. The underground workings had been rationalised, with levels linking all the shafts into one mine, and in keeping with a tradition on the field of naming shafts after people connected with their development, the main oreshaft, whose headframe stood on a hill dominating the mine and settlement, became the Urquhart shaft.

On his 1929 visit, Urquhart engaged in a round of meetings in Brisbane and Sydney. At that very time McCormack's legacy in the pieces of legislation were before the Queensland Legislative Assembly: the

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50. Urquhart to C.G. Cater-Scott, 29 March 1926, Urquhart papers.

51. Urquhart to B. Said, 8 May 1929, Urquhart papers.

52. H.A. Guess to H.A. Kursell, 14 December 1929, Asarco correspondence.

Amendment Act which removed the state's mortgage on Mount Isa's assets, and a separate act to grant the Mining Trust exclusive rights to a large tract of mineral land at Lawn Hills. Urquhart met the new premier and members of his cabinet, but probably had little to contribute to the parliamentary action. Both pieces of legislation had been negotiated with McCormack long before - the railway amendment bill had been drafted in consultation with Mount Isa Mines - and neither bill should have been contentious. Indeed the railway mortgage amendment passed easily, freeing Mount Isa Mines' hand in raising finance. The Lawn Hills bill, however, became embroiled in controversy, not because it gave the Mining Trust "sole and exclusive right" to prospect an area of 100,000 acres at Lawn Hill - that in itself was unprecedented in Queensland, but seen as necessary for the development of the deposits - but because of peripheral issues raised for entirely political purposes in the course of debate.

A few Government backbenchers had obviously spent much energy in a search of Mines Department files, and produced among other things the share registers of Bedford's old Mount Isa Silver-Lead Proprietary company. Now, with little relevance to the business before the house, it was made public knowledge that Bedford had sold his company's assets to Mount Isa Mines only days after helping to pass the Duchess-Mount Isa Railway Act which greatly boosted the value of the property; and further, that his fellow shareholders at the time had included the two Labor leaders Theodore and McCormack, the then mines minister A.J. Jones, the wife of the undersecretary for mines, Henry Marshall, and the Cloncurry mining warden, R.A. Dunlop.

This airing of an old scandal was of course done to discredit the Labor members named, and in particular Theodore, who was now deputy leader of the Federal Labor party. Except in the case of Dunlop, whose position as warden specifically forbade his dealing in shares of companies within his jurisdiction; none of the participants had done anything illegal, but the conflict of interest inherent in the affair was obvious. None of the discredit reflected on Mount Isa Mines or

anyone connected with the company in 1925, but the revelations served to give an unsavoury air to the circumstances surrounding the early development of the field. In time the controversy was forgotten, having been defused by Bedford's explanations to the parliament, and his jibes at political muck-raking:

> The value of the shares I gave away to friends, in mere goodwill, would be today about £11,000; and I don't expect mean little suburban "pikers" to understand either mateship, gratitude, or generosity. 53

Meanwhile, to meet underground development and mill construction expenses, plans were underway for a £1,500,000 debenture issue. With the obstacle of the state's first mortgage removed, Mount Isa Mines expanded its nominal capital to three million pounds by resolution of an extraordinary meeting in December. Working capital had been supplied in the interim by a loan from the Mining Trust of one million pounds, but it was foreseen even in October 1929 that construction expenses would exceed that amount by a quarter. A debenture issue was made in London on 17 May 1930. The Mining Trust subscribed one million pounds to cover the loan, and a further £500,000 in stock was offered on a preferential basis to shareholders. The prospectus cheerfully predicted that by September 1930 the mill would be operational at 2,000 tons daily capacity, affording an annual profit on capital of "more than 27 per cent".[54]

Even as the debenture issue was made however, it was clear that there would be no profit that year; Mount Isa was becoming a financial and technical monster that turned even Urquhart's ebullience to despair. The crisis was threefold in origin. First, the mill and smelters were proceeding badly. They were proving bigger, slower and more expensive in construction with the passage of time, and technical problems were emerging in the test mill, eroding confidence in Callow's ability to

53. *Q.P.D.* CLIII, 1929, p.777.

54. Prospectus, 17 May 1930, Chief Secretary's Batch 190.

design a successful treatment works. Second, at 500 feet the Man & Supply shaft struck water. The inflow began in April and steadily increased to a crescendo of two million gallons per day. It was presumably with quite unconscious irony that Urquhart told the Mining Trust shareholders in May: "The problem of the water supply has been definitely solved." Even with the urgent installation of additional pumps the flow could not be controlled until the completion of the power station late in the year; all development below the upper haulage level was suspended. Third, the price of lead, which had been sliding since 1925, plunged in 1930. Mitke and Callow's production plans had been calculated on a minimum lead price of £25, but now lead was at £22 and falling. By December it would be below £15.

As Mount Isa was not yet in production, this had no effect in real terms, but all planning was thrown into chaos. Estimates of pre-production costs were cabled from Sydney to London in an atmosphere of mounting anxiety through mid-1930. A long-serving Sydney director, Frank Hambridge, the Cassandra of the local board, caused panic in London in June by estimating an additional £865,000 would be required even to bring the mill to 750 tons capacity - only three-eighths of the production at first envisaged.[55] Even the more sanguine Urquhart calculated that the capital required would go dangerously near exhausting the entire debenture issue,[56] which had still not been fully subscribed, and there remained the lingering doubt that production might not be possible in 1930 at all. The gravity of the situation is expressed in one of Urquhart's cables to Sydney: "...it is impossible to reconcile these figures which if correct necessitates closing down until real position can be ascertained and further new financial arrangements made."[57] Hambridge believed he had the solution to the crisis, and sailed for London on the day after Urquhart telegraphed the words "closing down", but events were already out of the hands of the Sydney board.

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55. MIM Board Minutes, 19 June 1930.

56. Urquhart to Sir Edward Macartney, Agent-General for Queensland, 30 August 1930, Chief Secretary's Batch 190.

57. MIM Board Minutes, 25 June 1930.

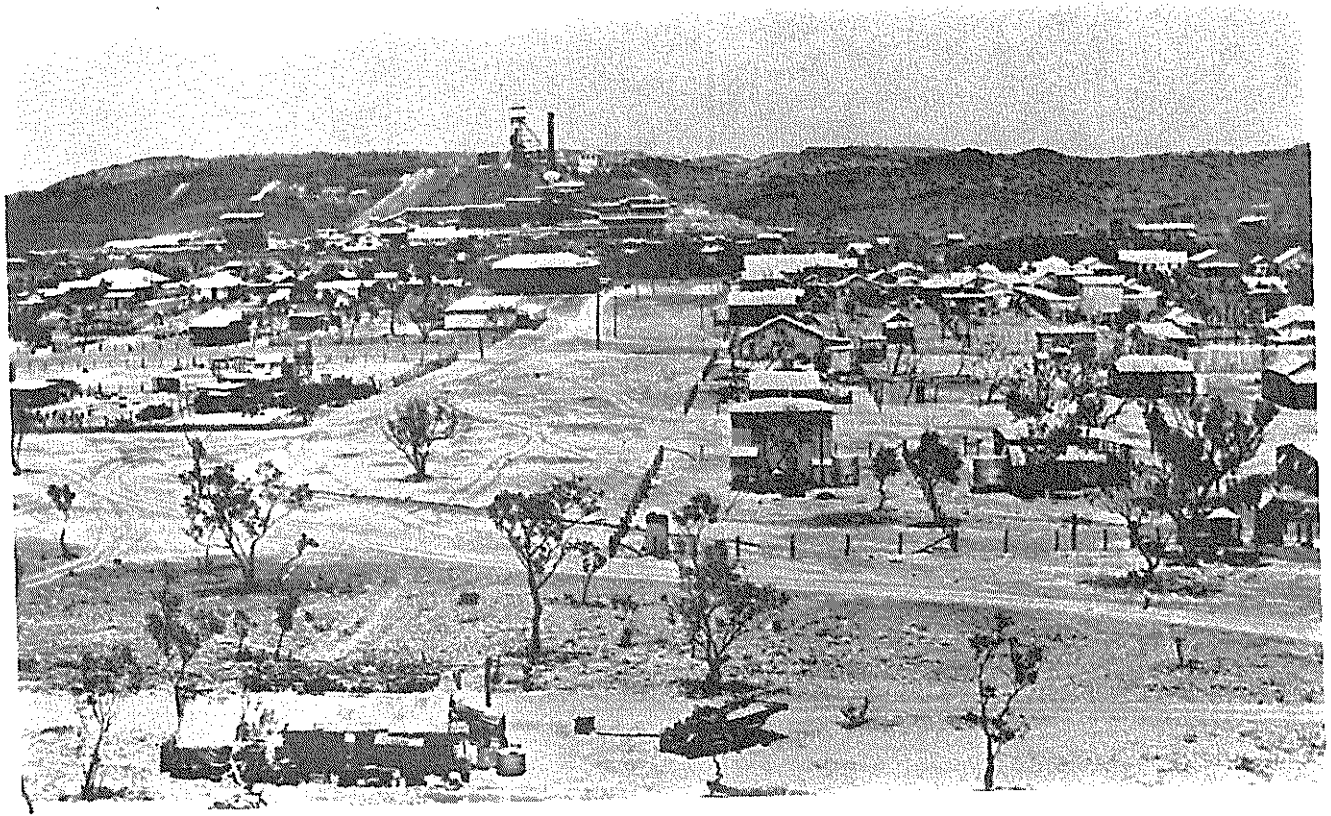
On 23 July 1930 the local directors were stunned on opening their copies of the *Sydney Morning Herald* to read the headline, "Mount Isa Mine. American Company's Interest". Urquhart, unbeknown to them, had lost no time in arranging further financial accommodation. Asarco had been waiting patiently since 1926 for an interest in Mount Isa, and in June 1930, aware of the Mining Trust's financial problems, H.A. Guess, Asarco Vice-President, had gone to London and resumed talks with Urquhart. Diffidence about the public involvement of American capital in a British company had vanished in the face of Mount Isa's hopeless financial situation, and a concrete proposal emerged for Asarco's acquisition of a major interest in the Mining Trust.

The agreement first involved Asarco's purchase of the entire unissued capital of Mount Isa, £498,395, thus providing finance for construction. These shares were then exchanged for one million reserve shares in the Mining Trust, and in addition Asarco bought 750,000 of Urquhart's own Mining Trust shares and a further 150,000 from other shareholders under his influence, at 10/-, half their face value. This left Asarco with 1,900,000 shares - over a third of the Mining Trust's equity. Moreover, Urquhart held an option on 500,000 Mining Trust shares to be issued in 1931. These would give Urquhart and Asarco jointly slightly over 50% of the capital then issued.[58] The agreement also provided for the formation of a technical committee of Asarco staff to tackle the metallurgical and construction problems of Mount Isa. Guess and Preston Locke, Asarco's resident engineer in London, joined the Mining Trust board.

The American interest caused some anxiety among London shareholders. At an unusually clamorous general meeting in September, questions were asked about the extent of Asarco control and the implications of foreign ownership: the question was unavoidable, for it was necessary to amend

58. H.A. Guess, Memorandum of proposal made by Mr. Leslie Urquhart in conversation with him June 23, 1930..., Asarco correspondence.

P57: Early photograph underground: Julius Kruttschnitt front-centre
[J. Farram]



P58: Mount Isa, 1932 [M.I.M. Holdings]

the Mining Trust's articles of association which had previously forbidden foreign shareholdings. Urquhart reassured the meeting, pointing out that Russo-Asiatic and the Mining Trust had always been Anglo-American in management and technical expertise: "If in the past we thought well, and you approved of this policy, to have American technical assistance in the management of your affairs, surely to-day it is an added advantage to have American capital also invested in our business."[59] However, he evaded the issue of the price of Mining Trust shares. Asarco had obtained nearly two million of these at under half their face value. In Sydney, righteous indignation prevailed, for the Mount Isa directors learned of Asarco's move only when the general public did.

Mount Isa was by no means out of trouble, for the money directly available for development work was less than £500,000, and during 1930 expenses at the mine were nearly £100,000 a month. While the agreement with Asarco merely bound the American company "to place its Technical staff and organisation at the disposal of the Mining Trust and its subsidiary and associated Companies" for ten years,[60] a more vigorous form of technical supervision was clearly intended. On 1 October an Asarco engineer, Julius Kruttschnitt, was appointed General Manager at Mount Isa. His first task was to turn out lead bullion at the earliest possible date. Hopes for production in 1930 had been dashed by flooding and delays at the mill and smelter, and Mount Isa continued to quaff money through the early months of 1931.

The search for finance continued unabated; by January Urquhart was negotiating further backing,[61] but people with faith in Mount Isa were now few. When in March Mount Isa Mines again increased its capital to £3.6 million, and issued debentures to £666,667, the guarantee was again

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59. Verbatim Report of Discussion, Mining Trust Annual General Meeting, 30 September 1930.

60. Agreement between the Mining Trust Limited and American Smelting and Refining Company, 21 July 1930, Urquhart papers.

61. J.P.B. Webster to Kruttschnitt, 9 January 1931, MIM Holdings Archive.

written by Asarco 75% and Urquhart 25%.[62] Ore production began at Mount Isa in May 1931, over eight years after the first leases were pegged: the mill started crushing a few days later. The Black Star gloryholes were providing the bulk of production, with richer ores for maintaining mill grades coming from the stopes of the Black Rock and Rio Grande. The smelters were blown in during June. Then came one of the bitterest blows of all: Callow's sintering plant and smelter did not work! They produced bullion, but to bring it to the required purity meant operating the smelter at a hopelessly slow rate. The plant had been designed to produce lead bullion at 210 tons per day, or nearly 70,000 tons in a year. Its actual output was scarcely seventy tons a day: by the end of that year 17,000 tons of lead had been produced, or what should have been smelted in eighty working days.[63] Even that small lead output was now worth less than £10 a ton.

Several months of experimentation followed, but it became apparent that the smelting problem was beyond conventional technology, and outside the competence of both Callow and the Mining Trust advisory committee. Asarco sent two of its smelting experts, R.F. McElvenny and W.P. Mee, to Mount Isa, and acrimony inevitably followed. When in September the Mining Trust cabled Kruttschnitt for news, "We are very anxious concerning financial situation caused by poor output lead",[64] there came a blistering reply from New York:

> ...this cable of September 10th is not only needless but detrimental rather than helpful to the difficulties upon which Messrs. McElvenny, Mee and Kruttschnitt are now working and which they will of course suitably

62. Agreement between Mount Isa Mines Limited, American Smelting and Refining Company and Leslie Urquhart, 20 March 1931, Urquhart papers.

63. *A.R.* 1931, p.45; J.M. Callow, "The Mill and Smelter at Mount Isa", *Mining Magazine* XLI (December 1929), pp.336-37; F.A. Forward, "Sintering and Smelting Mixed Lead Carbonate-Lead Sulphide Concentrates at Mt. Isa, Queensland", Australian Institute of Mining and Metallurgy, *Proceedings*, New Series No. 90, 1933, pp.125-189.

64. Mining Trust to Kruttschnitt, 10 September 1931, Urquhart papers.

> remedy, because when our metallurgical organisation undertakes to straighten out and remedy a set of difficulties, they remedy it, but they are not to be nagged or stampeded into reaching premature or partial conclusions....Of course you are anxious, and we have even more reason to be anxious because we are the ones upon whom has devolved these past 8 or 9 months the putting up of 7/8ths of these additional moneys, but we have not sent a cable to McElvenny or Kruttschnitt in an endeavour to hurry up McElvenny's cabled decision as to what steps are necessary to remedy it. Furthermore this jam at the smelter with which Kruttschnitt has been struggling these past several months and doubtless working and worrying night and day thereon, is not of his making at all, nor of ours, but is solely due to the fact that Callow, who designed the smelting plant, knows little or nothing about modern lead smelting and the requisites for such plant; neither does any one else in your organisation, except academically.
>
> It seems to me you should at this time feel extremely thankful that you have the A.S. & R. Co's smelting organization to take this smelting difficulty off your shoulders and straighten it out. 65

With financial relief from lead sales far below the level calculated, and expenditure on smelting plant continuing long after the expected date, events were no longer in the hands of either Mount Isa Mines or the Mining Trust. Guess concluded his cable: "we will see in what way and under what conditions we will be willing to provide the requisite financing." Asarco foresaw that Mount Isa would seek further finance, and was prepared to give it only at the price of full control of operations there. "Here is an opportunity whereunder Mr. Urquhart could have his worries and anxieties lightened immensely and be assured that a self-perpetuating and experienced organisation like the A.S.&R. would carry on the enterprise efficiently and successfully...."[66]

Only ten days later Mount Isa Mines was forced to come cap in hand for more funds. The Sydney board, in a gesture both of utter desperation and profound faith in Urquhart, gave him total powers of attorney to

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65. Guess to Urquhart, 18 September 1931, *ibid.*

66. Guess, desk memo, 2 October 1931, Asarco correspondence.

negotiate for finance with anyone, anywhere, on any terms.[67] Urquhart sailed for New York on 14 October. Asarco outwardly sought no further control of Mount Isa or the Mining Trust by share acquisition. The agreement between Guess and Urquhart provided for a 6% loan of up to a million dollars American in expenditure at Mount Isa, in return for "sole and complete operating management and control of its mining property and metallurgical plant".[68] Callow was a victim of Asarco's complete control; he had quarrelled with Kruttschnitt, and was dismissed. Knox, too, had apparently fallen from favour.[69] Of the Mining Trust's technical advisory committee, only Mitke left a legacy that endured under Asarco management.

The October 1931 agreement between Asarco and the Mining Trust, negotiated by Guess and Urquhart, ensured that Mount Isa would be developed on the scale that both Corbould and Urquhart had envisaged. The troubles were far from over, but the financial and technical resources were secured, and thus the major obstacles removed. The mine was closed by industrial disputes in 1932 and 1933, and did not make a profit in any year until 1937, by which time well over five million pounds had been expended. In 1947, with lead prices rising, Mount Isa Mines paid its first dividend. After 1953, the mine commenced large-scale copper production, from deposits first detected in 1928, and the subsequent diversification of its products has contributed to its post-war success. Urquhart did not live to see his faith vindicated; he died unexpectedly of pneumonia in March 1933, when Mount Isa's future still remained in doubt. His financial vehicle the Mining Trust, which fostered the venture in its sickly childhood, was acquired by Mount Isa Mines in 1951, and wound up.

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67. MIM Board Minutes, 12 October 1931. This crisis coincided with pressing financial obligations on one of the Mining Trust's French ventures.

68. Agreement between Mount Isa Mines Limited, the Mining Trust Limited, Brittania Lead Company Limited and Asarco, 26 October 1931, Urquhart papers.

69. Guess to Urquhart, 5 October 1931, *ibid.*

A BIBLIOGRAPHICAL NOTE

Peter Bell

This is not intended to be a comprehensive coverage of sources for the history of mining in North Queensland; its purpose is simply to draw the attention of those interested in pursuing the subject further to the scope of the research materials available. Its emphasis is on the mining industry, neglecting related topics such as social structure in mining settlements, health, industrial relations, the political and economic impact of mining or the role of specific ethnic groups, each of which has its own documentary sources. A much more complete guide will become available with the publication of Anne Allingham's bibliography of primary sources relating to all aspects of the history of central and North Queensland. Of special interest to the mining historian will be details of holdings in all Australian universities and public libraries, state and commonwealth archives, government offices in the field, mining company offices and some private collections.

Queensland government publications provide a comprehensive description of mining activities throughout the region. The most useful single source is the *Annual Report of the Undersecretary for Mines*, published since 1877. Originally very brief, this became more detailed during its first decade, eventually embracing individual reports from goldfield wardens, mineral lands commissioners, mines inspectors, government geologists and others, as well as an overview of the industry by the Undersecretary. From 1900 this report was supplemented by the monthly *Queensland Government Mining Journal* which contains articles of broader interest, geologist's interim reports and monthly and quarterly warden's returns. Both publications are valuable sources for photographs, maps and other illustrations.

Before the establishment of the mines department in 1874, aspects of mining were administered by the lands and works departments, and irregular reports from commissioners and geologists appear from 1867 onward in Queensland *Votes and Proceedings*. These printed reports to parliament, known after 1900 as *Queensland Parliamentary Papers*, also

contain many other annual and irregular documents which touch on mining: the annual *Estimates*, *Statistics of Queensland* and *Blue Book*, the *Census of Queensland* at five or ten year intervals until 1911, and occasional Royal Commission and Select Committee reports. Entirely separate government publications are *Queensland Statutes*, the *Queensland Government Gazette*, after 1919 the *Queensland Industrial Gazette*, and Hansard or *Queensland Parliamentary Debates*. The latter is a guide to parliamentary opinion when mining or related bills such as railway proposals were before the chamber, but must be used with caution, for political expediency frequently clouded the objectivity of members' statements.

Since 1879 the Geological Survey of Queensland has produced an irregular series of publications in the form of reports, bulletins, indexes and maps, many of which were printed for parliament, although others exist only as monographs or typescript. 278 publications were issued before 1930, when the series was suspended until 1953. The early reports are valuable for their contemporary descriptions of mining operations; much more so than the recent ones whose historical content is drawn largely from their predecessors. Although the series covers Queensland as a whole, a large number deal with northern fields, indicating the relative importance of the North Queensland mining industry. One indispensible tool for the mining historian is Benjamin Dunstan's *Queensland Mineral Index and Guide* (1913), which contains statistical information, alphabetical entries on places and minerals, and a very thorough bibliography on Queensland mining and geology. Among the more useful of the recent series is Levingston's *Ore Deposits and Mines of the Charters Towers 1:250,000 Sheet Area*, a compilation of much previously unpublished information on the mines of the Charters Towers-Ravenswood district.

The Commonwealth equivalent of the Geological Survey is the Bureau of Mineral Resources, which publishes its own series of reports. Some particularly relevant to North Queensland's early mining industry are Carter *et. al's. The Precambrian Mineral Belt of Northwestern Queensland* (1961), de Keyser & Lucas' *Geology of the Hodgkinson and Laura Basins*

(1968) and de Keyser & Wolff's *Geology and Mineral Resources of the Chillagoe Area* (1964).

Most North Queensland mining centres produced at least one newspaper and the regional press dwelled at length on mining developments. Although many newspaper runs have been lost, a good variety exist and include the *Northern Miner*, *Ravenswood Miner*, *Wild River Times*, *Hodgkinson Mining News*, *Croydon Mining News* and *Cooktown Herald*, all useful sources on mining. These are widely available on microfilm. The *Queenslander* and the *North Queensland Register* are particularly valuable in catering for a widely-distributed audience, and in reporting systematically each week on all the mining fields. The industry also produced its own publications, such as the *Charters Towers Mining Journal* and the *North Queensland Mining Annual*, both rare, and the *Australian Mining Standard*, published in Sydney and Melbourne by Critchley Parker. Annual directories of a general nature, like *Pugh's Almanac* and the *Post Office Directory*, or the more specific Nash's *Australian Joint Stock Companies Yearbook* and Skinner's *Mining Manual*, published in London, give detailed information on companies and individuals in mining. Professional journals catered for mining engineers, and are an important source for technical developments: the Australasian Institute of Mining and Metallurgy *Proceedings*, the *Mining Magazine* and *Mining Journal* of London, and the New York *Engineering and Mining Journal*.

A wealth of published books provide information on North Queensland mining, from travelogues and reminiscences of the 1870s onward to scholarly (and some not-so-scholarly) secondary accounts of recent years. Useful guides to this literature can be found in Bolton's *A Thousand Miles Away* and Blainey's *The Rush that Never Ended*, although it must be remembered that these, the standard authoritative works on North Queensland history and Australian mining respectively, are now twenty years old. Much more detailed work has been published since, building on the foundation these works provided. Johnston's *Bibliography of Queensland History* and Zerner's *Australian Studies* list works of recent

years, and the footnotes in these two volumes of readings and the bibliographies of recent theses probably provide guides to the published sources as helpful as any available.

Ephemeral and unpublished sources present greater problems of access for the researcher. Agents and brokers such as Elmslie of Croydon and E.D. Miles of Charters Towers published directories and prospectuses in pamphlet form, now rare. By far the largest collection of unpublished papers on North Queensland mining are the government records of the Queensland State Archives. These include extensive registers of applications for claims, leases and miners' rights, garden, machine, tailings and business areas, lists of mine managers, crushing statistics and workers' compensation claims. Most of this material, however, is unindexed. A few warden's letterbooks are held, but the bulk of the mines department's inward correspondence before 1900 has been lost; some twentieth century files have been microfilmed after flood damage in 1974. Much material relating to mining is also preserved in the records of other government bodies such as the railways, justice, premier's and education departments, and very full records exist for registered companies, giving details of their formation and shareholders. A users' guide to mining records in the Queensland State Archives is at present in preparation by Ruth Kerr.

Theses covering aspects of North Queensland mining have been written at a number of universities, ranging from McCarty's doctoral dissertation at Cambridge on British investment in overseas mining to recent honours and postgraduate work at Queensland and James Cook universities. As these necessarily have references of a high standard, they serve as useful guides to further sources. Unpublished primary documents are scarce and not readily accessible. The Guildhall library in London houses the stock exchange archives, with prospectuses and annual reports of companies floated there; in contrast, the Public Record Office has destroyed its extensive company records. Melbourne-registered companies will have papers in the Victorian Public Records Office, and several collections of company papers have found their way to the

Melbourne University archives. Not many company's records have survived - those of the Chillagoe company were destroyed at the liquidator's behest when the company was wound up in 1923 - but some exist; the New Ravenswood company's letterbooks are still in private hands in the town. Very few of the principal mining identities left papers. Some of John Moffat's letterbooks are held by the Cairns Historical Society, but few others are known. However, the journals of Mulligan and Palmerston's expeditions were sometimes published in the *Queenslander* or the *Brisbane Courier*. The John Oxley Library is currently searching for letters, reminiscences and diaries, and already several have been acquired.

CONSOLIDATED INDEX