"A Place Not Very Much Better Than Hades": Archaeological Landscapes of the Cape River Gold Field, North Queensland

John Brian Edgar

Bachelor of Social Science (Hons1, Archaeology. J.C.U.)
Bachelor of Science (Medical Microbiology, U.Q.)
Diploma of Local Government (Planning. L.G.A.Q)

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STATEMENT OF THE CONTRIBUTION OF OTHERS

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Other than these contributions I declare that this thesis is my own work and has not been submitted in any other form for another degree or diploma at any other university or other institution of tertiary education.

Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is included. Every reasonable effort has been made to gain permission and acknowledge the owners of copyright material. I would be pleased to hear from any copyright owner who has been omitted or incorrectly acknowledged.

This research presented and reported in this thesis was conducted in accordance with the National Health and Medical Research Council (NHMRC) National Statement on Ethical Conduct in Human Research, 2007. The proposed study received human research ethics approval from the JCU Human Research Ethics Committee Approval number: H1564.

John Brian Edgar

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ABSTRACT

The concept of landscape has a long and continuing use in both academic and colloquial applications, including uses in archaeology. Just as the meaning of landscape has changed in other fields, landscape has taken on a variety of increasingly complex meanings in archaeology. This thesis investigates the current uses of the term landscape in archaeology, and develops a method of archaeological landscape analysis and applies it to an archaeological case study. The thesis asks;

"How does the development of an archaeological landscape contribute to understanding the social phenomenon of the gold rushes, at a nineteenth century gold field?"

This thesis follows the archaeological work of James Delle at pre and post-emancipation Jamaican coffee plantations (Delle 1998). Delle applied Edward Soja's (1989) concepts of space to create spatialities of contestation for his archaeological sites. However, while referencing landscape, Delle did not develop a specific landscape approach. Delle's spatialities are modified here to incorporate the production of three *archaeological landscapes* for the case study site.

The archaeological landscape is a construct developed for this thesis that integrates data obtained through archaeological methodologies with other, primarily documentary, sources. This information is organised for each landscape into three spaces; *cognitive space*, *material space* and *social space*. The cognitive, material and social spaces are viewed as dialectically related, and their connectivity is examined within a separate over-arching dialectic for each

archaeological landscape. Finally, elements of the three archaeological landscapes, and the cognitive, material and social spaces that underpin them, are integrated as an increasingly complex matrix of relationships that reveals the flexibility and holistic nature of archaeological landscape.

The site of research is the relatively unknown and previously un-investigated nineteenth century gold field at Cape River, north Queensland. 164 sites of interest were recorded as a part of this research. Two of the sites, thought to be dwelling sites, with extensive surface scatters were surveyed and excavated. Over 5,000 artefacts were recovered from systematic collection and test excavations. Artefacts from both sites were recorded and analysed separately and a functional typology was applied to organise each assemblage and determine site function.

As a part of the social phenomenon of the gold rushes, Cape River gold field shows that colonial Australian society's approach to new gold finds were tempered in their timing and extent by experiences that were apparent both locally and colonially. Development of the field is viewed as a complex interdependence of the different needs and experience of its participants. Its varied international population and idiosyncratic individuals interacted in a multitude of spaces, wherein the spaces were transformed by activity. From these transformations we are able to deduce some of the meaning about those relationships. Archaeological landscape has shown that as a social phenomenon this gold field can best be characterised as a unique expression of place, in which local expressions of space created a mostly calm and productive gold field that instilled a level of optimism that led to the prospecting and expansion of the regional gold mining industry.

ACKNOWLEDGEMENTS

This thesis was begun in February 2002 and with intermittent bursts of progress has taken over a decade to complete. That it is complete is a testament to those that believed that the project was valuable. For supervisory assistance I acknowledge the guidance of my first supervisor Dr Martin Gibbs; and for continuing the good work with charity and an open heart, my current supervisor Dr Nigel Chang. I would also like to acknowledge Dr Shelley Greer for her continued encouragement over the years. Also, the academic staff, past and present, from the Department of Anthropology, Archaeology and Sociology at James Cook University (JCU) for the professional environment they created and their willingness to assist.

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To anybody not mentioned, who feels they should have been; I apologise for your omission.

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ABBREVIATIONS AND ACRONYMS

ARG	The Argus
CBE	Cleveland Bay Express and Northern Advertiser (1866-Apr 1867)
	Cleveland Bay Express and Cardwell Advertiser (Jun 1867-Dec 1867)
	Cleveland Bay Express and Cape River Mining News (Jan 1868-Dec 1870)
cwt	hundredweight (about 51 kilograms)
dwt	pennyweight (about 1.5grams)
GIS	Geographical Information System
hp	horsepower
LAE	Launceston Examiner
ICOMOS	International Council on Monuments and Sites
MNI	minimum number of items
MVC	minimum vessel count
n.d.	No Date
oz	Troy ounce (about 31 grams)
PDT	Port Denison Times
QGG	Queensland Government Gazette (1859-2013)
QSA	Queensland State Archives
QVP	Queensland Legislative Assembly Parliamentary Votes and Proceedings
SMH	Sydney Morning Herald

GLOSSARY

This glossary includes several terms not explained in the text. For a useful mining glossary refer to Pearson and McGowan (2000).

1. COSTEAN: a trench dug to reveal an underlying deposit and test its extent.
2. DRY BLOWING: a method of winnowing gold from the wash, using agitation and an air current rather than water.
3. DYKE: A tabular igneous intrusion that cuts across the bedding or foliation of the country rock (Jackson 1997:197).
4. ELLUVIAL DEPOSIT: A secondary mineral deposit resulting from the disintegration or decomposition of the original host rock with minimal transportation of the ,material; thus elluvial deposits remain relatively close to the primary deposit from which they are derived (Jackson 1997:205).
5. ELVAN : A Cornish term for intrusive igneous rocks forming near the earth's surface having the composition of granite (after Jackson 1997:205).
6. FLUME: A water race raised over uneven ground; mostly constructed of wood in the nineteenth century.
7. GOOGLE EARTH: Proprietary software of the Google Company. A web based aerial imaging software program that covers most of the land surface of the planet in detail. It incorporates waypoint marking and some basic GIS functions. Aerial images are periodically updated.

Chapter 1 **Cape River gold field; places, spaces and the life in-between**

Introduction

In 1867 Queensland had existed as a separate colony for only eight years. Brisbane in the south-east corner was the most significant population centre although, as is still the case, the majority of people lived in regional and remote centres (OESR 2009). The colony had a scattered non-Aboriginal population of just 99,849 (Queensland Government Blue Book 1868:10).

Queensland was excised from New South Wales; borne on the back of desires to exploit the Moreton Bay and other northern Districts' greatest resource; land. A pastoral industry based primarily on sheep, had from 1860, rapidly expanded to all but the most northerly and western districts (Fitzgerald 1982:135). However, by 1866 a prolonged drought and the collapse of European financial institutions, including the Agra and Masterman Bank, created recessionary economic conditions that severely affected the heavily indebted pastoral industry (Fitzgerald 1982:138, 143-4, Bolton 1970:38-9). Offering rewards for gold discoveries (Queensland Government Gazette 1867, CBE 1867b:26.1.1867, PDT 1866-68:2.1.1867) politicians and businessmen saw mineral riches as one potential economic saviour, and as a result initiated a cycle of reliance on mineral resources that continues to the present. Two gold discoveries in 1867 heralded a change in Queensland's fortunes; the more productive of the two was the Gympie gold field which developed into one of the colony's most significant reefing fields but it is the first, the ephemeral Cape River gold field that is the subject of analysis in this thesis.

Gold rushes and gold mining in the popular imagination

The Queensland gold fields of the latter half of the nineteenth century were a part of the fifty year global phenomenon of gold rushes that involved hundreds of thousands of people from many nations and colonies. Participants from all social strata pursued individual fortune at hundreds of gold fields throughout the world. The effects of the gold rushes were regarded variously as a fever, an epidemic, a panacea or a dire threat depending on who was commenting. And thousands have commented, both during the rushes and since. Popular and scholarly literature abounds with histories, biographies, autobiographies, anecdotes, misconceptions and fabrications. Cinema, television documentaries and dramas have through their mass scope and appeal permeated popular imagination with their interpretations of gold field life.

The gold rushes, have been portrayed variously as dangerous, lawless, dirty, anarchic, desperate, violent, disastrous, racist, social melting pots, foments for change, egalitarian, and the birthplace of Australian democracy. Each of these can be substantiated at particular places at particular times.

Each gold rush, and each gold field's subsequent development and decline, is by definition a material and social movement (Moore 2000:135). Despite the plethora of documentary information and recreations we may always be left wondering what it was like to have experienced a gold rush. Beyond dry definition, or florid imagery is archaeology in a position to move us closer to understanding this unprecedented phenomenon?

It has been suggested that by engaging with the material remains of nineteenth century alluvial gold fields in conjunction with an historical understanding of the phenomenon, historical archaeology can provide significant insights and a more textured understanding of the social conditions prevailing at gold fields (Hardesty 2003, Lawrence 1995b, Ritchie 1986)

Archaeology of gold mining in Australia

Australian historical archaeology has engaged with mining and to a greater extent with gold mining sites throughout the years. As an indicator, the peer reviewed journal *Australasian Historical Archaeology* has throughout its publication history consistently included articles that have dealt with mining and gold mining from a number of perspectives. These perspectives include but are not limited to *technological*, for example, Davies, Lawrence and Turnbull (2011), McGowan (1996), Moore and Ritchie (1998), Ritchie and Hooker (1997) *ethnicity*, for example, McGowan (2003), Smith (2003), Piper (1988), *cultural heritage*, for example Comber (1995), Milner (1997a), Milner (1997b), Pearson (1995); *settlement studies*, for example, McGowan (1992), Lawrence (1995b), Quirk (2008); *gardens* for example Jack et al. (1984); and *hydrology* for example, Davies et al. (2011), Davies and Lawrence (2013). Within this literature there are studies that emphasise the social in mining and gold fields or gold fields settlements, although these are still quite scarce, for example Jackman (1995), and Quirk (2008). Landscape has also been incorporated into some of this research for example Hill (1998).

Lawrence's doctoral research and subsequent publications were the first of the social interpretations of gold fields. Lawrence's research presented findings on the ephemeral settlements at Dolly's Creek on the Morabool gold field of Victoria. A different type of mining

settlement was investigated by Bolton (2009); the ephemeral settlements associated with travel to the remote Kalgoorlie goldfields of Western Australia. Mate (2010) provides a landscape study of the historical gold mining town of Mt. Shamrock. Nearby at the gold field town of Paradise, Prangnell and Quirk (2009) investigated the presence of children and expressions of childhood in the township. McGowan (2001) used material evidence to support his arguments in his regional history of the Southern Mining District of New South Wales. McGowan covered numerous mining settlements with the archaeological discussion generally limited to the nature and extent of the settlements. Peter Bell has written extensively over a number of years on the nature of housing and settlements associated with mining (see for example Bell 1984, 1998).

Other examples of archaeological research focusing on gold fields are Smith (1998), whose research investigated and demonstrated Chinese ethnicity in the archaeological record at Kiandra, New South Wales. Lambert Tracey's research was primarily an investigation of the various technologies and their archaeological signatures at the Adelong and Shoalhaven gold fields of New South Wales (Lambert Tracey 1997). Beale (2006) and Pendleton (2006), both provided dissertations on analyses of the glass and ceramic assemblages respectively, recovered from Lower Camp at the Woolgar gold field, in north Queensland.

To date, only two major studies have incorporated interpretive research as a primary aim to derive an understanding of the social construction of a gold field. Susan Lawrence in her PhD thesis (Lawrence 1995a) and related publications (Lawrence 1995b, 1998, 1999, 2000, 2001,) has used archaeological analyses to address social issues arising from change at an Australian gold field. In excavating four settlement sites, Lawrence found that mining initially placed

constraints on the variety and extent of material culture that miners and their families had with them. However, she found that over time while retaining the essence of portability; items, reflected an "interpretation of gentility" (Lawrence 1995a:258), expressed in qualitative decisions about goods acquired. Some of the complexities of material culture, and the shift towards expressions of gentility in habitus, are viewed as the result of the influence of women, who sought to maintain their domestic environments.

Geraldine Mate in her PhD thesis and subsequently (Mate 2010, 2013) uses a landscape approach in which both industrial and social concepts of landscape are examined for their dialectical relationships. Mate finds that meaning was embedded in the landscape through various activities such as; altering the landscape in the process of turning a wilderness into a mine and mining town, the movement of people throughout the landscape, and in narrative creation in which established meaning is reinforced by visiting places of importance. These experiences, amongst others, created attachments to place. Thus the mine gave meaning to the community, which identified itself as a mining community. Further, the town around the mine reflected some of the mine's social hierarchies in its physical and hierarchical structuring. A further dialectical relationship is identified wherein the social factors of individual agency and community networks in the town affected the mine's development through the availability of capital and application of certain technologies. Ultimately, through a complex web of sub-landscapes Mate substantiates the insight that in the case of Mt. Shamrock, the social and the industrial are not constituted independently, cannot be understood independently, but can be understood as a landscape.

Additional works that have incorporated social constructions into their interpretations of gold mining and gold mining communities include Quirk (2008) and Prangnell and Quirk (2009). Prangnell and Quirk found a disparity between the Victorian middle class ideal of a move to smaller families, and what was found in colonial Australia, and Paradise in particular. Historical records showed children were expected to be productive, with many examples of boys and girls in employment. Children were also venerated; shown through parental dedication to providing education for their children, and community grief in death. Children were represented in the material record through toys and slate writing paraphernalia.

Dudley (2005) used a multi-evidential approach to determine the social nature of the landscape of marginalised groups at Paradise gold field in the Burnett region of Queensland. Wegner (1995a) in a primarily historical thesis, used the material remains of mining technology at the Croyden gold field, as one parameter to determine why technology was taken up or by-passed at the field. The material culture helped substantiate the perceived conservatism of technological diffusion and adaptation at the field.

Several other investigations have focused on ethnic, particularly Chinese, cultural indicators at gold field sites (McCarthy 1987, McGowan 2003, McGowan 2005). McCarthy focused on the settlement site at Pine Creek in the Northern Territory. The assemblage of a large variety of oriental ceramics and glassware was hypothesised to represent the presence of Chinese trade networks that operated independently of the British colonial trade. The influence of the credit-ticket system coupled with the documented reliance of Chinese and European miners on Chinese traders at some gold fields was taken to support the possibility that equally strong Chinese

influences had created trade networks. If proven, this would have indicated that the Australian colonies had become a Pacific entity rather than just a colonial outpost.

Recently Lawrence and Davies have begun to explore the cultural landscape of water in gold mining at the central Victorian gold fields of Creswell (Davies et al. 2011, Lawrence and Davies 2012). They identify that much of the previous archaeological literature of water has concentrated on the industrial uses of water. While they acknowledge prior research into the importance of water as examples of technology transfer; they posit that what is missing is the nature of colonial engagement with the environment, particularly environmental constraints. They begin by placing water as a mining feature within its legislative and regulatory framework. These frameworks provided opportunities to commercialize the procurement, storage and supply of water at gold fields until the 1880s, when the Victorian government effectively nationalised state ownership of all surface water (Davies et al. 2011:27). The nature of the archaeological record of water is partly presented as a direct result of the activities of water entrepreneurs. Ultimately, what Davies and Lawrence are attempting is to integrate broader environment data and environmental change with cognitive and social archaeological constructions that explain how environmental constraints were overcome in the processes of colonization.

To achieve their aim Davies and Lawrence cite the landscape learning model after Rockman where landscape learning, “is the process by which individuals and groups learn about new environments and incorporate this information into ongoing cultural systems” (Rockman 2003 cited in Lawrence and Davies 2012:47). Within the scheme colonizers are said to engage with three types of knowledge through various periods of time:

1. Locational knowledge: in which people encounter and engage with the environment as a function of its resources, climatic conditions and physical properties;
2. Limitational knowledge: is an assessment of the quality and reliability of the locational environment; and
3. Social knowledge: is the "collective experience knowledge and tradition that enables the group to interact successfully with the environment and create a sense of place" (Lawrence and Davies 2012:47).

In terms of mining, the landscape learning model is used to explain the presence of the many archaeological features associated with water control such as races, dams and storage cisterns that exist on the gold fields at various scales and for a variety of industrial and non-industrial uses. That water control was necessary is seen as a function of the sporadic, seasonal nature of water supply in this region of Australia, coupled with the relative distance of gold deposits from the closest significant water sources.

In the colonizing scenario both European and Chinese miners possessed technologies and social knowledge of water that originated in water abundant climates. The first priority was to secure water for industrial and domestic use. This was achieved in a variety of ways which have left the archaeological features that constitute the cultural landscape of mining. The activities of securing and supplying water for mining has not only left the visible archaeological features of mining but have also affected the natural waterways of the pre-existing environment. Thus sluicing has left deep eroded gullies; sediments have been deposited that have choked waterways, or caused flooding. The archaeological and historical records for Cresswell are cited as examples of the adaptive response to an intermittent water supply. In terms of the cultural landscape this

extended beyond mining as the technologies themselves were re-used for other purposes at later times.

Within north Queensland, the archaeology of gold mining has generally been approached in a traditional sense, as industrial archaeology. Studies have either documented the obvious material remains of mining technology (Bell 1987, Wegner 1995a, 1995b), or sites have been the subject of cultural heritage assessments in which an inventory of technologically significant sites is produced, along with recommendations for future conservation (Bell 2000, Comber 1991, 1995). Material culture has been incorporated in academic and scholarly works on north Queensland gold mining but this has primarily been as a supplement to historical research (Wegner 1995a, 1995b, Menghetti 1984). Jack et al. (1984) excavated the site of a late Chinese market garden at the Palmer River gold field. This early project did not directly investigate mining but it appeared that the last Chinese resident, Ah Toy did sell his produce to the miners at the field. The excavations revealed what must have been rudimentary accommodation. Glass artefacts showed a great variety of internationally sourced foodstuff and beverages. The garden remains indicated a sophisticated use of water for irrigation.

Numerous regional scholarly and populist histories of life on Queensland gold fields have been produced that include reference to the Cape River gold field, generally as a part of broader mining or regional treatments, for example, Barton (1909), Bagnall (1979), Bell (2000), Blainey (2003), Bolton (1970), Cilento (1959), Davies (1993, 1998), de Havelland (1989), Gibson-Wilde (1984), Holthouse (1967), Janacek (2002, 2003), Loos (1982), Neal (1984), Pike (1960, 1996), Rolls (1992), Sanker (1977) and Thomas (1999). Don Johnson also produced an unpublished

draft manuscript of an historical chronology of Cape River gold field (Johnson n.d.). In several of these publications the sometimes lurid recollections of W.R.O. Hill (1907) have been the irresistible temptation for mentioning the Cape River gold field. Amongst the references cited by far the most comprehensive to date is Gibson-Wilde (1984), whose work ties the development of the Cape River gold field into the early regional development of Townsville's hinterland, and Townsville as an early port. The geology of the Cape River gold field was considered by Garrad (1996) as a part of his dissertation on the Lolworth and Pentland 1:100,000 geological maps; it also contains some secondary historical information. To date no history that treats the Cape River gold field as its primary subject matter has been produced, and only one small archaeological investigation has been carried out (Hansen 1999).

Research Question and Research Aims

This thesis broadly addresses a still existing deficiency of archaeological work that investigates historical gold mining in north Queensland. Moreover, it attempts to elucidate some of the motives and meaning in the variety of interactions that contributed to the social and physical change that was an ephemeral, primarily alluvial gold field. This is achieved by developing a specific method of landscape construction. The landscape methodology modifies James Delle's (Delle 1998) understanding of archaeological space, and applies it to a case study site. Delle's approach was built around the construction of spatialities which are, "the created space of social organization and production" (Soja 1989:79, cited in Delle 1998:39). Delle cites three types of space as contributing to his spatialities: material space, cognitive space and social space. These spaces are "combined in a holistic experience of the world" (Delle 1998:39). A review of the landscape literature in Chapter 2, shows that Soja's later constructions of spatialities exhibit

much of the explanatory capacity cited as inherent in landscape approaches (Soja 1996). I use the term archaeological landscape in the thesis, to emphasise that much of the spatial information here is the result of an archaeological methodology. The derivation of the approach is presented in greater detail in the following chapter.

Research Question

This thesis asks:

"How does the development of an archaeological landscape contribute to understanding the social phenomenon of the gold rushes, at a nineteenth century gold field?"

Cultural landscapes in their many forms are an increasingly prevalent method of developing a framework of understanding about place. This is because it is recognised that landscape approaches can provide an explanatory freedom in which human behaviour and its resultant material culture can be understood through time. However, landscape is a broad term that has numerous usages; to demonstrate the derivation of these usages and the position of the current approach in that body of work, a subsidiary Research Aim was developed:

Research Aim 1

To investigate current landscape approaches in archaeology

Additionally, it has been demonstrated above that there are few archaeological treatments of north Queensland gold fields that expand beyond the technological aspects of gold mining and its

immediate implications as technology, or as items of cultural heritage. Therefore, expanding beyond this confine at a north Queensland site was seen to be a novel contribution, worthy of investigation.

The ephemeral alluvial gold field presents the challenges of a relatively short duration, and therefore potentially truncated mining development. The most suitable site as a case study for this research was the Cape River gold field, located south west of Townsville. However, the literature has shown the Cape River has only ever been treated as a prelude to the bigger and more spectacular regional gold fields of Charters Towers and Ravenswood. Hence the field required contextualising and Research Aim 2 was developed.

Research Aim 2

Develop a historiography for the Cape River gold field.

Further, amongst several objectives that can be defined for the discipline, archaeology is a form of land use investigation. Archaeological methods of survey and excavation elucidate the spatial arrangement of material culture. Hence, archaeology is essentially spatial. In-turn, analyses of material culture can provide temporal indicators to changes in land use. Hence, archaeology is also essentially temporal. Finally, because the spatially defined and temporally manifest are materially expressed, as the material trace of peoples' experience, archaeology is also essentially social. Archaeology requires an explanatory framework that can incorporate the three broad types of information that its methods generate; spatial, temporal and social. Landscape is often used as a means of communicating that endeavours to express the continuous interaction

between people, the places they inhabit and the way they interpret their experiences. To incorporate spatial temporal and social information into a landscape approach a third research aim was devised:

Research Aim 3

Apply a modification of James Delle's spatialities as a landscape approach to the case study site.

The case study: The Cape River gold field

Cape River was chosen as the site for this case study chiefly because initial research revealed it was the site of a short lived, largely alluvial, gold field (Bolton 1970, de Havelland 1989, Gibson-Wilde 1984, Hooper 1993, Neal 1984). Additionally, it is recognised as the first payable gold field in north Queensland, pre-dating the Ravenswood, Charters Towers, Gilbert River and the Etheridge gold fields. The fact that it was the first payable field in such a large geographical area identified it as a field that may have experienced a 'rush' and further that it may share developmental features with other gold rush fields. Finally, it is in the north Queensland region, and was within the logistical scope of the resources available for this research project.

Location

The Cape River gold field is situated approximately 240 km south west of Townsville, and can be reached by sealed roads to the township of Pentland, (see Figure 1.1). It is likely that the remnants of the gold field are located across up to eight pastoral properties in this region (Alick and Alick 2000). Five key properties: *Ballabay*, *Capeville*, *Cornelia*, *Ellimeek* and *Oakvale* were investigated during this research. These places are accessible by four-wheel drive vehicle, (see

Figure 1.2). The gold field as originally gazetted in 1867 covered an area of 1619 sq. km (625 sq. miles) (Queensland Government Gazette 1867) and in its final gazetting it covered an area of 798 sq. km (308 sq. miles) (Queensland Government Gazette 1882)

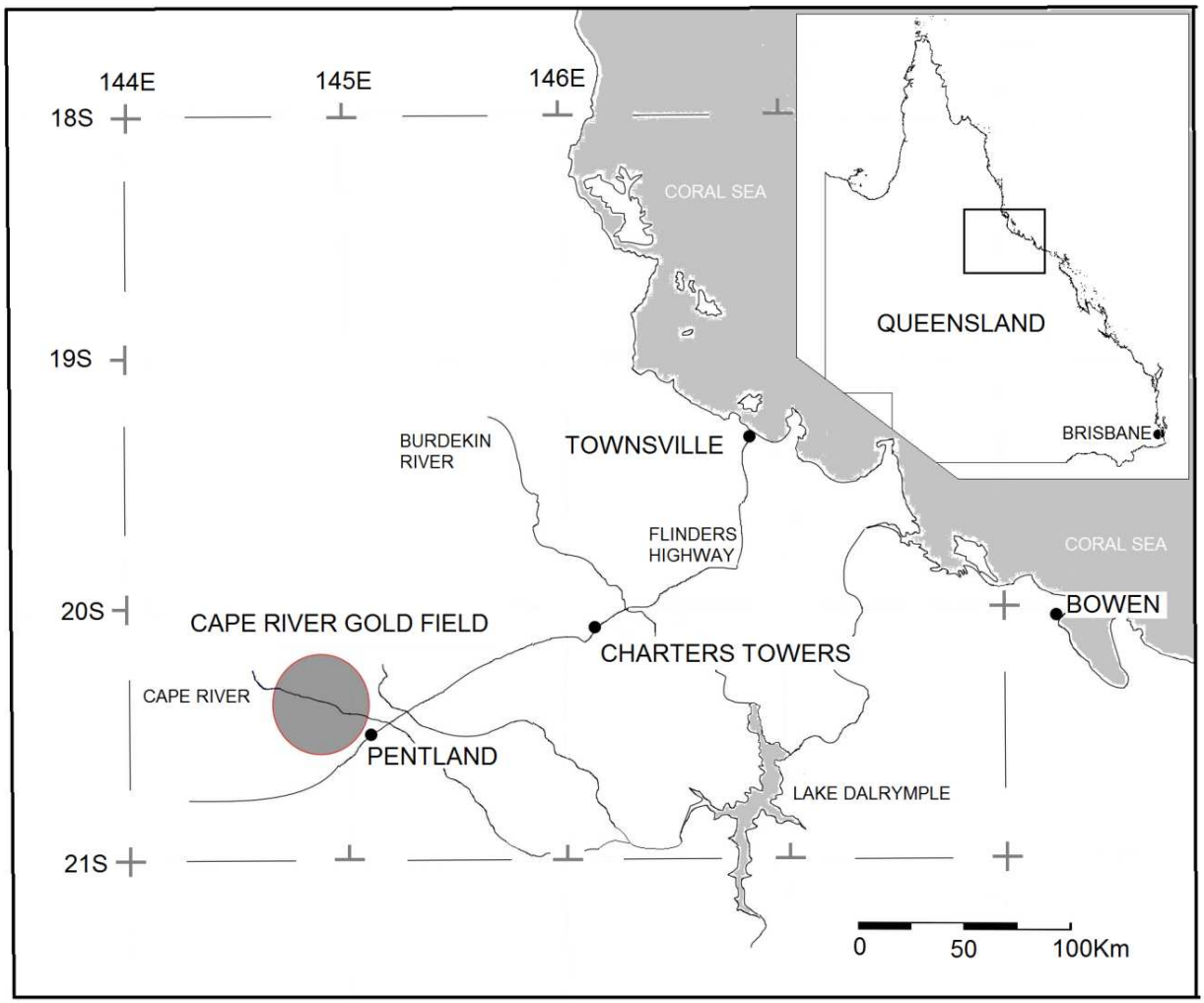


Figure 1.1 Location of Cape River gold field, Queensland, Australia

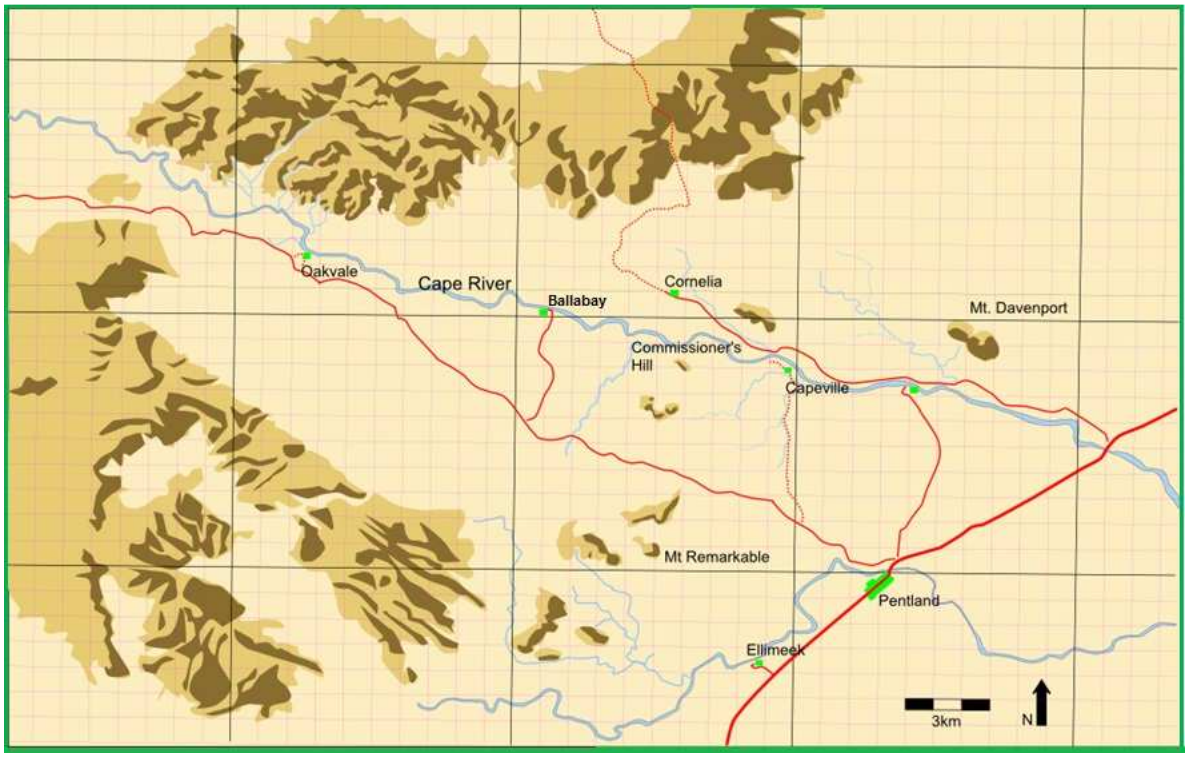


Figure 1.2 Location of the pastoral properties visited as a part of this research

Description

The gold field straddles the southern portion of the Einasleigh Uplands and the northern reaches of the Desert Uplands bioregions, the gold field is within the Broken River and Cape-Campaspe subregions (Department of the Environment 2013). Vegetation in the study area comprises mainly woodland and open woodland, with the main woodland communities being eucalypt, predominantly silver-leaved ironbarks, narrow-leaved ironbarks, yellowjacks and bloodwood. Predominant representative species are *Eucalyptus crebra, E. dichromophloia, E. brownii, and E. similis* (Isbell and Murtha 1972). The gold field is in the upper reaches of the Cape River catchment and is roughly bisected by the river. Cape River is a tributary of the Suttor River, itself a tributary of the Burdekin River. The Cape River is now a predominantly sand bedded seasonally flowing river. The climate classification of the study area is Grassland class; Hot

(winter drought) sub-class, of the modified Köppen classification system (Bureau of Meteorology 2005). The area experiences between 610 and 760 mm of rainfall annually, with the mean rainfall at Pentland being 667 mm (Bureau of Meteorology 2012). Over 70% of the precipitation falls during the wet season between December and March. Regional temperatures in excess of 40°C are common during summer but can be experienced as early as October.

Geologically the Cape River gold field is within the Lolworth-Ravenswood block. The geology of the Cape River has been discussed extensively in the government geologists reports such as those produced by Daintree (Daintree 1869a, 1870), Rands (1891, 1894), Dunstan (1913) and Morton (1937). More recently an overview of the geology of the area can be found in Paine et al. (1972); the geology of the Gorge Creek area of the Upper Cape was researched by Baker (1974). Garrad (1996) produced a detailed analysis of the geology of the 1:100,000 scale Lolworth, Pentland and White Mountains map sheets. A detailed analysis of the granites of the area was undertaken by Hutton (2004).

Thesis Structure

The thesis is structured around developing the three research aims that support answering the research question.

Chapter 2, addresses Research Aim 1 by exploring the literature of the broad concept of landscape and concentrating on its varied uses in archaeology. After summarising some of the spatial concepts of Edward Soja, the chapter presents the theoretical background to James

Delle's approach to spatiality and the modification of that method into archaeological landscapes used in the later chapters of the thesis.

Chapter 3, addresses Research Aim 2 by contextualising the Cape River gold field within the regional development of the Kennedy District. This is leads into a history of the case study site that explores demographic and technological changes at the gold field, and includes some of the social aspects of the gold field.

Chapter 4, details the methodology, results and a brief discussion of the field survey, collection and excavation portions of the archaeological research. Utilising the site survey, a site typology is presented, including examples of representative sites. The typology assisted with understanding the geographical spread of technology across the field. The full site inventory is available in Appendix 1. An excavation report is presented in Appendix 2.

Chapter 5, details the analysis of the artefact assemblages of the two excavation sites. The two assemblages are analysed independently for their ability to provide site chronology. Appendix 3 presents a summary of the diagnostic artefacts derived from the artefact database. The artefact assemblages are presented in the format of a functional typology in Appendix 4. The functional typology was used to derive possible site uses, as well as the contribution of the sites to the material spaces of the gold field. A concluding summary compares both sites.

Chapters 6 to 8 directly fulfil Research Aim 3, in that the three elements of space defined in Chapter 2 are examined. Chapter 6 develops the first of the archaeological landscapes for the

case study site, the Archaeological Landscape of Water. Chapter 7 develops the Archaeological Landscape of Mobility, and Chapter 8 develops the Archaeological Landscape of Authority. Chapter 8 concludes by highlighting instances where the spaces discussed enable the three archaeological landscapes to be integrated.

Chapter 9 concludes the thesis by a summarising the approach and findings, and discussing the effectiveness of the dialectic in the construction of archaeological landscapes, and the contribution of the archaeological landscapes to understanding the gold rushes as a social phenomenon. Lastly, future research questions and avenues evident as a result of this research are presented.

Chapter 2 **Beyond the horizon - concepts of landscape**

This chapter begins with a short exposition of the etymology of landscape and some non-archaeological uses of the term before presenting a discussion of the current state of understanding of the term as it is being applied in archaeological investigations, including theoretical uses of landscape. This is followed by a review of landscape applications in Australian historical archaeology. The chapter concludes with a description of the landscape approach used in this thesis.

Beginnings

The word landscape has subtly different meanings in both vernacular and academic senses. Tracing the etymology of the word 'landscape' from Dutch or German, one of its original meanings was, "a view or prospect of natural inland scenery" (Murray 1933 (1970) VI:54). The word was used during the seventeenth century as a technical term to describe inland, as opposed to coastal, pictures of nature (Bender 1993:2, Murray 1933 VI:54, Olwig 2003:309-13, Preucel and Meskell 2004:218). Other obscure uses identified include, "the object of one's gaze", "a bird's eye view" and "the depiction or description of something in words" (Murray 1933 VI:54).

One developing use of landscape in vernacular contexts is in communication media where landscape is used to allude to the web of relationships between material and cognitive entities that together constitute the contemporary understanding of a given theme or subject. For example we commonly read commentary on the 'political landscape', the 'ideological landscape', the 'media landscape', even the 'one-day cricket landscape', often when a comprehensive

knowledge of a subject or theme is being suggested. I believe this use has become popular as it draws upon previous uses in which landscape was associated with land. Landscape thus imparts a context of permanency and the maintenance of the status quo, whilst also allowing new information to be easily integrated. This is a useful approach if the theme or subject is dynamic, and the web of relationships connects multiple geographically separate places, people and ideas. Some of these relationships may be ephemeral, or for instance only exist in the virtual spaces of the internet.

A second aspect to this vernacular use is the implication, derived from painted and other imagery, which suggests landscape encapsulates the totality of a view. Ingold's analysis of Bruegel's, "The Harvesters" shows that the parts of a pictorial landscape can be analysed independently but can only be understood relative to each other (Ingold 1993:164-172). Similarly, Australian war photographer Frank Hurley famously created photo landscapes of trench warfare in World War 1 stating, "It is impossible to secure full effects of this bloody war without composite pictures" (Hurley cited Laffin 1988:7). The suggestion of totality allows for the incorporation of disparate sources and forms of information within the metaphorical observational frame of landscape. This is in much the same way that surrealist art compels us to contemplate as a whole, the combination of potentially distorted, fragmented and imaginary elements juxtaposed within the frame.

A third strand in the vernacular use of the term landscape is when landscape is used in ways that suggest a contemporary and up to date understanding of a subject, which implies a thorough understanding of the historiography or background of a subject. This implied understanding and

familiarity with a subject further suggests an authoritative standing. For instance, if a journalist in prefacing a story refers to the “current political landscape of Queensland”, the audience is being asked through metaphor to connect its contemporary to its historical understandings of politics in Queensland. This might differ from the equally common metaphor “current political climate in Queensland”, in which a more immediate and changing, or volatile, understanding is implied. Landscape is the trigger word that implies both extent and depth of knowledge. At this point the metaphor of landscape becomes a pact of understanding between the producer and consumer of information, even though the landscape need not be fully explained. In this case landscape is the metaphor for the spatial and temporal (historical) understanding of a subject. It partially achieves altering the word landscape from noun to verb; to consider landscape “not as an object to be seen or a text to be read, but as a social process by which social and subjective identities are formed” (Mitchell 1994). To landscape, is to transform.

Evolving vernacular uses of landscape appear to incorporate the implicit contexts of permanency, authority and totality. Although earlier vernacular uses derived meaning predominantly from artistic representations of the physical environment, the transformative aspect of landscape also has a long history.

Landscape and archaeology

The archaeological use of landscape is often traced to seventeenth century artistic representations of the physical environment (Fleming 2006, Johnson 2007). Physical environments depicted as landscapes form a continuous tradition in western art, as do their interpretations (Clark 1976, Hughes 1997).

At the end of the 19th Century in the United States, the deterministic impacts of the natural landscape were espoused in Turner's theories of the frontier. In the United States, Turner viewed the European in a new setting, overwhelmed by the different challenges that the landscape presented. The newcomers adopted new ways of interpreting their surroundings to survive, sometimes based on Indigenous experience. In the process a new way of perceiving the world was created that was neither the old European, old Indigenous or purely environmentally determined. A new way of being was created that suited a new nation's view of itself (Furniss 2005).

The art historian Kenneth Clark characterised four, roughly chronological, core 'landscapes of seeing' in his portrayal of landscape in western art. His view of art history considers these landscapes, and those that followed, as being contextual productions. Changes in representation are a product of either technical developments or artist's insight, and in all cases until the twentieth century landscape production was contingent upon an understanding of the past (Clark 1976). However, in only one of his four landscapes of seeing, the landscape of fact, does Clark invoke a social group, the bourgeois, as responsible for an art movement (1976:59). As wealthy patrons the bourgeois obtained framed views of the world. In its reproduction nature was metaphorically appropriated, and landscape became a means of ideological expression. This reification of nature can be seen as a metamorphosis of non-landscape world views into the development of hegemonic capitalist landscapes through the commoditisation of land (after Olwig 2003, also Berger cited in Cosgrove and Daniels 1988). However, despite the politicisation of some forms of landscape art, and the potential that four centuries of vernacular

use offers, archaeological concepts of landscape owe more to approaches developed in geography (Anscheutz et al. 2001).

Early twentieth century geographers transformed landscapes beyond observed and appropriated two-dimensional pictorial representations and mere cartographic notions of space into an appreciation of people changing and being changed by their physical environments (Anscheutz et al. 2001, Blake 2004). Carl Sauer is often cited as devising the first functional concept of landscape as the separate entities of 'cultural landscape' and 'natural landscape' (Sauer 1963 (1925)). A natural landscape was that suite of geo-morphological, climatic and biological phenomena, unaffected by humans that composed a distinctive area, distinguishable from other areas. A cultural landscape was a natural or previously existing cultural landscape that had been changed by the action of an intrusive culture (Sauer 1963(1925):333). In both natural and cultural landscapes, Sauer presented a morphological method of organising related observable phenomena into 'forms' which interact organically to form recognisable and comparable 'structures'. The structures have functions as part of a system; as forms and structures change through time so the system evolves. Sauer recognised that this method challenged the primacy of environment as a determinant of land development (Sauer 1963(1925):342-3). Anscheutz et al. (2001:164) note that prior to Sauer, the polemic between environmental factors and human agency as determinants of behaviour was evident in the nineteenth century works of Ratzel and Durkheim. Roberts (1987) and Stuart (1998) have also acknowledged nineteenth century German origins in geography through the works of Meitzen and Schluter respectively.

Followers of Sauer developed his morphological approach of landscape, which Stuart (Stuart 1997, 1998) refers to as the '*super organic*', whereby geographers sought the presence of cultural traits indicative of a culture, as did the anthropologist E.B. Tylor (Crawford 1953). Sauer's approach, and those that followed, are similar to the contemporary development of European culture histories during the 1920s by Montelius, Kossina and later Childe (Trigger 1989).

Stuart (1998) outlines an extension of the use of morphological landscapes that exists within cultural heritage studies that rely heavily on the development of site types and site lists. The approach finds international expression in the World Heritage Convention definitions of cultural landscape, which provide an international standard for the process of classifying and quantifying esteemed cultural landscapes for conservation (Droste et al. 1995). The use of morphological approaches, when used to record and preserve the veneer of extant material culture has been criticised as preferencing the present at the expense of deriving potential meaning about the past from material culture (Roberts 1987:83-5, 88-9).

The realisation that the landscape could be an implicit but fragmentary record of activity through time in particular settings, is largely credited to the British historian W.G. Hoskins (1955) through his work "*The Making of the English Landscape*" (Aston 1985, Johnson 2007, Roberts 1987:78-9). Only two years before Hoskins, in "*Archaeology in the Field*", O.G.S. Crawford (1953) had presented unambiguous statements that the field archaeologist must deal with the "surface of England" as a palimpsest; deciphering the landscape in terms of the recognition of the major classes of archaeological features such as Roman roads, tracks, earthworks, mounds

and barrows (Crawford 1953:51). Although he does not specifically refer to landscape, Crawford's surface comes alive as pedestrian survey illuminates cartographic space, generating uniquely archaeological data. Pedestrian field survey is described in a tactile almost sensual manner from which a contextual understanding of landscape features was to emerge (see also Sauer 1963:344-345);

> "It would be best to take the Blandford bus and leave it a mile (S.S.W. of) Woodgates Inn, now a private house but once a bleak hostel where the bare necessities of a night's lodging were reluctantly conceded. Here the Roman and modern roads diverge, and the Roman causeway is well preserved. Where it lies near the modern road it has been used and mutilated as a quarry for it; but when it gets further removed there from it is found intact and most impressive and continues from some distance" (Crawford 1953:54).

Crawford shows that prior to this time much archaeology had been site based archaeology, with an emphasis on excavation. Sites were not considered as existing in a landscape, and context for sites was not sought from the landscape (Fowler 2001). Archaeological applications of the Hoskins/Crawford concept of the English landscape were developed further by Aston (1985). Aston's was a morphological approach that formulated the landscape as consisting of the potential relationships between identifiable cultural and natural attributes in the environment. These attributes have a role in fulfilling essential human needs, such as shelter construction and food production. As functional aspects of a society they are developed as themes having material correlates, from which relationships are inferred (Aston 1985:9-12). Aston's approach used systems theory and site pattern recognition to spatially organise the functional aspects of material culture. Thomas (1993) was critical of Aston's empiricist approach that privileged material culture over the people that produced it. Thomas regarded it as resulting in the creation of a

"black box" from which people emerge as the missing parts of a "totalising knowledge of all other factors" and missing "is any sense that these relics are bound together and given significance by a continuous flow of human conduct" (Thomas 1993:26).

Morphological approaches have been widely used in the United States, through a growth in cultural resource management during the 1960s and onwards. Heritage projects, in particular the preservation of historic houses, resulted in the archaeological investigation of gardens associated with houses and farms. Garden studies initially defined the study of landscape within historical archaeology in the United States (Anscheutz et al. 2001:172-173, Ashmore 2004:258-9, Delle 1998:14-16, Kelso and Most 1990). Many of these garden studies were evolutionary and particularistic; modelling changes in garden and grounds as reflective of the changing fortunes of successive occupants, for which extensive historical documents often exist (Bairstow 1991, Kelso and Most 1990). Extending beyond such empiricist and site specific approaches to theorising about the ideological purpose of garden layouts was pioneered by Mark Leone. Leone's interpretations of the relationships between garden layout and power at the Paca mansion in Annapolis, Maryland showed that certain garden illusions served to reinforce William Paca's dominant community position to visitors, and household members (Leone 1988:32-33). As part of a multi-disciplinary project, gardens archaeology has also contributed to primarily Marxist interpretations of the corporate ideology operating at Boot Mill in Lowell, Massachusetts. It has been inferred that a management regime sought to create and maintain class boundaries through paternalistic intervention in the lives of an entire population (Mrozowski and Beaudry 1990). A comparison between two garden based landscape anthologies from the United States, "Earth Patterns" (Kelso and Most 1990) with the later, "Landscape

Archaeology" (Yamin and Metheny 1996) shows that despite a broadly similar purpose for each volume (Deetz 1990:1-4, Yamin and Metheny 1996:xiii-xx), there was a change towards "questions that count", in which Cleland (1988:16) had previously recognised the importance of off-site approaches and Deagan (1988:9) had recognised the potential of historical archaeology to address issues that transcended specific space and time.

It is accepted that archaeological approaches seeking a greater commitment to understanding the cognitive and social processes responsible for the creation of the archaeological record reflect a widely documented and lengthy disenchantment with the broadly law-making positivist agenda of processual archaeology. The disenchantment was fuelled by the paucity of meaningful laws of human behaviour developed under the guise of middle range theory (Hodder 2005). As had been the case with the incorporation of positivist thought into archaeological studies during the 1960s and 1970s; a gradual abandonment of the goals of positivism followed a similar trend first recognised in geography (Blake 2004, Yamin and Metheny 1996). A variety of post-modern social theory had influenced the development of a post-modern geography, and had been an increasing influence on archaeology and particularly the development of archaeological landscape studies (Hodder 1987). Social theorists examining the concepts of space, time and the role of human agency in creation and reproduction of these concepts have since been utilised in explanatory frameworks. Johnson (2007:142) has emphasised the important concepts of agency and practice as being able to unify actions and their physical and cognitive contexts. The incorporation of these and other ideas into the development of landscapes in archaeology has resulted in a greater theoretical diversity for landscape.

Anthropological discussions of landscape include those that incorporate the concepts of time, place, space and voice. However, a comprehensive discussion of these is beyond the limitations of this thesis. Nevertheless, as some of these concepts are fundamental to archaeological discussion, some anthropological approaches will be highlighted.

Bender (1993) and Rodman (1992:647) consider landscapes as being multi-vocal and polysemous. Landscape, "is part of the way in which identities are created and disputed, whether as individual, group or nation-state" (Bender 1993:3). Ingold (1993) rejects the polemics, identified earlier, between nature and culture stating, "The landscape, I hold, is not a picture in the imagination, surveyed by the mind's eye; nor, however, is it an alien and formless substrate awaiting the imposition of human order" replacing them is a landscape which is always in the process of becoming and in which the physical parts of landscape are a temporal record (Ingold 1993:154). For Gosden and Head, landscapes possess the unifying property that history can be derived from them (Gosden and Head 1994:113, 116). Bender considers landscape as fundamentally perceptive, "in the Western world we 'perceive' landscapes" (Bender 1993:1) although she goes on to characterise this as a visual perception which contrasts with the combination of visual and auditory perception of action espoused by Ingold (1993) in his explanation of 'taskscape'. Landscape is perceived at a place, over a time, it needs to be situated to be relevant; therefore contextualizing landscape is a fundamental prerequisite.

The unifying concept within Ingold's explanation of landscape is the concept of place. Using an analogy from Saussere, the physical and cognitive aspects of place are viewed as homologous. In cartographic (cognitive) representations, place is delimited and bound. However, in landscape

places cannot be delimited and bound, “each place embodies the whole at a particular nexus within it” (Ingold 1993:155). The significance of place is drawn from “the relational context of people’s engagement with the world” (Ingold 1993:155). In this understanding, journeying between places is an experience of landscape creation. In the experience of the journey, places do not end there is just transformation. Space exists as the cognitive (cartographic) concept of area, or potential distance between places.

The broad scope of belief that landscape is about the relationships between people and their environment is also used in anthropology to incorporate the world-views of traditional or Indigenous cultures into landscape (Bender 1993, Kuchler 1993). Such a function is viewed as a strength of the landscape approach, “the experience of landscape is too important and too interesting to be confined to particular time, place and class” (Bender 1993:1). As such landscape becomes a vehicle for theorising about meaning. However, subsuming non-western views under a landscape rubric may also be regarded as appropriating Indigenous intellectual capital; in the same manner that Harrison (2002b) considers Australian Indigenous artwork to have been appropriated to forge a materialist link between “settler history and the Indigenous past” (Harrison 2002b:38).

In some anthropological literature the phenomenological nature of landscape is stressed, “image-making practise and its visual forms are implicated in the process of remembering and forgetting and thus are shaped by memory-work rather than by accounts of distinct memories” (Kuchler 1993:86). Recognising that archaeologists also attempt meaningful renditions of the past through experiences in the present, Christopher Tilley (Tilley 1994) proposed a move beyond empirically

derived interpretation to a form of actuated synergistic re-engagement with the past. Fleming (2006) provides a vigorous critique of phenomenological and hyper-sensory archaeological interpretation, concluding that going "beyond the evidence" as suggested by Bender (Bender cited in Fleming 2006:268) allows versions of the past to be created that privilege the author's imagination above that of the reader, without the necessity for any empirical validation of a position. While attempts at emic reproductions of landscape, of even the recent past could constitute the creation of a landscape that was never experienced, the exercise of the imagination in the production of landscape, rather than be considered the endpoint of interpretation, could be the basis of future questions and hypotheses.

Landscape approach syntheses in archaeology

Several works have attempted to synthesise, to varying degrees, the variety of methods that employ landscape in archaeology (Anscheutz et al. 2001, Ashmore 2004, Ashmore and Knapp 1999, Bender 1993, 2001, Gosden and Head 1994, Johnson 2007). Some, in their distillations, provide signposts for the future of landscape in archaeology; others are content to provide the critical essence of the approach. The essential conclusions of some of these have been incorporated into the previous discussion. While several of these present divergent views on the origin of landscape in archaeology, there is an emerging clarity of what landscape embodies.

In an attempt to construct a role for archaeology within an anthropology of place Anscheutz et al. (2001) develop a methodology, or at least present some conceptual tools, with which to fashion a landscape paradigm. Essential to the paradigm are four fundamental principles:

1. Landscapes are not synonymous with natural environments.

2. Landscape are worlds of cultural product.

3. Landscapes are the arena for all of a community's activities.

4. Landscapes are dynamic constructions (Anscheutz et al. 2001:162-163).

That archaeology has a role in landscape is premised on the basis that landscape may offer answers to archaeological questions such as the importance of "regional change and variation" as opposed to site specific studies; and may provide the possibility of constructing a "a past populated with ideational actors" (Anscheutz et al. 2001:161-2). Landscape presents the potential to communicate with the public and provide a "medium for cross-cultural dialogue on the construction and reproduction of affiliations with places" (Anscheutz et al. 2001:163, also Bender (1993)). Anscheutz et al., and others, recognise there exists a great variety of archaeological approaches that can contribute to archaeological landscapes. However, it is the ability of landscape to "accommodate if not integrate" (Anscheutz et al. 2001:159), these approaches that is viewed as the great potential of landscape. The synthetic framework Anscheutz et al. derive to achieve this accommodation is built around the concepts of settlement ecology, ritual landscape and ethnic landscapes "Each of these components emphasizes different aspects of how humans define, shape and use space at particular times. Together, they address some of the historically contingent processes that underlie how people transform space into place" (Anscheutz et al. 2001:176). The components are unified by their common derivation from the anthropological concepts of culture, tradition, vernacular knowledge and the inevitability of socio-economic change. This explicitly anthropological basis for unifying the landscape concepts suits the ultimate goal of defining an anthropology of place, in which archaeology is viewed only as a contributing element (Anscheutz et al. 2001:181-187).

Landscape is posited as a bridge between traditional systematic spatial approaches and historically contingent explanations of place that in combination might produce an explanation of the ways that a landscape was occupied (Anscheutz et al. 2001:187).

Ashmore and Knapp (1999) refer to constructed, conceptualised and ideational landscapes, exploring them as definable positions along a continuum, and also as parallel definitions to ICOMOS categories of cultural landscape: *defined*; *organically evolved*, either *relict* or *continuing*; and *associative* ICOMOS (2013). Their continuum begins with the ideational or "imaginative….and emotional" (Ashmore and Knapp 1999:12), becoming incrementally more physical with increasingly detectable material traces at various archaeological sites. The most materially evident is the constructed landscape, roughly equated to the ICOMOS category of defined and organically evolved landscapes. Landscape as memory, identity, social order and transformation are used as thematic vehicles to demonstrate the application of the terms. Ashmore and Knapp note that the continuum of "how people inhabit and identify with their surroundings" supplants the relevance of the creation of artificial boundaries (Ashmore and Knapp 1999:16).

Johnson (2007), in a volume that has the English landscape tradition at the forefront, views landscape studies as having an inherent dichotomy between what could be termed a romantic empiricist tradition and an anthropological tradition. The romantic tradition is traced back through such works as Aston (1985) to Hoskins (1955) and others, even to the influence of the poetical works of Wordsworth. It is derived from a desire to know about "one's own backyard". The tradition emphasises the phenomenological appreciation of landscape through experience. It

is particularistic, concerned with a narrative history of place in which theory has little or no place, and understanding is implicit. In contrast Johnson also defines a collection of approaches, incorporating and reactive to the dual goals of the processual anthropological tradition in archaeology. The first goal is to use rigorous scientific methods to link archaeological data and archaeological inference. The second goal is to be more anthropological in considering people in the past as parts of social systems that operated differently from the social systems existing now (Johnson 2007:121). Inherent in both romantic and anthropological derivations of landscape are the notions that landscape involves, " 'the land' however it is defined" and "how the land is viewed" (Johnson 2007:3-4). Johnson's vision is that the two disparate traditions can be brought together using the strengths of both approaches. Deriving from the processual critique is an understanding of the importance of variability. Landscapes are to be developed contextually and locally but archaeological inference should not be limited to the site specific but be theorised to enable potential generalisations. After an understanding of place is developed, attention is focused on the diachronic investigation of place and after that to material understandings at larger scales, incorporating the potential for cross-cultural comparisons. Johnson argues for the potential that "the archaeological and 'historical' records emerge as products and mediators of social action rather than 'evidence' about a past to be 'reconstructed' " (Johnson 2007:152).

Approaches in Australasian historical archaeology

I discuss Australasian approaches to landscape in archaeology separately as they receive little or no consideration from European and American scholars and do not appear to be influential in broad patterns of development of landscape thinking. The great variety of archaeological

approaches to landscape, from morphological and cultural heritage landscapes to ideationally inspired approaches are however utilised in Australasian landscape studies.

In Australian historical archaeology the Occupance Approach, defined as "the association of material forms, techniques, organisational units and attitudes by which people occupy a given area" (Harrington 1996:19), has occasionally been utilised to posit sites "within a web of functional, hierarchical and political, as well as spatial and economic relationships (Harrington 1996:19). The use of the occupance approach is derived from geography and is similar to Aston's use of morphological landscapes. There is however an emphasis on the web of relationships as providing not only context to the study but an increased depth of understanding of the functional parts. In this sense it follows the logic outlined by Gosden and Head in building a system of reference; a network linking actions in time and space (Gosden and Head 1994:114).

The occupance approach, and landscape studies more generally, were foreshadowed in Australian archaeology by Pearson's thesis on the archaeology of the settlement of the Macquarie region of N.S.W. (Pearson 1981). The thesis is expansive in its regional scope and its treatment of Indigenous land use practices, functional considerations of an expanding pastoral frontier, and the further implications of the nature of mining populations as a secondary frontier. It emphasises the use of multiple sources of data: archaeological, ethnographic, historical and geographical, combining them in a synthesis of the significant determinants of change in land use practise over time. The thesis builds a unique characterisation of causes and effects as evolutionary process in changing land use practices in the Macquarie Region.

Cultural landscape is a concept widely used in the contexts of Australian archaeology and Australian cultural heritage. Within cultural heritage, cultural landscape is given a set meaning. Article 47 of the UNESCO Operational Guidelines for the Implementation of the World Heritage Convention defines cultural landscapes as;

> "Cultural landscapes are cultural properties and represent the 'combined works of nature and of man' designated in Article 1 of the Convention. They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal"
>
> (ICOMOS 2013:13)

The definition is a part of a suite of such definitions that define cultural and natural heritage as separate items and a third category for items that share cultural and natural heritage features. Through the definition, recognised cultural landscapes are a type of place that are worthy of conservation. The identification of such cultural landscapes is promulgated through the application of national and state government heritage legislation and regulations, and locally through town planning schemes. The historical and physical components of a place are usually presented as independent sources of data. The overall heritage value of the archaeological material is related to its contribution to significance through its degree of preservation and ability to inform about the place under consideration. In Australia through the application of the principles of the Burra Charter within legislations and regulations, the historical, social, scientific, aesthetic and symbolic values of a place are sought during the development of significance criteria. This manifestation of cultural landscape has proven useful to conserve places of global, national, regional and local heritage significance. However, heritage cultural landscapes are not inherently a way of deriving meaning about places whether they are

archaeological sites or not. It is the lack of synthesis of the heritage values as a lived past that is underdeveloped in the presentation of such cultural landscapes, (see Coroneos (1992) and Lennon (1997)).

Duncan (2006) looked at the notion of cultural landscape beyond its cultural heritage uses, in order to develop the totality of landscape subjects and themes. In this conception a series of analytical units is developed which together are posited to represent the multi-vocality of landscape. Duncan views the landscape as a plenum, that ultimately contains multiple interpretations and perceptions in which the multivalency of notions is significant, giving validity to all interpretations.

Ireland (2003) uses landscape as a construct that has been developed to shoulder various vernacular myths of colonisation. The intimate relationship between early Australian historical archaeology and cultural heritage is viewed as perpetuating colonial myths about land. The land is defined as an oppositional force in a context of primarily male struggle from which a concept of national identity has been defined. Despite archaeological and ethnographic evidence and 220 years of European settlement, Ireland finds "Australian culture remains fascinated with the intractability of the Australian landscape" (Ireland 2003:68). In this ideational construction landscape is primarily natural, deterministic and impervious; a backdrop to other products.

Mate's (2010) approach to landscape is a complex interweaving of a dialectical construction of a mining landscape and its nearby township in which a wilderness is transformed by human action into a mine. The created landscape of the mine and its social structures, was posited as

dialectically affecting the social and physical structuring of the settlement. The townsfolk were existentially attached to the mine, and while the mine through its productivity retained its meaning they perpetuated that meaning through storytelling and acts of visitation. Mate also reflexively considers the dimension of her own phenomenological perspective of working at the site, adding these responses into her understanding of the township.

Additionally, Davies and Lawrence (2012) have recently introduced Rockman's concepts of landscape learning into evaluations of how gold field hydrology developed at the Creswell goldfields.

This is a sample of some of the diversity present in landscape approaches in Australian historical archaeology and is far from exhaustive.

Summary

Developing a coherent and comprehensive summary of the origins, breadth and trajectory of landscape use in archaeology is challenging. Pictorial landscape views are at the essence of developing vernacular and some archaeological uses of the word landscape. Vernacular uses are metaphorical and conceptual when they imply a comprehensive, contemporary understanding of issues in subject areas that may transcend a fixed geographical reality. When the impression of a prolonged engagement with a subject is required for the acceptance of an opinion, landscape may become a proxy for authority, and in archaeology may lead to misleading reproductions. Landscape in most spheres in which it is employed is a construct of the kinetic and transformative relationships between people, and between people and their environments.

The development of many archaeological landscapes still follow a theoretical path grounded in the adaptation of social theory by geography to archaeological epistemologies. Recently the ideas of a variety of social theorists have been employed, exploring such issues as agency and practice. These post-modern approaches are also being employed to encompass non-western world-views under a landscape rubric in anthropology. At the same time there exists the continuation of more functional, empirical approaches particularly with respect to historical archaeology and cultural heritage management in Australia and the United States. Anschuetz et al. (2001) and Johnson (2007) identify this divergence in landscape approaches as originating in previous theoretical debates. Neither considers the divergence intractable, each viewing landscape as a potential bridge that can accommodate traditional spatio-temporal methods and post-modern interpretations.

According to several commentators the most valued aspect of landscape to archaeology is its inherent temporality (Ashmore 2004, Bender 2002, Ingold 1993). Although, according to Anschuetz et al. (2001:184), "The question that remains is not whether landscape concepts are useful in archaeology… The question is whether archaeology can contribute to a systematic, scientific explanation of landscape dynamics over time". The approach I have adopted from this plethora of landscape platforms is one in which space, time and sociality are each considered as equally important and essential components of landscape.

Approach used in this thesis

I have adopted an approach that uses various aspects from the discussion of landscapes above. It begins with the general implication from Anschuetz et al. that perhaps it is archaeology that has something to contribute to landscape studies, rather than the reverse. However, Anscheutz et al.'s (2001) request that archaeology's contribution be to a 'systematic, scientific explanation of landscape dynamics over time', seems too narrow. This doesn't mean that I reject the scientific method, and its epistemologies of knowledge creation; or that a project should not be undertaken in a systematic fashion. Nor do I reject that an essential component of landscape is temporality, which is now axiomatic. What appears confining is a notion that landscape can only be a systematic and scientific endeavour, and that explaining the diachronic change of landscape should be the ultimate goal. I believe Anscheutz et al.'s (2001) concept of landscape largely aligns with Ingold's (1993), notion of a fundamentally temporal landscape where landscape is a lived concept that embodies the cognitive contexts of experience and imagination in the process of dwelling. For Ingold, "landscape is constituted as an enduring record of – and testimony to – the lives and works of past generations who have dwelt within it, and in doing so have left there something of themselves" (Ingold 1993:152). However, what Ingold provides in his derivation is a primarily physical landscape that is itself an artefact of the ontology of being. Unfortunately, what Ingold provided was a physical manifestation that somehow explicitly avoided the spatial.

I believe that archaeology's contribution can be through landscape, to a better understanding of place. Within that concept of place is the multi-vocality of experiences that may be apprehended; the fluidity of place across topographical space as expressed in multiple experiences, and any permeability through time that such multiple experiences may afford.

To provide some theoretical rigor to this position, the archaeological work of James Delle (1998) was crucial. Delle's work was in part an adaptation of Soja's work on spatialities in geography, and Soja quite explicitly viewed his task as representing the work of Henri Lefebvre to a wider audience, and highlighting the contribution to spatial study of Michel Foucault (Soja 1996).

Soja begins by identifying that the traditional empiricist explanations for an ontology of being are derived from the dialectical relationship between sociality and historicity. In other words, no human experience can be considered that does not have a historical or social referent. Spatiality is the seemingly innocuous insight that not only does any form of socially mediated experience have a historical precedent; it also has an inherent and undeniable spatial reference. Soja acknowledges that the spatial component has not been completely ignored but it is most often, "peripheralised into the background as reflection, container, stage, environment or external constraint upon human behaviour and social action" (Soja 1996:71). Hence, Soja adds a third element, spatiality, to the ontology of being; creating a tri-alectic of being, composed of three dialectic relationships, (Soja 1996:71). Figure 2.1 represents "what the world must be like for us to have knowledge of it" (Soja 1996:70). A significant feature is that the ontology of being comprises three dialectical relationships none of which can be understood without the others or as Soja states none are "epistemologically privileged" (Soja 1996:72).

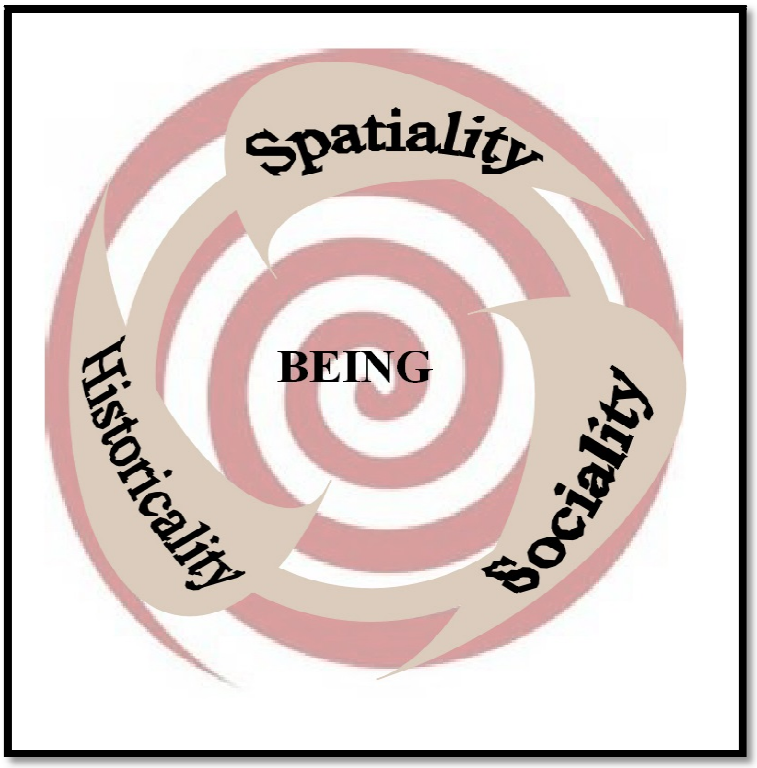


Figure 2.1 Diagrammatic representation of an ontology of being (after Soja 1996:71)

Soja explains spatiality and the epistemology of space by returning to Lefebvre. Spatiality is itself conceived of as a trialectic, or three interdependent dialectical relationships. A firstspace called *perceived space* is defined, that encompasses the majority of spatial knowledge that has been the product of western thought. It comprises the material and measurable concepts of the built environment, and the relationships between people and their environments. Firstspaces are those that provided the basis of a positivist geography. Attempts at elucidating the social production of spatial patterning are also viewed as an expansion of firstspace explanations, these go as far as to include "an evolving sequence of changing geographies that result from the dynamic relations between human beings and their constructed as well as natural environments" (Soja 1996:77). It could be conceded that this level of complexity encompasses some landscape

approaches used in archaeology. Despite the dynamism, Soja views these explanations of firstspace as one way, from historicity and sociality towards explanations of space. Secondspace or *conceived space* is generally interpreted as a reactionary response to firstspace constructions. They provide the opposite route, from the explanation of space to the physical manifestations of it. Secondspace is characterised as being the discursive product of the mind, "In its purest form secondspace is entirely ideational, made up of projections into the empirical world from conceived or imagined geographies" (Soja 1996:79). Secondspace does not deny firstspace but regards knowledge of firstspace as "comprehended through thought" (Soja 1996:79). Soja expresses concern that secondspace epistemologies had for decades been the dominant form of spatial epistemology, whereas firstspace was the dominant form of disciplinary practise. The inherent problem was that alternatives to the hegemonic secondspace epistemologies were silenced. Thirdspace, or *lived space* or *social space*, is a reconceptualising of the firstspace-secondspace dualism into a thirding. The thirding, and the provision of new pathways within new dialectics, is viewed as a means of re-invigorating and resolving the limitations of the existing duality (see Figure 2.2). Thirdspace, based on Lefebvre's Spaces of Representation, is viewed as a counter-space with the properties of "subordinate, marginalised and peripheral positioning" (Soja 1996:68). From this position Soja views *social space* as constituted by political choice, wherein social space becomes the strategic location for the transformation of all spaces, and the space of social struggle (Soja 1996:68).

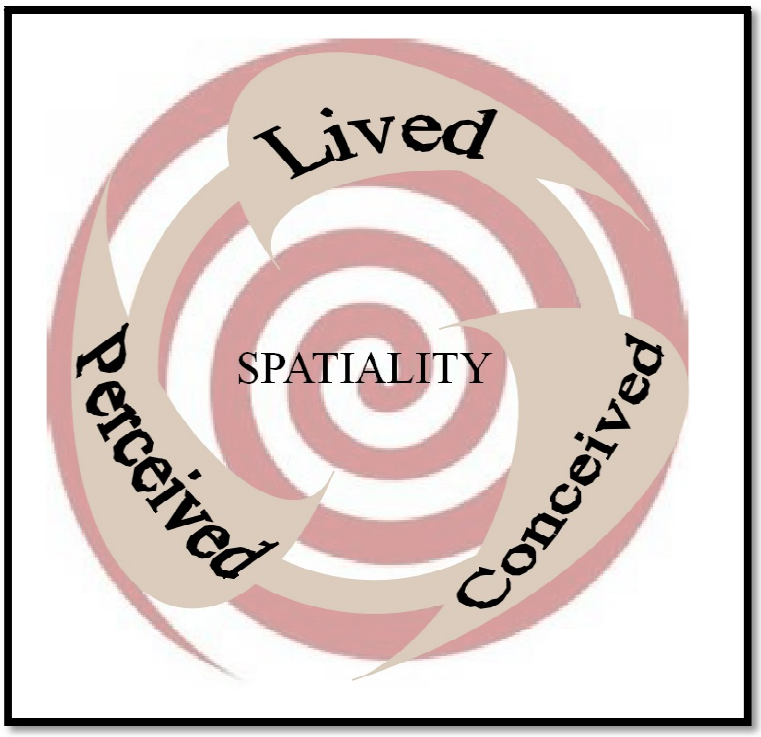


Figure 2.2 Diagrammatic representation of the tri-alectics of spatiality, (after Soja 1996:74)

In his examination of pre and post emancipation coffee plantations in colonial Jamaica, James Delle developed spatialities as a means of eliciting the nature of relationships between planters and the enslaved. Identifying the transition period from slavery to emancipation as a local point of crisis in the Jamaican colonial capitalist system, Delle's proposition was that, "the organizational logic of space (e.g., house forms, field arrangements, town plans) is an intricate and inherent element in any such period of labour restructuring" (Delle 1996:37). Citing Werlen (1993), Delle constructs his spatialities for archaeology around the three phenomena of material space, cognitive space and social space, which appear to be adaptations of firstspace, second space and thirdspace respectively. This is illustrated diagrammatically in Figure 2.3. Delle considers space itself as a form of material culture, where material culture is defined after Wobst, as a "reflexive material" that "must both be produced by human behaviour and in turn affect the

subsequent pattern of human behaviour" (Delle 1998:37). Delle's spatialities are both product of and producer of social relations. This is analogous to the reflexive properties ascribed to landscape, for example, "The landscape is never inert, people engage with it, re-work it, appropriate and contest it" (Bender 1993:3).

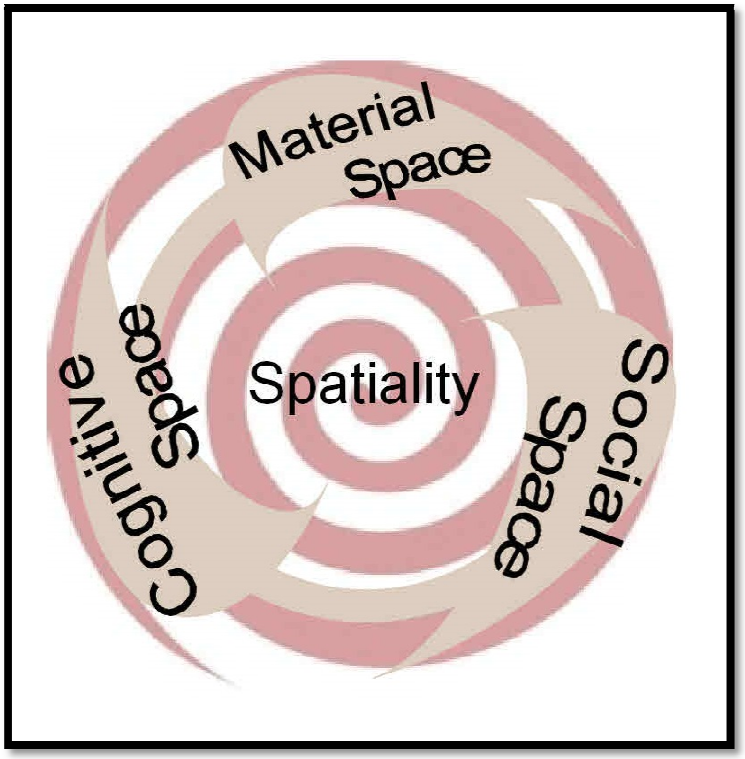


Figure 2.3 Diagrammatic interpretation of Delle's spatialities.

The three spatial phenomena exist "simultaneously and are interdependent; one cannot exist in isolation from any other; changes in one will theoretically result in changes in the others" (Delle 1998:38). Material space is defined as the "empirically measurable universe" it consists of anything that has been humanly created or is mediated by human thought and can include so-called natural space (Delle 1998:38). Significantly, the meaning associated with any given material space is not immutable and can change as the use of that space changes; meaning may also change with variations in social or spatial context. The second component of spatiality is

cognitive space that Delle views as a "mental process by which people interpret social and material spaces" (Delle 1998:39). Cognitive space incorporates the creation or reproduction of physical and imagined concepts of material and social spaces. Thirdly, social space is seen as defining relationships at the personal and cultural levels. Delle's view of social space "refers to spatial relationships that exist between people and that are experienced in material space" (Delle 1998:38-9). As these relationships occur in material space, control of material space is viewed as a potential determinant of how social relationships develop.

While Delle is able to separate the three spaces for the purpose of definition, in practise, when he derives his spatialities, social spaces are not independently referred to. This is perhaps because social space is partly defined as the complex set of relations that defines a person's spatial relationships with others. In developing his spatialities these social spatial relationships appear implicit. Delle appears to simultaneously construct spatiality and social space, with the nature of the social space rapidly transformed from the unequal power dialectic existing between slaves and their overseers into the explanatory framework of spatiality.

Delle acknowledges three underlying elements to landscape, "landscape archaeologists examine relatively large spatial units…. the spaces that people occupy are endowed with multiple meanings, meanings that change with social situations, and that change with time…(and) material landscapes both shape and reflect social relations" (Delle 1998:14). Delle did not outwardly identify the perceptible synchronicity between lived spatialities and landscape, choosing instead to reference the utility of space as material culture back to the positivist agenda of middle range theory building. His use of landscape is not developed further, and is only

specifically used in the context of a physical backdrop represented in contemporary maps. In this study the parameters provided for *lived space* and *cognitive space* by Soja and Delle share the same qualities as Ingold's taskscape. *Material space*, Ingold's landscape; rather than the temporalised product of taskscape, becomes artefact in Delle's conception of space as a form of material culture.

My approach develops three archaeological landscapes, namely; *water*, *mobility* and *authority*, each considered to be an essential component of a nineteenth century gold field. These three elements were chosen because they are pervasive themes in much of the literature of the gold rushes and gold mining in general in Australia. Beyond the location, nature and extent of any gold deposit, they were significant influences on a gold field's development. In stating this it is recognised that Wegner (1995) and Mate (2010) have demonstrated examples of technology and mine practises that are drawn from the unique experiences of particular mining populations, wherein the development of the gold field is a social manifestation of those experiences. However, these examples do not negate the significance of water, mobility and authority as components that underpin other influences.

The trialectic of material, cognitive and social spaces are developed for each archaeological landscape, (see Figure 2.4). Additional to the dialectical relationships between these spaces a further overarching dialectic was conceived for each archaeological landscape, this dialectic is viewed as the engine of transformation for the archaeological landscape being developed. The cognitive space for the three landscapes were primarily derived from historical documents comprising, legislation, reports, letters and newspaper articles; from which some contemporary

perspectives of gold mining were apparent. The material spaces of the gold field were primarily defined from the archaeological research program but this is guided by the contextual history developed as a part of this thesis, (see chapter 3). The social spaces, the spheres of interaction between people, are derived from primary historical sources; they provide the locus for the development of the archaeological landscape. Social space and archaeological landscape are, for the purpose of explanation, created independently rather than simultaneously. In this sense they differ from what Delle attempted. Hence, archaeological landscape and spatiality are not synonymous. Archaeological landscapes in this thesis are a theorised version of the ontology of the historical and material records of Cape River gold field. As landscape they exist as working hypotheses; arguments of best fit.

Figure 2.4 Diagrammatic representation of the three archaeological landscapes

The theoretical approach of the thesis will be applied in chapters 6 to 8; the following chapter addresses Research Aim 2, by providing an historiography of the Cape River gold field.

Chapter 3 Contextualising place: History at the Cape River gold field

Introduction

To date, no academic or published sources exist that treat the Cape River gold field as the primary subject of an archaeological or historical investigation. As was outlined in Chapter 1, due to the emergence of the Ravenswood and Charters Towers gold fields in the late 1860s and early 1870s respectively, the gold production figures for the Cape River gold field are relatively small and have often relegated it to the role of preface, addendum or curiosity in most of the literature. Hence, an historical context is required that privileges and emphasises this gold field. The primary sources are most vivid and thorough for the field's initial period, and this is reflected in the density of topics covered. The history has been divided into chronological phases, with some discussion of important themes dispersed throughout. In addition to the necessary context, the history also provide part of the evidence and some of the initiative for the cognitive and social spaces that are developed as archaeological landscapes in chapters 6, 7 and 8.

Cape River gold field

The Cape River gold field was primarily an alluvial and deep lead field and its relatively shallow sub-surface deposits, were before the 1980s, most intensively and extensively worked during the first rush and the period that followed which effectively lasted for about six years. This gold rush was not only important locally, it became prominent regionally and inter-colonially as information about it was disseminated by newspaper, books, reports, telegraph and exhibitions.

Inevitably though, public interest in the diggings waned when newer and larger finds were prospected in the region. Cape River gold field disappeared from public view when it was subsumed into the jurisdiction of the Charters Towers Gold Commissioner, and when the railway line that passed close-by after 1884, the public gaze narrowed to Pentland and points west.

Phase 1 - Prior to 1861

The first phase of occupation of the region to become known as the Cape River gold field is the period preceding contact with Europeans. Loos (1982) characterises north Queensland Aboriginal society prior to European contact as a scenario of variably sized groups of restricted nomads who ranged over particular areas of land. A group was bound to the land spiritually, through beliefs that certain physical topographic features were the result of creation activities expressed in stories of the dreaming. The significance of land for Aboriginal people in general has been summarised as:

> "In all places the land is the enduring symbol of the power which gave life to it. The people, being a special part of this creation, hold the land and its creatures in trust for the great beings on their instructions, and cannot leave it, give it to others or allow its injury except at the peril of their existence. Those who lose their dreaming are themselves lost; cut adrift from their spiritual roots and able to exist only in flesh and blood. When this dies, nothing of it survives and the cultural point of existence is wiped away" (Godden and Malnic 1982:15).

In addition to spiritual attachments, the immediate land was also the source of all the requirements for physical existence. In the north Queensland setting Allingham saw that "the Kennedy region provided a generally secure environment for its first inhabitants….their selective

hunter gathering regime was in far greater harmony than were the land use practises of the Europeans" (Allingham 1988).

Brayshaw's ethnography and archaeology of the Aboriginal groups of the Herbert/Burdekin region remains the only comprehensive study incorporating ethnographies of the region's Aboriginal people Brayshaw (1990). The Cape River gold field is located in the upper reaches of the Cape River catchment in the Herbert/Burdekin region.

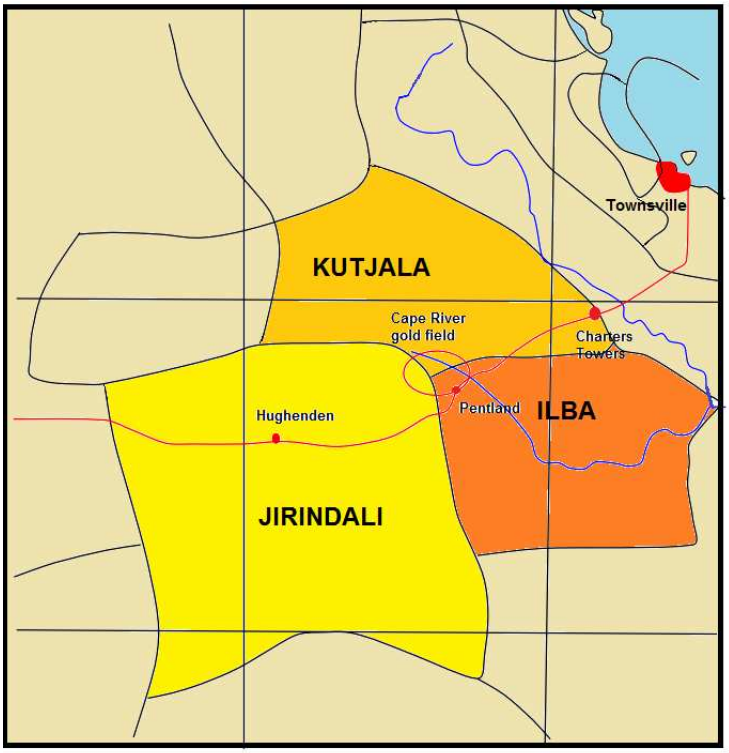


Figure 3.1 Tribal boundaries in the Cape River region (after Tindale 1974).

Brayshaw (1990:34) names the Cape River people as the Yilba (Ilba), derived from Tindale (1974). An examination of Tindale's NE map sheet shows that the Cape River gold field was a border region between the Ilba, Kutjala and Jirindali tribes, (Figure 3.1). Tindale believed that the Kutjala moved south to the Cape River after white settlement Tindale (1974). Chatfield's

information in Curr (1886) presents six loosely defined groups as occupying the Cape River catchment and these are inferred by Brayshaw to be six groups totalling a calculated population of 3,000 people. The upper reaches of the Cape are cited as having a population of 350 (Brayshaw 1990:32). According to Babidge (2004) the people who currently identify as the traditional owners call themselves Gudjal and Kudjala, and do not recognise the tribal names recorded by Chatfield in Curr (1886 (II):468). While detailed knowledge of the population size, tribal boundaries and specific lifeways of the Cape River people is limited, Brayshaw does provide some ethnographic details.

Of the several habitats distinguishable in the Herbert/Burdekin, Brayshaw (1990) states that some inland groups encountered by early European explorers may have occupied riverine areas. There, the availability of a variety of food sources throughout the year was seen as providing the opportunity for a partly sedentary lifestyle, particularly during winter. When travel was necessary, the range of the Cape River groups is defined as extending as much as 300 km to the south-east, while contacting groups near Peak Downs (Curr 1886 II:473).

Comparatively little Aboriginal material culture is cited from the Cape River region, and numerically Brayshaw lists five artefacts and one rock art site containing two monochrome stencils (Brayshaw1990:68,71,124). Curr (1886 II:476) describes some aspects of Pegalloburra tribe rock art but not any locations. Shelters in the more arid regions are described by Brayshaw (1990) as being less elaborate than the thatched grass huts of the coastal groups observed elsewhere in the Herbert/Burdekin, consisting of a framework of two forked twigs topped with a sapling which was covered with bark sheeting and finished with the addition of bushes and

branches. The following from Chatfield is pertinent to the Cape River area, although Mt. Elsie is much lower down the catchment than the gold field;

> "I know that until 1867 this and another quarry in this neighbourhood were frequented by the blacks, who used on the spot to chip out tomahawks, and as only one in three could be chipped into the proper shape the rejected stones were left half finished, and those approved of carried from camp to camp, and polished at leisure. I have seen the latter part of the process (the polishing on a piece of sandstone) going on hundreds of times within a few miles of Mt. Elsie, between '64 and '67...the reason they chipped them on the spot was that when newly dug up they flaked off better than when long exposed to the atmosphere." (Chatfield cited in Brayshaw 1990:158)

Items of personal material culture cited in the ethnographies include mention of sea shell adornments that were obtained from tribes to the south, who had themselves obtained the shells when visiting the coast. Additional ethnographic details regarding ritual elements, particularly mortuary practices in the area are also widely discussed for the Cape River groups (Brayshaw 1990:44-47).

Despite a paucity of evidence that elicits the actual extent and complexity of Aboriginal occupation in the upper reaches of the Cape River it appears that approximately 350 people of the Yilba or Kutjala tribes, suffered the initial influx of pastoral settlers, their stock and their guns. These were followed in less than five years by a wave of miners and settlers that at a regional scale, has never abated.

Phase 2 - 1861-1867 - Contact and conflict

The Kennedy District was one of the administrative and electoral districts created when Queensland obtained separation from New South Wales in 1859 and incorporates the entire Herbert/Burdekin region referred to previously, (see Figure 3.2).

The alienation of Crown land for pastoral purposes in the Kennedy District began in 1861. Prior to this time Aboriginal contact with Europeans had been the result of European exploration, both coastal and inland, (see Loos 1982:3-19 and Bolton 1970 for overviews of exploration in north Queensland, and Morrill 1863 for a firsthand account of Aboriginal Life prior to settlement of the Kennedy District by shipwreck survivor James Morrill). In a review of European explorations resulting in contact, Loos (1982:7-18) concludes that Aboriginal reaction to the European presence varied greatly. Based as it is almost entirely on European testament; the outcome of contact appears to be dependent upon the skill of the European leadership to resist confrontation. The level of Aboriginal acceptance of further contacts in an area appeared to be partly dependent upon the outcome of previous contacts. It is from 1861 onwards that the most dramatic effects of contact between the Aboriginal groups of the Cape River and European pastoralists in the region began.

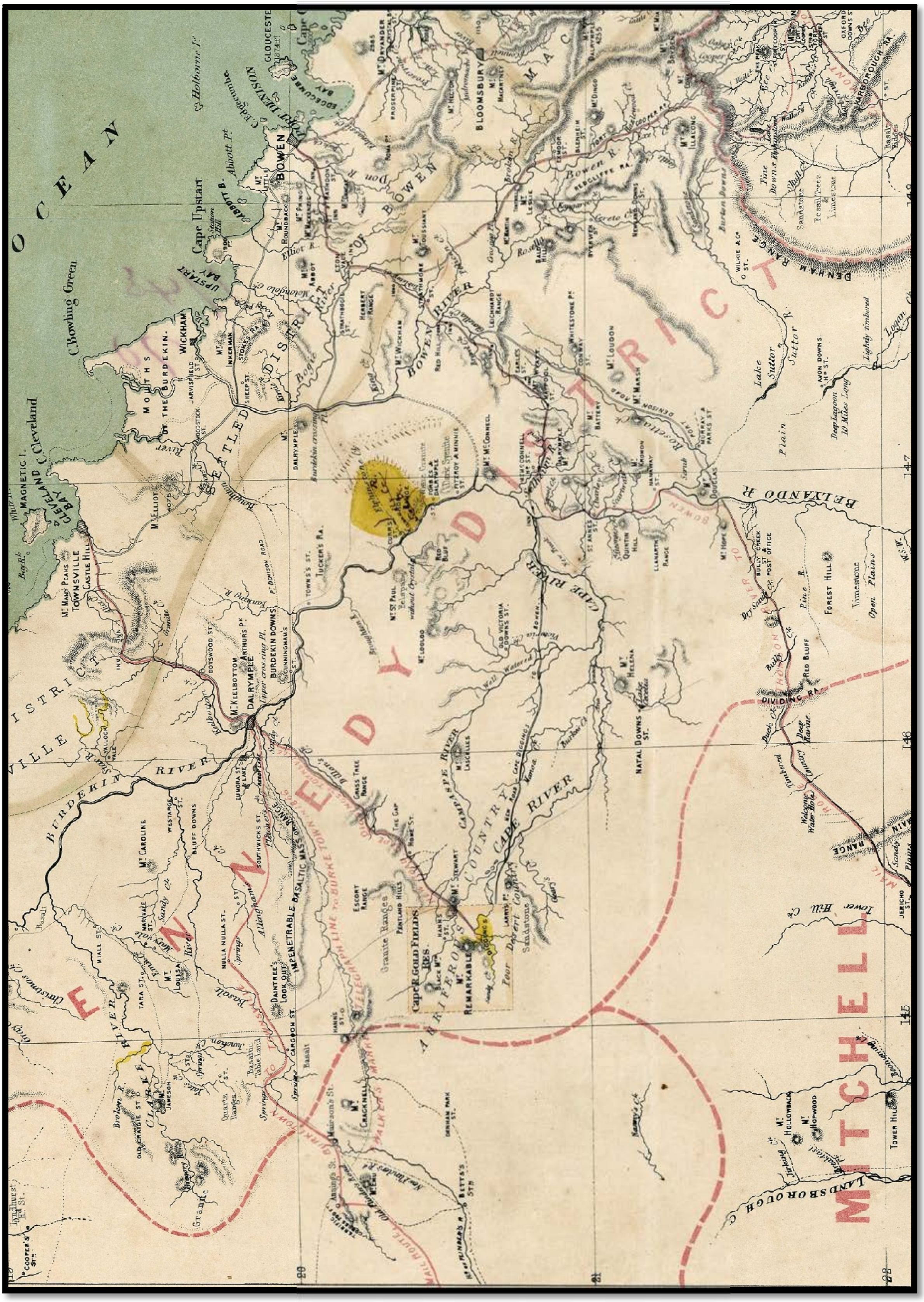


Figure 3.2 Kennedy District showing Cape River gold field, (after Ham 1868, Queensland State Archives 1868d)

Loos (1982) deals with contact as a differentially patterned process in each of four frontiers: *pastoral*, *mining*, *rainforest*, and *sea*. Each frontier developed as Europeans attempted to colonise the land or sea to exploit the resources of the land and seascapes encountered; all are considered by Loos as industrial frontiers. Loos presents conflict on the pastoral frontier after 1861 as developing in stages wherever the frontier is defined but is not regarded as a strategic regional response by an Aboriginal hierarchical elite. The first stage appears to be one of initial conflict that was rapidly superseded by a hiatus in hostilities that lasted for up to four years in several areas.

Loos cites Berndt in arguing that due to, "limitations of authority in social range and scale Aboriginal political organisation was poorly developed" (Loos 1982:7). Additionally, in north Queensland, importations of cultural aspects from Papua are reported as "grafted on to the existing culture without changing it fundamentally" (Loos 1982:7). Despite continuous contact from the north, Aboriginal society is perceived as being "ill equipped for European invasion" (Loos 1982:7).

Allingham (1988) also provides a very detailed account of the effects upon traditional Aboriginal life of the occupation of pastoral runs in the Kennedy District from 1861 to the early 1870s. The response of Aboriginal peoples to the invasion of European settlers is presented as a modified four-stage model. It is suggested that for the Kennedy, "an initial stage of 1) acceptance and hospitality seems relevant, followed by 2) fear and avoidance, then 3) violent resistance and finally 4) intelligent exploitation" (Hartwig 1954 cited in Allingham 1988:146). These stages are explored by Allingham by reference to the actions of pastoralists and government that

precipitated a range of Aboriginal reactions. More importantly however, are the effects that the imperative to resist had on traditional patterns of life, see also Curr (1886(II):469-470). Moreover the lack of an organised and humane response resulted in pastoralists and police wielding inordinate power (Allingham 1988:147).

With the arrival of the pastoralists and large numbers of stock, a new set of attitudes were imported. Many squatters came from southern colonies and brought with them a fear of Aboriginal attacks and the belief that the land would have to be forcibly wrought from the Aborigines (Allingham 1988:147,176-178, Loos 1982:22). To assist pastoralists the Queensland Government had followed the New South Wales' practice of instituting a "Native Police" force and supplying detachments to rural areas. Such detachments were located near Bowen from 1863 and later from Dalrymple in 1868 (Allingham 1988:150). The Native Police were small groups of mounted and armed patrols that utilised Aboriginal troopers under the command of European officers. According to Loos (1982:25) they had three roles: to prevent Aboriginal depredations, to act as a punitive force and to capture Aboriginal criminals. Following an attack or complaint, reprisal attacks were conducted by the native police against potential 'offending groups'. Such attacks are presented as often being excessive and indiscriminate and not directed on the basis of evidence. The actions of these patrols were also frequently brutal and lethal; and dispersal was interpreted as meaning 'shooting them down' (QVP 1861:151 cited in Allingham 1988:148). Additionally, pastoralists were also heavily armed, and Loos (1982:26) presents evidence that contrary to a pastoral lease requirement that allowed Aborigines use of the land, the unofficial view was that squatters needed to be able to protect themselves as they saw fit. The native police succeeded in rapidly 'clearing' several areas within the Kennedy. Their brutal methods

ultimately resulted in an estimated minimum of 5,000 Aboriginal deaths from an estimated North Queensland population of 60,000 to 70,000 (Allingham 1988: 143; Loos 1982:190; Reynolds 1975 cited in Allingham 1988:163).

Following an inevitable contraction in resources available to Aboriginal groups, a rise in violence against pastoralists, their employees and stock occurred. Resultant reprisals by the native police initiated retaliatory actions by Aborigines that targeted, "isolated travellers and workers" (Allingham 1988:154) but also included an increased destruction of stock beyond that required for food. The Aboriginal response is regarded as a guerrilla campaign that was waged between 1864 and 1868, through which time large tracts of land were considered 'pacified' by the native police. Aboriginal resistance continued where the natural geography afforded them protection, food and water (Allingham 1988:158, Loos 1982:58). The initial actions of the Kennedy pastoralists was to follow the accepted wisdom of southern colonies by totally excising Aborigines from the land hence, 'keeping them out'. This prevented the perceived problem of competition with stock for resources, the dispersal of stock across large unfenced runs and the hunting of stock. Once these measures had sufficiently disrupted the Aboriginal system of living, mainly through denial of access to food resources, those groups who came to pastoral stations for food were initially assisted, hence 'letting them in'. After this however, many Aboriginal groups came under an increasingly coercive control (Babidge 2004, Loos 1982:33-35). By 1868, only seven years after settlement, and the fierce upholding of 'keeping them out', many Aboriginal people had been subjugated to the extent that they were being 'let in' at many stations in the Kennedy. Within the Kennedy, a low level of conflict is found occurring into the 1880s in areas close to Bowen and other 'cleared' areas (Loos 1982:55-61). Allingham (1988:163) concludes:

"The old order was completely broken down, with tribal territory invaded, religious sites desecrated, the destructive impact of domestic animals and, as often happened, the deliberate breakage and theft of Aboriginal artefacts"

Amidst this decline, Allingham's fourth phase of 'intelligent exploitation' appears to be the only strategically pragmatic choice available for a people whose cultural tradition had previously existed in the region for millennia (Brayshaw 1990:169,185,192,210; Campbell 1982 cited in Brayshaw 1990:210).

The second frontier discussed by Loos is mining. Loos differentiates this frontier as one where the opening up of gold or mineral fields was the first encroachment of settlement on Aboriginal lands. Conflict on the mining frontier was essentially caused by the occupation of Aboriginal land to procure gold, and was different from that on the pastoral frontier due to three inherent characteristics of mining. Firstly, the physical dislocation caused by the more extensive pastoral frontier meant the mining frontier was more likely to be occupied by previously displaced Aboriginal groups. The presence of large numbers of mobile miners on the land, and the utilisation and destruction of creeks provided a constant provocation. Miners and carriers provided further provocation through the kidnap and bondage of Aboriginal women and children, the former used for sexual gratification, and all as a cheap and ready supply of labour (Loos 1982:56). Secondly, the terrain that mining occurred in was often suitable for Aboriginal resistance. Thirdly, the relatively isolated locations of mines made miners more vulnerable to attack.

Compounding these three characteristics were the risks that miners were prepared to take, which made them more vulnerable to attack. Loos notes a general poverty, combined with a widely recognised inherent optimism that resulted in many miners travelling unarmed, alone or in small groups. Further, the native police could not effectively protect miners over the large areas being prospected, nor could they patrol the miner's secret locations (Loos 1982:68-71).

The most significant area of conflict on a mining frontier was the Palmer River gold field on Cape York Peninsula. Loos (1982:62-87) details many instances of Aboriginal retaliation that are reasoned to have been caused by intense provocation by miners. Due to their own transient presence the miners did not entertain the need for co-existence with Aboriginal groups. Additionally, mining methods were destructive to some resources and prevented access to others. Areas at or beyond the fringe of pastoral settlement, the Palmer, the Gilbert, Cloncurry and the Etheridge, were all areas of increased vulnerability for miners (Bolton 1970, Brown 1974, Loos 1982).

In the Cape River region it is clear that mining followed pastoralism, exacerbating the strangulation of resource supply for Aboriginal people. It is probable that the instigation of mining at Cape River constitutes a specific example of a hastened Aboriginal decline due to mining. Of the estimated 350 members of the Mungerra tribe of the Upper Cape only 150 remained by 1886 (Curr 1886(II):464).

I believe that the significant differences in the way the pastoral and mining frontiers are defined by Loos (1982) in terms of population density, resource depletion, environmental impact, and persistence, allows room for the recognition of a secondary frontier in the Cape River area. In the secondary frontier the resident population comprises the mutually antagonistic pastoralist and Aboriginal groups, both of whom have to contend with a new intrusive population that is superficially of little benefit to either group, and is in competition for the most valuable of resources; land. Irrespective of whether mining persisted in an area or not, both the deteriorating Aboriginal lifeway and the evolving pastoral frontier were permanently altered by mining. As Lawrence has stated, “the frontier and gold rushes acted to mutually shape and transform each other” Lawrence (1995a).

At Cape River the advancing frontier of the mining industry met an Aboriginal population not only aware of Europeans but also potentially aware of the effects of intrusion by miners. As mentioned previously, the Cape River tribes are known to have ranged as far south as Peak Downs. Here they are likely to have been in contact with Aboriginal groups who had previously engaged with mining on the Peak Downs gold field as far back as 1864. Further, many of the miners at Cape River overlanded from Peak Downs to the new field possibly using similar or the same routes as the Aborigines (Bolton 1970:45, Gibson-Wilde 1984:78). By 1867 the Aboriginal population had responded to the pastoral intrusion, and despite evidence of regional conflicts in surrounding areas throughout the early mining period, there is a lack of evidence of a violent response to the mining intrusion at Cape River gold field (Loos 1982:195-202). Whether dispossessed by pastoralism or either unwilling or unable to challenge the territorial dominance of such a large intrusive population, conflict at this limited frontier is not recorded.

Babidge has highlighted the manner in which Aborigines were portrayed by Europeans. These range from the scientific categorizations evident in Curr and Roth to the fear, disdain and detached curiosity of townsfolk when Aboriginal groups ventured into white settlements (Babidge 2004: 31-33, 42, 46). Such curiosity was exhibited at the Cape River gold field;

> "On Saturday last we were favoured with a visit from 100 blacks, men women and children, who walked into town in a state of nudity – a very imposing sight. I could only make out that they were hungry. They collected about the office of Mr Hill CPS who played on the cornopean for them, at which they were highly pleased and held a grand corroboree to the music. They are still knocking about the diggings" (CBE 1868-70:10.4.1869).

The presence of Aborigines in towns at all could be viewed as an act of defiance, curiosity or desperation. It indicates the possibility that Aborigines were willing to risk their lives at the beginning of Allingham's process of intelligent exploitation.

At Cape River there appears to have been two colonizing events. Firstly, the incursion of pastoralists onto Aboriginal lands and secondly the incursion of mining, into this disputed territory. The advent of a mining population does appear to have been neither embraced nor resisted by the pastoralist; and the Aboriginal population was to suffer further. Ironically, the first miners were also reluctant to share their discoveries with others. At Dolly's Creek, Lawrence outlined a simple three phase structure to characterise the events of a gold rush. Phase 2 – the contact phase described above, corresponds to Lawrence's *initial discovery phase*

(Lawrence 1995a:4). During this period of contact at Cape River pastoralists had become aware of the gold on the land but choose not to exploit it, which had been a common experience elsewhere, (see Blainey (2003) and Fetherling (1988)).

Phase 3 - early 1867 to October 1867 - Headstart on the rush

The actual rush phase of the gold rush as described by Lawrence, parallels Phases 3 and 4 at Cape River (Lawrence 1995a:4-5). At Cape River the rush phase is separated into two phases, where an early fluid period of exploitation (Phase 3) that might have resembled the protracted and larger rushes of two decades earlier in New South Wales, Victoria and California, can be differentiated from a later, more ordered development of the gold field, that was possibly facilitated by the arrival of the Gold Commissioner (Phase 4).

In relation to the earliest large-scale gold rushes (1848-1852), a rush has a restricted meaning as a short-lived phenomenon, and broadly refers to the initial exploitation of the alluvial gold, prior to the advent of company based reef or lead mining (Lawrence 1995a:5). A rush has been defined by Moore as, ‘a sudden movement of numbers of people to a newly discovered goldfield; the people who take part in such a movement’ Moore (2000). Within the context of Cape River gold field, an isolated and widely dispersed field within which numerous diggings were rushed over eighteen months, the rush might have more closely resembled those rolling rushes of the 1850s. Lawrence recognised that the latter rushes of the 1860s in Victoria were subtly different from those of the 1850s, “Fewer people were involved, rewards were less, and technology and transportation links were different” (Lawrence 1995a:51).

In some respects the early rushes in north Queensland during the 1860s were different again from their contemporary Victorian rushes. Mining was on the fringe of a scattered and isolated European settlement; transport links were a problem again and the climate was fickle. However, the industry was positively influenced by the wealth of mining expertise available from other colonies and countries. This expertise was a priority in a place such as Townsville still unsure of its own place in the colony and the world. The following comment admires some new diggers, subtly acknowledging a lack of local expertise, "sixteen diggers arrived from Ballarat Diggings via Melbourne….From their appearance we have no hesitation in saying they are the right stamp of men to test our goldfields" (CBE 1867a: 21.9.1867).

The discovery of gold is often attributed to the individual who publicises the find to the extent that further interest is generated, for example Edward Hargraves is widely known for his efforts at publicising the first finds in New South Wales. However, Blainey (2003:6-8, 10-12) cites both New South Wales and Victorian gold fields as regions where the knowledge of the presence of gold had not resulted in its immediate exploitation. This also appears to be the case at Cape River. The Hanns and their partners, who leased most of the land in the vicinity of the Upper Cape River, were aware of the presence of gold on the land. Frank Hann of Lolworth Station, diarises the arrival of several early prospecting parties in March of 1867 being shown 'gold country' (JCU archive Hann Papers 1866-1875:5.3.1867).

The discovery of gold in the Kennedy District had followed pastoral expansion but was not directly a result of the prospecting efforts of pastoralists. Richard Daintree; both pastoralist and geologist, is the notable exception as the lack of a payable find until his explorations of the

country surrounding his Maryvale property attests. While it may be true that north Queensland pastoralists were too busy with stock preservation, self-preservation, a harsh climate and dwindling markets for wool, they were perhaps also fearful of the effects a significant find may have had on their pastoral leases, all of these factors may have restricted their involvement in the development of the gold resource.

It is paradoxical that Richard Daintree and William Hann, while both aware of the presence of gold did not seek to exploit its potential. The £1000 reward they could have claimed at this time would have assisted their struggling pastoral holdings. Rather, Daintree travelled to Melbourne in early 1866 securing £6,000 of loans. Bolton reveals an altruistic tendency in Daintree, 'Once the goldfield is discovered, it should be left to the diggers, and the geologist should go to another part of the country' (Daintree 1869:357 cited in Bolton 1965). However the paradox is that this opinion did not prevent the partners' unsuccessfully attempting to exploit a copper mine at the Einasleigh River ('Lynd'), which although yielding rich ore was thwarted by the high cost of cartage to Townsville (Bolton 1965:12).

It is clear from Frank Hann's diary (JCU Archive Hann Papers 1866-75) that prospectors had reached Maryvale and Lolworth by early 1867. An entry for New Years Day reads, "Working about home in the morning a digger came for beef staid (sic) the night.." and on the 5th of March "I went out to show the diggers sum (sic) gold country" followed a month later by, "saw where the diggers had taken cattle over to the Cape I followed the tracks to there (sic) camp they had killed one for beef, I did not say much to them". Notably, this is a much less severe response than pastoralists would have meted out to local Aborigines for the same transgression. Although

Daintree and his partners were clearly not interested in developing the field for themselves a gold rush probably appeared both unavoidable and imminent. It is probable that Hann's entries for the 8th and 9th of June record Daintree's visit to Cape River, possibly to verify the names of the prospectors, "Daintree and I started for the diggins (sic) Camped at the Black Mountain on the Cape" and "we went to the diggins (sic) staid (sic) all night" after which on the 11th of June "Daintree went to Maryvale". This immediately precedes the public announcement of the gold find and probably represents Daintree verifying with the diggers that the field was payable. The events were also diarised by one of the prospectors, Thomas Ellem (Queensland State Archives 1868b). Ellem does not mention Daintree's involvement but confirms that he and his party had been prospecting in the region at least since November 1866. He records payable gold at Oxley Creek on March 18th, 1867, payable gold near Black Mountain on April 1st 1867 and payable gold in Golden Gully on April 27th 1867. In a letter to the Police Magistrate at Townsville dated June 12th, subsequently published in the Cleveland Bay Express on July 13th 1867; Daintree names the six prospectors and benevolently credits the find to them, as discoverers of the Cape River gold field (CBE 1867a:13.7.1867). The publication of the letter served several purposes; in it Daintree emphasises his credentials to the public, and reminds the Government of his previous reports regarding the auriferous (gold bearing) nature of the region. Daintree's correspondence to the Police Magistrate was a little ambivalent but despite this a move to the field commenced, although it appears tempered by Daintree's warning about the scarcity of water (Bolton 1970:45).

Although Frank Hann records the presence of diggers at a scale large enough to be a diggings, followed by the early presence of a hawker taking his dray to the diggings (JCU Archive Hann

Papers 1866-751866-75:14.6.1867) the earliest publicized mention indicating when a movement to the field had begun is a reference by W.B Clarke, quoting R. Daintree, expressing that in mid-July 1867, 100 people were working in Specimen and Golden Gullies (CBE 1867a:12.10.1867). Previous to this the Townsville police magistrate James Gordon had written to the government on 5th July 1867 alerting them to the approximately 100 miners on the field, and supporting the letter written by the reward claimants. Following his initial letter Gordon had sent several updates in August and September on the progress of the field (Queensland State Archives 1868c). The population increased steadily until January of 1868, when there was a dramatic increase that constitutes the rush phase of this field, (see Figure 3.3).

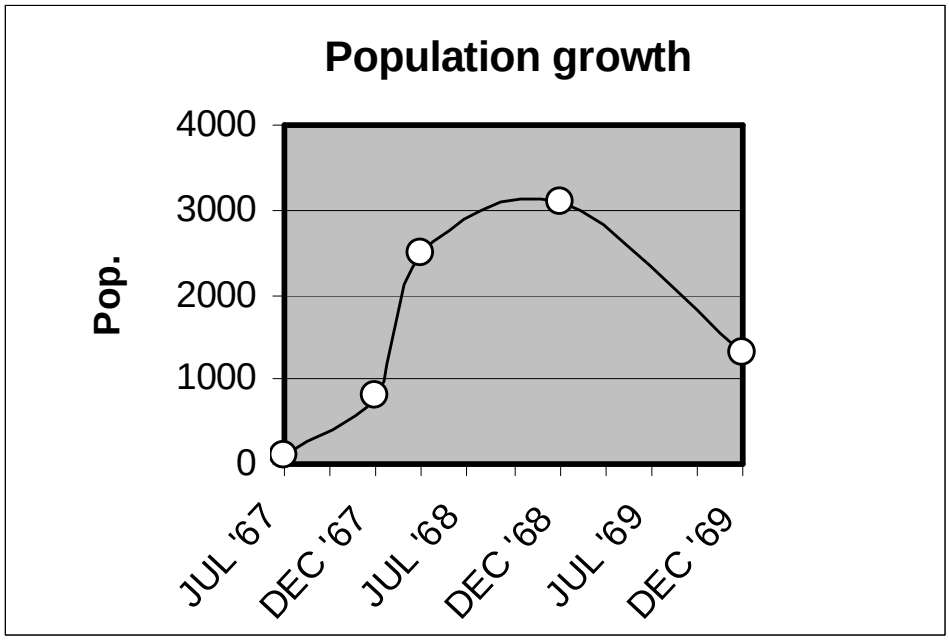


Figure 3.3 Population figures at Cape River July 1867- Dec 1869

The Cleveland Bay Express and Northern Advertiser had ceased publication on 6th April 1867 and resumed as the Cleveland Bay Express and Cardwell Advertiser on 29th June 1867. For two months Townsville citizens were reliant on the Port Denison Times of Bowen for news,

including the initial stages of the opening up of the field during which Daintree had made the announcement on behalf of the prospectors for the gold. It had been left to the Port Denison Times to herald the 'discovery' of the new field but this did not materialise in print and the first definitive mention of the Cape River is an article that presumes knowledge of the existence of the Cape River diggings (CBE 1867a:6.7.1867). Both papers reported similarly about the diggings during 1867. Over the corresponding period both papers published reports from the field. Initial reports from the Cleveland Bay Express were sketchy although the editorial was positive in its assessment of the future prospects of the field for Townsville and the region (CBE 1867a:13.7.1867). It is evident through the reports of the Port Denison Times how crucial securing the field was to Bowen; likewise the Cleveland Bay Express vigorously promoted Townsville. Some of the Port Denison Times reporting of the diggings reflects a realisation that Townsville was geographically better suited to servicing the new field; although Townsville's position was not recognised until the arrival of Gold Commissioner W.S.E.M. Charters in October 1867.

By early August, Townsville businessmen were beginning to organise the infrastructure needs of the field; actions that were designed to secure and consolidate an economic foothold for Townsville. Likewise the same needs were being discussed in Bowen. Two of the earliest identified needs were a surveyed road from each town and provision of a Government gold escort (CBE 1867a:20.7.1867; PDT 1866-68:13.7.1867). For Townsville to benefit from the gold it had to secure the route to the fields, the attendant shipping and trade from the miners and traders travelling to the field, and additionally the export of gold through Townsville customs. The route via Townsville was 100 miles (160 km) shorter than via Bowen. The major difficulties

encountered on the journey from Townsville were the climb up Hervey's Range through Thornton's Gap and crossing the Burdekin River. Comparatively, Bowen residents considered their town had a superior harbour, was accessible to the diggings without crossing the Burdekin River, or having to climb a mountain range (PDT 1866-68:13.7.1867). By the 3rd of August more infrastructure in the form of a mail route from the inland township of Dalrymple (74 miles by road south-west of Townsville) was proposed for the Cape River, the impetus for this seemed to come from the miners at the diggings, who petitioned the Post Master General (CBE 1867a:3.8.1867). In August the CBE reported that the Townsville Gold Committee had realised that Bowen had already despatched a private gold escort to the diggings, in addition to the Government Surveyor Mr McMillan surveying a 250 mile route from Bowen to the Cape River diggings (CBE 1867a:3.8.1867). Townsville's gold escort hastily followed, with the surveyor E.U. Roberts surveying the route along the way. The shorter distance from Townsville resulted in the two escorts arriving at the field within seven hours of each other. On returning, the Townsville escort had secured 120 oz of gold purchased at £3 12/- per oz. The Bowen escort had secured more gold but had parted with £3 13/- per oz for its 300 oz. It was also clear to these private escorts that the, "Diggers were loathe to part with gold as a rush may be created" there was a belief that up to 1500 oz was being held back by the miners (CBE 1867a:17.8.1867). A Cleveland Bay Express correspondent provocatively stated that the outrageous sum of £5 would have been offered by the Bowen escort for enough gold to secure the permanent escort. This comment was one more in a short war of words fought in the newspapers over which town was to be considered the most suitable as a gold field staging post, port for export and base for the gold escort.

On the field the diggers were apparently concerned over the lack of an appointment of a Gold Commissioner another development in the provision of gold rush infrastructure. Bowen residents suggested a local surveyor named Captain Goodall be installed to the position of Gold Commissioner, possibly attempting to secure the gold field for Bowen, but were informed in early September that a Gold Commissioner had been appointed and that the diggings had been declared a goldfield (PDT 1866-68:7.9.1867).

Until the Commissioner arrived the only authority figure to visit the field had been Bowen Police Magistrate Mr Pinnock, who read the new gold field regulations to an assembly of about 70 diggers (PDT 1866-68:27.8.1867); the report does not mention how this was received, although the Townsville paper sarcastically portrayed some of his comments as paternalistic (CBE 1867a:31.8.1867). A Mr. Fryer reported that the diggers, 'had established a code of rules for their own guidance, allowing amongst other things claims of 30 superficial yards' (PDT 1866-68:24.8.1867).

At the field the miners required food and some had approached Frank Hann at Lolworth Station for meat. Following this Hann recognised the commercial opportunity of the increasing mining population. By 18th June 1867 he was erecting holding yards for stock at the diggings and occasionally slaughtering and butchering a bullock for the miners (JCU Archive Hann Papers 10.7.1867). Within a few months he was selling to the butchers Graham, Brendon and Symes. Hann records several neighbouring and even more distant pastoralists droving stock for direct sale at Cape River, for example "James Anning and his black boy came brought fifty head of cattle for the butcher" (JCU Archive, Hann Papers 1866-75:30.12.1867).

Descriptions of the diggings during this early phase are infrequent, reliant upon correspondents in the field. The miners had quickly realised the need for organisation as a means of self-protection and some mining rules were put in place, although the nature of these is unclear. The need for infrastructure had become apparent from both the miner's and townspeople's perspectives but for different reasons. The miners required security for their gold and a level of security for their claims. Business people in Townsville and Bowen saw the commercial advantages of developing the gold field as rapidly as possible.

Phase 4 – October 1867-1869 The rule of law

Upon arriving at the field on October 2nd 1867 (CBE 1867a:12.10.1867) Gold Commissioner W.S.E.M. Charters began the processes of applying the Gold Field Regulations to the field. Charters had to initially determine where he should locate himself. The precise spot for his first camp is uncertain but was likely in the vicinity of the Mt. Remarkable field where Specimen and Golden Gullies were being worked "The head camp on the Diggings is on Running Creek, which creek runs into, 'Betts Mistake Creek' " (CBE 1867a:12.10.1867). This suggests the possibility that it was near the later site of Norwood and while distant from the bulk of mining activity was the closest supply of water (see Figure 3.4 for locations). From his first report, submitted to the Secretary for Public lands in March 1868, it is clear that Charters' most substantial task had been the issuing of Mining and Business Rights and gauging the extent of the field; including quantifying its disparate population, a fact that was to be problematic throughout the life of the field and possibly one which has masked a higher level of mining activity than is reported. It took Charters two months to accomplish these tasks.

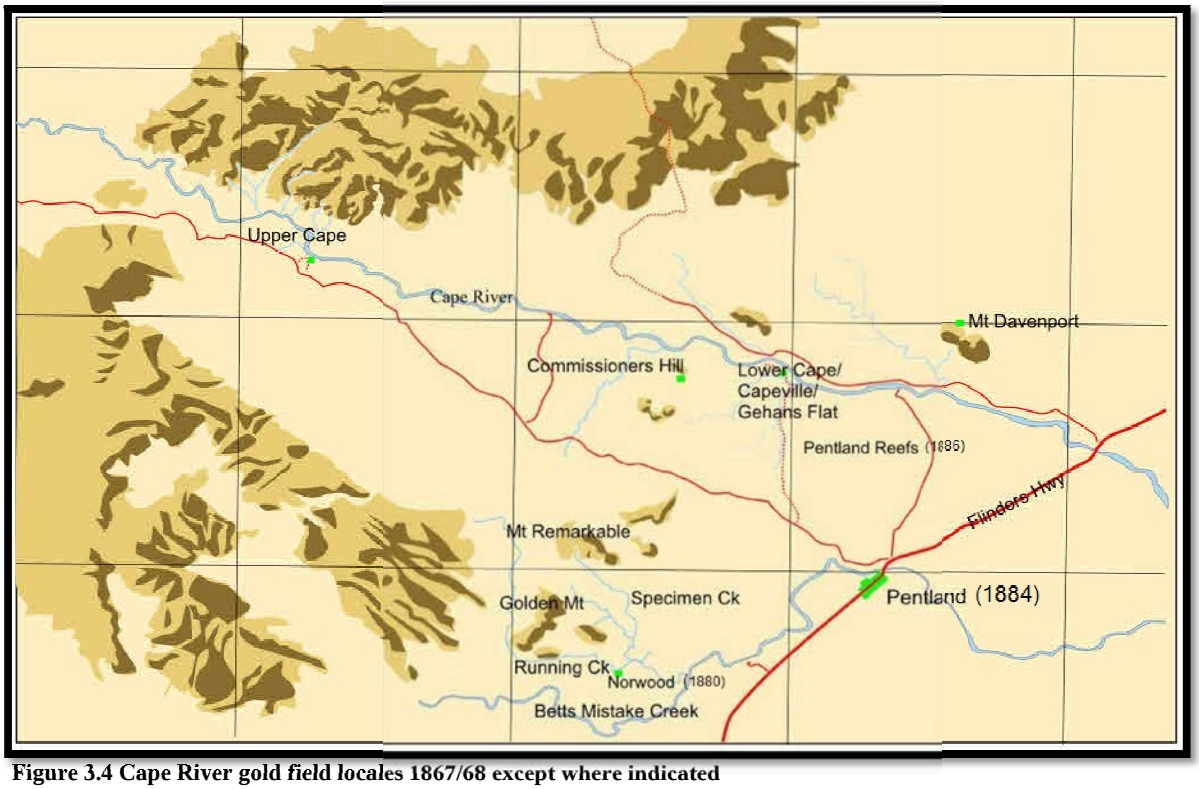


Figure 3.4 Cape River gold field locales 1867/68 except where indicated

It is from this time, in early January 1868, that the majority of sources reporting on the gold field's development indicate that this can be considered a proper rush. A florescence of activity is reflected in the increased variety of subjects reported by journalists of the *Cleveland Bay Express*, *Port Denison Times* and *Queenslander* such as the price of salt beef and flour, the weather, the road conditions, the optimism of miners and Commissioner. Initial concerns about the unproven potential of the field gave way to excited stories of large nuggets and good gold for those prepared to work for it (CBE 1868-70:18.1.68, 15.2.68) The advent of some summer rain had increased the likelihood of good returns from stockpiled washdirt, food appeared plentiful

and reasonably priced, new rushes were being reported as prospectors ranged across the country (CBE 1868-70:15.2.68; 29.2.68).

At Cape River the earliest find is stated but not referenced by Neal (1984:121). as being near Black Mountain, this location is possibly derived from Frank Hann's diary entry or Thomas Ellem's diary entry. The hilly country in the vicinity of Mount Remarkable was rapidly prospected and reports of finds at Golden Gully and Specimen Creek (CBE 1867a:12.10.1867) were followed by the news that Paddy's Gully was worked out (CBE 1867a:23.11.1867). To be in a more central location Charters moved from the main camp (CBE 1867a:23.11.1867). The flat below the new Commissioner's camp at Commissioners Hill was adopted as the Racecourse at which races were held until at least 1870 (CBE 1868-70:28.8.1870). In a personal conversation with Mr. Don Rebgetz former owner of Ballabay Station in June 2004, he anecdotally referred to the area as "the racecourse".

Commissioner's Hill is located five kilometres from the area initially known as Gehan's Flat (also Gann's Flat) and later Capeville, where an early alluvial find actually turned out to be a deep lead deposit. Few descriptions of these early alluvial diggings are to be found. However, it is likely that they resembled many other diggings with rapidly diminishing lightly timbered woodland interspersed with tents, close to both a source of water (Shearers Creek) and the diggings, giving way to an increasingly potholed environment, (see Figure 3.5). A Cleveland Bay Express correspondent reflected during the field's contraction, "Gehan's Flat one of the best leads ever opened in Queensland, is now almost deserted; the grass is growing on the heaps of rubbish about the holes, and not a vestige remains of the many large camps which covered the

ridges and flats along the edge of the lead-not a voice is heard, where hundreds of men, were once at work in a long line extending for over two or three miles" (CBE 1868-70:22.10.70).

Figure 3.5 Gehan's Flat/Capeville 1868 (Queensland Museum 1868a)

By February 1868 new rushes were being reported, and within the confines of this isolated community there appears to have been little concern from the majority of the population about leaving, what in all likelihood were productive diggings, to test the potential of any new diggings. This movement shows that the well documented and commented on peripatetic nature of the alluvial miner was an ever present characteristic.

Rushes to other regions within the field were reported in quite rapid succession with the Upper Cape by 23rd May 1868 and Mount Davenport by 15th August 1868. Distinct from these rushes are the several 'Chinaman's Rushes' (CBE 1868-70:18.1.1868, 9.1.1869), the terminology indicating that the nature of the rush was somehow specific to the Chinese or more likely that the population was exclusively Chinese. By July 1868 the alluvial rush at Gehan's Flat had been supplanted by the much more significant find of a lead that was dubbed the 'Deep Lead' (CBE 1868-70:6.6.68).

The find of the Deep Lead, heralded the potential for the development of a mining community to some of the population. Lawrence's third phase of gold rush development is described as either the waning of the alluvial and abandonment of the field or the development of reef or lead deposits (Lawrence 1995a:5). The deep lead near Capeville promised the permanency of the latter and there were calls for a surveyed town plan (CBE 1868-70: 25.4.1868). These demands were not acceded to by the Government until 1869 when the half square mile township of Capeville was gazetted (Queensland State Archives 1869) (see Figure 3.6).

The request for an organised township embodies the desire that Cape River gold field become a self-aware, stable community; a full participant in the Colony. It is also most likely that during late 1868, or early 1869, when Clerk of Petty Sessions, W.R.O. Hill arrived at the field, that Charters moved to Capeville. It is this location that Hill would describe in his memoirs so unfavourably, as "A place not very much better than Hades" (Hill 1907:45).

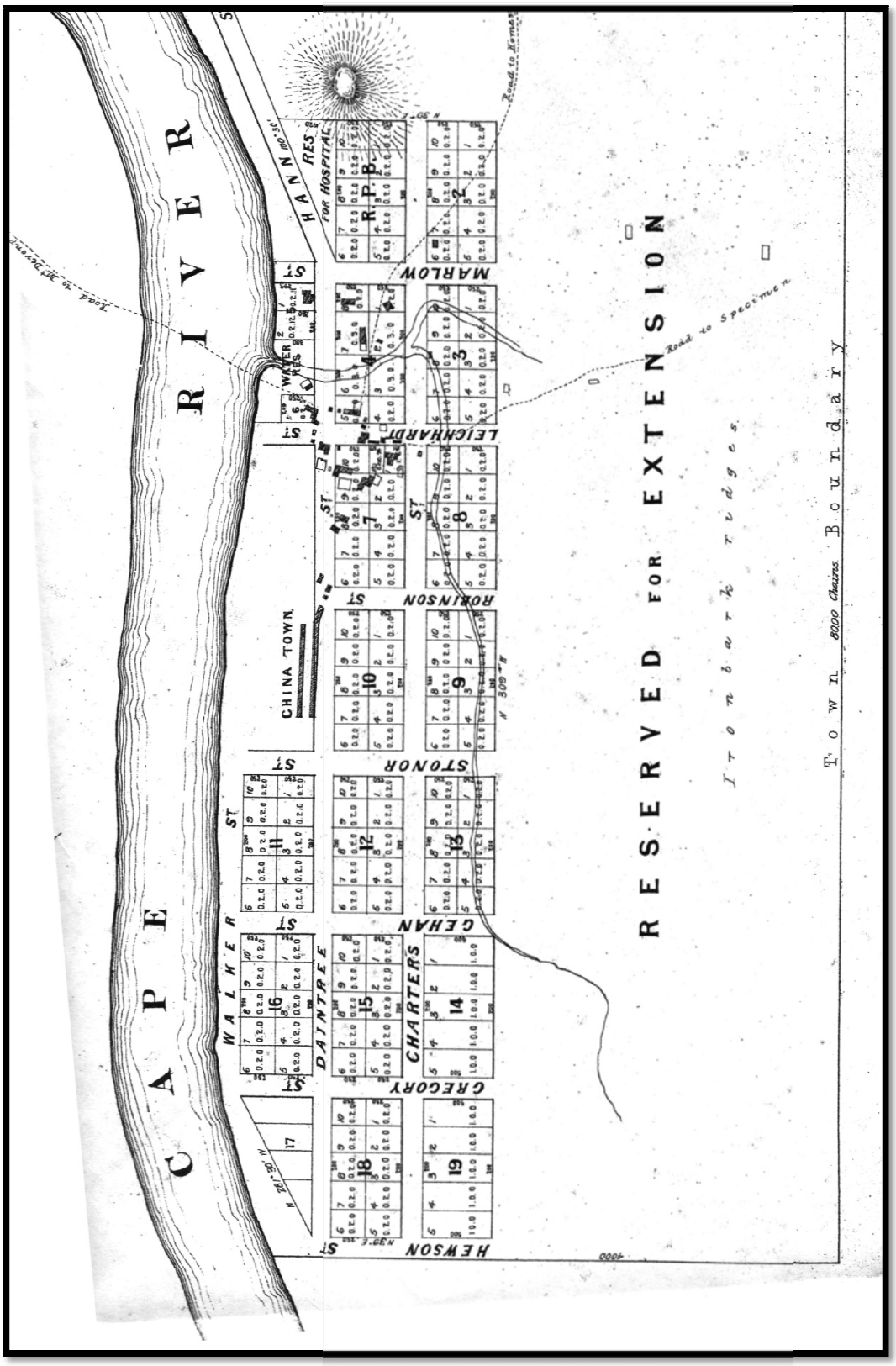


Figure 3.6 Capeville gazetted town grid (Queensland State Archives 1869)

Despite the lack of documentary evidence in the government gazettes, and the lack of assigned lots on the township map that together might indicate that lots in Capeville were purchased, it is unlikely that the area set aside was wholly undeveloped. The haphazard settlement at Gehan's Flat built to service the alluvial rush is visible in two of Daintree's photographs (see Figures 3.7 and 3.8).

Figure 3.7 Capeville detail from Daintree (Queensland Museum 1868b) view is west

Figure 3.8 Capeville township detail (Queensland Museum 1868a) view probably north

The buildings could have been viewed as an impediment to the development of the lead but the settlement doesn't appear to have hindered mining. Mining occurred around and under the trader's shanties and dwellings. "The whole of the township is now being worked and the streets are rapidly becoming impassable from the number of shafts going down" (CBE 1868-

70:3.10.1868). Close examination of the township plan shows that the grid supplants an existing settlement indicated by a small cluster of squares, these are unlikely to indicate shafts as any shafts would have been far more numerous, (see Figure 3.9). Hence, it appears that the map shows both the actual township with the imagined and prospective new town plan overlaid. There are several recorded instances of the danger posed by open shafts within the township to individuals (CBE 1868-70:3.10.1868, 31.10.1868, Hill 1907) and to carriers, "At the time the township was honeycombed with shafts, and we had many misadventures driving our teams in the dark" Corfield (1921). The disregard for the structuring of space at Cape River confirms that disorganisation was a defining character of this alluvial rush, a feature described by Lawrence (1995a:39).

Figure 3.9 Township detail beneath Capeville grid (after Queensland State Archives 1869).

In the hectic year of 1868 new diggings within the field had been rapidly located and some quartz reefs had been pegged out but all this was only possible because of the relative population explosion, the defining feature of the rush.

The manner in which population information was initially reported by the Commissioner at Cape River was limited to categories of European or Chinese, which probably masks a variety of other ethnic groups and certainly nationalities. By 1868, the government census information had added a category for 'Polynesian and other aliens', a population group employed in the cotton, sugar and pastoral industries but still a homogenising category for a heterogeneous group (Bolton 1970:39), see also Hayes (2000). What purpose these categories served has not been investigated here but it appears that at one level distinguishing ethnic origins was not important beyond the recognition of gross racial characteristics.

The field's population is reported as increasing to 1200 by January (CBE 1868-70:18.1.1868), an increase of approximately 300 from the annual report which states 817 Male and 92 Females on the field (QVP 1868:307). By April of 1868 a correspondent to the CBE complains of the inadequacy of the Police to keep order over a further increased population of nearly 2000 (CBE 1868-70:25.4.1868). By the end of 1868 the Cape River gold field population showed a total of 3,100 (Table 3.1). A correspondent had claimed between 3,000 and 4,000 which is a consistent estimate (CBE 1868-70:21.10.1868). In addition to the first official recognition of Chinese miners and merchants, a high proportion of females are represented in the statistics of 1868. If we accept two common statements about the Chinese from the earlier gold rushes; firstly that the Chinese population was almost exclusively male and that few European women became partners of the Chinese, then the ratio of 'European males' to 'women and children' at the close of 1868 is 4.1:1 and suggests a much more balanced gender scenario than earlier rushes.

Table 3.1 Population estimates for 1867, 1868 and 1869 (QVP 1868-1870)

Occupation group	Year ending 1867	Year ending 1868	Year ending 1869
European reefing miners	900	300	200
European alluvial miners		1200	300
Carters and getters		50	20
Merchants and trades		100	30
Women and Children		350	150
Chinese miners	100	1000	500
Other Chinese		100	100
TOTALS	1000	3100	1300

The variety of ethnicities at a gold field is one of the hallmarks of the internationalism of gold rushes described by Lawrence (1995a) and others (Fetherling 1988, Morrell 1940). At Cape River there is a limited expression of this internationalism. Several references are made to German Fred (CBE 1868-70:6.12.68), and later German Pete. Three of four discoverers of the 'Abraham Lincoln Reef' were American (CBE 1868-70:23.1.69), presumably so were the reef miners of the 'Union' and 'General Grant' mines at Mt. Davenport. Add to this, miners from New Zealand and other colonies. However, the overwhelmingly non-British contingent was clearly the Chinese.

The Chinese at Cape River gold field

The Chinese at Cape River are reported by Bolton as being the first in north Queensland (1970:54), and later erroneously as the first Chinese miners in Queensland (Neal 1984).

The relatively large population of Chinese at Cape River had travelled overland from the Peak Downs field 300 miles to the south (Bolton 1970:54, CBE 1868-70:23.11.1867, 23.5.1868, National Library of Australia 1868). There is some evidence to suggest that the common presumptions about the exclusively young and male Chinese population are not applicable to the Cape River Chinese miners. The Kennedy District Register of deaths Gallagher (1994) shows the deaths of several Chinese children, some of which have Anglicised names, for example Joseph Ah Fung (Gallagher 1994:1). These may indicate that the children's mothers were European, or that the Chinese were adopting non-Chinese names. A correspondent from Cape River noted "in passing through that part of the diggings known as China Town, I noticed many of the offspring of Chinamen and white women." (Queenslander 6.11.1869:10). Additionally, the average age at death of Chinese men who died between 1867 and 1874 in the Kennedy District was 38, which is indicative of a middle-aged population rather than a young population.

An often reported feature of European and Chinese relations at Australian gold fields is the sometime sporadic, occasionally systematic violence directed towards Chinese miners. Notorious during the 1860s were Beechworth and Lambing Flat (Blainey 2003:88) and later during Queensland's Palmer River gold field rush of 1873-1878 (Kirkman 1980). In both the early and later instances legislation was enacted that attempted to restrict Chinese access to the gold fields. In 1855 Victoria had placed a £10 poll tax on disembarking Chinese, in 1857 a limit was placed on the number of Chinese that could disembark from each ship in Victoria and a further tax of £4 was imposed (Blainey 2003:87). By 1877, the Queensland government had enacted legislation prohibiting any Chinese from a newly declared gold field for a period of three years (Drew

1982). This was in addition to doubling of the fees payable by the Chinese for miner's rights and business licences (Drew 1982:167). Protracted anti-Chinese violence was also evident on the southern and central Queensland gold fields of Crocodile and Peak Downs that preceded Cape River gold field, and at the Gilbert River gold field in 1869 (Brown 1974). At Cape River there appears to be little documentary evidence of any systematic attempts at excluding the Chinese from mining, although there are some instances of altercations and fights between European and Chinese miners, the Cleveland Bay express reports one such "roll up" which appears to be a face saving exercise in solidarity, undertaken for the benefit of a previously over-powered group of Europeans (CBE 1868-70:21.11.1868). Following hostility against the Chinese and their exclusion from the field at Gilbert River, the sentiment expressed was that the Chinese had ruined the Cape River field for Europeans, and therefore the Chinese should return to the Cape and prospect there (CBE 1868-70:18.12.1869). There appear to be as many instances of petty crimes against individual Chinese as there are crimes perpetrated by the Chinese. Although one case, that of bushranging against a lone Chinese traveller (CBE 1868-70:12.9.1868, National Library of Australia 1868), is significant in that despite threats, the victim was not intimidated by his attackers and returned to Cape River gold field, reported the crime, and identified the culprits to the Police.

The relative lack of hostility towards the Chinese could be due to one or a combination of factors. Firstly, it is possible that there was systematic violence against the Chinese but this was either not apparent to observers of the day or they chose not to record it. This is unlikely as several sources; including the few official reports that are available produced at Cape River during this time do not report anti-Chinese violence. A second possibility is that the mining

population matched the productive potential of the field over the time period enabling all those working to be adequately remunerated rather than competing over an ever-diminishing resource, hence conflict would have been unnecessary. Thirdly, the Chinese probably formed a large proportion of the population from an early stage. The early establishment and maintenance of this population may have legitimised the Chinese presence at the field in the European mind and reduced the confidence of European miners to successfully exclude the Chinese. Such a view is supported by the rampant anti-Chinese sentiment at the contemporary Gilbert River field where the following was reported, "No Chinese are allowed on the field" and "we hear the Chinese have been hunted off the ground at the Gilbert, and all their goods and chattels destroyed" (CBE 1868-70:22.5.1869). A further explanation may be found in the disseminated nature of the productive areas of Cape River gold field. By mid-1868 gold was being mined at the four main diggings; Capeville, Mt. Remarkable, Upper Cape and Mt. Davenport. The relative isolation of several of the gold deposits especially at the Upper Cape may have enabled the Chinese to establish numerous concurrent legitimate claims thereby effectively excluding European alluvial miners from these areas. A corollary to this is evidence that at Cape River the Chinese acted as prospectors opening up several new rushes (CBE 1868-70:18.1.1868, 14.11.1868). This is contrary to the prevalent contemporary impression of the Chinese miner;

> "Initial anti-Chinese criticisms were based prima facie on the stereotypes of the Victorian goldfields. It was claimed that Chinese miners did not prospect, but merely anticipated the absence of Europeans from their diggings; and that their impermanency, stolid self-sufficiency and secretive export of gold were prejudicial to the field's future" (Kirkman 1980:127-128).

The European miner has been popularly portrayed as driven to retribution by continual claim jumping and the taking up of abandoned claims by the Chinese. Taking up an abandoned claim was a legitimate action after 3 days absence from a claim by the first claimant, (Queensland Legislative Assembly Parliamentary Votes and Proceedings 1867). Such generalisations of claim jumping amounted to contemporary wisdom but the only evidence for this is when the claims became available when the Gilbert River was rushed in 1869. One further possibility is that in the earlier southern fields and at the Palmer River the Chinese populations were new to the colonies and were prepared to, or felt the need to, exploit any advantage they perceived and this could have precipitated violence against them. At Cape River the Chinese miners are likely to have been either experienced in avoiding conflict with Europeans; and were likely to be aware of the recent violence at Crocodile and Peak Downs fields, and in some cases were possibly exiles from those fields.

Exclusion and violence by European miners at the Gilbert gold field probably represents a combination of greed, coupled with the opportunity to exert an advantage over a repressible and easily identified rival. Initially, the violence could have represented the rejection of a small number of Chinese sent to gauge the field for the larger population remaining active at Cape River. Brown (1978) points out that despite these initial exclusions the Chinese were eventually allowed on to the field as the Commissioner could not exclude them; their presence appeared to be a boon to activity at the field. As it was, the Gilbert alluvial gold was quickly worked out (Brown 1974).

In a similar manner to the Aboriginal population, the Chinese were victims of prejudice and an overwhelmingly ambivalent but exploitative response from the European population. The portrayal of the Chinese in print as benign and industrious extends to patronising commentary on dress and customs;

> "At the funeral a man walks in front of the deceased, throwing away bits of paper right and left. They are hand pricked and denote that he was a good man. I should think that they throw away a thousand pieces. They let off crackers on the road that the departed may rejoice. They also leave at the grave a bottle of brandy, tin of sardines, some sperm candles, and a bucket of water, that the departed may refresh himself on his journey. After they return they kill a pig and five fowls, and make a night of it. Should he happen to be a bad man, they don't throw any papers away and leave him nothing to regale himself with" (CBE 1868-70:27.3.1869), (see also the CBE 1868-70:24.7.1869).

However, these comments could rapidly turn sour if there was a perception that the Chinese were, through population size or endeavour, doing better than the European miner. Legislative responses to the Chinese miner were demanded and delivered, but as Kirkman notes by 1877 they had little effect on the Chinese in north Queensland as other than the Hodgkinson gold field most other fields were legally open to the Chinese (Kirkman 1980:130). That systematic violence against the Chinese is not documented at Cape River is an anomalous finding, compared to contemporary gold fields.

Reefing and the Deep Lead

As industrious as the Chinese were at working and reworking alluvial and lead deposits, proving of the gold field was always sought in the form of productive reefs. The establishment of deep leads or quartz mining industries were the pinnacle of development at a nineteenth century gold field and it is not surprising that one of the characteristics of activity at a rush field was the active prospecting for leads and reefs.

There is some evidence in the CBE that gold containing stone was found before the arrival of Commissioner Charters in late 1867, with the Cleveland Bay Express reporting samples of stone returned to Townsville (CBE 1868-70:28.3.1868). However, Charters did not lay out the first reef at the Upper Cape until on the 6th July 1868 (CBE 1868-70:8.8.1868). During the period 1868 to 1872 numerous named but not mapped quartz reefs were exploited in the Mt. Remarkable, Upper Cape and Mt. Davenport regions of the Cape River gold field, these are detailed at length by Rands (1891) and some have been investigated from a geological and production perspective by Garrad (1996). By 1868 Daintree had mapped the Union Reef at Mt. Davenport, Commissioner's Reef, Day Dawn and Morning Star at Mt. Remarkable and the Great Australian, Greens Specimen and Prospectors Reef at the Upper Cape (Daintree 1869a). By October 1868 the CBE was reporting a dozen reef claims (CBE 1868-70:3.10.1868). Reef mining in these areas was as dependent upon the availability of water as was alluvial mining but required technical expertise, machinery and money.

Discovery of the Deep Lead prompted calls to the Government for the implementation of increased infrastructure; a government gold escort urgently recognised and requested by

Townsville and Bowen entrepreneurs the previous year did not materialise, and gold was being transported by private escorts or by individuals. By April 1868 the CBE reported that six private escorts from Townsville had serviced the field and several more were eventually undertaken. The government escort arrived on the 13th October 1868 carried out a single collection and did not run again until March 1869 by which time it had been labelled a farce in the paper (CBE 1868-70:30.1.1869). Despite this reporting, there were continuous monthly gold escort returns from February 1869 at least until December 1870 (Queensland State Archives 1867-1875). It appears however, the escort was initially inadequately resourced and had been provided with substandard equipment and horses.

The large extent of the gold field coupled with Charters' responsibilities for both mining control and as Police Magistrate, civil order, led to requests for improvements in other infrastructure needs. Charters received a Clerk, W.R.O. Hill in late 1868 to alleviate some of the administrative burden. Law and order was the responsibility of the one constable and three troopers initially accompanying Charters. By mid-1868 this was seen as an inadequate force for nearly 2000 people by the Cape River community (CBE 1868-70:25.4.1868). In response a Sub-Inspector Clohesy was eventually appointed by March 1869 (CBE 1868-70:20.3.1869) and the full contingent of police numbered ten (Pugh 1869:62).

Further infrastructure needs of the gold field in the form of a hospital and schooling were provided for at private expense. The Burdekin and Flinders Hospital in Townsville was supported through subscription and provided the only hospital care until 1869. Lists of subscribers and their donations were prominent in the papers, serving to notify the public of

those both willing and unwilling to promote the common good. The Townsville hospital was put under increasing financial pressure from the high proportion of destitute miners from the Cape River diggings seeking treatment (CBE 1868-70:13.6.68, 8.8.1868). Although the trustees were no doubt under pressure, some prominent subscribers such as W. Hann (CBE 1868-70:13.6.1868) were probably prospering from the gold field, and complaints on their behalf appear hypocritical. Some monies for the hospital were forthcoming from the Cape River Jockey Club (CBE 1868-70:19.9.1868). The call for facilities at Cape River resulted in action by Sergeant Francis who took it upon himself to raise subscriptions for a hospital at the diggings. For his efforts he was initially rebuked for potential fraud in the Cleveland Bay Express (CBE 1868-70:4.7.1868), although after some time a list of subscriptions was published. The Government had appointed a Dr Cunningham to be the health officer for the Cape River District in February 1869 and he took up practise in March of 1869. He appears to have replaced Dr Homan, who left Cape River soon after being fined by Charters for using obscene language to the police. The CBE reports that a Mr Rutherford had been administering to the sick and had been involved in trying to establish a small hospital at Gehan's Flat (CBE 1868-70:6.3.1869), by 23 March, Dr Cunningham was running the small hospital.

Schooling was only available at a private school on the diggings, for the years 1868-1870 the school was attended by up to 15 children, with a near equal proportion of the sexes (QVP 1869-1870).

Commerce

The development of private trade at Cape River occurred without any of the delays seen in the Government's provision of infrastructure. Once the field was proclaimed merchants rapidly began moving goods to the fields. In addition to carting goods for sale, dray owners also transported diggers, or for a lesser cost their belongings, to the diggings. The CBE records an increasing number of drays heading off to the fields from Townsville. The difficulty of carriage over Hervey's Range is not discussed in these articles but in the contest between Townsville and Bowen the lower cost per ton of cartage from Townsville to the diggings is.

Even though the initial population movement had been constant rather than exponential, demand for goods was greater than supply and consequently prices rose. This situation was alleviated by October 1868 and although supplies are recorded as 'plentiful', the effect of potential summer flooding was foreshadowed. The rain during the summer of 1868 was considered good with respect to its effect on mining but supplies were slowed as the drays contended with sodden and deeply furrowed tracks (CBE 1868-70: 14.3.1868). In April 1868 a billiard table was transported to the Cape, an expensive and risky task but indicative of the confidence in the field's future at the time (CBE 1868-70:4.7.1868). By mid 1869 the amount of stores at the field appeared too large;

> "lately it has been overdone, sufficient stores have been sent from Townsville for a population of 10,000 instead of our 3,000 and odd, and consequently storekeepers have had stores on hand for 12 months or more" (CBE 1868-70:22.5.1869).

However, at this time the Gilbert field was beginning to draw population away from the Cape and it attracted many of the storekeepers also. Corfield, the carrier, was on hand to assist;

> "On my last trip to the Cape diggings…. Bob Wilson rode up, and enquired what we would take loading to the Gilbert River….we asked for £30 per ton. This was agreed to, with the proviso that the teams were to be loaded at night on the Lower Cape. At the time the township was honeycombed with shafts, and we had many misadventures driving our teams in the dark. Watson explained the reason for our loading at night was that the Gilbert diggings had only just been reported, and his firm wished to get supplies on the ground early to obtain high prices" (Corfield 1921:36-37).

Beginning in January 1868, Frank Hann sold livestock to the Chinese and although the size and value of the transactions are recorded, who he was dealing with is not clear, except in later post-rush entries. Of the three butchers mentioned in the newspaper, only one, Graham, is mentioned by name (CBE 1867a:12.10.1867). F. Hann records the names of several butchers but none appear to be Chinese. Direct Chinese trade with the producer rather than with butchers is significant for several reasons. Firstly, it indicates that the Chinese were able to rapidly establish independent supplies of produce outside of the European controlled stores, this was further entrenched by early 1869, "Chinese stores and public houses abound…a branch of Sydney Chinese firm say they have 100, 200, 300 tons of goods coming" (CBE 1868-70:23.1.1869). Secondly, these purchases could indicate enterprising Chinese butchers acting autonomously as part of the gold field economy or it could reflect a desire to circumvent that economy, and trade within a closed community. A third possibility is that sheep (the main livestock recorded) were not to be traded at all but were part of a communal purchasing arrangement. Most of the stock Hann records selling to the Chinese were sheep in multiples of a 100 (JCU archive Hann family

papers 1866-1875: 3.1.68, 24.5.68, 24.6.68). A lack of variety that suggests the purchaser was not stocking an outlet for the broader mining community, leaving closed community trade or communal purchasing as the most plausible possibilities. It is worthy to note that at Cape River and elsewhere the gold field population was often estimated by reference to the number of bullocks and sheep slaughtered by the butchers, and an average consumption per individual applied (CBE 1868-70:18.1.1868, Charters 1868:489, Jardine 1873). If the Chinese were operating a system of procuring meat outside that of the recognised butchers then it is possible that Chinese population figures for the field were often under-estimated.

Daily Life

The typical miner's day is largely unrecorded for Cape River but several of the routine aspects can reasonably be inferred from accounts at other fields. Some accounts exist that portray a sense of what was experienced on the fields. The least flattering accounts for the reputation of the Cape River gold field are W.R.O. Hill's (1907:46-53). His stories recount excessive drink and violence, but also some of the black humour and social life. Others, tell of teaming up with partners or investing in mining only to be cheated out of earnings; a story that exposes an unexpected naivety and trust but also an aspect of mining that was often repeated (Corfield 1921:31-32, Hill 1907:52).

After the working day the social-life of the individual miner might be dependent upon his productiveness. If the miner were making good money then it is probable it would be spent at a gold field public house. Horse racing was an obvious social outlet and there appears to have been a well organised Turf Club with Commissioner Charters as the Chairman (CBE 1868-

70:25.12.1868). Other organised events appear to have been irregular at the Cape; Hill (1907:52) records some public games these may have been the games at Christmas and New Year 1869 in which he and Charter's participated (CBE 1868-70:9.1.1869).

Gold Production

The statistical means of assessing the value of a gold field was based primarily on its yield of gold estimated from the gold duty, despite the eventual elimination of the duty on gold exported from the colony by 1874 (QVP 1875:83). The strength of activity at a field was quantified by the number of men employed in mining, the variety and quantity of machinery, the cumulative size of which was quantified by the number of stamper-heads or horsepower, and the amount of money the machinery was worth. With this information the government could make statistical comparisons between fields and within fields over time. Such figures served to reflect the strength of industry and were a means of conveying the importance of Queensland to other colonies and Britain. The statistical figures in reports were augmented by the sporadic reports of the early Gold Commissioners and Government Geologists and later by the Mining Wardens and the more extensive and systematic reports of the Government Geologists and Queensland Geological Survey.

The success of the gold fields was an important facet of inter-colonial rivalries, particularly as this was played out in various exhibitions held in Britain. Following his time as Queensland Government Geologist, Richard Daintree became Agent-General for Queensland in London. His role was to promote Queensland as an ideal destination for emigration; increased population meant increased consumption and taxes. It also gave the Colony the opportunity to garner the

public affection of the Empire (Mackay 1998). The 1871 Exhibition featured many of Daintree's own photographs of Cape River and geological specimens from the region, (Daintree 1871:757-758, Mackay 1998).

Charters had rapidly got to work administering the field but little importance appears to have been placed on the early yields by the Gold Commissioner. Like many of the early events at rush fields it is shrouded by the disorganised nature of the phenomenon, institutional delays and the scepticism, recalcitrance and probable dishonesty of some miners. This is further reflected in a lack of archival records for the early period of the gold field.

Deriving an accurate gold yield figure from historical sources enables a degree of regional comparison in terms of gold production. Paine appears to refer to an official figure of 45,000 oz (Paine et al. 1972) but no official total figure has been produced although estimates have been made. Based on the presumed non-reporting of gold by the Chinese, de Havelland 1989 almost doubles an 'official figure' of 49,920 oz to more than 96,000oz. Neal (1984:122) mentions 80,000 oz for the alluvial and lead returns alone at Surface Hill, an unusually large quantity. Government figures for the years 1878-1889 show a yield of 18,841 oz for this period (Rands 1891).

Newspaper reports provide some idea of the quantitative returns of a gold field including noteworthy finds, nuggets or large yields from quartz specimens. However this is insufficient to derive an accurate yield. The CBE records two statistics that can be used to estimate the production at Cape River with some qualification. The first is the customs return from gold

exported from Townsville. From 1866 Townsville was exporting gold; however, these were small quantities derived most likely from the Star River. In early 1867 gold was being reported from the Clarke and Broken Rivers (CBE 1867b:2.2.1867) which would probably account for the majority of 1867 exports prior to June. The Mt. Wyatt field, discovered January 1867 (Bolton 1970:45), was probably accessed via Bowen which reported on the field during its short life and it seems reasonable to assume that much of the gold would have returned that way. Later the Ravenswood field reported in October 1868 (Hurle 1919) although close to Townsville, did not attract a significant population until late 1869 and early 1870 when it became clear that it possessed payable reefs (Bell 2000). The Gilbert field although known about since 1867 (CBE 1867a:28.9.1867) was not rushed until mid 1869, after Daintree had led another party of prospectors to gold, an event which was widely publicised (Daintree 1869b:163). This leaves a period of reporting from mid 1867 to the end of 1868 that can reasonably be attributed to the Cape River alone. Customs takings for these months are listed in table 3.2.

Table 3.2 Customs returns for gold July 1867-December 1868 (CBE 1867-1868)

Month (1867)	Return (£ s d)	Month (1868)	Return (£ s d)	Month (1868)	Return (£ s d)
July	*	January	24 19 6	July	124 13 11
August	*	February	17 0 6	August	118 7 9
September	31 9 5	March	142 7 6	September	250 0 9
October	10 3 8	April	60 4 1	October	257 14 2
November	Not available	May	101 19 9	November	115 10 1
December	Not available	June	223 8 5	December	95 11 1

* September 1867 figure is a cumulative figure for the July-September quarter.

The customs revenue during this time was charged at 1s 6d per oz giving a calculable total for the period of Jul-Dec of 20,987 oz. Comparatively, the figures exported by the ship *SS Boomerang* and one recorded export from the ship *Eagle* for the same period total 19,352 oz. The CBE reports amounts for October and December totalling 4710 oz exported directly to Sydney, "exclusive of what may be supposed to have left the port coastwise during the same period" (CBE 1868-70:24.11.1868, 9.1.1869), it is not known whether duty was paid on these amounts but can reasonably be added to the coastal exports giving a total of 25,697 oz. Comparatively, the government statistics, based upon the gold returned by government escort for the same period totalled only 2704 oz to the end of December 1868 (QVP 1869-1870). The only valid figure for gold production during 1869 is the amount obtained by government escort which totals 11,548 oz (QVP 1869-1870). A further figure of 2314 oz was brought down by the government escort during 1870 as calculated from the escort fee receipts at 8d per oz (Queensland State Archives 1867-1875). Thus for the period June 1867 to December 1870 the Cape River gold field conservatively yielded, 39,559 oz.

It is anecdotally documented that significant amounts of gold left Cape River and other gold fields without the payment of duty, and these figures support those statements. Some of the gold exported through Bowen is also likely to have been from Cape River. More significant is the grossly underestimated figure the government records in the statistics. Whether this had any influence on decisions made in the allocation of resources for the Cape River gold field is possible but entirely conjectural.

Phase 5 1870-1872 "Not the worst goldfield in Queensland"

Investors in Townsville had been slow to subscribe to the newly formed Cape River Quartz Crushing Company, and the field's expected move to permanency that some parts of the population craved, was delayed. The initial company offer collapsed in June 1869 and this was followed by the loss of machinery through shipwreck (CBE 1868-70:4.12.1869). A second company quickly replaced the first which secured a machine from Maryborough in September 1869. Having reached Townsville by December 1869 high hopes were held for the *'Victory'* machine as it was eventually christened in August 1870. It was at this time that Charters retrospectively observed that the Cape River, was "Not the worst goldfield in Queensland" (CBE 1868-70:27.8.1870). Incredulously, when the *Victory* was put to work, 40 tons of stockpiled quartz from the Union Reef yielded no gold, and after limited operation the machinery was dissembled and moved to the Gilbert River field. The failure of crushing at Mt. Davenport and therefore of the Cape River Quartz Crushing Company represented the evaporation of the last of any rush optimism and momentum in the gold field, that had been maintained by the Townsville business community since mid-1867.

During the latter portion of the rush phase Capeville had become the most populous centre on the goldfield but in late 1869 was disparagingly described by one correspondent as, "the most notable features of Cape River society are patience, patchwork, rags, resignation, Chinamen and fleas" (Queenslander 6.11.1869:10). After many delays Capeville had finally been surveyed and gazetted in 1869. However, by the time land was offered for sale in November 1869 none of the lots were taken up, there was little interest from potential purchasers as either owners or

speculators (QVP 1870:486). A further issue of lots in 1870 also failed to result in a sale. It appears that Capeville, as a surveyed settlement, was never a reality; the town never attained the order and regularity of the surveyed grid. The overlay of the surveyed plan on Morton's (1937) report and the implicit association of the town plan with anecdotes in Hooper's, Angor to Zillmanton (Hooper 1993), incorrectly assume the presence of a gridded town. It is undeniable that the discoveries of the Gilbert River and Ravenswood fields dramatically reduced the Cape River population as many miners tried their luck elsewhere. The Gilbert field initially proved to be unrewarding for many miners and late in 1869 the CBE reports miners returning to the Cape. By 1870 the Cape River population had dropped to as low as 390 (QVP 1870:426) but by the census in 1871 this had increased to 848 (QVP 1872:1033).

Possibly the most dramatic effects of depopulation were on the settlements and their commercial ventures. Storeowners and publicans who had likely consolidated their positions on the field with the erection of more substantial premises stood to lose that investment. The remaining population would have still required merchandise, alcohol and the social venue of the public house, providing enough motivation for some merchants to remain. The Upper Cape does not appear to have been as severely depleted due mainly to a new alluvial rush reported mid 1870; the census confirms that 78% of the Cape River gold field population was there in 1871. Of the total gold field population of 848 at least 593 were Chinese men and 11 were Polynesian men (QVP 1872:1033).

For his part Frank Hann does not register the drop in population, and was still actively conducting business at Specimen (Mt. Remarkable) and occasionally Capeville, until 1874 (JCU

Archive, Hann family papers 1866-1875). The Chinese continued to purchase his sheep and occasionally pigs, but purchases were less frequent and the sheep less numerous. In his numerous later dealings, Hann names several of his Chinese customers possibly indicating some level of familiarity and possibly respect developing between himself and the Chinese throughout the period 1870-1874 (JCU Archive, Hann family papers 1866-1875).

Charters' camp remained at Capeville, until 1871 when he relocated, probably in response to a protracted rush to the Broughton. The Cape River gold field was abandoned as an administrative centre and began a protracted history on the fringe of the main event in the region; the Charters Towers gold field.

By the 26th January 1872 three prospectors, Mossman, Clarke and Fraser had registered their claims, at what would become Charters Towers, with Gold Commissioner Charters while he was relieving at Ravenswood (Menghetti 1982). It is roughly from this point on that the history of the Cape River gold field becomes mired in with that of the Charters Towers gold field. Unfortunately, production reports for the Charters Towers field included but did not itemize returns from Cape River.

Phase 6 1872-1886 A poor man's diggings

At the regional scale of north Queensland, mining in the period following the discovery of gold at Charters Towers was one of unmitigated growth. By 1872 the Gilbert River, Ravenswood and Etheridge gold fields had been established and were operating with varying degrees of success (Bell 2000, Bolton 1970, Brown 1974, Wegner 1980). In 1873 it was reported that there was no

true alluvial at the Towers only, “decomposed quartz on the surface of the granite rock” (Jardine 1873). By this time there were between five and six batteries crushing from 47 reefs, producing approximately 7,000 oz of gold per month. Even so the future of the field was not assured as much of the crush was surface stone.

In 1873 J.V. Mulligan followed up on reports of unlikely prospects of gold at the Palmer River (Hann 1873) a rush ensued that within three years had produced 459,429 oz of primarily alluvial gold (Kirkman 1980:117). The richness of the Palmer’s alluvial deposits attracted many Chinese miners, some from southern fields, probably including the Cape River, but most were new arrivals from China and they kept the Palmer productive for seven years (Kirkman 1980:130). To the south of the Palmer, the Hodgkinson gold field was prospected and proclaimed in 1876 (Kirkman 1982:171-172). Further west and north, mining penetrated areas of sparsely settled and disputed pastoral territory opening fields such as the Woolgar in 1880 and Croyden in 1885 (Bolton 1970:130-131).

Activity at Cape River gold field for this phase has primarily been resourced from the Gold Commissioner and Mining Wardens reports. The decreasing amount of mining was mostly alluvial and the population was roughly evenly divided between European and Chinese miners. Population figures for this period are sporadic, the 1876 census reports 139 people (QVP 1877:321) and in 1879 there were approximately 200 miners, estimated to be 100 Chinese alluvial miners, 50 Europeans alluvial miners and 50 European quartz miners (QVP 1880:96). This figure decreased steadily over the following years and despite their being only 40 alluvial miners reported for 1885 (QVP 1886), the figure may not be reflective of people who would

have mined. A drought in 1884 and 1885 hampered attempts to sluice for gold and this probably contributed to the population decline (QVP 1886).

The Norwood township, was surveyed in 1880 and served as an administrative centre for the gold field. In 1884 the railhead west from Charters Towers to Hughenden reached Cape River, and a settlement at Betts Creek was established, it was later renamed Pentland. As it was closer to the railway than Norwood, services quickly established there (Edwards 1999). The gold returns for this phase are sporadic. Some of the figures were combined with Charters Towers returns and were not used to calculate the total of 13,976 oz up to and including 1885. Close to resigning his position the last words for this phase belong to Charters:

> "I have yet confidence in the ultimate success of mining at the Cape River, and when other places more easily worked are exhausted a return to this place by miners with means will result in the profitable development of its networks of reefs and large alluvial deposits" (Charters 1879:14)

Phase 7 1886-1894 The Pentland Reefs

From the period 1885, Bolton notes a massive increase in the amount of British investment, particularly in Charters Towers block mines (Bolton 1970:125), some of this was in bona fide prospects but much of it was speculative and many smaller owner/miners created companies and sold out to overseas investors. This may have released owner/miners back into regional mining. Therefore it is perhaps not a coincidence that the reef system known as the Pentland Reefs were opened up at about this time. The mining warden notes "several lodes near Pentland….several

crushings from them have gone from 4 oz to 6 oz per ton" (Sellheim 1887). This phase spans a small resurgence at the Cape River gold field. The Pentland Reefs were mined from 1886 and this was followed by prospecting from 1893 in the area between Pentland and Capeville to recover what was thought to be the area where the Deep Lead was lost. Possibly the presence and experience of reef miners had led to the suggestion that the Deep Lead might be relocated. The Assistant Government Geologist Rands visited the field in 1890 reporting on activities there (Rands 1891). Despite the largely geological orientation to the report some indication of the history of the field is also documented. Rands made a return visit to the Cape in 1894 to observe the wash from the Deep Lead mines, none of which were being mined in 1890. By 1894 the lead appears all but exhausted, the reefs were quite shallow and the field appears to have few prospects. The gold returns for this short period are relatively good at 17,093 oz. Interestingly, at this time the warden was of the opinion that the Deep Lead was not a lead but a deposit accompanying the outcrop of a gold bearing dyke (Mowbray 1894).

Phase 8 1894-1939 Evil days

The information for the Cape River gold field derived from Mining Wardens and geological reports indicate that the field was at a near standstill until the Government began sponsoring prospecting in 1929. Despite this, the reports for the years 1894-1900 show a not unhealthy return of 12,919 oz. The transition from Colony to State had little impact on the goldfield, with absolutely minimal returns for the early years of the twentieth century being reported. The field had reverted to primarily alluvial mining and these remaining miners were heavily dependent upon adequate rainfall to work the gold from the wash. This was patchy over periods of years, and the years 1901-1903 are the driest on record. Dry blowers were not reported as being used as

an alternative. Dredging was undertaken sporadically between 1898 and 1933 but the results of activity are also sporadic (Laun 1922, Morton 1933, QVP 1899). Regionally, this period was from 1910, marked by a major decline at the Charters Towers and Ravenswood fields (Bolton 1970:271-4, 315). By the 1930s economic depression again caused an increase in mining activity aided by Government assistance. At the Cape River production of gold remained extremely limited, never exceeding 100 oz after 1910 (Qld Department of Mines, Annual Reports 1900-1939).

Phase 9 1940 – 2003

A thorough understanding of these 66 years is difficult to achieve. Following the rapid decline of Charters Towers as a gold producer in the early 1910s, and the rise of other minerals of economic importance, the reports of gold production in the Charters Towers district, which encompasses Cape River, became brief. The Queensland Government Mining Journal has several reports on the Balgay Reef (earlier known as the Bell Gay) that was sporadically worked for diminutive returns in the 1940s (Morton 1940). The annual reports of the twentieth century generally concentrate on work done and yield at any location and contain no anecdotal social or demographic information. By the 1950s reefing was represented by the reef name, the lease number, the lessee(s) and a short description of the year's production. By the 1960s the lease number was dropped. Without location information it is difficult and time consuming to locate potential Cape River mines especially when stated returns from the 1950s-1970s are generally less than 1000 oz for the whole district. The only mines close to Cape River but not forming part of the study area were the 'Whoop' and 'Midas' near Lolworth at the head of the Cape River. Mentioned almost annually from 1957 to 1978, they generally employed only one or two men producing unspecified low or no yields (Queensland Department of Mines Annual Reports

1957-1978). This low level of activity remained the norm until the gold price escalated markedly in the 1980s. During the 1980s, all of the major Cape River diggings, once worked in the 1860s, were again subject to prospecting, with large scale alluvial deposits being mined and processed at Capeville, Specimen Creek and Gorge Creek. Sporadic alluvial mining still occurs at Capeville and the Upper Cape. Garrad reports a return of 114.57 kg (3563 oz) of gold and 6.615 kg (206 oz) of silver between 1980 and 1989 at Gorge Creek (Garrad 1996:43).

Conclusion

While the basic three stage phasing of a gold rush described by Lawrence (1995a) is evident at this gold field, the history shows that several other phases can be identified, even within the pre-consolidation phases. The miners moved into territory that was already contested. The effect on local pastoral interests appears to have been benign and even beneficial but the effect on the Aboriginal population was probably devastating. The reefing at the field never fulfilled the promise of its shallow but rich alluvial deposits. The field waned as it was removed from the public glare by many and greater regional discoveries. There are the first glimpses of the idiosyncratic nature of Commissioner Charters in his dealings with miners (see also Davies 1993, and Janacek 2003)

For 15 years optimism about the future and long term prosperity of the Cape River gold field had been expressed in various ways. This was not just self-interest but as a correspondent put it “it is more than likely we shall become a people, and a very important portion of the Queensland territory”. There is a yearning sense of destined place in history in these words (CBE 1868-70:9.1.1869). The Cape River gold field experienced a brief resurgence in the late 1880s, but this cannot be classified as a rush. Firstly, the deposits were reefs, and secondly, the reported

population movement was not great. In many respects the field conforms to the recognised pattern of a brief rapid exploitation followed by slower decline. However, in some respects the field can be seen to be at variance with some of the accepted wisdom present in much gold fields' literature. The Chinese were apparently not as maligned here as at other gold fields to the south and north. The Chinese population is likely to have comprised miners from other fields, and demographically the Chinese groups do not appear to have been exclusively young men.

The Cape River gold field did fulfil the immediate needs of the small townships of Bowen and Townsville, and by attracting people had ensured a regional destiny was more than fulfilled, and by which time the Cape River gold field was largely inactive. In the ensuing years the gold field primarily reverted to its previous role of pastoralism, and in the middle of the twentieth century the Cape River was far better known as the site of an important meat processing plant (Muller 1999).

The preceding history provides a sound chronological base from which further understanding of the gold field can be derived. However, other than its appearance on contemporary maps, where the gold field is represented as gold field locations, connecting routes and major topographic features, the gold field is not expressed as a spatial phenomenon by the history. Yet as was demonstrated in Chapter 2 by reference to the work of Edward Soja, a significant part of the ontology of being is the spatial aspect of sociality. Understanding the gold field, requires that the nature of social interaction be understood, and as was demonstrated in Chapter 2, this will be achieved for this thesis by developing the tripartite concepts of cognitive, material, and social spaces into three archaeological landscapes. Clearly, the history provides a chain of events that

can be used to derive examples of cognitive space, and instances of social space that can be investigated further. Beyond maps, the material spaces of the field are yet to be defined. The two following Chapters present the results of the core archaeological research, in the investigation of the Cape River gold field. They provide evidence for the material spaces of gold mining, emphasising where possible the earliest phases of the gold field's development.

Chapter 4 **Archaeological survey, collection and excavation; method and results**

Chapter 4 presents the archaeological research component of this thesis. The chapter should be read in conjunction with Appendix 2, which details the archaeological excavations conducted as a part of this research. The chapter is divided into two parts. Part A presents the survey methodology and survey results. Part B presents the collection and excavation methodologies and collection and excavation results, excluding the artefact analyses. A brief discussion and conclusions drawn from the survey, collection and excavation results concludes each part of the chapter. A detailed analysis of the diagnostic artefacts from the collection and excavation of the two excavated sites is presented in Chapter 5. The cumulative information from both chapters comprises those elements of material space, required for the development of the archaeological landscapes to follow in Chapters 6, 7 and 8.

Part A

Survey Methodology

In Chapter 1, a review of the literature that has considered the Cape River gold field, located only one previous archaeological investigation (Hansen 1999). This work covered a small portion of the gold field, namely Commissioner's Hill, at the Lower Cape (Ballabay Station), in an area presumed to have been occupied by Commissioner Charters soon after arriving at the gold field. Previously to this work, the historic mines had been visited and relocated by various government and non-government geologists over time. Most recently Garrad (1996), reported on the some of the locations and gold bearing strata of various parts of this gold field.

The land area of the Cape River gold field was immense, and even though the gazetted area of the field decreased over time it still encompassed almost 800 square kilometres in its last listing. When undertaking the archaeological project reported in this thesis, the initial survey strategy was to, *distinguish areas of concentrated mining activity within the extent of the field, and investigate these further*. Documentary sources, maps, online resources and several informants were used to focus the areas for survey.

Dunstan's encyclopaedic report on Queensland mining notes six principle mining centres at the Cape River gold field, namely: Mt. Richardson, Lower Cape, Mt. Remarkable, Upper Cape, Mt. Davenport and Pentland (Dunstan 1913:179). Of these, Mt. Richardson is referred to infrequently in historical records and newspaper reports and was not included in this study. Likewise, Pentland field is included here as a part of the Lower Cape because of its physical proximity to it, and its co-location on Capeville Station; although it is recognised that some mines to the south of the township have been excluded. The distinct temporal boundary between the major mining activities at the Lower Cape and Pentland Reefs is recognised. The four remaining fields appeared to show the greatest potential for the recovery of archaeological material. Hence, the four fields surveyed were:

Lower Cape; synonymous with Capeville, Gehan's Flat, Gann's Flat, and including the specific locales of: Deep Lead, Commissioner's Hill, Charter's Hill, Red Hill, White Hill, Pentland Reefs.

Mt. Remarkable; synonymous with Specimen, Mt. Specimen, Specimen Creek, and including the specific locales of: Golden Mount, Nuggety Gully, Paddy's Claim, Sharper's Gully, Store or Escort Creek, Moran's Gully, Graveyard Gully.

Upper Cape; synonymous with Gorge Creek, Pothole Lead, Canton Lead, Mt. Elvan and including the specific locales of: Chinaman's Creek and Chinaman's Gully although the latter two are removed from the Gorge Creek area. (Dunstan (1913), includes Chinaman's Creek and Chinaman's Gully with the Lower Cape)

Mt. Davenport; synonymous with Davenport and including the specific locales of Union and General Grant Reefs, (see Figure 4.1).

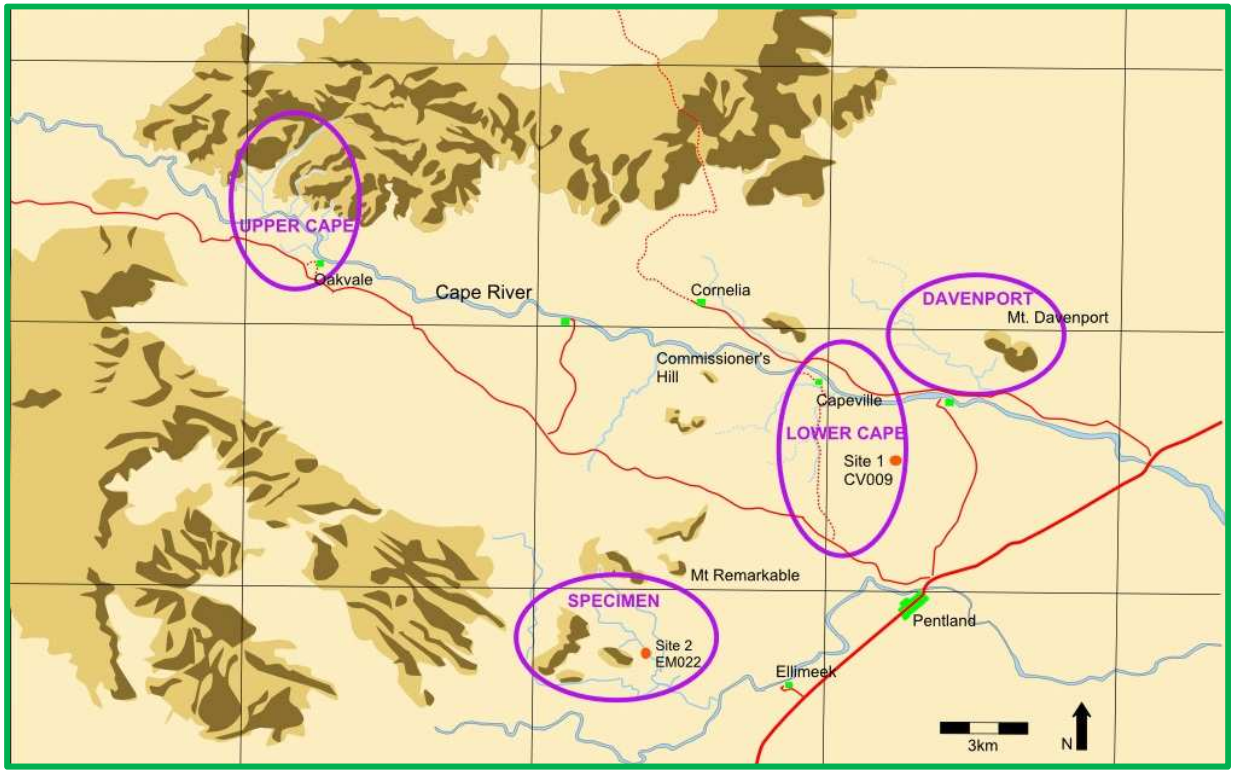


Figure 4.1 Approximate location and extent (purple) of the four gold mining areas researched at the Cape River gold field, and the two excavation sites (orange)

The finest resolution mapping available was the national topographic 100,000 series, maps 7956 and 7957. This recent information was supplemented with several historical maps produced by surveyors and government geologists from 1867 to the late 1930s (Daintree 1869a, Dunstan 1913, Goodall 1867, Matthews 1981, Morton 1937, Rands 1891, 1894, Roberts 1867). During the course of the research Google Earth™ was released. Although the initial imagery was too coarse to be useful at anything but the largest scales, subsequent imagery has now improved and numerous significant features located in the survey are also visible in this easily accessible, mapping and rudimentary GIS platform. The Google Earth™ imagery used for this thesis dates from 2004, which as of December 2013 was still the current imagery.

The Lower Cape workings now have a presence on present-day Capeville, Ballabay and Cornelia stations. The Upper Cape field is present on two properties - Oakvale and Cornelia. Mt. Remarkable is present on Ellimeek Station and Mt. Davenport is present on Cornelia Station. For logistical reasons the survey method located sites on a particular property rather than moving between properties to cover a historically contiguous mining area. In so doing, areas between the four main diggings were also surveyed.

Sites were located in various ways. On Ballabay, Capeville and Cornelia stations the landowners took the team directly to sites. Other landowners gave directions to potential sites, sometimes by drawing maps. Informants also included regular visitors to the areas who prospect for gold using metal detectors. Several sites were relocated by reference to historical maps. Some sites were located by systematic survey of areas that research indicated should contain evidence of mining

or occupation, a lesser number were located by chance while moving between locations or conducting more random searches. Several specific systematic searches resulted in no finds of features, despite map evidence indicating some potential.

Two types of feature were systematically followed during surveys. Creeks were targeted because alluvial and reef mining are intrinsically associated with the availability of water. When evidence of mining was found the surrounding area was surveyed for further evidence of mining and occupation. Races, water diversion channels and barrow ways were also tracked at length, as they should connect workings or connect a water supply feature or to a water utilisation feature.

During systematic pedestrian survey volunteers were spaced apart at varying distances depending upon the visibility of ground features. Features of interest were recorded as they were found, and no items were collected during survey. Location was established by handheld GPS, recorded as easting and northing in the WGS84 coordinate system, and a brief description was entered into a notebook. The boundaries of search areas were also recorded by GPS. In this way several broad area surveys were completed.

Limiting factors

The fieldwork was subject to two types of limiting factors. The first of these were conditions that decreased access and visibility. Access to practically all of the sites was initially by four-wheel drive but most of the survey was conducted on foot, this was slow and occasionally precarious. Visibility of surface features and artefacts was decreased by grasses and woodland regrowth. Following adequate rain the predominant grass in some of the former mining areas are varieties

of ‘spear’ and ‘barb’ grasses. These grasses can grow to approximately 1m high, and in forming contiguous grassland they potentially obscured low-lying features and thus hindered the survey. During pedestrian survey in some areas a significant proportion of ground was covered by large amounts of manure, which may have also obscured small artefacts.

The second limiting factor was associated with the mitigation of risk to personnel. Primary amongst these was the conduct of fieldwork during the autumn and winter months of April to August. Avoiding spring and summer was important as daytime temperatures of over 40°C are common and were actually experienced on some short field surveys during October (spring) 2003. Additionally, November to April is the wet season, when violent storms can flood dry creek beds without warning, an event experienced in August 2006. As the fieldwork region is isolated, the potential to be stranded in such conditions was minimised.

Further, as most of the properties visited are working cattle properties, caution when dealing with large numbers of free roaming livestock was exercised. Additionally, an awareness of the potential dangers from snakes, dingos, and feral pigs, all of which were encountered with no adverse outcomes, was also necessary. Finally, the spear grasses are equipped with a spear or barb mechanism, some of which are ‘spring’ loaded and cause discomfort when they penetrate clothing and skin.

Survey Results

As a result of the surveys 164 sites were located and recorded in a database that is reproduced as a spreadsheet in Appendix 1. The database records the following features: site code, site type,

gold field workings, modern property location, location by co-ordinates in UTM, and a site description and a site name where known. The site description is further divided into site condition (integrity), site components, artefacts, associations and other work completed.

The database affords easy access to the recorded data, and by assigning a site type to each record a level of analysis is possible. The types of analysis made possible are intra-field analyses, where the components of each working are compared, contrasted and explained. A thorough intra-site analysis was not performed for the thesis although certain site types are compared across the gold field. Additionally, spatial information is used in the later chapters to develop the material spaces of the archaeological landscapes.

Generating site types also enables inter-field analyses to be undertaken if the same or a similar typology is used; although this sort of inter-field analysis was not a part of this research. The site typological system used here follows that proposed by Pearson and McGowan (2000:151-187), using the mostly technological categories for alluvial and reef gold mining sites with some modifications. Although Pearson and McGowan do not present their site types as potential database fields, they are accompanied by good descriptions of what each type should comprise. As the primary aim of their publication is the proper recording and conservation of mining sites, it is likely that other workers in the field may consider Pearson and McGowan's a worthwhile method. This thesis shows that for mining sites there is valuable cross over between cultural heritage recording and recording for archaeological research, an important factor in Queensland which has 80 protected mining areas on the Queensland Heritage Register (Queensland

Department of Environment and Heritage Protection 2013). The 27 site types for Cape River gold field are presented in table 4.1.

Table 4.1 Quantification of site types at Cape River gold field diggings

Site Type and deposit	Lower Cape	Upper Cape	Mt. Remarkable	Mt. Davenport	Total
Barrow ways - alluvial	0	0	0	0	**0**
Battery - reef	0	0	0	0	**0**
Cemetery - all	3	2	1	0	**6**
Channels and tunnels - alluvial	0	4	0	0	**4**
Common sluicing-ground-alluvial	0	2	0	0	**2**
Common sluicing-box-alluvial	0	0	0	0	**0**
Costean - reef and deep lead	0	2	0	0	**2**
Dam - all	1	3	0	2	**6**
Dredging - dredging	0	0	0	0	**0**
Drift shafts or tunnels - alluvial	0	1	0	0	**1**
Drives/adits - alluvial and reef	0	0	1	0	**1**
Equipment - all	1	0	1	0	**2**
Garden - all	1	0	0	0	**1**
Gully Scouring - alluvial	0	3	5	0	**8**
Hydraulic sluicing or elevating - sluicing	0	0	0	0	**0**
Mullock - reef and deep lead	2	1	1	0	**4**
Multi-component site - all	7	4	7	3	**21**
Other	4	8	5	1	**18**
Paddocking/Face - alluvial	0	0	0	1	**1**
Puddler - alluvial	2	0	0	0	**2**
Race - all	0	17	3	3	**23**
Road - all	0	1	0	0	**1**
Settlement - all	11	9	8	1	**29**
Shaft - reef and deep lead	5	3	6	4	**18**
Shallow sinking - alluvial	5	2	1	1	**9**
Surfacing - alluvial	0	0	0	2	**2**
Tailings - alluvial	1	2	0	0	**5**
Total	**43**	**64**	**39**	**18**	**164**

Because Pearson and McGowan's (2000) descriptions are technological and not intended as a classification system, it was necessary to amalgamate some descriptions and to create some

additional site categories. The most significant additions were *Settlement – all*, *Multi-component-all*, *Cemetery* and *Other*.

Settlement sites vary in extent from rubbish deposits, to single occupancy sites, through to known multi-dwelling settlement sites. The *multi-component* category was created because several sites, particularly at the Upper Cape, showed evidence of surface workings, reef mining and lead mining in close proximity. The alternative is choosing one component to record the site, which emphasises it importance above the other components, and also has the potential to diminish the significance of their association. Classifying these areas could have been achieved with the alternative term *mining landscape* being applied to complex sites. However, using the term landscape for a typological nomenclature would be using landscape as a "metaphor for scale" (Anscheutz et al. 2001) and is contrary to how this thesis develops the idea of an archaeological landscape. The *cemetery* sites were an integral part of the social life of the gold field. Chinese cemetery practices are twice reported at length in the Cleveland Bay Express, (see Chapter 3). The cemetery sites located ranged from the obvious to the obscure. The site type of *other* allows the inclusion of artefacts, and unusual and unidentifiable features into the typology.

Of the 27 site types, 22 are represented by an example located during the survey. However, three of the five unrepresented types form part of one or more of the multi-component sites, the exceptions being the *Battery-reef* and *Common sluicing-box* site types. As such the Cape River gold field has a comprehensive representation of sites of the extractive and processing technologies of gold mining, particularly relating to alluvial and lead deposits. Evidence of the technologies though is not matched by remnant equipment, little of which is present; when

compared to the quantities still existing at other north Queensland sites such as at the Palmer River (Bell 1987, Comber 1991), Croyden (Wegner 1995a), Ravenswood (Bell 2000), and the Woolgar gold fields.

To demonstrate the comprehensive nature of the material remains of Cape River gold field, the following section presents examples of the site types in the context of a brief overview of the technologies associated with the major types of gold bearing deposit. Gold is broadly found in three forms of deposit: the alluvial deposit, the lead, and the reef (see Chapter 1). All three types were represented at the Lower Cape and the Upper Cape; while only alluvial and reef deposits are historically recorded at Mt. Remarkable and Mt. Davenport.

The technological components of the extraction and processing of any of the three types of gold deposit can be assigned to three main categories; the mining, the processing, and the waste. For alluvial deposits all three are generally closely located, and can be represented by several archaeologically detectable features. The easiest to recognise and often the most spectacular feature is the waste, or tailings. During alluvial mining, rocks and boulders were removed from the wash to facilitate processing. Rather than being discarded at a distance; which would require unproductive effort, or the encroachment onto another claim, the stone tailings were utilised in the control of water, or were stacked. At Cape River organised tailings mounds are found where gully raking (*gully scouring*) has occurred such as at EM014. Figures 4.2 and 4.3 show examples of tailings stacked to reinforce the creek banks while providing diversionary channels or races along the creek edge. Figure 4.4 from the same creek shows low mounds of tailings in a herringbone shape.

Figure 4.2 Stacked tailings forming wall and channel (EM014)

Figure 4.3 Stacked tailings lining gully (EM014)

Figure 4.4 Tailings, herringbone shape (EM014)

Figure 4.5 Ground sluicing (CN023)

Figure 4.6 Ground sluicing (OK033)

Tailings were also formed into ground sluicing features for example at CN023, and OK033, these sites are illustrated in figures 4.5 and 4.6. Tailings were also utilised to form other structures such as dams (see Figure 4.7); and more extensive races and barrow ways (see Figure 4.8). Alluvial and elluvial deposits were worked by gully raking and an example of this is CN009 (see Figure 4.9).

Figure 4.7 Small dam at Golden Mt. (EM028)

Figure 4.8 Races and barrow ways, Gorge Creek (OK002)

Figure 4.9 Elluvial creek workings, Mt. Davenport (CN009)

Associated with this probable deposit were several shallow pits or pot holes possibly sunk to test the nature of the drift either side of the creek. Alluvial and elluvial potholes are found at all four

of the Cape River fields although few were found at Mt. Remarkable. Examples are CN005, and OK036, shown in figures 4.10 and 4.11

Figure 4.10 Shallow potholing/surface workings (CN005)

Figure 4.11 Shallow surface workings (OK036)

The nature of the worked ground is indicative of the mining techniques employed. Gully raked creeks can still be found scoured to bedrock, for example EM014, or they may be silted up with only tailings mounds indicating that they were worked, for example OK032. Dams used for water diversion and storage may still be present, for example OK055, or may have been eroded, for example CV003. Early map evidence indicates the Cape River was dammed (see Figure 4.12) but the success of this dam is not recorded and no physical evidence of the dam was located during survey.

Elluvial deposits may also have been worked by damming and sluicing a creek to retard runoff at steep sites; OK026 may be an example of this. The multi-component site at OK033 shows several types of worked alluvial ground including potholes, ground sluicing and hydraulic sluicing. Extensive shallow workings can leave behind barren flats, especially if the area has been paddocked. In these instances a shallow face may be present but whether this is the result of older or recent workings can be difficult to distinguish, as bulldozed sites can be equally barren. Figure 4.13 shows a possible paddocked area at CN023. A basic method of processing clayey wash and removing unwanted debris was the puddler. A possible puddler site is present at CV021 (Figure 4.14).

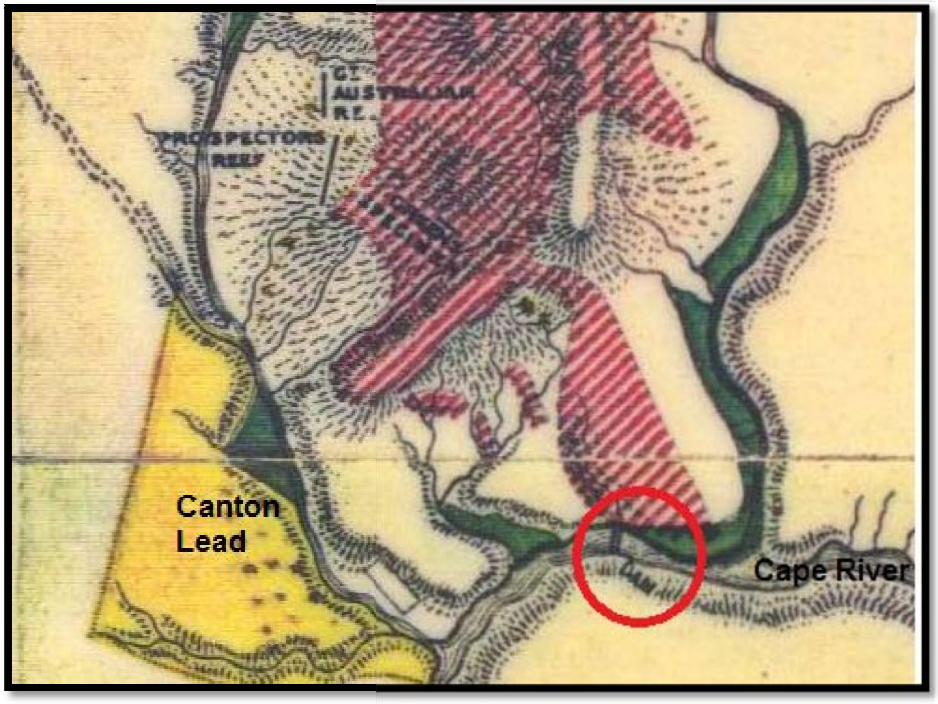


Figure 4.12 Dam across Cape River, Upper Cape (Daintree 1869a)

Figure 4.13 Paddocked area (CN023)

Figure 4.14 Eroded puddler site, on Sandy Creek (CV021), scale increments 20cm

The Cape River gold field had three important deep lead deposits, the Deep Lead, the Canton Lead and the Pothole Lead. A lead is a buried alluvial deposit, indicative of the previous path of a gold bearing watercourse; similar to an alluvial deposit its wash must be reached by digging. The Deep Lead at Capeville comprises many of the types of sites associated with the mining of a lead deposit. Daintree (1869a) indicated that the northern part of the Deep Lead was close to the surface and potholing would have been all that was required to reach the deposit. Extensive evidence of these potholing sites remains at Capeville, for example CV006 and nearby at CV031. The Deep Lead followed a north to south trajectory, getting gradually deeper. Rands (1891) reported that the sinkings to intercept the terminal end of the lead were as deep as 100 feet (30 metres). Much of this work probably occurred later than the shallower workings of the lead, testing several theories as to the loss of the deep lead. Ultimately, the geological opinion was that

the lead was not lost but that the deposit just became poorer and poorer at depth, generally petering out at the location of an elvan dyke but not as a result of the dyke (Morton 1937:309).

Due to the depth and the nature of the overburden these shafts are significantly wider and deeper, and ringed by much more extensive mullock, for example CV027. Rands (1891) had indicated that there was an extensive area where the lead had been systematically worked. At Capeville, especially in the area of the Deep Lead the remains of nineteenth century mining in this vast area are now extremely sparse. To access the wash during the late twentieth century, much of the overburden was removed in what must have been a form of shallow strip mining to a depth of less than 10 metres. What is now visible in the old deep lead area are the remains of modern workings consisting of large earthen dams, tailings mounds and processing areas extending over several hectares. Remnant older workings do exist and CV003 is one of these, although it is possible that it represents a later re-working of the area. CV003 is a multi-component site that comprises a dam (now broached) which would have backed up the flow of the shallow creek that runs through the site (Figure 4.15). At a certain height the water was diverted around and above both banks of the creek, the mounds and channels are still clearly visible in figure 4.16. The layout of this site is not inconsistent with sites described for ground sluicing as illustrated by Jackson (1970:33-35) (see figure 4.17).

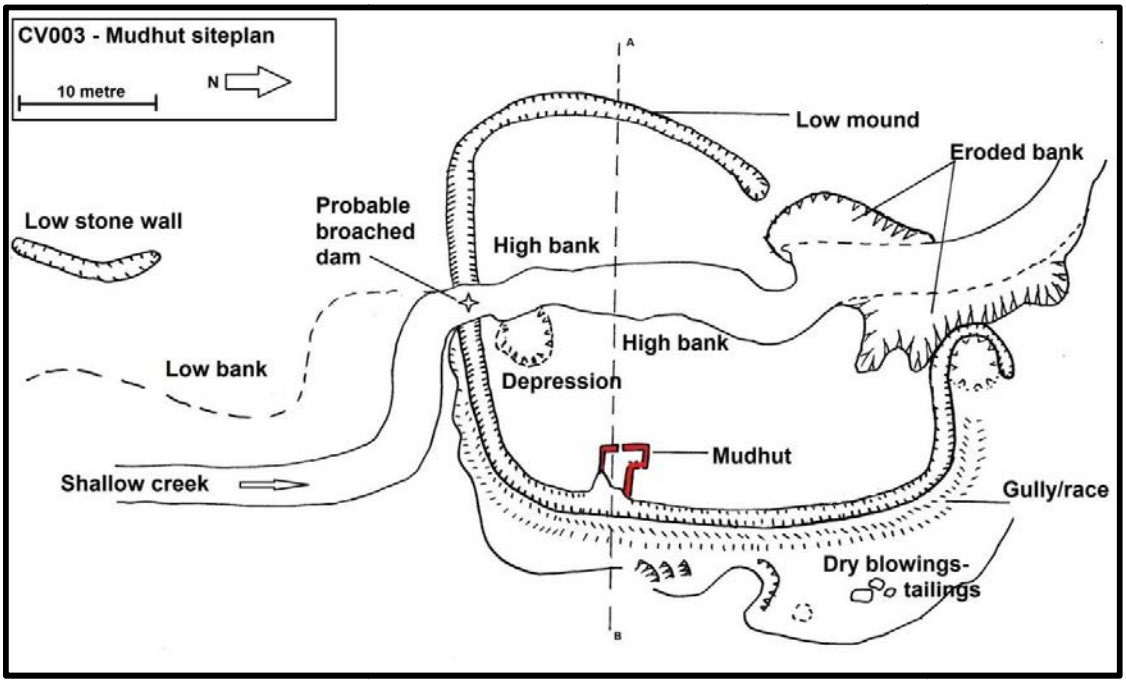


Figure 4.15 Multi-componenent creek workings (CV003)

Figure 4.16 Channel and mound (CV003)

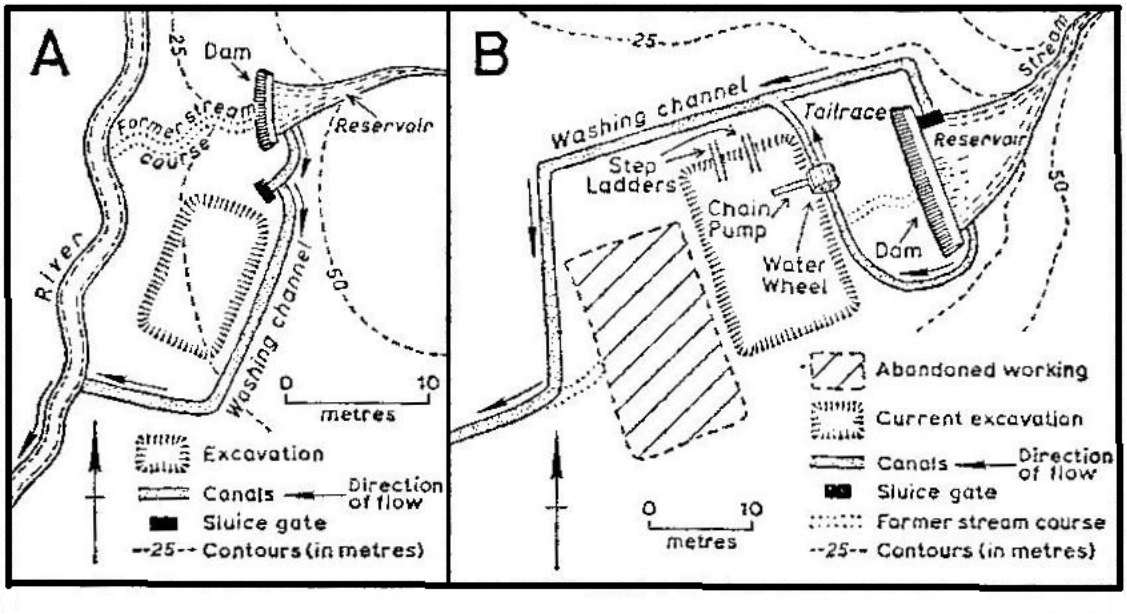


Figure 4.17 Chinese ground working sites, Borneo (Jackson 1970)

There is some potholing along this creek and there do appear to be eroded areas, possibly sluicing areas, where the diverted flow would have re-entered the creek. There are still substantial remains of a mud hut built into the back of one of the diversion channels (Figure 4.18). Also visible at the site are some small mounds of gravel of differing grades. In a personal conversation in October 2003, Max Read, former gold miner and owner of Capeville station, said he thought they possibly represented tailings from a dry blower.

Figure 4.18 Mud hut (CV003)

Similarly, very little evidence of once extensive workings remain from the Canton Lead and the Pothole Lead. The Canton Lead was reworked and the wash processed nearby in the late twentieth century. While Gorge Creek still flows through the site of the Canton Lead, the land around is sparsely vegetated and was dug to at least 20 feet below natural surface for its wash (Maxlow et al. 1986). At OK040-42 the Pothole Lead is still being worked by modern mechanical methods. The modern workings of the Pothole Lead are identifiable by the large earthen dams covering much of the site. During fieldwork, several costeans dug as part of these modern workings, were recorded; with old shafts and tunnels visible cutting through the overburden (Figure 4.19). One intriguing site (OK049) was a shallow tunnel; cut between two layers of sediment into the bank of the Cape River (Figure 4.20). The purpose of the tunnel is not clear, it may have been a more extensive drift tunnel at one time.

Figure 4.19 Recent costean, revealing old lead tunnels (OK042)

Figure 4.20 Drift tunnel (OK049)

Reef mining was present for most of the chronological history of mining at the field but 12 months of mining had occurred before the first reef was officially pegged. While alluvial mining and deep lead mining always gave hope and the prospect of wealth to the individual miner; the greatest profit and the proving of a field were likely to happen when the gold bearing reefs were discovered. At Cape River, Daintree's 1868 map clearly identifies reefs opened at Mt. Remarkable and the Upper Cape. At Mt. Remarkable, Commissioners Reef (EM033) and the Day Dawn (EM021) were relocated. They are positioned close to other reefs of uncertain chronology (EM032) and together comprise a technological element within the multi-component areas defined by the sites of (EM009, EM010 and EM011). These settlement sites were all mapped and surveyed separately but their proximity to each other indicates that the settlement at Specimen, positioned on Mt. Specimen was in this vicinity. Unfortunately, no historical map

evidence exists to confirm this inference. The site of the presumed small assay, or retort furnace (EM020) is close to the site of large reef shafts. Later reefs were opened at Mt. Remarkable, with the last of the payable reefs the Balgay (also referred to as the Bell-Gay) relocated at EM034. The Balgay was worked from 1934 through to the 1940s (Morton 1940). It comprises a series of large shafts that traverse down a hillside south west of Specimen Creek. In addition to the shafts there is sporadic machinery scattered close by, some retaining a coat of paint (see Figures 4.21 and 4.22). A further reef named the Coming Home Reef by G. Bennett, prospector, in a personal conversation in April 2003; was relocated along the western side of Golden Mount (EM012). A berdan pan and other metal artefacts litter the immediate area of this site. The surface scatter including petrol containers is consistent with a mid-, or late-, twentieth century mine.

Figure 4.21 Balgay mine shafts (EM034)

The shafts relocated at the Upper Cape at the foot of Mt. Elvan fit the locale of the Prospectors Reef, The Great Australian Reef and Green's Specimen Reef (OK024), all are present on

Daintree's 1868 map. A later report (Rands 1894) also mentions the opening of further reefs at the Upper Cape and these may be represented by the series of shafts at (OK053).

Figure 4.22 Winding machinery, Balgay mine (EM034)

The Mt. Davenport Reefs are mentioned by Daintree in his 1870 report and they are referred to at length by later geologists, the main reefs were the General Grant (CN026) and the Union Reef (CN028). Both existed as a part of several lines of reef that were exploited across Mt. Davenport. The General Grant exists alongside some evidence of settlement and close to extensive alluvial surface workings.

The remaining reefs of significance located at the Cape River gold field are known as the Pentland Reefs. These were discovered and mined at a later stage of the development of the gold field in the late-1880s. The reefs are located to the west and south west of the Deep Lead.

Several shafts noted by Rands (1894:167) were relocated as part of this survey. There is some evidence of settlement in and around several of these reefs. The most significant settlement in terms of artefact scatter was at CV009, which is more extensively discussed in the Part B of this chapter.

Numerically, the most significant sites recorded as a part of this research are the settlement sites. A settlement was recorded for the presence of a non-mining habitation feature such as a fireplace, for example figure 4.23; a stone outline indicative of an occupation site, for example figure 4.24; or a site containing some form of low edging defining a pathway or potential garden border or a combination of these. Also indicative of occupancy were rubbish deposits. Three differing depositions of rubbish were recognised; firstly, the back-filled mining pothole of which CV001 is indicative, secondly the in-filled waterway of which CV022 and EM023 are examples, and thirdly the open butchery scatter, of which CV023 is the sole example.

Figure 4.23 Double fireplace (EM016)

Figure 4.24 Occupance at Mt. Davenport (CN010)

An assessment of the historical sources and the archaeological survey evidence for the Cape River gold field indicates that settlements can be divided into three main types. Firstly are the nucleated settlements of which Capeville (CV001) and Norwood (EM013) are the two examples, secondly are the larger non-nucleated sites such as Specimen and the Upper Cape and thirdly the disseminated occupancies. Both of the nucleated settlements can be initially categorised on the basis of a gazetted town survey plan, and by the archaeological evidence that was located. At Capeville, little remains within the gazetted area that relates to any particular dwelling although there are occasional stone arrangements, for example CV007. The nature and function of these arrangements is unclear. Other than the gazetted maps, the overwhelming evidence for settlement is the extensive rubbish deposits such as CV001 and CV022, (see Figures 4.25. and 4.26). Just beyond the limit of the gazetted Capeville township is Commissioner's Hill, on which CV020 may possibly be the remnant site of a loopholed structure referred to by Hooper (1993:11).

Chapter 3 has mentioned the possibility that Capeville was a less ordered settlement than is indicated by its gazetted grid pattern.

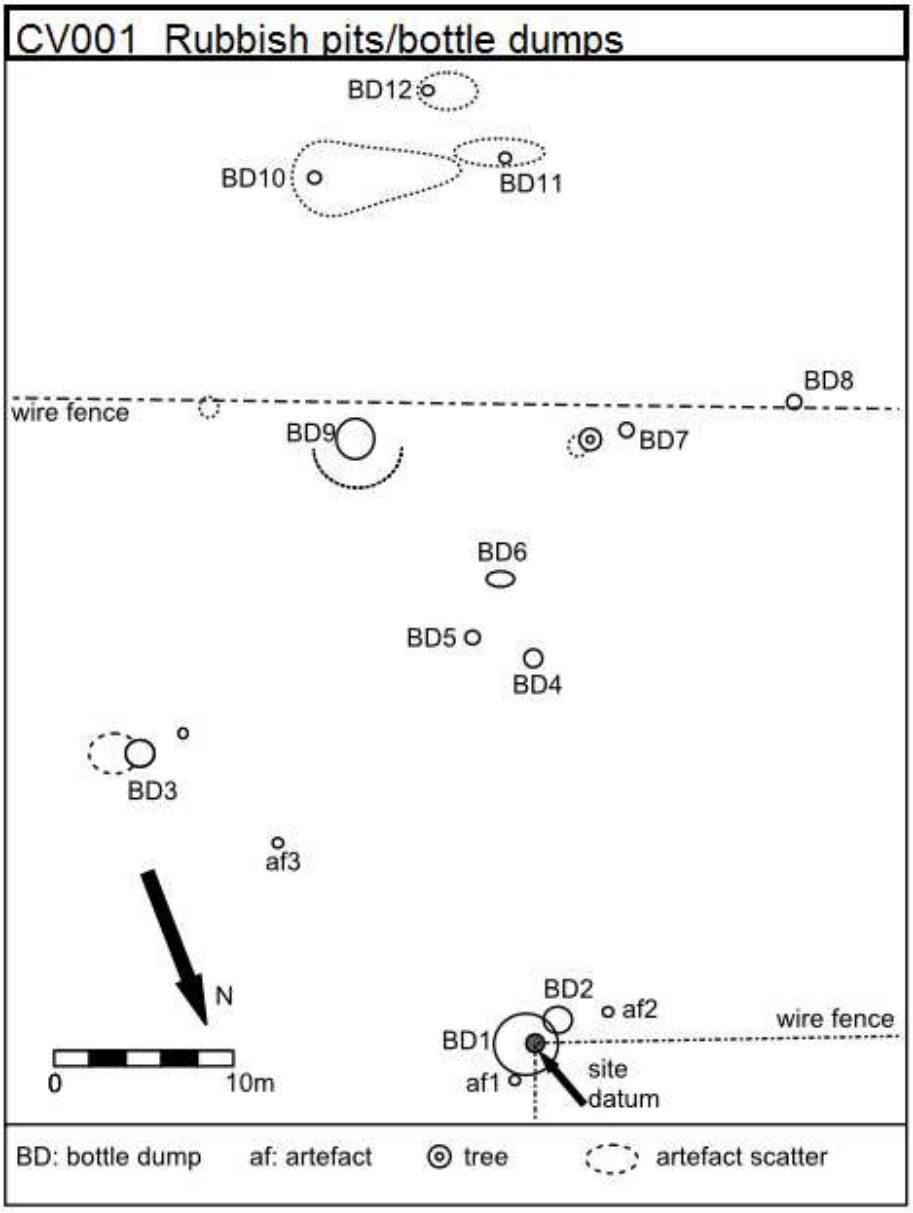


Figure 4.25 Rubbish deposits/bottle dumps (CV001)

Figure 4.26 Rubbish deposit/bottle dump, BD2 (CV001)

The non-nucleated sites are referred to as such because there is historical evidence that refers to settlements at these locations. These sources include newspaper reports, applications for hotel licences and business licences advertised in the Cleveland Bay Express and official reports. However, the places were not gazetted as townsites, and the nature and size of settlement is unclear. It may be that services such as hotels, blacksmiths, stables and possibly government services such as post offices (Hooper 1993:16) and police were located at these places intermingled with dwellings and other business types. To date, recording the location and the main features of these sites is the only archaeological work done. At the probable location of one of these non-nucleated settlements, Specimen; there are recent roads and tracks. These tracks appear to cut through the edges of some sites. It is possible they represent the location of original roads or tracks that have been significantly widened for modern vehicles; albeit while remaining rough dirt tracks. The rugged and hilly terrain at Mt. Remarkable and Specimen Creek precludes

the likelihood of many alternative routes. These settlements are interspersed with extensive areas of reef mines.

The disseminated occupancies are often not referred to in historical documents, they are historically anonymous places. Some of these anonymous occupation sites were directly associated with mine workings; others were likely to be indirectly associated with a mine working, or be associated with a non-mining function contemporary with mining such as gardening, for example CN013. Others may have been associated with other industries such as a shepherd's hut or logger's camp; the sites CN002 and CN012 may both fit this latter category. The disseminated settlements at Cape River gold field are represented by individual dwelling sites and fireplaces or combinations of these in association with, alluvial, lead and reef deposits, figures 4.27 and 4.28.

Figure 4.27 Occupance outline at EM002, scale increment 20cm

Figure 4.28 Occupation site outline (OK014)

The *multi-component site* is, after the *settlement sites*, the next most numerically significant site. The multi-component site was recorded as such when more than one aspect of mining technology was present with or without the presence of a settlement site. Other than the site at CV003 mentioned previously most of the remaining multi-component sites are places that have avoided destruction by modern mining events. Modern mining has primarily targeted the leads and some of the productive alluvial creeks. The extant sites represent elluvial diggings, or alluvial diggings, close to hilly country, or are predominantly settlement areas built around reef mining. Multi-component sites are present at each of the four diggings. EM002 is a small site with several mining processing and settlement features. It was likely a small scale removal of a quartz outcrop, a testing hole to determine the depth of the reef is indicated, as there is not a great deal of mullock in the area I presume that the reef was not deep (Figure 4.29).

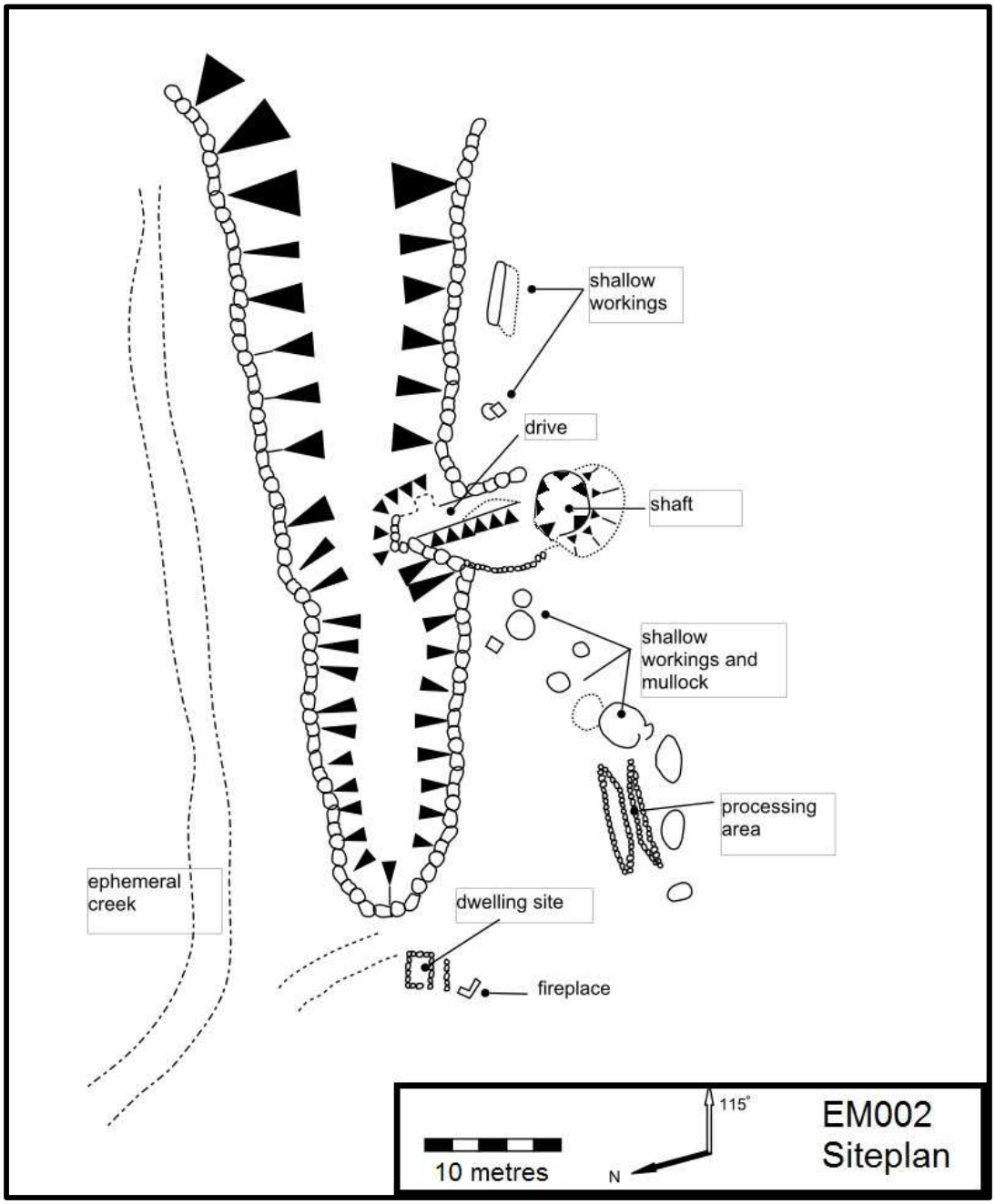


Figure 4.29 Plan of multi-component site (EM002)

Research shows that the Cape River gold field had a battery present at each of the four main diggings, at various stages of the field's early productive life, and one situated at Norwood. The batteries proved difficult to relocate and identify, despite old maps showing some of the

locations. All of the machinery and boilers were evidently moved on, either sold or scavenged. The remnant stone, masonry or wooden foundations may still be present at some places, and possible sites where potential foundations were located are CN029, OK044 and CV024 but owing to uncertainty were not recorded as such. Crushing appears to be the limit of large scale gold processing at Cape River based on current archaeological and historical findings. Chlorination and cyaniding are not mentioned in the relevant geologists' reports, nor is there, to date, any archaeological evidence of the necessary equipment for these processes. The exception was a chlorination works just outside the Cape River gold field within the boundary of the Ravenswood gold field constructed during 1885 (QVP 1886:16).

The last site type to be discussed is the *other* sites. The site type is designed to capture sites that do not neatly fit into the other categories. The sites comprise artefact scatters, several interesting stone arrangements, potential settlement sites where there is just not enough order to define the site, and areas surveyed that were archaeologically barren. It is likely that the two stone arrangements (see Figure 4.30 and 4.31) represent mining homestead lease border markers as suggested by GIS map overlays. A use as reef markers was suggested by Max Read, gold miner and owner of Capeville Station, in a personal conversation in October 2003.

Figure 4.30 Stone arrangement (CV012)

Figure 4.31 Stone arrangement (CV013)

Survey Discussion

The surveys were intended to record as much evidence for mining as was possible with the aim providing evidence for the material spaces of mining at the Cape River gold field. The material spaces are a fundamental component of the development of the archaeological landscapes for the thesis. The variety of sites located was ordered by applying an adaption of Pearson and McGowan's (2000) model type profiles, as a site typology within a site database.

The site typology as used in the thesis shows the advantages and disadvantages of quantification. Recording site types allows for the numerical comparison of different site types across individual diggings both within a field and across fields. This may provide a method of assessing the types of technology, types of mining and extent of the gold field when historical records of the field are scant. Such numbers may indicate the relative intensity of mining across a geographical area, and these data may be collated and compared between various mining districts. Further, when comparing technologies across fields the absence of specific components in the archaeological record may reveal a pattern of significance. A site typology provides a means of categorization, which can be important in deciding on the relative significance of mining sites for cultural heritage assessments. One of the disadvantages of quantification is that by itself it does not provide a temporal indication for workings at a field. The newest mining and processing technologies were not always used. The take-up of technology at a given place was dependent on numerous factors such as, cost, familiarity and competence with new technology (Wegner 1995b). Thus the absence of a particular mining technology does not always provide a temporal indicator for the site.

As a site type the *multi-component* site contradicts the methodological advantages of quantifying types of sites. One difficulty is the artifice of applying a boundary to a site, especially if co-located technologies indicate a palimpsest is present and the site is unlikely to represent a single period of use (Pearson and McGowan 2000:16-17). Further to this are the degraded nature of some sites, for example earthworks and stonework associated with race systems such as the elluvial creek workings at OK026. These workings are apparently fed by at least seven channels, yet some of these earthen channels appear discontinuous. It maybe that flumes carried water between the more substantially constructed curved portions of the flow, or it may be that some of the channels represent barrow ways for easy traverse between workings around a contour at elevated sites. Many of these channels extend for hundreds of metres around Mt. Elvan, potentially connecting several activity areas. The distinction between one site and another becomes vague, for example EM035. The multi-component site type also covers up the inherent ambiguity of different functions and technologies. However, the multi-component site type has the advantage that it recognises the artifice of separating the components of a continuous, generally water dependent technology from the material remains of the miners and the people that depended on it for physical and social support. That the technology and other aspects of life were intricately bound is clear from the proximity of technological and non-technological elements in the multi-component sites, for example CV001, EM009-11, and OK014.

The distribution of sites across the field both within the main surveyed areas and areas surveyed beyond them show that although the Cape River gold field was a single administrative area it was essentially composed of four discrete diggings. The diggings were supported by three significant settlements. Each digging presents as a palimpsest with the most recent mining

activity often erasing earlier mining traces. The earlier traces themselves comprise both erasure and intermingling of potentially chronologically distinct mining activity. Components that have survived are located away from modern mining; at the base of hills, or higher up as elluvial sites or races feeding sites lower down. Missing from practically all sites is any evidence of machinery such as whims, poppet heads, boilers and stampers. The exceptions are the Balgay and Coming Home reefs; both of which date from the mid-twentieth century.

The small occupance sites, generally comprising a single fireplace/hearth or several courses of building outline are intimately associated with the mining sites, which has led to the large number of recorded *multi-component sites*. These are found across all four diggings. The three larger settlement sites comprise one definitely nucleated site at Capeville, one non-nucleated settlement at Specimen, and one well-documented but fragmentary settlement at the Upper Cape. In all cases the settlements are inter-mingled with mining activity. Capeville exists only as numerous rubbish pits, no evidence of roads, or structures remain, that it was a nucleated settlement is derived from map evidence and the extent of the rubbish dumps. The Specimen settlement is non-nucleated because the presence of reef mining sites cross cut areas of settlement in a fairly hilly terrain. The Upper Cape, while having a documented presence on the south of Cape River, has material evidence on the opposite side, near the junction of Gorge Creek and Cape River. There is also a probable settlement further up the Gorge Creek. I consider that the survey of the south of the river was inconclusive and could be expanded. It seems likely that the settlement of the Upper Cape spanned the river.

An exhaustive survey of the Cape River gold field was not completed as a part of this research. The balance was always between obtaining a broad sample, and recording sites of interest in sufficient detail. As previously mentioned the survey encompassed the five most significant of eight probable properties that now accommodate the field's original extent. Several ground searches were undertaken for specific features present on old maps. These included searching for Challinor's Store and Harris's Store (Roberts 1867), and several garden areas and evidence of the dam across Cape River (Daintree 1869a). These searches are not recorded in the database because no archaeological material was located. Additionally, areas such as Golden Gully and Nuggety Gully remain to be recorded as does a detailed look at the deep shafts of the deep lead. Chinaman's Creek was likewise only briefly surveyed.

Part B

Collection and excavation rationale

The rationale underpinning the excavation program was the requirement to obtain a, diverse and more detailed data set for the investigation of material space than was provided by the recording and analysis of the site types from the field survey. Recording of sites and their components, including the technological components of mining, does not always provide sufficient detail to assess a broad scope of social activity at a gold field. Hence, up to 13 sites were initially planned to be excavated; which was expected to sample a variety of site types through the historic phases of the gold field. However, it quickly became obvious that this was too many sites for the time frame and personnel available. Fortunately, amongst these were two sites, located at different diggings, thought to have been occupied at different periods, and thought to have been associated with different types of gold deposit. These two sites, designated CV009 and EM022 are treated separately for the purposes of this chapter. A more detailed account of the excavations is found in the report at Appendix 2.

Site 1: CV009 Collection and excavation

Introduction

CV009, is located on Capeville Station, north of Pentland (see Figure 4.32). It is situated within a mining area historically referred to as the Pentland Reefs. The area is approximately 440m above sea level on a plateau of the Great Dividing Range. The site is located near the *Sara Howson* and

Hayward Reef mines but there is no established historical association with them. The site datum for CV009 is at UTM 55K 332785E.7734405N (WGS84).

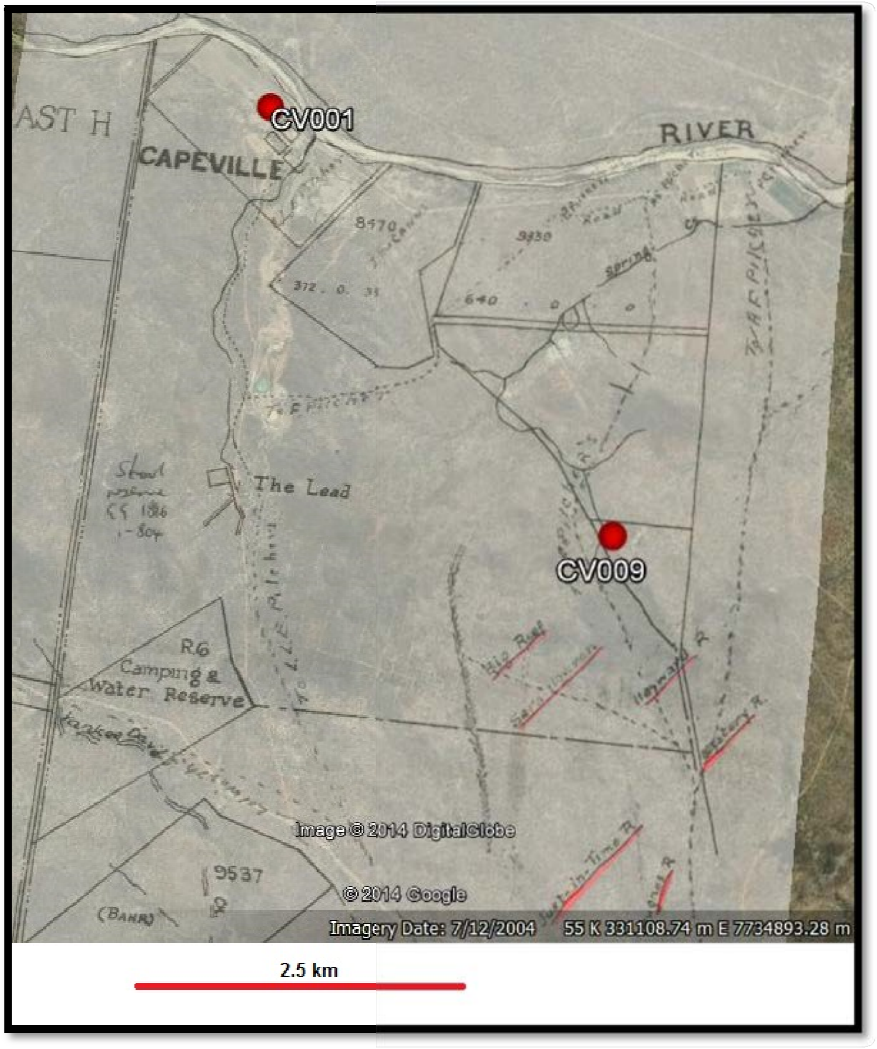


Figure 4.32 Location of CV009, showing Pentland Reefs, (after Morton 1937 and Google Earth)

The area is lightly wooded with low eucalypts, predominantly ironbarks *(Eucalyptus cerbra),* to 7m, and is subject to cattle grazing. The ground cover consists of scant clumps of tufted grass. The ground surface over the majority of the site is small gravel in a course sand matrix however

towards the south a low rocky outcrop surfaces. The site is situated on the northern side of a low hill that slopes down towards a small east-west flowing creek.

The site covers an area of approximately 3000 square metres and is roughly bisected by a well-defined vehicle track that has been graded to a depth of approximately 15cm below the ground level. Immediately to the south of the road is a fireplace, and nearby is an ill-defined low earthen mound; both were associated with a scant and dispersed artefact scatter. The artefact scatter to the north of the track was more extensive, with some areas of intense deposit consisting mostly of glass fragments, (see Figures 4.33 and 4.34).

Figure 4.33 CV009 site surrounds

Methodology

This site was chosen as one of the areas for collection and excavation for the following reasons:

- The fireplace indicated that this was an area of occupation; it was clearly within the area of the Pentland Reefs, and was potentially associated with them.
- There was an extensive scatter of surface artefacts in a large area surrounding the fireplace, which were presumed to be associated with the operation of the site.
- Surface artefacts represented a variety of materials, although much was fragmented.
- It was hoped an artefact assemblage would reveal a clear set of temporal markers for the site, and indicators for determining the site use.

Figure 4.34 Fireplace facing north-west, scale increment 20cm (CV009)

This site had been visited several times over the course of the fieldwork and early recording of the area was as a part of a more extensive site recording at Capeville. Prior to collecting the surface artefacts a site record was made that included: a plot of the relative locations of significant features and artefacts, a plot of the relative locations of other surface artefacts and a general survey of site topography. The survey primarily used the baseline offset method, employing six interconnected baselines. Supplementary spatial information for the site was recorded using a Nikon DTM-310 EDM, site datum was established with a Garmin 12XL GPS on the WGS 84 coordinate system.

Collection and excavation took place from July 13th to 18th 2003. The initial objective of the site recording was to locate and collect all artefacts. However, the occurrence of several widespread dense scatters of predominantly glass fragments resulted in a modification of this objective. The largest dense scatter was gridded as trench AB42, and a total surface collection from one square metre (AB43) was collected as a random sample in order to extrapolate for the whole area. Square AB43 was subsequently excavated.

Artefact locations were pegged using numbered, coloured flags. The fireplace was also recorded by offset survey. Figure 4.35 below shows the artefact locations and the relative locations of the fireplace and excavation squares. Artefacts collected at a peg included all artefacts within a radius of 0.5m from the peg. Where an extensive scatter was collected the peg locations have a circular boundary. The three areas of denser artefact concentration are bound by grey polygons in figure 4.36.

The decision on where to excavate was made prior to the collection of surface artefacts, and the excavation trenches were not chosen using a random method. Initial assessments showed that there was an extensive artefact scatter (AB42) to the north-east of the site and while not resembling a refuse pit, it was thought this area was likely to contain sub-surface artefacts, because of the density of surface artefacts. Additionally, it seemed reasonable to assume that the area near the fireplace, presumed to be the interior of the structure due to its ‘U’ shape, might contain artefacts, so a trench (HE1) was gridded there for test excavations.

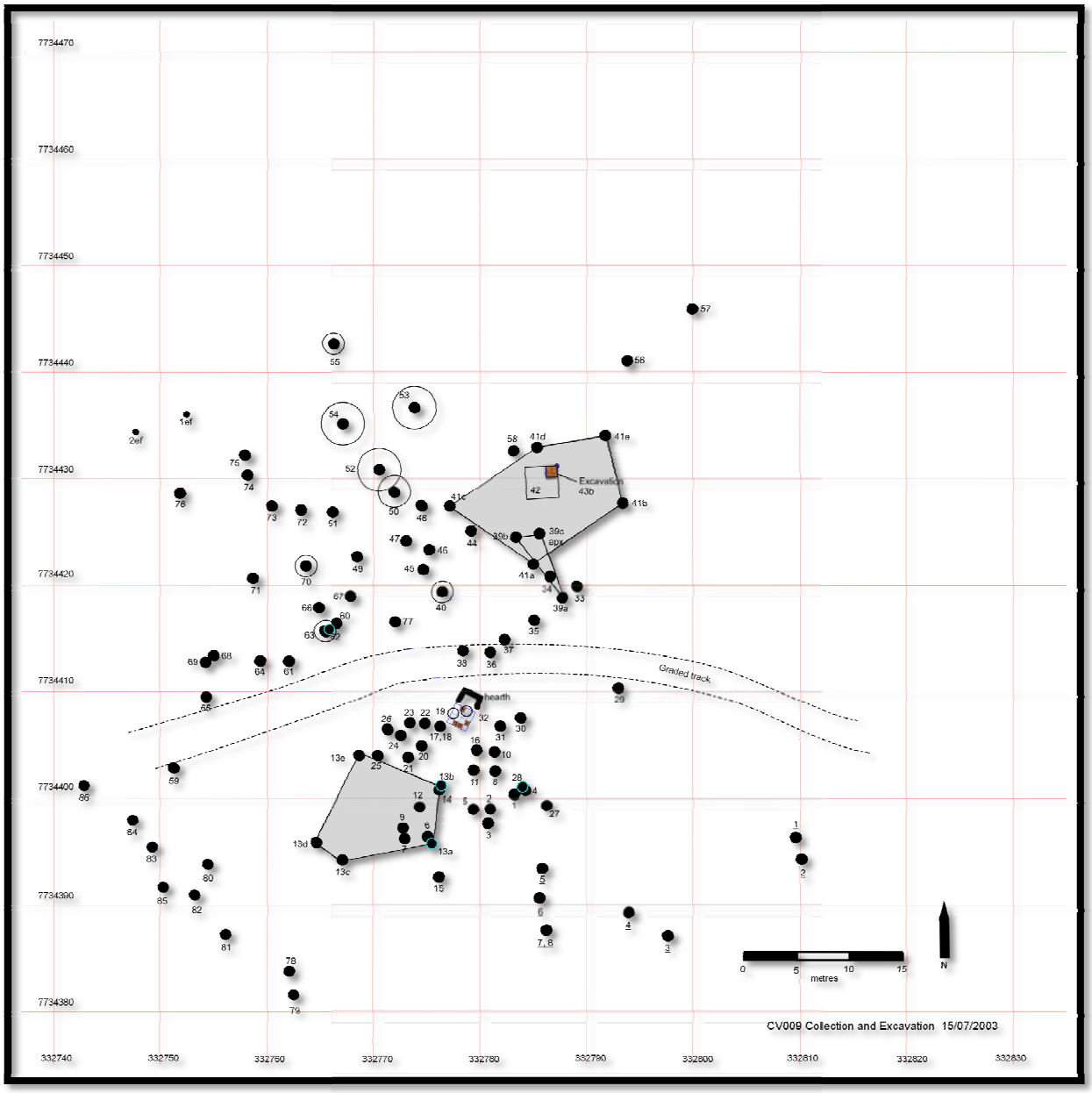


Figure 4.35 CV009 artefact and feature distribution

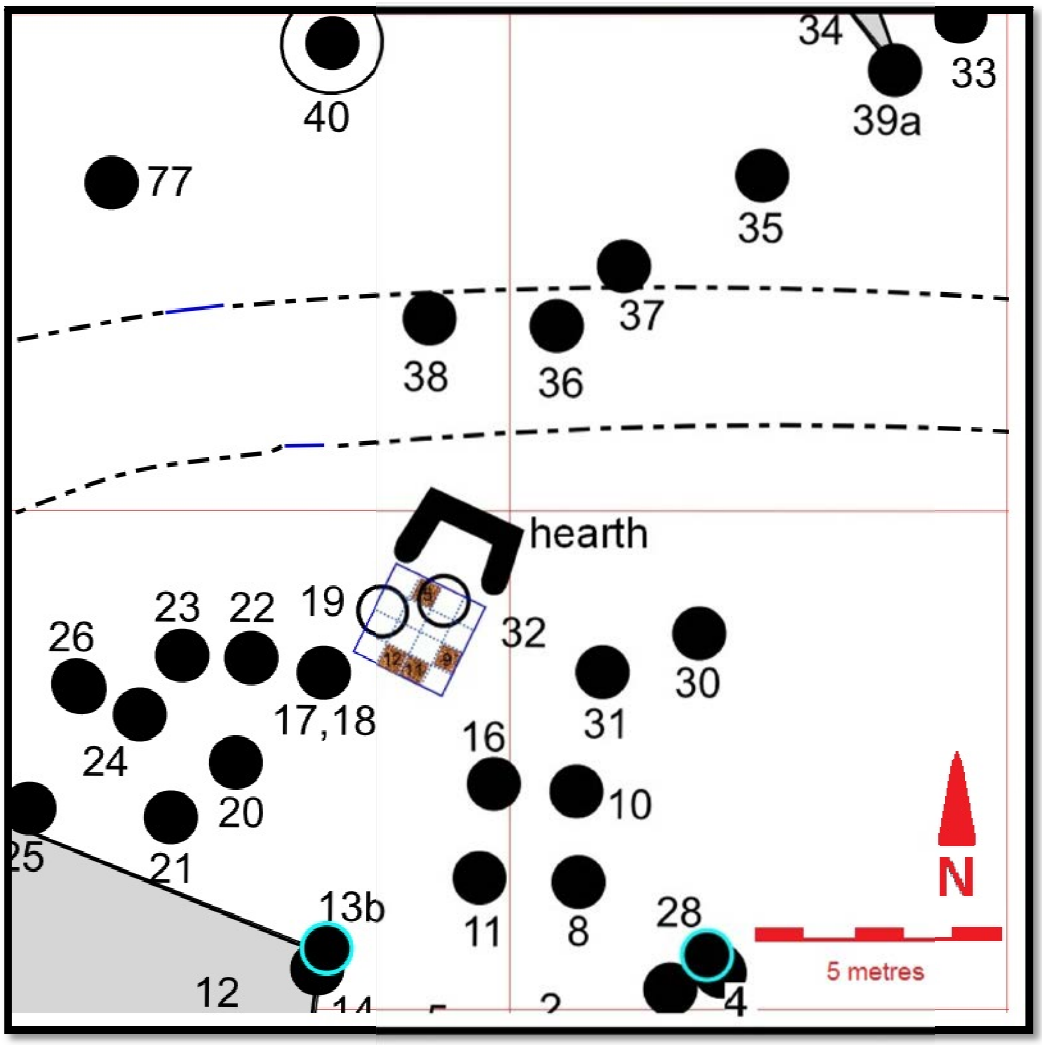


Figure 4.36 CV009 fireplace/hearth area detail

Collection and excavation results

At CV009 surface collection resulted in an assemblage of 1441 artefacts, weighing approximately 24.7 kg. Excavation comprised four test pits, at two locations, totalling 2.5 square metres, recovering 104 artefacts. 1545 artefacts were recovered from the whole site. A greater proportion of artefacts were recovered from the surface collection. Table 4.2 provides summary information for artefacts from CV009. Tables 4.3 and 4.4 quantify the artefacts by fabric. A

detailed record of artefacts recovered from the locations shown in figure 4.36, and from excavation spits and features, is found in Appendix 2. A functional analysis of the diagnostic assemblage from CV009 is the subject of Chapter 5 and also Appendix 4.

Table 4.2 CV009 artefact summary

Site	Number	Weight (gm)
CV009 Collection	1441	24677
CV009 Excavation	104	672
CV009 Totals	**1545**	**25349**

Table 4.3 CV009 artefact numbers by fabric

	Collection	Excavation	Totals
Metal	451	28	**479**
Ceramic	272	7	**279**
Glass	714	69	**783**
Bone	0	0	**0**
Other	4	0	**4**
Totals	**1441**	**104**	**1545**

Table 4.4 CV009 artefact weights (gm) by fabric

	Collection	Excavation	Totals
Metal	7372	40	**7412**
Ceramic	2433	28	**2461**
Glass	14304	604	**14908**
Bone	0	0	**0**
Other	568	0	**568**
Totals	**24677**	**672**	**25349**

Site formation processes and taphonomy

CV009 was probably subject to several taphonomic factors which have affected the formation of the site. The most obvious is the graded track that cuts through the site. The track has resulted in at least the displacement of artefacts, as none were found on the track, although artefacts were located on the low mounds to the edge of the track. The track probably serviced recent (1980s) mining exploration, as located within the site boundary is a mining lease peg. The track leads visitors past the prominent fireplace and this visibility raises the probability that the site has been picked over, and the possibility that intact items may have been collected as well as other items of interest. The site is also still subject to grazing, and cattle were seen to roam through the site throughout the excavation period. This activity must have resulted in the fragmentation of glass and ceramics over time, and even the movement of artefacts. Natural taphonomic features such as bushfire are impossible to discount but their impact on this site is hard to gauge as the site has only sporadic grass coverage and is only lightly treed. It is however unlikely the area has avoided impact by bushfire, although the mining lease peg may have been in excess of 30 years old and was not burnt.

Fireplace excavations

The trench HE1 was pegged to the immediate interior of the fireplace. Covering 4 square metres, the 2 m x 2 m grid was subdivided into 50 cm x 50 cm units. Four squares were randomly chosen as test pits. The squares were labelled Excavation (HE1) and were numbered HE1-5, HE1-9, HE1-11 and HE1-12 respectively (see figure 4.37). The numbering system was based on a clockwise spiral. A standard recording method allocated the north-west corner as A, and the subsequent clockwise corners B, C and D.

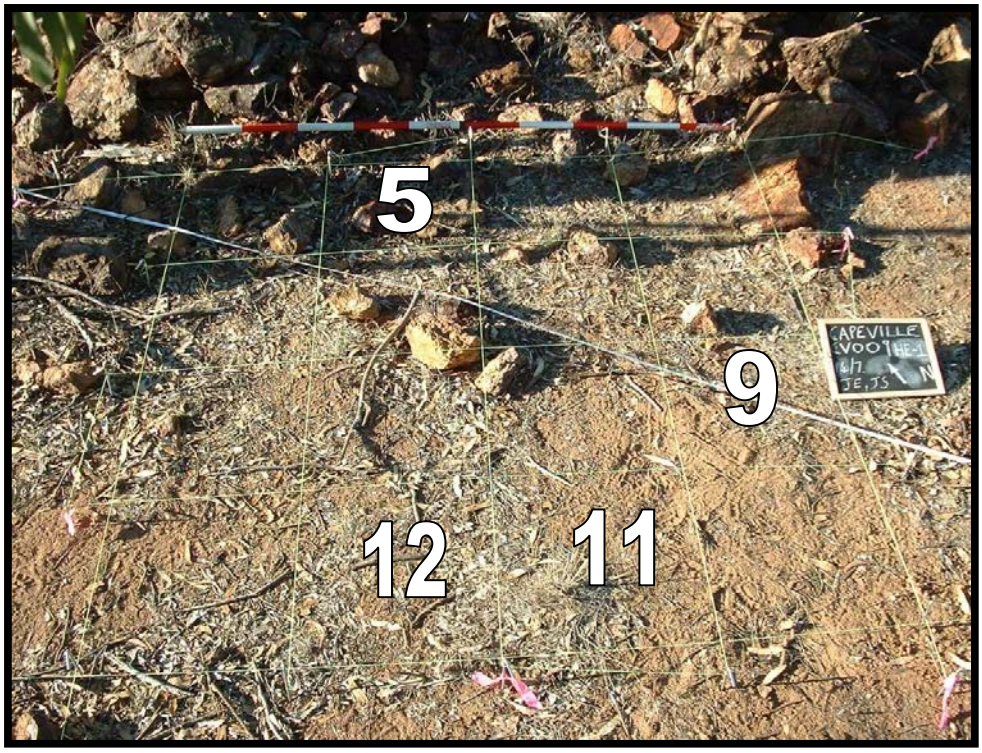


Figure 4.37 Trench HE1, showing excavated squares, facing NNE, scale increments 20cm

The four test pits revealed very few artefacts (n=27). Only one, the glass piece from the surface of HE1-5, was considered as being diagnostic. Stratigraphy for the test pits consisted of a thin humus layer, slightly thicker in HE5, which was above a compacted gravel layer. The gravel was infiltrated with some roots and small amounts of organic matter. Figure 4.38 shows the appearance of one square. There was nothing in the stratigraphy or recovered artefacts to encourage further investigation of fireplace area of the site. Excavation details, including stratigraphic sections are reproduced in Appendix 2.

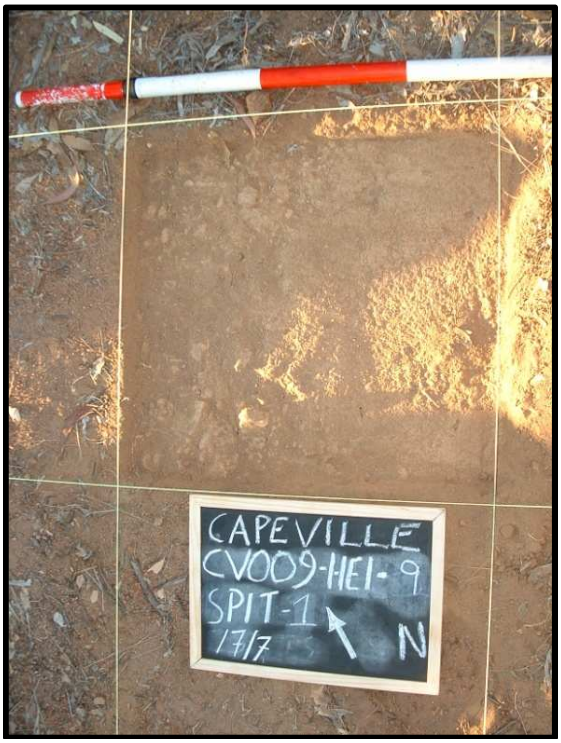


Figure 4.38 Square HE1-9 spit 1.

AB43 Dense Scatter Test Excavation

A large scatter comprising mostly glass sherds was located to the north-east of the site. A 3 m x 3 m grid labelled (AB42) was laid over the scatter. A 1 m x 1 m square was randomly chosen from the grid for excavation, it was labelled AB43, (Figures 4.39 and 4.40).

Figure 4.39 Square AB43, foreground, scale increment 20cm

Figure 4.40 Square AB43 Spit 1 showing two features

The surface was of AB42 mostly regular with the exception of a small raised ant-nest. The artefact distribution in AB42 was not uniform. Although 178 artefacts were collected from the surface of AB43, excavation indicated that the square AB43 was not a refuse pit, and it was concluded that further excavation was unlikely to reveal a greater concentration of material. It is possible that the artefacts recovered from the excavation are in a cycle of moving down into the hard gravel layer and eroding out of the same layer, depending on environmental conditions.

Due to the varying density of artefacts across several squares in AB42 the extrapolation of artefact numbers from AB43 would not have given an accurate representation of the artefacts across AB42, as was thought at the time of collection. A more reasonable alternative might have been a transect sample collected across the area of variation in artefact density.

Stratigraphic interpretation of artefact distribution

At CV009 the overwhelming majority of artefacts were recovered from the surface (n=1441) as opposed to the excavations (n=104). The location of the surface finds was shown in Figure 4.35.

Considering the very simple stratigraphy of the CV009 excavations, spatially representing the small number of excavated artefacts, the majority of which were glass sherds, would not improve the site interpretation and is not included.

Conclusions for site CV009

The site was obviously an occupation area from the evidence of the substantial fireplace, and the extensive artefact scatter that comprised a variety of fabrics and objects. There was little surface

evidence beyond the fireplace to indicate what dimensions a structure surrounding, or incorporating it may have been, or what it may have looked like.

The taphonomic impacts mentioned previously have most likely resulted in both a reduction in the size, and potentially the variety of artefacts in the assemblage. The cattle's grazing has undoubtedly reduced the integrity of the remaining artefacts, resulting in the low numbers of intact artefacts. Bushfire may have aided the destruction of any organic materials including a structure if there was one. While the extent of the impact of taphonomic features on the site and assemblage is impossible to quantify, their impact may be more pronounced at a site that has apparently little sub-surface deposit compared to its diverse surface assemblage, and this must be a caveat to any site interpretation.

The areas that it was initially thought might reveal sub-surface deposits, proved otherwise. The lack of deposits in these areas could indicate that occupation of the area was for a very limited time, with limited opportunity for artefacts to become buried. Additionally, the soil, topography, vegetation and climate may not have provided conditions suitable for the rapid deposition of sediment. It seems likely that both scenarios have contributed to the lack of quantity and variety in excavated artefacts in comparison to the collected assemblage.

Site 2: EM022 Collection and excavation

Introduction

Site 2 is located on Ellimeek Station (see Figure 4.41), within the riparian zone of Escort Creek / Store Creek and an unnamed tributary creek that joins Escort Creek downstream from the EM022 site. The site is located at approximately UTM 55K 323023E 7728757N (WGS84).

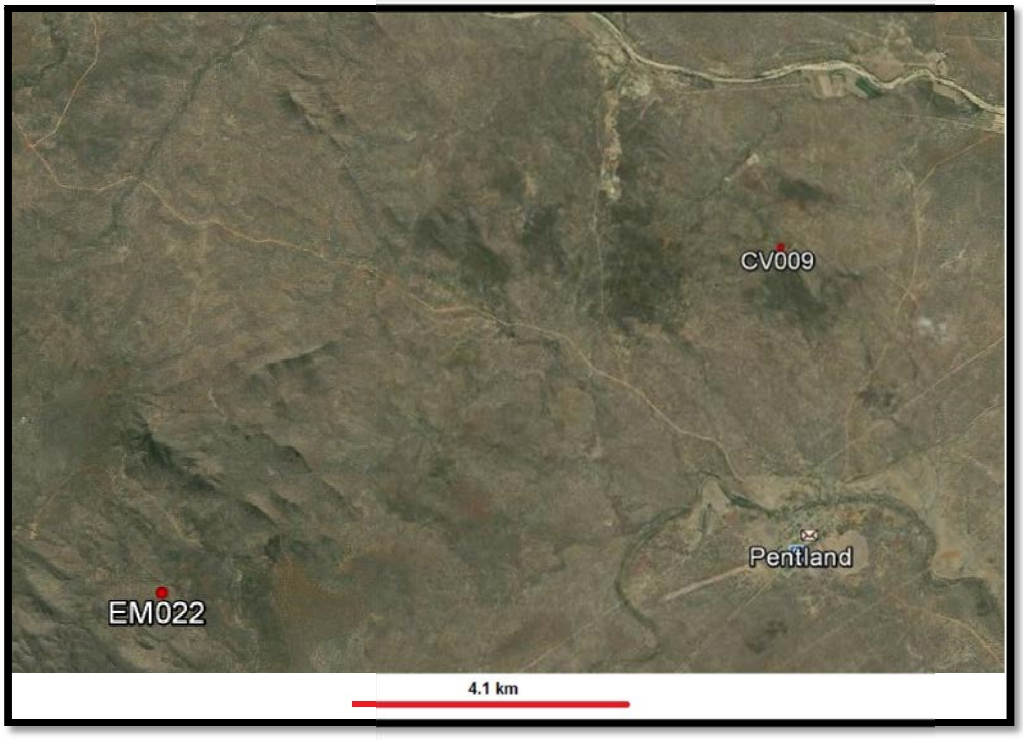


Figure 4.41 Location of EM022 relative to CV009 and Pentland (Google Earth)

The site was lightly wooded on its southern edge with large ironbarks *(Eucalyptus. cerbra*) occasional smaller eucalypts, and prickle bush (*Parkinsonia acetulata*). Beyond the southern edge of the site and extending onto the lower slopes of Golden Mount the vegetation becomes slightly denser. Although potentially subject to intermittent grazing by cattle there was no evidence of recent grazing. The site was visited several times during the year and grass cover

varied from scant low tufts to a moderate cover of tufted grasses. There was a gentle downhill gradient south-west to north-east towards Escort Creek.

The site encompassed approximately 2500 square metres, an area that surrounds the remains of a fireplace. Other features of the site are a mound of boulder and rough stone close to the fireplace and a thin line of stones forming an edge or border also near the fireplace. The site had a broad and in some places dense artefact scatter. To the south of the site the scatter was practically contiguous with another dense and varied scatter at site EM036. The area to the north beyond the site limits was also contained an intermittent scatter of artefacts.

Methodology

The site was chosen for collection and excavation for the following reasons:

- Escort Creek is marked on two of the earliest maps of the mining area (Daintree 1869a, Roberts 1867).
- The fireplace indicates the site was occupied, and the site is close enough to the visible alluvial diggings of Escort Creek to be associated with them. As with site CV009, it was hoped that excavation of the area presumed internal to the fireplace would reveal an assemblage that was indicative of the function of any potential structure.
- During an earlier site recording at EM022, a Chinese cash coin was located; indicating that it was unlikely that enthusiasts had metal detected the area.
- There was an extensive and variable scatter of surface artefacts in the area, which it was presumed were associated with the site. It was thought that the extensive surface collection could enable an interpretation of site use.

The EM022 site was visited several times over the course of the fieldwork (2002-2005), and early recordings of the area were a part of the more extensive recording of sites at Ellimeek. The rough peninsula defined by the confluence of Escort Creek and an unnamed creek had a scant and disseminated artefact cover throughout, consisting predominantly of broken bottles and metal container remnants. Several areas with abundant artefact scatters were located. The scatters consisted predominantly of ceramic and glass but also with some match tin lids and other ferrous metal items. EM022 was defined on the basis of the concentration of artefacts around the fireplace.

Collection and excavation took place from July 19th to July 26th, 2003. The initial objective of the recording was to locate and collect all artefacts associated with the fireplace; however the almost contiguous artefact scatter over a large area prevented this from being achieved. A site boundary was established using markers that indicated either the limit of artefacts or a decreased concentration of artefacts in the direction of a marker. Two, 50 metre baselines were set internal to the site boundary, at right angles. Individual artefacts and clusters of artefacts were marked with numbered pegs. Systematic recording of the pegs and features at EM022 was by the baseline offset method. The location of surface artefacts and other features was also tied into known coordinates. Artefacts collected at a peg included all artefacts in a radius of 0.5 m from the peg. Those pegs where an extensive scatter was collected are indicated with circular boundaries, (see Figure 4.42). Additional spatial information for the site was recorded using a Nikon DTM-310 EDM; site datum was established with a Garmin 12XL GPS using the WGS 84 coordinate system. Most of the excavation levels were manually recorded using a dumpy level.

A dense artefact concentration was noted near the fireplace, and this area was tied into a baseline and subdivided into seven equal areas of 3 m x 3 m (GS1-7), (see Figure 4.43). A complete collection of all surface artefacts was completed across the 63 square metre area.

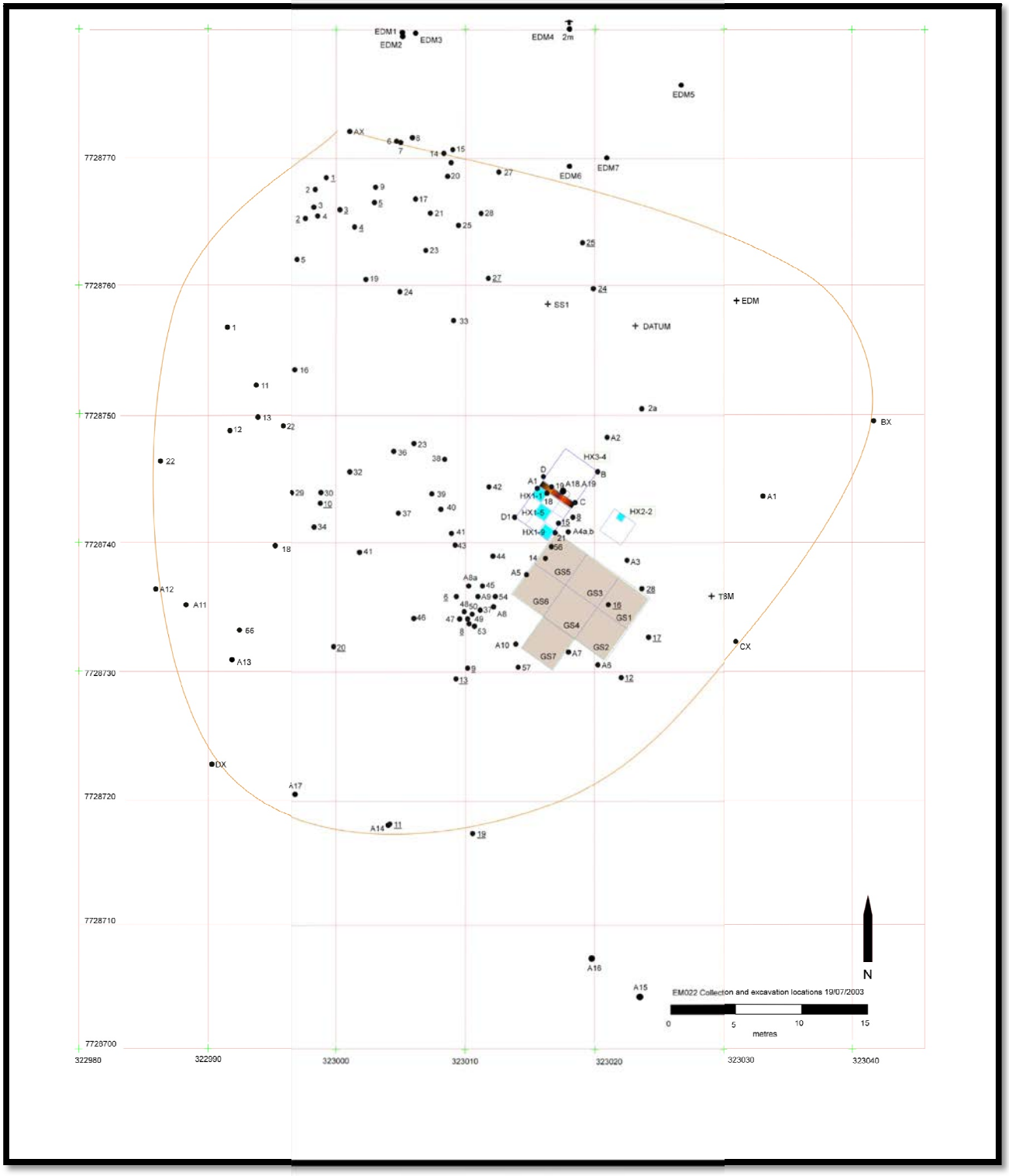


Figure 4.42 EM022 site map showing artefact and feature distribution.

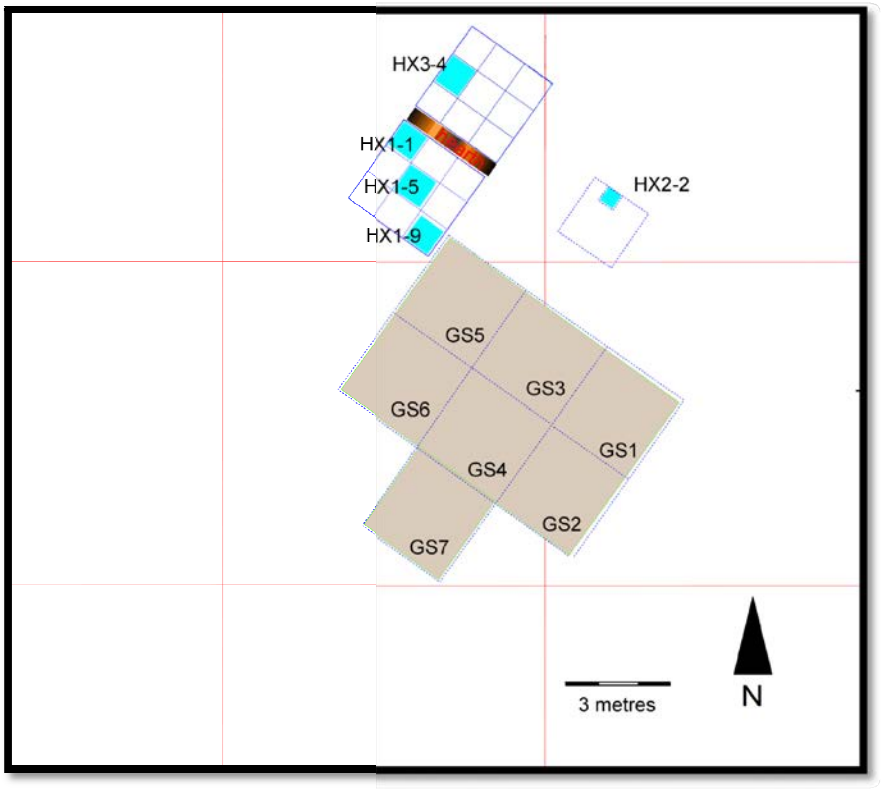


Figure 4.43 Fireplace, excavated squares (HX) and dense artefact scatter (GS)

Collection and excavation results

Surface collection resulted in an assemblage of 1669 artefacts. The artefact information is summarised in table 4.5. At EM022, five squares closely located, totalling 4.5 square metres were excavated. Excavation revealed a greater number of artefacts than surface collection and did provide indications of the site structure. 4123 artefacts were recovered from the whole site. Tables 4.6 and 4.7 quantify the artefact data by fabric. Detailed descriptions of trench stratigraphies for EM022 can be found in Appendix 2.

Table 4.5 EM022 artefact summary

Site	Number	Weight (gm)
EM022 Collection	1669	17749
EM022 Excavation	2454	4941
EM022 Totals	**4123**	**22690**

Table 4.6 EM022 artefact numbers by fabric

	Collection	Excavation	Totals
Metal	345	788	**1133**
Ceramic	258	93	**351**
Glass	1043	719	**1762**
Bone	23	850	**873**
Other	0	4	**4**
Totals	**1669**	**2454**	**4123**

Table 4.7 EM022 artefacts weights (gm) by fabric

	Collection	Excavation	Totals
Metal	6887	1186	**8073**
Ceramic	3043	304	**3347**
Glass	7745	2228	**9973**
Bone	74	1217	**1291**
Other	0	6	**6**
Totals	**17749**	**4941**	**22690**

Site formation processes and taphonomy

EM022 had the potential to be subject to natural and human mediated site formation processes. As the site is at base of a gentle slope, one of the potential taphonomic aspects of site formation is the potential for the accumulation of sediment on the uphill side of the fireplace being a

natural and a cultural process, or at least a process that has decreased the impact of erosion. Additionally, the site is lightly treed and lightly grassed, although it is surrounded by denser woodland. Because of this there is a high probability that the site has been affected by bush fire at some time, and that this has affected the survival of organic artefacts including any wooden structural items, if they were present. Tree roots had not significantly disturbed the excavated areas. Some roots were encountered in excavation of square of trench HX1 but not in HX2 or HX3. Further, the property is a working cattle property and cattle were observed in the vicinity of the site but not at the site. It is possible that over time cattle have contributed to site disturbance in the form of movement of artefacts and breakage and fragmentation of artefacts. Lastly, are the purely human impacts. Whether the site has been disturbed by metal detectors or other collectors is difficult to gauge. There was no obvious evidence that anybody had disturbed the site. Finding the Chinese cash coin and the intact hamilton bottle suggest that the site, if it has been picked over, was not extensively examined. The potential for the removal of intact surface items and other items of interest cannot be discounted.

Trench interpretation - HX1

The stratigraphy from all three excavated squares of HX-1 was consistent with the trench representing the exterior of the occupance and fireplace with ash and debris from the fire being discarded immediately to the exterior behind the fireplace. It appears that the stratigraphy of the trench was built up from an accumulation of artefacts, sediment and a combination of ash, and burnt and partially burnt, pieces of wood. Occasional lenses of ash may represent other forms of discard. It is possible that the larger rocks throughout are collapsed levels of the hearth, particularly the larger pieces, and those clearly above the natural ground level. The square HX1-

9, furthest from the fireplace, had several pieces of bone, one associated with an apparently flaked piece of glass. These were situated slightly below a dark lens that may have represented a later campfire. Ceramic, glass and metal artefacts were abundant throughout this trench.

Trench interpretation - HX2

A combination of smooth boulders and angular rocks suggest the use of water smoothed boulders and perhaps some excavated material as well. The rocks probably represent structural building material, probably external walls, which have mostly collapsed to the internal area of the structure following a fire. A substantial burnt earth layer indicates the structure also had a substantial timber frame, roof or furniture. Artefacts in the layer below the burnt layer indicate that they were deposited before the timber element of the structure collapsed. The deep orange and the extent of the burnt layer indicate that the fire was extensive and if the timbers were load bearing may have contributed to the collapse of the structure. The stratigraphy of this excavation is shown in figure 4.45.

Due to the slight slope of the area and the likelihood that this occupied site was rapidly cleared, the upper layer of loam and gravel probably represents sediment moved down the slope by rain events, deposited amongst the rocks and boulders. The rocks will have also caught leaves and other vegetative matter which will have decomposed to humus over time. The fragmentary nature of the small artefact assemblage does not indicate a particular use for the structure. Although the substantial stone component and small size may indicate the structure was a storage area or bund.

Trench interpretation - HX3

Only one square metre of the nine square metre area was excavated and a full interpretation is therefore not possible. As excavation of the square proceeded it revealed an increasingly complex set of features although stratigraphy remained quite simple. Relative to HX-1 there was a lesser number of artefacts and no bone. When compared with HX1 it seems likely that HX3-4 is located in the internal area of a structure. This is further emphasised by the burnt timber feature which appears to be parallel to the hearth suggesting it is a structural element of the floor or a possibly piece of framework. That it appears to be immediately above or perhaps embedded in the red/orange gravel layer is also suggestive of a structural piece of timber. The thin layer of brown sandy loam present above the red/orange gravelly layer suggests that there was little deposition in this area. This could be explained by the hearth blocking the movement of sediment over the site.

Stratigraphic interpretation of artefact distribution

At EM022 the non-faunal assemblage is roughly equally divided between collected (surface) finds (n=1646) and excavated finds (n=1604) The location of the surface finds is shown in Figure 4.42. Cross referencing this figure with the data available in Appendix 2, pages 55-60 provides information about the spatial distribution of artefacts across the site.

Spatially representing the stratigraphic location of excavated artefacts is not included in the thesis because the stratigraphies of all excavated squares were quite simple. The interpretation for Trench HX1 is of only two stratigraphic events. The first is the deposition of ash and charcoal that is mixed with a yellow loam, close to the rear fireplace and clearly evident in HX1-1 and

HX1-5. This layer contained artefacts in some areas of the trench but not others. The second is the deposition of a variety of artefacts including bone and the subsequent accumulation of feature 1. No discernible stratigraphy was found within feature 1 other than charcoal lenses. There is only one other association within the assemblage which suggests a discontinuity in the suggestion of a steady accumulation of sediment across the trench. This is the finding of what appears to be a glass flake in association with bone (see Figure 4.44). These artefacts were close to the surface of feature 1 and nothing appeared to separate them from the continuity of artefacts found throughout the stratigraphy of square HX1-9. Likewise trench HX2 had a simple stratigraphy that is detailed in Appendix 2, pp44-7, and HX3 which also had a simply explained stratigraphy that is explained in Appendix 2, p43.

Figure 4.44 Possible glass flake (EM022HX1-9S3F2.G04) found in association with bone

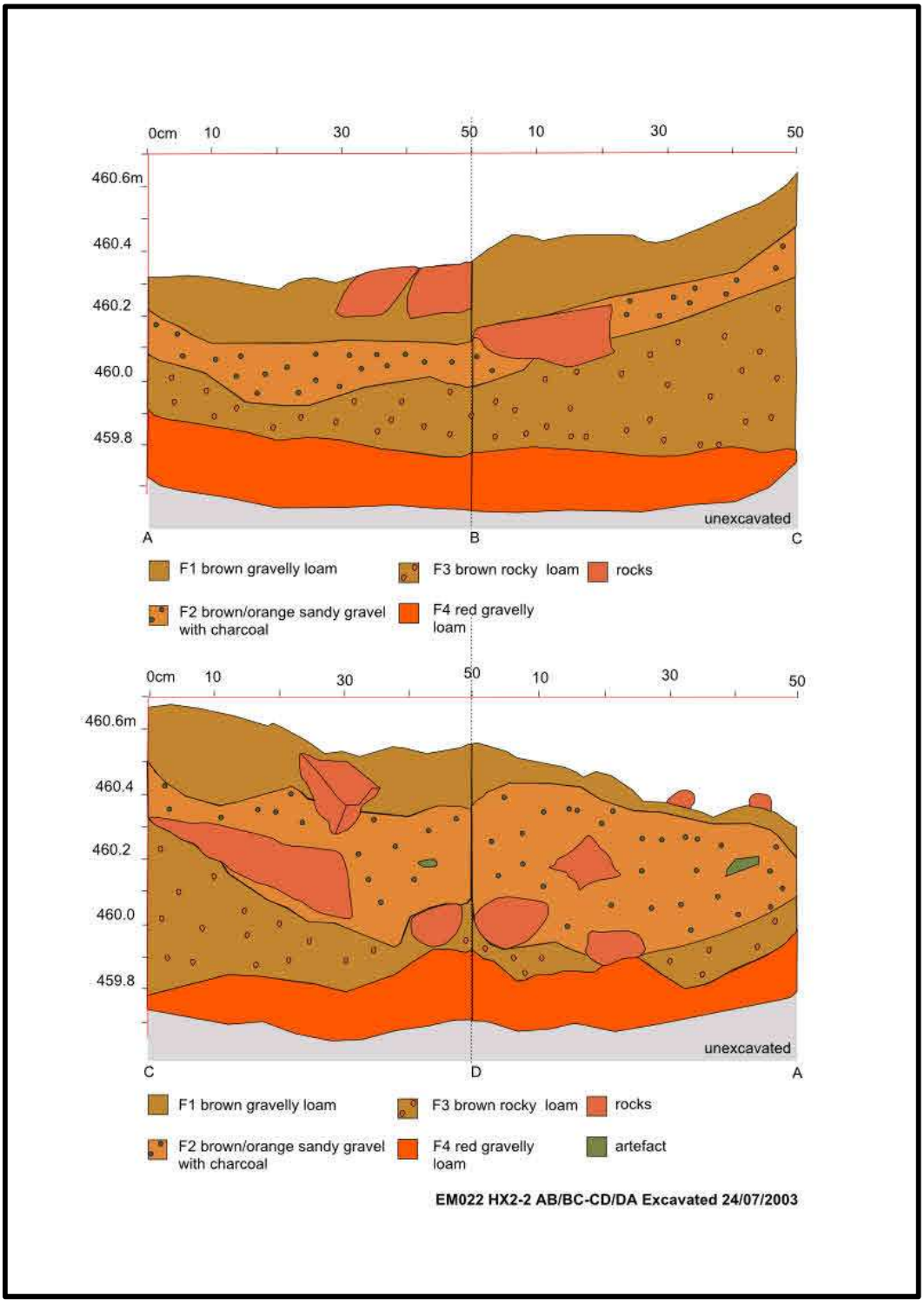


Figure 4.45 HX2-2 excavation stratigraphy

Conclusions for site EM022

Most of the taphonomic processes mentioned previously have likely resulted in both a reduction in the size, and potentially the variety of artefacts in the surface assemblage. Although, if sedimentation did accumulate behind the fireplace this may have prevented some souveniring of artefacts. There appeared to be little appreciable difference in the fragmentation of the surface and excavated assemblages with both being highly fragmented. Excluding the bone fragments reveals an almost equal proportion of excavated and surface artefacts. Hence, the impact of any souveniring of artefacts on conclusions for the site is proportionately diminished when compared with the same artefacts figures for CV009. Bushfire may have aided the destruction of any organic materials including a structure if there was one. While the extent of the impact of the variety of taphonomic processes on the site and assemblage is impossible to quantify, the potential for these processes to have affected the assemblage must be a caveat to any site interpretation.

The excavations revealed the internal area of the structure once present on the site to be north of the fireplace. It appears that it was possibly a wooden structure with thin slate like stones forming the base layers of the fireplace. Insufficient stone waste was present at the site to suggest a much more substantial stone fireplace. The possibility exists that some stone has been scavenged but it seems unlikely. The find of a burnt square edged timber parallel to the fireplace in square HX3-4 may represent either remnant timber flooring or some form of structural frame in the vicinity of the fireplace. The presence of the stone structure revealed in HX2 is suggestive of a form of outhouse. From the substantial number of stones it may have been a sturdy structure that housed something worthy of protection; possibly alcohol, food or something flammable. The

significant amount of burnt clay at HX2-2 is indicative of a hot fire which it seems may have caused the collapse of the structure, whether this was during its useful lifetime or after abandonment is not clear as artefacts were located throughout the excavation. Subsequent visits have revealed that across the site some artefacts are occasionally weathering out of the soil, indicating the potential at this site for further productive excavation.

Close to the presumed interior space of the structure was a single coarse of rounded rocks to a height of 25 cm. These appeared to form an edging, possibly part of a pathway between the two structures inferred to be on site, possibly a garden or vegetable garden exterior to the structure.

Summary

Site recording, collection and excavation at Cape River gold field were largely successful. Each of the four diggings identified retains much mining technology generally in association with one or more of the types of settlements described. It is evident from the historic mapping that areas associated with mining but not surveyed will result in further sites await recording. The typing of sites has allowed material spaces of different types to be defined, and how these are used to identify archaeological landscapes is developed in Chapters 6, 7 and 8. Beyond the potentially devastating effect of bush fires over time on any potential structures at both sites, the site formation processes identifiable at the site do not appear to be significant. The impact of souveniring at both sites is possible but not obvious and cannot be quantified. Hence, speculation on it adds little to the interpretations.

Excavation at CV009 appears complete and it is unlikely more will be revealed about the site unless a rubbish deposit is located. With so many more sites with archaeological potential further work at CV009 is not a priority. EM022 is a different site altogether, excavation did reveal information about site structure and further investigation may reveal more about the nature of the structure. The site exists within a broad but disseminated artefact scatter that could also be sampled, possibly revealing a network of deposition areas for the nearby workings. The collection and excavations both revealed voluminous assemblages from which site chronologies and site function are inferred in Chapter 5.

Chapter 5 **Artefact Analyses and Functional Typologies**

Chapter 4 has demonstrated the methodologies and shown the results for the site survey and recording, and the collection and excavation of artefacts from sites CV009 and EM022. This chapter begins by considering the role of functional typologies in artefact analysis. It then outlines the functional typology used in analysis of assemblages from CV009 and EM022. This is followed by a short discussion of the database developed for this project. For each assemblage a site chronology is derived from the analysis of specific artefact types, rather than the functional analysis. The functional analysis is used to infer about site use.

Functional Analysis

An overview of several theses that examine Australian sites of similar temporal span to the Cape River gold field shows a variety of approaches to artefact analysis (Davies 2001, Gibbs 1996, Lawrence 1995a, Smith 1998). All however adopt the categorising principles of functional typologies formalised for historical archaeological assemblages by Stanley South (South 1977). Following extensive use and expansion of South's principles during the 1980s, deriving specific artefact patterns from functional typologies has been criticised and its utility reviewed in several works (Gibbs 1996, Orser 1989).

Orser produced his 1989 critique while investigating plantation archaeology but it is equally relevant to mining and other archaeologies. On plantations, Orser viewed the dynamism of social relations within a Marxian dialectic of the oscillation of power between slaves and masters in the slave mode of production. He cites the relationships inherent in the concept of the social field as

those that structured plantation life, and by default the archaeological record. Orser's criticism of South is that artefacts become "secondary reflections" of the culture that gives rise to the pattern rather than articulating between social relations and material culture (Orser 1989:36). The application of a pattern invokes a closed cultural system that negates the investigation of diachronic change at any given site.

As part of a wider discourse on the role of artefacts in Australasian historical archaeology the distinctions between identification and analysis have received attention in the literature (Brooks 2005b; Crook et al. 2002). Brooks has suggested a two-tiered approach that clearly delineates the processes of identifying form and then attributing function; the former deals with inherent characteristics and the latter with socially constructed characteristics of artefacts, of which function is one. Brooks argues that functional categories need not be a necessary part of a catalogue as other socially-constructed artefact characteristics are able to be examined through in-depth analysis of the assemblage (Brooks 2005b). He also suggests that the use of functional categories in a database sometimes provides only an 'illusion' of analysis.

Perhaps the major feature of any functional typology is that the categories chosen as relevant to historical archaeology are conflations of broader categories of artefact categorisation derived from comprehensive systems of museum cataloguing (Chenhall 1978, 1988). Canadian Parks Service (1992) and Davies and Buckley (1987) both cite Chenhall (1978) as their source of information. Lawrence (1995a) and Davies (2001) both cite Canadian Parks Service (1992) as their source and modify it for their analyses. The method by which the numerous categories and sub categories of museum catalogues are conflated or excluded to construct a typology, and then

further modified to suit archaeological assemblages is dependent upon the assemblage and the archaeologists understanding of material culture. Any underlying theoretical position also affects the analytical use that is made of the power of categorisation and pattern recognition to infer about site function, intra-site usage and specific behaviours.

The functional typologies of Gibbs (1996) and Davies (2001) are more general approaches to categorisation as neither allows for a sub-category to be filled by a single object, thereby avoiding the promotion of certain items of material culture to unwarranted importance in the analysis.

Despite the criticisms and alternative viewpoints, I believe there is a necessity for using a functional typology to order an assemblage especially in historical archaeology where, despite the potential pitfalls of polyfunctionality (Brooks 2005a, 2005b), there is an increased probability of accurately interpreting artefact function in historical assemblages.

The functional analysis used in this chapter is Gibbs' (1996) modification of Orser (1989) primarily because Gibbs added several sub-categories of *'Other'*, giving more flexibility within the categories (see Table 5.1). This has been further modified here to include a sixth category; *'Undefinable'*. The provision of the two sub-categories: *Storage* and *Other*, is reflective of the needs of the assemblages analysed here allowing for the inclusion of unidentifiable objects or those of ambiguous function.

Table 5.1 Functional typology categories and sub-categories used below

Category	Sub-category
1 Household/structural	**1a** Architectural/construction **1b** Hardware **1c** Furnishings/accessories
2 Foodways	**2a** Procurement **2b** Preparation **2c** Service **2d** Storage **2e** Food remains
3 Clothing	**3a** Fastener **3b** Manufacture **3c** Other
4 Personal	**4a** Medicinal **4b** Cosmetic **4c** Recreational **4d** Monetary **4e** Decorative **4f** Other
5 Labour	**5a** Agricultural **5b** Industrial **5c** Other
6 Undefinable	**6a** Storage **6b** Other

Artefact Database

A database for the recording of diagnostic artefacts was developed in the propriety software Filemaker™ platform. Figures 5.1 to 5.4 show sample data entry pages for the three most prevalent fabrics (glass ceramic, metals).

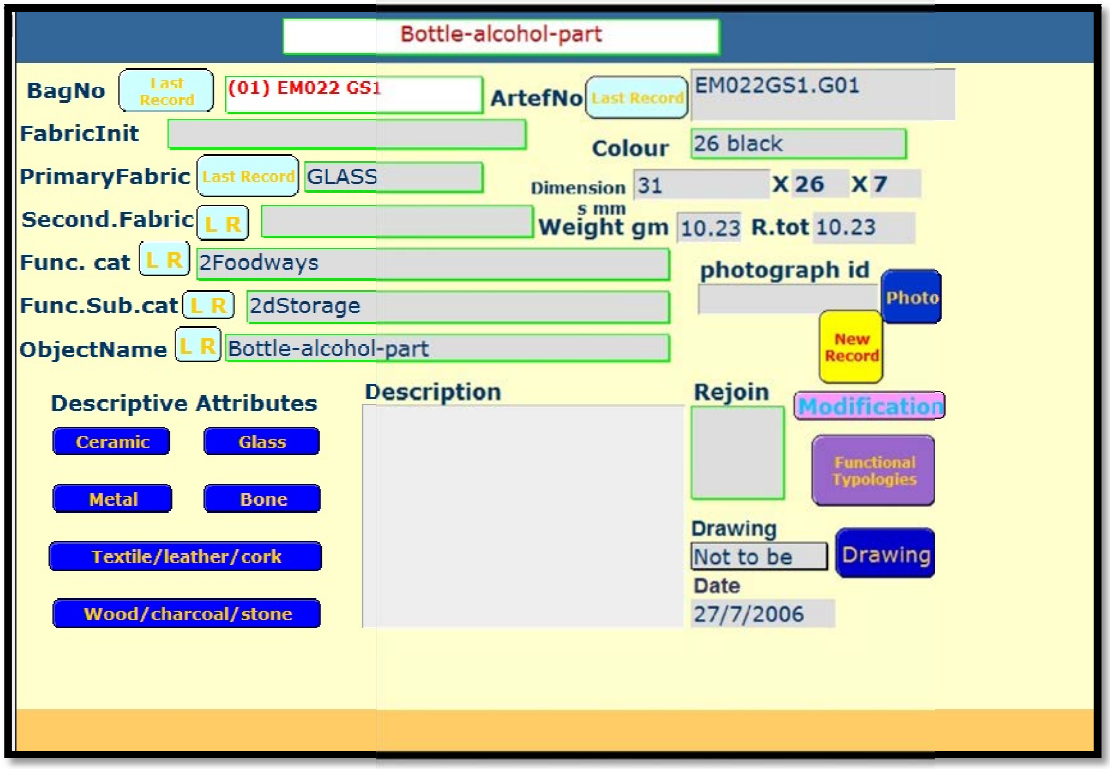


Figure 5.1 Artefact database, basic information page

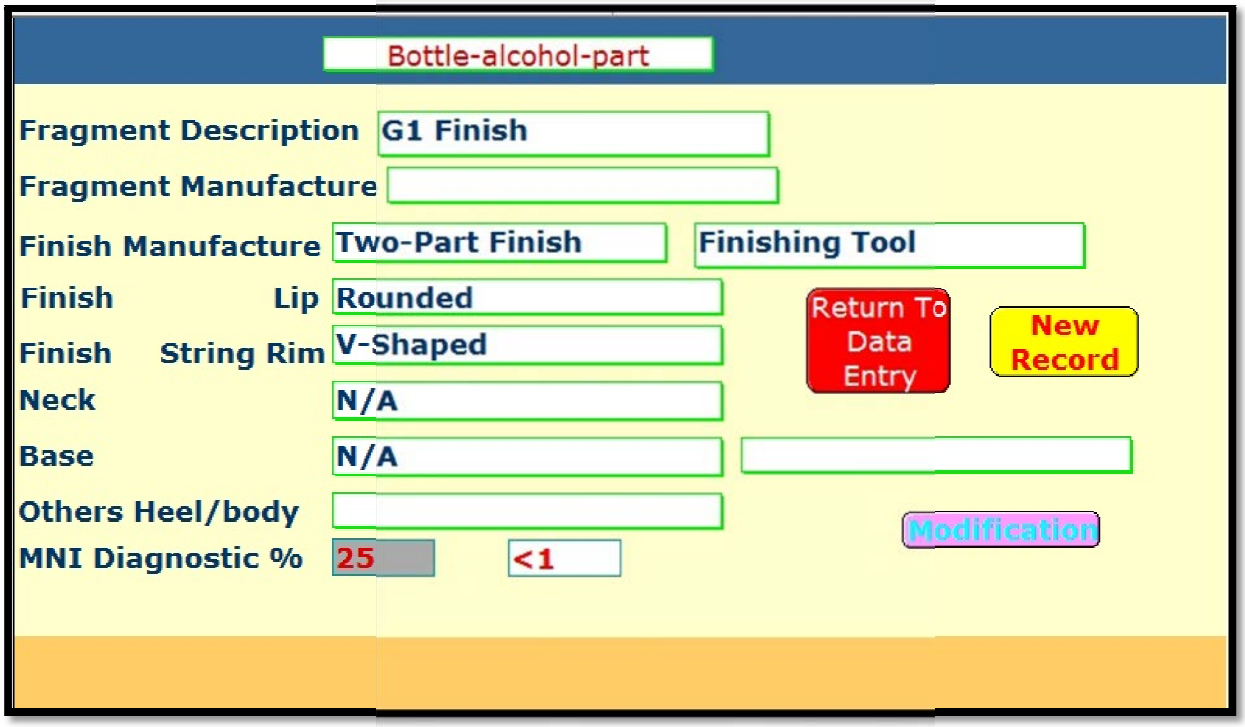


Figure 5.2 Artefact database, glass detail page

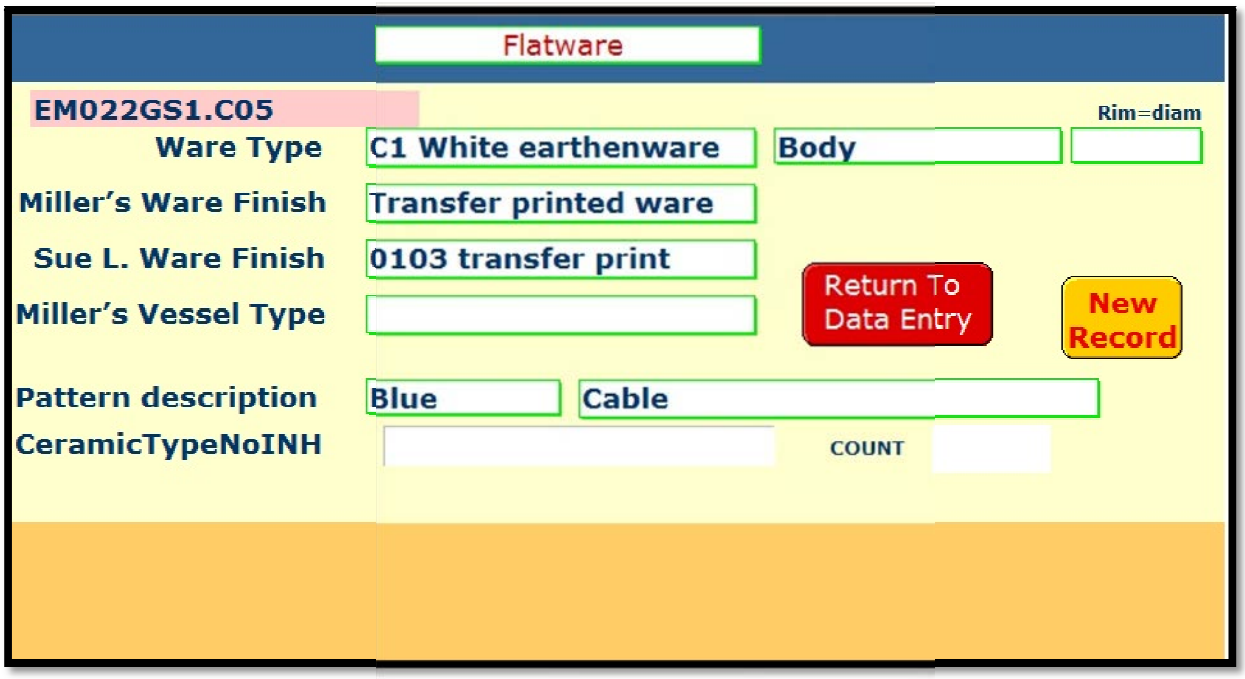


Figure 5.3 Artefact database, ceramic details page

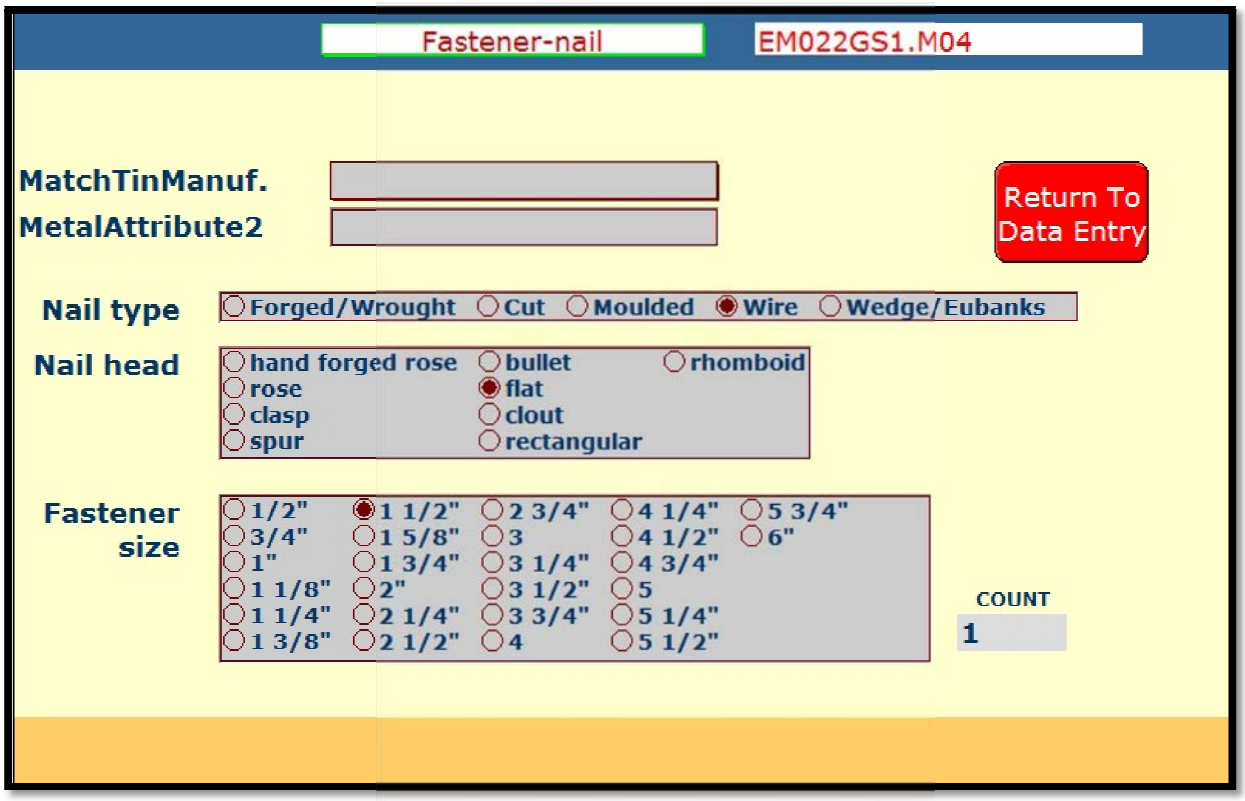


Figure 5.4 Artefact database, metals details page

In the development of the process of analysis, it was apparent that choosing one method of functional analysis over another might limit future re-assessments of the data. Therefore, the artefact database design accommodated four functional typologies;

- Port Arthur classification (Davies and Buckley 1987)
- South's classification (South 1977)
- Gibbs' modification of Orser's classification (Gibbs 1996)
- Davies' modification of Parks Canada classification (Davies 2001)

This allows the potential for comparison of the effectiveness of each typology for a single assemblage or incorporation of more typologies if necessary, (see Figure 5.5). Ultimately, comparing and contrasting the utility of several functional typologies for an assemblage was beyond the scope of this thesis and was not pursued as a thesis aim.

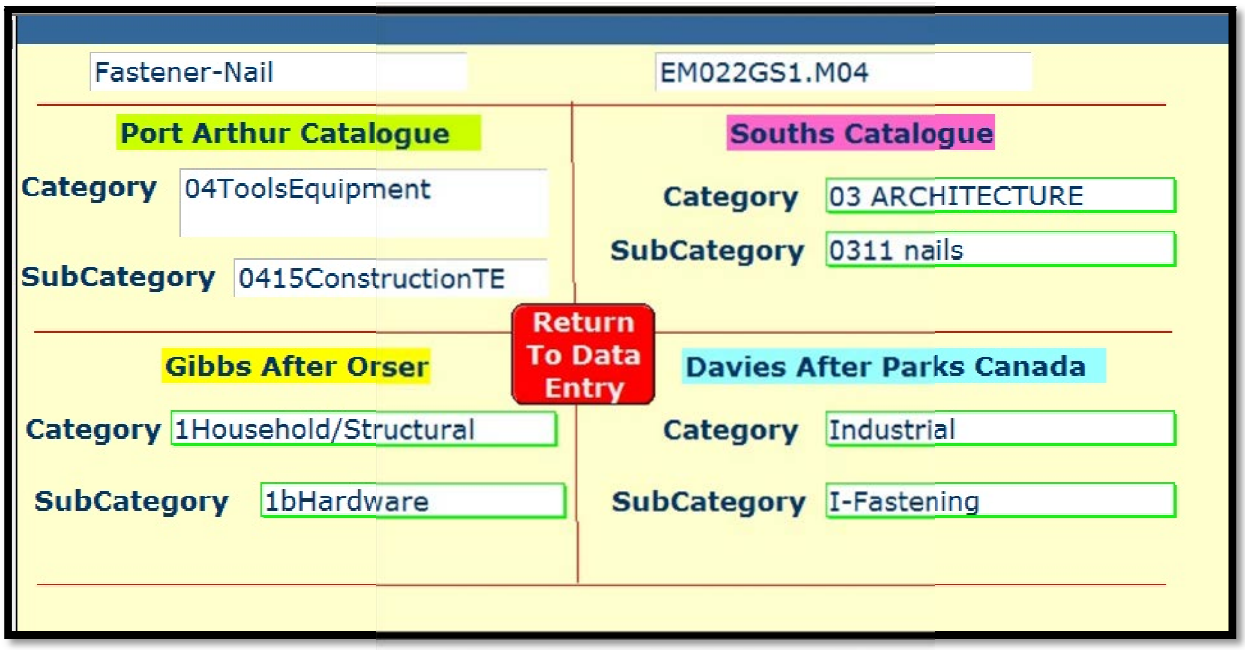


Figure 5.5 Artefact database, functional typologies comparison page

The database enabled the recording of as much detail about the artefacts as possible. Each artefact had its provenance, primary and secondary fabric, colour and dimensions and weight recorded. Initially based on the primary fabric, secondary aspects of form for each artefact were recorded using multiple data fields.

While the determination of form and function are separate procedures, and as Brooks asserts should not be confused (Brooks 2005b:9), a functional typology is dependent upon making the connection between form and function. Within this database, the many aspects of form led to a single decision on object identity. Some of the identity categories are generalised, such as hollow-ware, some are specific such as cup, and a conservative approach to identity was taken, preferring not to classify function unless it was clear. This identity was then used to place the object into category and sub category in each of the four functional typologies:

Assigning a single object identity for an artefact appears to preclude the possibility of polyfunctionality and could lead to the misinterpretation within an assemblage. Brooks (2005b) suggests that this can be resolved for databases by including 'primary intended use' and 'secondary use' fields, a principle adopted here via the 'modified use' field. Recognising also that function is a socially constructed attribute; Brooks suggests that function might be better-established using "an in-depth analysis of the assemblage" (Brooks 2005b:13).

Methodologies for main fabric types

The first procedure in the analysis of the assemblage was to separate the artefacts in fabric types. After this separation was done each fabric type was analysed for artefacts which could

potentially contribute more information these are deemed diagnostic artefacts. The remainder of the assemblage were non-diagnostic and were not analysed any further. Diagnostic artefacts were chosen on the basis of their characteristics as detailed below.

Glass

Development of the glass database was based on anatomical information derived from the works of Boow (1991) and Jones and Sullivan (1989) and augmented by the website produced for the United States Bureau of Land Management by Bill Lindsey (2013), now hosted by the Society for Historical Archaeology. Where possible the following features were recorded in detail for each artefact;

- manufacturing method
- type of finish
- style of lip
- style of string rim
- shape of neck
- style of base
- proportion of a diagnostic feature, if present

Glass colour is useful for distinguishing items within an assemblage and was used here with the other diagnostic features to determine minimum number of vessel counts (MVC). With the exceptions of manganese (purple or amethyst) glass and selenium (straw coloured) glass, Jones and Sullivan (1989) and Lindsey (2013) do not recommend colour as an accurate chronological marker; Lockhart however, shows that for containers, the amethyst colour does provide a useful time bracket of 1890 to 1920. In the Australian context this has been extended by as much as 10

years to 1930, and perhaps more (Bolton 2005). As manganese has been used as both colourant and clarifying agent distinguishing between originally purple or solarised glass sherds may be difficult. Selenium was also used as a clarifying agent, generally after 1914, replacing manganese which was less suited to the automated methods of manufacture (Lockhart 2006).

Ceramic

All items that were made of clay and appeared to have been fired were regarded as ceramic. Bricks, clay smoking pipes and dolls arms were analysed separately. The ceramics were classified as;

- earthenware (coarse)
- white earthenware
- stoneware and
- porcelain (including bone china)
- clay pipes
- other.

Sherds were classified using a combination of the degree of vitrification visible in the exposed body, the density of the clays and the type of exterior finish. Diagnostic sherds were those with one or more of a;

- rim
- foot
- handle
- makers mark
- sprigging

- transfer print
- decal
- hand-painted decoration
- relief design
- all stone ware

Design elements were described including variations of colour. Rims were used to determine vessel diameters.

Metals

All metal artefacts were sorted into one of thirteen categories according to material, form and function. These were:

- ferrous container or lid
- ferrous match tin
- nails/spikes
- screws
- ferrous trade/industrial
- domestic
- coin
- ferrous clothing/footwear
- non-ferrous clothing footwear
- jewellery/adornment
- miscellaneous ferrous sheet
- unidentified objects

- other

Following cleaning by dry brushing, all items were examined for seams, embossing and other marks in oblique light. Only ferrous sheet with no markings or signs of manufacture was regarded as non-diagnostic all other artefacts had weight, some measurements and description recorded. Nails were categorised according to presence and type of head, type of shank, overall length and diameter of shank.

Other

In all, six other fabrics were identified: bone, shell, slate, resin, textile and mineral. Each was classified by fabric, measured and weighed. Light microscopy was used to assist in identification.

The diagnostic assemblages for both sites are quantified by functional categories and major fabrics in tables 5.2 and 5.3.

Table 5.2 CV009 quantification of diagnostic artefact count by functional categories and major fabrics

	CV009 **(n=578)**				
	ceramic	glass	metal	other	Total
Category 1: Household/Structural	**1**	**2**	**19**	**0**	**22**
Sub-category 1a: Architectural/construction	1	0	0	0	1
Sub-category 1b: Hardware	0	0	19	0	19
Sub-category 1c: Furnishings/Accessories	0	2	0	0	2
Category 2: Foodways	**184**	**185**	**95**	**0**	**464**
Sub-category 2a: Procurement	0	0	0	0	0
Sub-category 2b: Preparation	0	0	1	0	1
Sub-category 2c: Service	184	1	6	0	191
Sub-category 2d: Storage	0	184	88	0	272
Sub-category 2e: Food Remains	0	0	0	0	0
Category 3: Clothing	**0**	**0**	**5**	**1**	**6**
Sub-category 3a: Fastener	0	0	4	1	5
Sub-category 3b: Manufacture	0	0	0	0	0
Sub-category 3c: Other	0	0	1	0	1
Category 4: Personal	**5**	**7**	**43**	**1**	**56**
Sub-category 4a: Medicinal	0	7	0	0	7
Sub-category 4b: Cosmetic	0	0	0	0	0
Sub-category 4c: Recreational	5	0	42	0	47
Sub-category 4d: Monetary	0	0	0	0	0
Sub-category 4e: Decoration	0	0	0	0	0
Sub-category 4f: Other	0	0	1	1	2
Category 5: Labour	**0**	**0**	**10**	**0**	**10**
Sub-category 5a: Agricultural	0	0	4	0	4
Sub-category 5b: Industrial	0	0	5	0	5
Sub-category 5c: Other	0	0	1	0	1
Category 6: Undefinable	**1**	**4**	**15**	**0**	**20**
Sub-category 6a: Storage	0	1	3	0	4
Sub-category 6b: Other	1	3	12	0	16
Total	191	198	187	2	**578**

Table 5.3 EM022 quantification of diagnostic artefact count by functional categories and major fabrics

	EM022 **(n=1119)**				
	ceramic	glass	metal	other	Total
Category 1: Household/Structural	**4**	**7**	**430**	**0**	**441**
Sub-category 1a: Architectural/construction	4	7	0	0	11
Sub-category 1b: Hardware	0	0	421	0	421
Sub-category 1c: Furnishings/Accessories	0	0	9	0	9
Category 2: Foodways	**229**	**165**	**16**	**1**	**411**
Sub-category 2a: Procurement	0	0	0	0	0
Sub-category 2b: Preparation	0	3	5	0	8
Sub-category 2c: Service	157	2	0	0	159
Sub-category 2d: Storage	72	160	11	0	243
Sub-category 2e: Food Remains	0	0	0	100	100
Category 3: Clothing	**0**	**0**	**26**	**0**	**26**
Sub-category 3a: Fastener	0	0	21	0	21
Sub-category 3b: Manufacture	0	0	5	0	5
Sub-category 3c: Other	0	0	0	0	0
Category 4: Personal	**17**	**9**	**19**	**3**	**48**
Sub-category 4a: Medicinal	0	4	0	0	4
Sub-category 4b: Cosmetic	0	5	0	1	6
Sub-category 4c: Recreational	17	0	15	0	32
Sub-category 4d: Monetary	0	0	1	0	1
Sub-category 4e: Decoration	0	0	3	0	3
Sub-category 4f: Other	0	0	0	2	2
Category 5: Labour	**0**	**0**	**32**	**0**	**32**
Sub-category 5a: Agricultural	0	0	13	0	13
Sub-category 5b: Industrial	0	0	19	0	19
Sub-category 5c: Other	0	0	0	0	0
Category 6: Undefinable	**2**	**9**	**49**	**2**	**62**
Sub-category 6a: Storage	0	3	0	0	3
Sub-category 6b: Other	2	6	49	2	59
Total	252	190	572	105	**1119**

CV009 Results

The CV009 assemblage is highly fragmented, only a single entire glass bottle, a near intact stoneware ink pot, and a near intact hole and cap type tin can (Ritchie 1986:331-332) were recovered. Of the remaining artefacts, 21% of the glass and ceramics were less than 1 cm^2. Initial recording of the whole assemblage produced the results in table 5.4. Seven fabric groups predominate. Artefacts recovered by surface collection account for 93% of artefacts by number and 97% by weight. No faunal remains were recovered. Excavation at the site is represented by several small test squares that were investigated to determine the potential of sub-surface artefact densities. At the time of excavation, it was determined that further excavation would be unlikely to justify the time and effort expended.

Table 5.4 CV009 total assemblage from collection and excavation; numbers and weights by major fabrics

	Collection		Excavation	
Fabric	Number	Weight (gm)	Number	Weight (gm)
Metals	451	7372	28	40
Ceramics	272	2433	7	28
Glass	714	14304	69	604
Graphite	0	0	0	0
Bone	0	0	0	0
Resin	0	0	0	0
Slate	1	21	0	0
Pearl Shell	1	0.3	0	0
Textile	1	68	0	0
Mineral	1	479	0	0
Sub-totals	1441	24677	104	672
Site totals			1545	25349

Ceramics

The ceramic assemblage for CV009 comprises 279 artefacts (see table 5.5), weighing 2462 gm in total. Of these 191 (2126 gm) were of diagnostic value and a further 184 (1024 gm) were classified into the sub-category 2b foodways-service.

Table 5.5 CV009 total ceramic assemblage summary

	C1 White Earthenware	C2 Earthenware	C3 Stoneware	C4 Porcelain	C5 Clay pipe	C6 Other	Totals
Collection	253	2	1	11	3	2	272
Excavation	6	0	0	0	1	0	7
Totals	259	2	1	11	4	2	279

Initial processing sorted the assemblage into six fabric categories (C1 to C6). Ceramics were considered potentially diagnostic if they possessed one or more of the following elements: base (footring), rim/edge, handle, maker's mark, mould relief, embossing, hand painting, transfer print, decal decoration or were stoneware. On this basis 191 (2125.8gm) (69%) artefacts were deemed to be potentially diagnostic. 184 ceramic artefacts are analysed in the Foodways-Service category. Stoneware and clay pipes are analysed in Category 4c personal-recreational. Bricks were analysed in Category 1a household/structural-architectural/construction. No stoneware Foodways-service items were located.

Glass

The CV009 glass assemblage numbering 783 artefacts was sorted into diagnostic and non-diagnostic categories (see table 5.6). The non-diagnostic artefacts, categorised as G5-miscellaneous unidentified, constituted 75% (n=585) of the assemblage, the remaining 25% (n=198) were categorised on the basis of their diagnostically useful anatomical features in the

following categories: G1-finish, G2-bases, G3-mould mark, G4-embossed, G6-whole artefacts, G7-flat glass, G8-other.

Table 5.6 CV009 diagnostic glass assemblage summary

	G1 Finish	G2 Bases	G3 Mould mark	G4 Embossed	G6 Whole	G7 Flat glass	G8 Other	Totals
Collection	34	116	13	24	1	0	8	196
Excavation	1	0	1	0	0	0	0	2
Totals	35	116	14	24	1	0	8	198

Metals

Metal artefacts were also sorted into diagnostic and non-diagnostic categories. The non-diagnostic category (n=292) consisted of ferrous metal sheet with no embossing, seams, folds or holes. All other metal items were considered potentially diagnostic. The diagnostic category (n=187) was further subdivided into several object types, with further subdivision based on the secondary fabric, for example; ferrous, brass.

CV009 Discussion

Site chronology

Several classes of artefact rather than the functional typology, were used to derive an approximate site chronology. Additionally, the absence of some types of artefact, whose presence can normally be used as a chronological marker for an assemblage, are also included as data for assessing site chronology.

Nails – The nail assemblage (n=15) is too small to provide an indication of site chronology. Wire nails are consistent with a post 1860s manufacture; those with rose heads of a pre 1880s manufacture.

Glass technologies – Several of bottle closure technologies are present at CV009. These include examples of Codd patent closures, the particular variants are the earliest one-way closure dating from 1872 (Boow 1991:77), and a bottle produced by the Lamont company. Additionally, there are three bottles likely to have been produced by Nutall and Co in the United Kingdom dating from after 1872. Two examples of Warners Safe Cure, exhibiting the four cities style date from after 1891, when the Dunedin branch was opened (Jackson 2008). Additionally, the bottle base with "WIS G Co" "MILW" is indicative of the Wisconsin Glass Company, Milwaukee, USA which used this marking from 1881 to 1886 (Maas n.d.). The miner and farmer trade mark belonging to E. Rowlands spans the probable date range for the site. There are no other direct chronological indicators other than the absence, of machine made bottles and bottles exhibiting a crown seal, suggesting that the assemblage was deposited prior to the twentieth century.

Match tin lids – CV009 exhibits three styles of match tin manufacturers. The most common are the Bell and Black No 4 lids (MVC=18), listed by Burke and Smith (2004:381-3), quoting several sources, as dating between 1875 and 1888. This style of lid is also listed by Anson (1983) as type 3. Anson's text and absolute dates suggest a date range of 1868 to 1887 but his suggested chronology has the type spanning early 1880s to 1900 (Anson 1983:128). The Superior Belgian Wax Vesta (MVC=1) have an absolute chronological age of 1887, and are given a relative date

range of 1887-1900 by Anson (1983). No information about the Phoenix Match Company was found, (see Figure 5.6).

Figure 5.6 Phoenix Match Co., (artefact no: CV009AB46.M01)

Other metal storage vessels - Keens Mustard dates from 1742 and is still produced, the meaning of DSF is obscure but was present from at least the early nineteenth century (Shaw 1992).

Moir's of London possibly refers to John Moir and Son a producer of a variety of grocery items from 1822. Originally an Aberdeen, Scotland based company they moved their headquarters to London in 1878 (Hooper 2013). An advertisement from 1895 shows, "Moir's Soups in glass bottles and tins, pints and half pints" (Carnell 2005).

The Van Houten Cocoa Company is still operational but is no longer family run, the company dates from 1828 (Barry Callebaut n.d.). The two lids recovered probably date from the very late nineteenth or early twentieth century and are a type that replaced earlier glass containers produced by Van Houtens.

Burke and Smith (2004:375) date the sardine style can from the 1880s onwards, (see Figure 5.7).

Figure 5.7 Sardine/Pilchard can (artefact no: CV009CD03.M01)

Ceramics – The maker's marks and ceramic designs of this assemblage provide some information regarding chronology. Godden, lists the use of the term TRADE MARK post 1862, and the use of ENGLAND was introduced after 1891 (Godden 1990(1968):10). The

Staffordshire Knot “was used beginning in 1845, though it was most popular during the 1870s and 1880s (Majewski and O'Brien 1987:167). Hence, it is reasonable to assume that some of the flatware dates from post-1880.

Twelve pieces of relief decorated pottery were recovered, giving an MVC of 4 based on clearly different design features. Most of the designs incorporate vegetal patterns (10/12) which are consistent with the 1870-1890 period of manufacture that has been characterised as “..more delicate, often in the form of finely executed floral and abstract motifs on thinner semi-vitreous to vitreous white bodied wares” (Majewski and O’Brien 1987:155).

The porcelain dolls arm appears to be mould-produced and therefore probably mass produced. This is indicative of a probable post 1860s to 1914 manufacture.

Site use

The presentation of artefacts as a functional typology in Appendix 4 categorises the identifiable properties of the artefacts and where necessary provides reasons for the crucial links between form and function which enable this typology to exist. To a large extent this has necessitated the quantification of the various categories and sub-categories which it could be argued is analysis. However, as the primary role of a functional typology is to group functionally similar objects; in this case quantification provides a numerical presentation of the data. The following section uses the typology to move beyond “the illusion of analysis” (Brooks 2005b). Assigning artefacts into functional categories is used to derive possible site uses (see Table 5.7).

Table 5.7 CV009 artefact numbers and MVC for functional categories

Category	Artefact no's	MVC
1 Household/structural	22	22
2 Foodways excluding food remains	464	123
3 Clothing	6	5
4 Personal	46	40
5 Labour	10	10
6 Undefinable	20	12

Category 2 – Foodways is the most numerous category by both fragment numbers and MVC. The greatest proportion of foodways items belong to the storage sub category represented by glass bottles and metal cans. 49% of the bottles can be inferred to have contained alcohol, 31% of bottles are either food containers or soda water. Whether this proportion of alcohol to non-alcohol containers represents a greater than domestic level of alcohol consumption, is conjectural. The presence of a greater proportion of alcoholic to non alcoholic containers suggests heavy consumption. The metal cans are relatively numerous (MVC=20) mostly represented by hole and cap type can lids. Some indication of a variety of products is indicated, Moirs produced a range of goods such as soups, the lid represented here suggests a volume of 1 pint. Also represented are sardine and other fish containers, cocoa and mustard. Several of the other unidentified lids show double puncture holes indicating that the contents were liquid or may have been heated in the can.

The significant group of service items are the ceramic crockery items. Based upon the MVC (n=31), the assemblage is quite small. Only 8 varieties of earthenware can be identified by colour variation of transfer printed ware, additional to which are the mould relief wares, and a single

piece of Rockingham ware. Two varieties of porcelain were found, hand painted and undecorated. The service items also show little variety in form with flatware rim curves all being plates of between 8 and 11 inches in diameter, and three items of hollow-ware. The lack of variety could be due to several factors. Firstly the site occupants my not have had access to a large variety of goods, perhaps relying on those they brought with them. Secondly, the site may have only been occupied by a small number of people, for a brief time, who did not require a large number of services to meet their needs. Thirdly, there may have been a deliberate effort to maintain a low number of patterns (sets), rather than maintaining a single functional set using various patterns.

In addition to the ceramics are one metal bowl, one drinking glass and one teaspoon. Little can be inferred from the spoon other than cutlery is only likely to reach the archaeological context when the item is of no further use or by accidental loss; the latter seems to apply here. A single metal bowl would indicate that metal serving items were either not preferred or were hardwearing and rarely discarded. A single drinking glass might also indicate a preference for other items but might represent accidental breakage from a small and valued set of items.

The next most numerically significant category is the *Category4-Personal items*. Here the number of match tins accounts for the majority of items, an MVC of 21 indicates that smoking was probably common, although obviously matches also ignite cooking fires. Just a single clay pipe may indicate a preference for cigarette smoking over pipe smoking.

The porcelain dolls arm allows us to infer that a female child was once an occupant of this site. The possibility exists that the doll belonged to a child of European immigrants but could as easily represent the depth of penetration of international markets by European manufacturers.

The timepiece appears to be a mass produced item; as its origin cannot be established little can be inferred.

Category 1, Household-structural, contains 22 artefacts of which the majority are nails. However, only two of these were from an excavated context, close to the fireplace nine were co-located 10m from the fireplace. This does not support that any structure at CV009 was timber, in the absence of any other building materials a tent, perhaps close to the fireplace is a possibility. Neither the single brick nor slotted screw are suggestive of any particular function.

The agricultural sub-section of *Category 5-labour*, contains the few equine artefacts. The large bits and robust horseshoe and hobble are consistent with the use or stabling of a horse possibly a draught horse at the site. The fork in the industrial sub-category is also consistent with stabling of a horse. The file was most likely for sharpening a wood saw. The penknife, has a range of functions, including potential use as a children's toy. The robust bucket is consistent with mining and domestic uses.

Category 3-Clothing is the least represented category, only two pieces of corset busk, three buttons and a boot-heel protector were found. One of the buttons is pearl-shell or mother-of-pearl

and indicates use on a non-utilitarian item of clothing, possibly including children's clothing. The corsetry is indicative of the presence of a woman at the site.

Category 6-undefinable is the repository for items that cannot be attributed an identity or for which a single function is not obvious. There are possible cosmetic and perfumery items, a possible picture frame, possible clock part and joinery reinforcing. There are potential ornamental items of glass and metal.

Summary

Based upon the artefact assemblage the site can be broadly dated as post-1872 to 1900. This is based primarily on the presence and absence of bottle technologies. The initial date takes into account the earliest availability of the one-way Codd bottles at this site. However, it is likely that such bottles date from later but most likely up to 1886 when the original patent on these bottles expired (Boow 1991:77). The presence of the Warners Safe Cure 'Four Cities' bottles imply an occupation later than 1891. Using the full implication of the chronology of the Bell and Black match tins gives a most likely date range of post 1880 to 1900. This date is supported by the Superior Belgian Wax Vestas dating post 1887.

The presence of the word 'England' on one piece of ceramic is also indicative of a post-1891 date and a date possibly 1890s is indicated by the Van Houtens Cocoa tins. None of the material evidence is inconsistent with an occupation date range of 1887 to 1900.

The only site use suggested by the assemblage is of a domestic habitation. This is supported by the range of tinned and bottled goods in limited quantities. The likelihood of a domestic

arrangement is also supported by the limited diversity of form and decoration within the ceramic assemblage which appears conservative and utilitarian. There are no specific items that indicate the occupants were of any specific ethnic group or nationality.

It is likely that the site was home to at least one woman and at least one child and this suggests a typical domestic arrangement of a nuclear family consisting of two parents and children. Other domestic situations have been noted at gold fields but the limited array of material culture does not support any other arrangement. There is only one fireplace, and the dearth of building materials suggests that the dwelling may have been as rudimentary as a tent.

The area around the fireplace was relatively clear of artefacts. Glass and metals appear to have been deposited in separate areas with metal at a slightly greater distance than glass. Perhaps this represents disposal of artefacts away from the dwelling in discrete piles.

EM022 Results

The EM022 assemblage is comprised of highly fragmented artefacts. Only one entire glass vessel, a Hamilton (or torpedo) style soda water bottle was recovered from the surface collection. All other glass and ceramic artefacts were fragments, most falling in the 2-25 sq. cm size category. Initial recording of the assemblage produced total artefact counts and weights in nine fabric categories (see Table 5.8). The data in table 5.8 show that excavation, even though only 4.5 sq. metres in extent, resulted in the recovery of a greater number of artefacts than collection. However, almost the entire faunal and nail/spike assemblages were from excavation, accounting for 51% of the excavated assemblage by number and 45% by weight.

Table 5.8 EM022 collection and excavation numbers and weights by major fabrics

Fabric	Collection		Excavation	
	Number	Weight (gm)	Number	Weight (gm)
Metals	345	6887	788	1186
Ceramics	258	3043	93	304
Glass	1043	7745	719	2228
Bone	23	74	850	1217
Graphite	0	0	1	<1
Resin	0	0	1	3
Slate	0	0	2	3
Pearl Shell	0	0	0	0
Textile	0	0	0	0
Mineral	0	0	0	0
Sub totals	1669	17749	2454	4941
Site totals			4123	22690

Ceramics

The total ceramic assemblage (n=351) for EM022 is summarised in table 5.9. The majority of the ceramic assemblage consists of sherds with a maximum dimension of less than 40mm (n=210).

Table 5.9 EM022 total ceramic assemblage summary

	C1 White Earthenware	C2 Earthenware	C3 Stoneware	C4 Porcelain	C5 Clay Pipes	C6 Other	Totals
Collection	163	7	72	16	0	0	258
Excavation	60	4	9	10	10	0	93
Totals	223	11	81	26	10	0	351

Initial processing separated the assemblage into five fabric categories (C1 to C5) (see Table 5.9). Ceramics were considered potentially diagnostic if they possessed one or more of the following elements: base (footring), rim/edge, handle, maker's mark, mould relief, embossing, hand painting, transfer print, decal decoration or were stoneware. On this basis 252 (71%) artefacts were deemed to be potentially diagnostic. Much of the ceramic assemblage was analysed in sub-category 2d Foodways-Service. Stoneware is analysed in sub-categories: 2c Foodways-Storage, 4c Personal-Recreational and 6a Undefinable-Storage. Bricks are attributed to sub-category 1a Household/structural-Architectural/construction and Clay pipes are discussed in sub-category 4c Personal-Recreational, (see Appendix 4).

Glass

The glass assemblage numbering 1762 pieces was initially sorted into potentially diagnostic and non-diagnostic categories. Diagnostic artefacts (n=190) showing one or more of the following anatomical features were placed in the following categories: G1-finish, G2-bases, G3-mould mark, G4-embossed, G6-whole artefacts, G7-flat glass, G8-other. The diagnostic glass assemblage for EM022 is summarised in Table 5.10. Non-diagnostic artefacts, categorised as G5-miscellaneous unidentified (n=1572), constituted 89% of the assemblage.

Table 5.10 EM022 diagnostic glass assemblage summary

	G1 Finish	G2 Bases	G3 Mould mark	G4 Embossed	G6 Whole	G7 Flat glass	G8 Other	Totals
Collection	31	84	3	10	1	1	4	134
Excavation	12	20	3	9	0	6	6	56
Totals	43	104	6	19	1	7	10	190

Flat glass is discussed in the sub-category 1a Household/Structural-Architectural/Construction. Glass exhibiting a secondary use is discussed in sub-category 2b Foodways-Preparation. Blue glass, commonly associated with medicinal contents and small, presumed medicinal bottles, is discussed in sub-category 4a Personal-Medicinal. A small phial is discussed in Sub-category 4b Personal-cosmetic, and pieces of tumbler are discussed in sub-category 2c Foodways-Service (see Appendix 4).

Metals

After sorting into fabric categories and determining diagnostic and non-diagnostic artefacts, the non-diagnostic category consisting of ferrous metal sheet with no embossing, seams, folds or holes numbered 561. The diagnostic category (n=572) was further subdivided into several object types, with further subdivision based on the secondary fabric eg. ferrous, non-ferrous, brass.

It is widely recognised that gross numbers or weights are not reliable indicators of the relative abundance of artefact types and that the derivation of a Minimum Vessel Count or Minimum Item Count (MVC, MIC) is a preferable means of quantification. Where possible, MVCs were calculated for the assemblage.

EM022 Discussion

Site chronology

The site chronology was derived from an analysis of classes of artefact based on fabric rather than derived from the functional typology. In addition to those technologies represented by the

assemblage, the absence of certain artefacts and their inherent technology also provides chronological information and is used to infer a site chronology.

Nails – The nails here are predominantly pre and post 1870 wire nails, with a small number of post 1880s rhomboid and bullet headed nails. However, there are also a significant number of pre-1870s wedge type nails. The quantities of the various nails are consistent with a structure of the late 1860s or 1870s. There were perhaps later additions to the structure using rhomboid and bullet head type wire nails or these may have been introduced by later site occupants who did not contribute to the structure.

Glass technologies – The most significant glass artefact that provides some chronological information is the intact Hamilton bottle branded 'W.G Henfrey's'. It is probable that the bottle was discarded prior to 1880. Curation and bottle re-use could affect the accuracy of this approximation In this case however, reuse is presumed to be unlikely because of storage difficulties due to its conical (torpedo-shaped) base. A further factor potentially affecting the bottle's use and discard at this site is the time between last manufacture in Sydney (1878) and the time of purchase. However, as a regular steamer, the *SS Boomerang* ran monthly return voyages between Sydney and Cleveland Bay (Townsville) there may not have been a significant delay. No other bottles provide direct chronological information. However, in this assemblage there is a complete absence of bottle closures that were patented from 1870 onward. The most common of these is the Codd seal first patented in 1870 and any of the variations to the basic design patented at later dates. There is also a lack of other patented closures such as the Lamont seal, patented 1877 or the lightening seal (swing lid) patented in 1878 (Vader and Murray 1975). Later

manufacturing developments such as machine made bottles and crown seals are also unrepresented in the assemblage. None of this information is inconsistent with an 1867 to mid-1870s occupation of the site.

Match tin lids – The two Bell and Black No 4 lids are listed by Burke and Smith (2004:381-3) quoting several sources as dating between 1875 and 1888. This style of lid is also listed by Anson (1983) as type 3. Anson's text and absolute dates suggest a date range of 1868 to 1887 but his suggested chronology has the type spanning early 1880s to 1900 (Anson 1983:128). Thus the chronological information provided by these two lids is ambiguous and could conceivably range from 1868 to 1900.

Ceramics – The maker's marks and ceramic designs of this assemblage provide little information regarding chronology. Most of the marks and transfer print designs have a history predating and spanning the presumed occupation dates for this site. Again the absence of a particular technology, that of decal prints or decalcomania, which was a development of the very late nineteenth century (Majewski and O'Brien 1987:137) is consistent with an earlier date for the assemblage.

Five pieces of relief decorated pottery were recovered giving an MVC of 3, including one porcelain. The clearest mould design is a simple arched pattern, (see Figure 5.8). Simple designs are consistent with the period 1840-1870, (Majewski and O'Brien 1987:153-157) although little can be reliably extrapolated from the presence of one simple design.

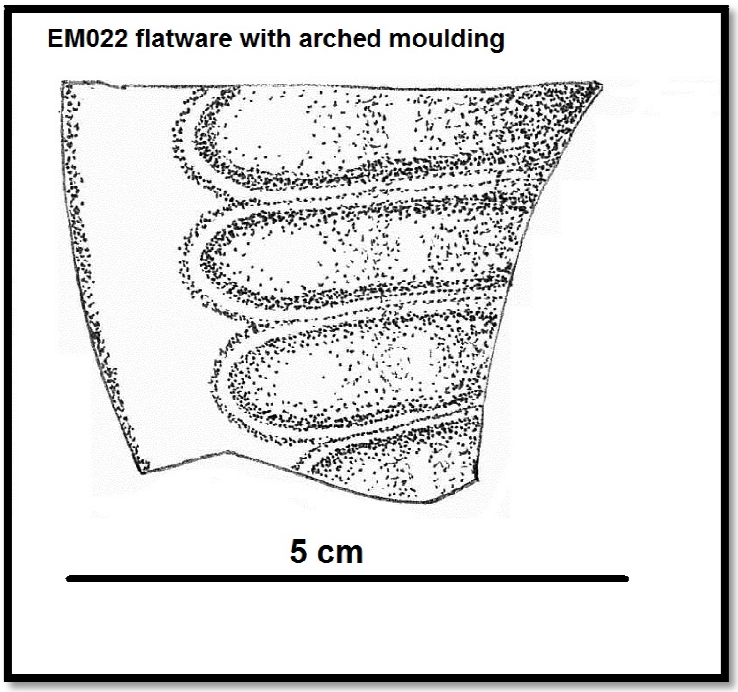


Figure 5.8 EM022 flatware showing moulding (author)

Those artefacts that either by their presence or by their absence provide chronological information are all consistent with a probable date range of 1867-1878.

Site use

Table 5.11 shows that the greatest number of artefacts based on MVC are in *Category 1: Household/structural*, the majority of these being nails recovered from the excavation context. The nails indicate that there was likely a timber structure around or near the fireplace. As the excavations were positioned around the fireplace it is not surprising that structural components should be recovered in large numbers. No structural timbers were recovered, except those revealed at HX3-4, although whether this structure was roughly hewn local timber, or constructed from dressed timber brought to the site was not possible to tell. The small number of

brick fragments indicates that brick was an unlikely structural component of the building. No corrugated iron was found at the site, indicating that this was unlikely to have been used, as does the small number of clouts (roofing nails) (n=16). There is some flat glass, possibly indicative of windows in the structure. A single substantial lock plate indicates this place required a door as some form of security, or possibly an indicator of entry beyond a threshold. Upholstery pins, lugholes and a hinge are indicative of items of potential furniture or furnishings. The collapsed stone structure adjacent to the fireplace and presumably adjacent to the main structure appears to have been constructed from several courses of river stone. The burnt earth layer indicates that there were combustible components to the structure. When these burnt they may have caused the structure to collapse.

Table 5.11 EM022 artefact numbers and MVC for functional categories

Category	Artefact no's	MVC
1 Household/structural	435	226 (205 nail)
2 Foodways (excluding food remains)	411	106
3 Clothing	26	26
4 Personal	48	16
5 Labour	30	29
6 Undefinable	68	68

The next most numerous group of items are those associated with *Category 2- Foodways*. Food preparation is indicated by two distinct artefact classes. The cooking pot part and spoon indicate that food was prepared at the site, although little can be derived from them about the ethnicity or gender of those preparing the food or whether this was a domestic or commercial arrangement. A second set of preparation tools are glass flakes, and associated with them bottle bases with likely flake removal scars. The glass and the stratigraphical association of the tools indicate that

Aboriginal people probably re-occupied the site at some time, either bringing glass tools with them, or more likely manufacturing glass tools from the heavy bottle bases littering the site. The excavation of square HX1-9 exposed the possible edge of a small fireplace, no artefacts were found in direct association with this fireplace. The largest piece of bone recovered from the EM022 was found in stratigraphical association with a single glass flake in square HX1-9. The bone showed cut marks although it was not possible to determine whether these were made by a glass, stone or metal tool.

The *Foodways-service* category consists almost entirely of earthenware and porcelain ceramic sherds with two drinking glass fragments completing the category. A relatively large MVC for the ceramics was derived using a combination of transfer print and moulded pattern design and colour, see Appendix 4. The assemblage comprises cups, saucers, small and large plates and undefined hollowware items. Of the ceramic MVC of 48 only white undecorated wares with an MVC of five and nine other designs with an MVC of two are represented as more than one object. Given that the chronology established for this site derived above is consistent with a range of approximately 1867-1878, it is unlikely that in excess of thirty different whole dinner service sets were used at this site. What is more likely is that the variety represents an economical or adventitious acquisition of the required number of items needed to provide the service required. This suggests the site was a place where food was served on a larger than domestic scale. A similar variety of ceramic service items was noted by Jane Lydon (1993) in her analysis of the assemblage derived from a privy at Mrs Lewis' boarding-house. In that case, although there was variety in decoration, there was less variety in form and sets were presumed to be assembled based on form. That assemblage was interpreted as not reflecting but

constituting culture, as Mrs Lewis' choices were designed to present an outward appearance of respectability (Lydon 1993:37-38). At EM022 it seems unlikely that a choice was made to purposely assemble an *ad hoc* collection of service ceramics. The assemblage may indicate a reduced access to whole dinner sets at a frontier location. This effect may be amplified if the owner did not actively seek service items in large sets but only in numbers sufficient to replenish discarded items.

The *Foodways-storage* assemblage contains a diverse range of fabrics. The 160 glass artefacts represent an MVC of 42 containers. The majority (n=28) of these are alcohol containers for which varying degrees of confidence can be assigned to the specific contents, (see Table 4.12). The number of alcohol containers is increased to 29 when the ceramic porter bottle is included. In her analysis of alcoholic containers recovered from excavations at Dolly's Creek, Susan Lawrence indicated that large numbers of alcohol bottles (78/91) at site C45 indicated more than domestic consumption (Lawrence 1995a:171). At EM022 it is also possible that 29/43 containers also indicates a greater than domestic consumption. The alcohols show a diversity of origins; gins were likely imported from Britain. Beers and porter may have been imported but by the 1860s may also be Australian varieties. The Dutch company Blankenhym and Nolet is represented by a single lead capsule, as is a bottle of cognac from the Hennessey Company. This diversity indicates the penetration of European producers into Colonial markets but is also reflective of the wide demands of the miners as consumers.

Both ceramic and metal storage containers are underrepresented at this site. Only four stoneware containers were identified of which one is likely to have been a large container. Only three tin

cans were recovered. It is possible that stoneware containers were reused and may have been taken when the site was abandoned. Perhaps they represented a more versatile, hardwearing and therefore valuable item. That only a few tin cans were recovered could have several explanations. Firstly the site may have been serviced by a rubbish pit, not yet located, where offensive rubbish was discarded. Secondly, if food was being prepared in commercial amounts, canned food may have been too expensive or not available in large enough quantities; large fresh cuts would have meant a greater profit. Thirdly, there may have been enough fresh meat present, that canned meats were not required.

Of the 26 objects in *Category 3–Clothing;* the most numerous are the hooks and eyes that are most usually found as fasteners on women's underwear. There are two buttons that are more robust and may be trouser or jacket buttons. Several straight pins were found one with no corrosion suggesting it was nickel. There was also a brass thimble. The presence of several items associated with sewing and fasteners most commonly associated with women's clothing indicates that a woman or women used this structure. There is also a single clasp such as those from corsetry busks, further indication of a female presence. At Cape River the presence of women should not be surprising as there are several accounts of women in transit to and from the field or accompanying their husbands in commerce as well as the demographic information (chapter 3). The small decorated buckle is presumed to be from an item of footwear, although it may have fastened any type of narrow strap. Beyond clearly indicating the presence of a woman or women, these items do not enable us to distinguish whether females were undertaking domestic or commercial activities, or both.

The artefacts constituting the *Category 4-Personal* are an eclectic mix of items. The domestic presence of women at the site is represented by hair pins and probable fragments of perfume bottles (which could also possibly be small pharmaceutical bottles). The personal category here also contains several items that are recreational items such as the clay pipe and match tins, although they are present in very low numbers, indicating perhaps occasional use. There is a probable brooch back representing the only item of jewellery. One fragment of a comb is not gender specific; however, in the context of a woman's item there appears to be a trend to image maintenance as there are probable perfumery bottles, dress making or repair items, jewellery, and items of grooming. Medicine bottles, particularly patent medicines containing alcohol and laudanum, have been associated with a less visible and thereby more socially acceptable means of accessing these drugs than drinking or taking opium. Their presence in this assemblage does not suggest this type of social practice but it cannot be discounted.

The presence of the utilitarian items of ink pots and slate pencil indicates that two forms of writing were being practised. The slate pencil provides only a temporary means of record making and is associated with children's education or sign writing or possibly even a credit record at a pub, i.e. the 'slate'. Ink wells indicate the need to record permanently to paper; the most likely tasks would be bookkeeping, letter writing, receipts and diary records.

The artefacts constituting *Category 5–Labour*, have been arbitrarily placed in the Industrial and Agricultural sub categories. There is nothing about the artefacts, particularly the equine associated artefacts, which indicates one division of labour over another.

The horseshoe MVC of five indicates that horses were probably stabled at this site. The shoes vary from lightweight to those with substantial calkins indicating both mounted and draught horses. It is possible that the accumulation of horseshoes is due to Aborigines bringing the horseshoes to the site as raw material for the creation of metal blades (Harrison 2002a), although none shows any alteration other than excessive wear, and no metal tools were located.

In the context of mining two shovels are a likely find but cannot be directly attributed to mining due to their proximity to the hotel. It is possible they were discarded when broken or may have been in use at the site for domestic purposes such as digging cess pits and burying rubbish. Also in this ambiguous position are the riveted bands and chains that could easily be attributed origins as industrial artefacts in the context of mining but are as likely to be found domestically used for a variety of purposes.

Category 6-Undefinable, was created to enable the quantification of items that did not fit easily into the other categories or for which their fragmented nature did not suggest a single clear function but still suggested some possibilities. The category is in some ways a response to the problem of polyfunctionality as discussed by Brooks (2005a, 2005b). If the explanations for the 59 items are accepted as plausible (see Appendix 4), then the MVC of several categories could be increased. There is potentially more jewellery, medicine/perfume phials, combs, a musical instrument and decorative items. The spring, rimfire cartridge, corner piece, rivets, and possible knife tangs are all items with several potential uses but are not used here to augment any inferences about site activities.

Summary

The large variety of transfer prints present on the ceramics appears to represent more than would be assembled for a simple domestic arrangement. The large proportion of alcohol bottles also indicates either a large domestic consumption or consumption on a greater than domestic scale. The large spoon and part of a large iron pot may also be indicative of the preparation of food in large quantities. The faunal analysis of the bone recovered from this site has substantiated that some of the meat came from butchered cuts. It is also possible that some of the faunal remains represent discard from later Aboriginal visitation to the site (see Appendix 4). The faunal remains from the commercial arrangement proposed for this site may have been buried or burnt, for reasons of hygiene and comfort, at an undiscovered location away from the structure.

It seems reasonable to deduce that EM022 was a hotel. The hotel was home to one or more women, who were perhaps concerned about the maintenance of an outward personal appearance of decency. The place was occupied for a brief period, possibly in association with the earliest phase of alluvial mining only.

The preceding two chapters have outlined the current level of understanding of what constitutes the material spaces of the gold field. These have been expressed in terms of the extent of the field and the nature of different sites at the four main diggings. Via a site typology the chapters have quantified the types of sites that comprise the archaeological trace of mining at each digging. Two occupation sites were selected for excavation and collection to provide detailed information about site chronology and site use. This has produced a greater level of material detail about these two occupation sites. The following three chapters present the explanatory

portion of the thesis. In each chapter an archaeological landscape is developed. For each landscape a discrete dialectical transformation suggested by trajectories evident from developing the spaces, enables those cognitive, material and social spaces to be perceived as interdependent created and creative aspects of the archaeological landscape.

Chapter 6 **Archaeological Landscape of Water**

Introduction

In this and the following two chapters three archaeological landscapes are separately developed. Each archaeological landscape is based upon a fundamental element of a 19th Century gold field. These three, Water, Mobility and Authority are not the only elements that could have been considered as archaeological landscapes but each provides a means of cross cutting sufficient gold field entities, and their relationships, to elucidate the nature of lived space at this gold field (McGuire 2002:100).

Following Delle (1998), as detailed in Chapter 2; the approach for developing each of the three archaeological landscapes – in this chapter that related to water - is to examine three spaces, cognitive, material and social, that are subsequently integrated utilising a dialectical approach to produce the archaeological landscape. Cognitive space was defined in Chapter 2 as, "a mental process by which material and social space are interpreted" (Delle 1998:39). The constructions of cognitive space are intended to be indicative of the mental processes, or influences upon those processes, that are contemporary with the archaeological and primary documentary records. In this chapter, cognitive space is derived, as much as has been possible, from primary sources. The cognitive spaces developed are for the non-mining population comprising Aboriginal groups and pastoralists, and for the mining population, with special reference to the Chinese. The cognitive spaces are followed by a discussion of some material spaces of the gold field, or aspects of the "empirically measurable universe" (Delle 1998:38). The material spaces are partly sourced from the archaeological information generated by this research. These spaces include discussion of the

waterways that existed prior to mining, and additionally, examples of the hydraulic technology of mining still evident at the gold field. Examples of the third space, social space, are derived from primary and secondary documentary sources. Social space encompasses the variety of activities and interactions of the gold field participants; it includes evidence of events, experiences and relationships emphasising the spatial nature of these phenomena. Two main social spaces are developed, the experience of the gold rush, and the Chinese social spaces of water. Table 6.1 plots the three archaeological landscapes that are developed in this and subsequent chapters, against the three spaces. The tabular matrix contains the specific elements, or data, that will be developed for each archaeological landscape and shows the dialectic that informs transformation for each archaeological landscape.

Table 6.1 Matrix of comparison for the archaeological landscapes

	Archaeological landscape of:		
	Water	**Mobility**	**Authority**
Cognitive spaces	• Non mining population o Aboriginal o Pastoralist • Mining population o Chinese • Water regulations	• Canoona gold rush • Townsville's development	• Early Gold fields legislation and Regulation
Material spaces	• Water bodies at differing scales o International o Colonial/regional o Gold field • Chinese miners • Other miners	• Batteries • Occupance sites o Site CV009 o Site EM022	• Commissioner Charters' camps
Social spaces	• Demographics of the gold rush • Chinese mining spaces	• Cape River Quartz Crushing Company • Occupance sites o Site CV009 o Site EM022	• Commissioner Charters' decisions
	Periodicity - Continuity	Persistence - Abandonment	Centrality - Marginality
	Dialectic		

The archaeological landscape of water is a construct of various interdependences between the three spaces (cognitive, material, social). These interdependencies are presented as the product of the interactions between the three spaces, which are activated for the landscape of water by the transformation in the dialectic between *Periodicity* and *Continuity*. The origin of the dialectic is explained later in the chapter. The purpose of the archaeological landscape is to bridge the limitations of each space, to create something that is more holistic, essential and useful. It is recognised that what is construed and presented here as an archaeological landscape is a unique and privileged view of material culture. Ultimately, the archaeological landscape while approaching holistic, cannot achieve definitive and all encompassing. Any presentation of landscape can only ever contribute a limited access to what was the complete social panorama that preceded, operated at, and post-dated the gold field. The thesis provides a more complex integration of the three archaeological landscapes at the end of chapter 8.

Cognitive spaces of water

It may appear contradictory that water should be developed as a landscape. When discussing maritime archaeology, seascape is the appropriate term (Stuart 1998) but even so, seascapes are considered relative to their terrestrial contexts (Duncan 2006). This thesis accepts the position that landscape is "a lived concept that embodies the cognitive contexts of experience and imagination in the process of dwelling" (Ingold 1993). Water falls on land, flows across the land, pools as lakes, soaks through the land and wells up from it. Water management was one of the critical factors in the development of most early agriculture (Ho 1977 cited in Jixu 2006). Water is fundamental, and as a potential landscape it is not the contradiction it may initially appear to be.

Water is essential for all life, yet in both its scarcity and abundance it provides challenges to human existence. Likewise, water is also an essential component of the industrial processes of gold mining. In alluvial mining water is the solvent for the clay and pebbles of the alluvial wash. Dissolving the wash is achieved through agitation in pan, rocker cradle and puddler. Gold's greater density than its surrounding matrix is used to separate it out, using controlled water flow in vessels such as the pan, and numerous varieties of the sluice box or 'Tom', (see Figure 6.1).

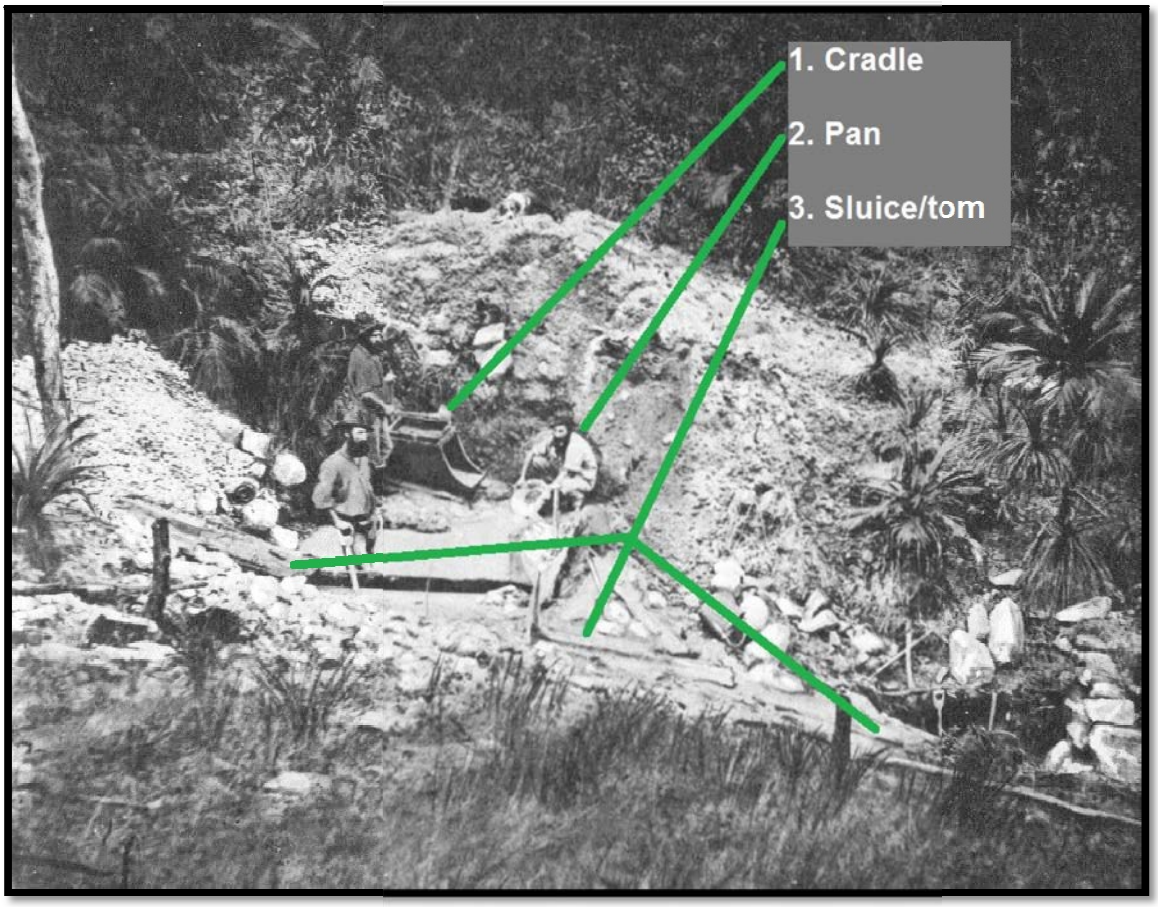


Figure 6.1 Example of the Pan (1), Cradle (2) and Sluice (3) (after R. Daintree in Sanker 1977:11)

For non-alluvial deposits, gold holding matrices and gold ores are pulverised with water to form a suspension from which gold is extracted via one or more physical and chemical means. Mercury (quicksilver), chlorine and cyanide chemical extractions were the three successive

technologies developed to maximise the recovery of gold. Mercury has been used as a gold amalgam from antiquity, and is still used. Possessing a lower boiling point than gold, it is boiled off (retorted), leaving the gold behind in the crucible. Chlorine extraction and Cyanide extraction are two techniques that were developed in the nineteenth century that rely on the affinity of gold to these molecules to form gold compounds. Gold is precipitated from these compounds by a reductive process in both cases, often using zinc. Greater detail of the chlorination and cyaniding technologies can be found in the works of Diane Menghetti and Jan Wegner especially in relation to the north Queensland gold fields of Charters Towers and Croyden respectively (Menghetti 1982, 1984; Wegner 1995a).

The necessary and beneficial roles of water in gold mining are countered by some potential detrimental effects. Shallow alluvial mining would be unmanageable during heavy rain, and shafts could easily become waterlogged, causing collapse. The presence of groundwater in deeper mining usually required continuous pumping to prevent the shafts and tunnels from being inundated. This effort demanded efficient and costly pumps that decreased a mine's profitability and in some cases led to the abandonment of mining. The fouling of drinking water by sediments and chemicals also presented serious health risks and logistical problems for miners, particularly during the alluvial phase of a gold field.

It is the combination of water's fundamental role in life and its inherent roles in gold mining technology that enables a landscape of water to be defined for this project.

Cognitive spaces of water at the Cape River gold field

The cognitive spaces of water in this chapter are presented for two broad groupings, the non-mining population and the mining population. Because of its ubiquity and necessity for life, it is not possible to imagine an adult that lacks some form of cognitive understanding of water. However, extrapolating the nature of the contemporary understandings of the non-mining groups in this region and at this gold field has proven difficult.

Non-mining populations

In Chapter 3 it was demonstrated that in 1867 the establishment of this gold field represented the intrusion of a gold mining population into a region still in the throes of conflict between pastoralists and Aboriginal groups. Without any detailed ethnographic information, the ways that water was utilised as a resource by the Ilba and other Aboriginal groups cannot be elaborated on with confidence. However, it is reasonable to suppose that the seasonal waterways of the upper reaches of the Cape River were both a water source and possible fishery for the Aboriginal population. It is also possible that the Cape River was a part of the Ilba cosmology, as water courses are widely represented in dreamtime stories and Aboriginal art. There is also the possibility that the area was a natural boundary between the three Aboriginal groups in the region indicated by Tindale's Queensland map (Tindale 1974), (Figure 6.2). The area's status as territory may have been actively contested; or at the other extreme, it may have been a place the three groups interacted on common ground.

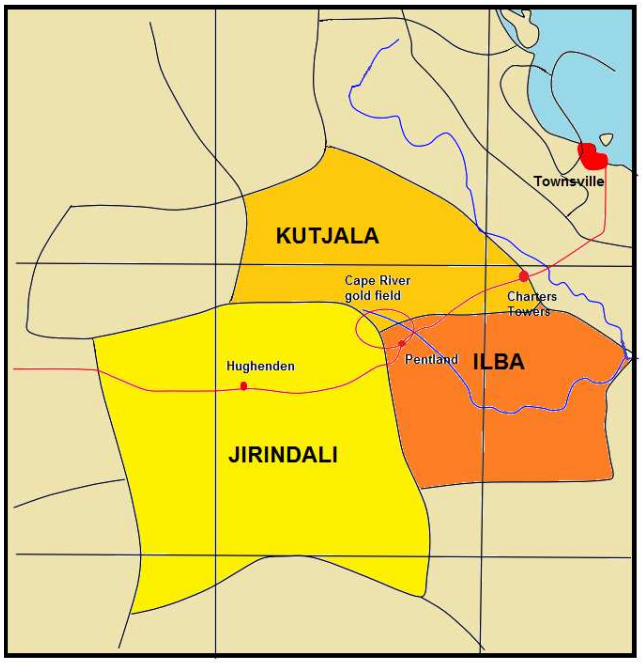


Figure 6.2 Tribal boundaries in the Cape River region (after Tindale 1974)

We can infer that pastoralism would have begun to alter Aboriginal cognitive spaces of water, prior to the advent of mining. For Aboriginal groups, pastoralism, which preceded mining in the region, would have at least reduced access to some water sources. Sheep and cattle would have spoiled other waterways used by Aboriginal people. Aboriginal people may have been forcibly excluded from water sources, and access to good water may have been denied by the proximity of European farm settlements to water sources.

Pastoralists would have regarded the rivers and creeks in the area of Cape River as a resource, both for themselves and for their stock. As a potential indicator to the importance of water for early pastoralists; all of the present homesteads visited as a part of this fieldwork are within a few hundred meters of a major water course, (see Table 6.2). From the proximity of two groups competing for the same resource we can presume potential conflict over water.

Table 6.2 Present-day proximity of homesteads to Cape River

Property	Distance from major water course
Ballabay	63m
Capeville	210m
Cornelia	630m
Ellimeek	175m
Oakvale	110m

Water bodies such as the Burdekin River were recognised for both their positive and negative impacts on life. The river's water was existentially essential, and its flooding naturally irrigated large areas of potential pasture, it provided a fishery, and water holes in the dry season. However, during the wet season with good water flow the Burdekin River was difficult to cross for people and stock; and at times was a potentially impenetrable barrier. It is notable that Joseph Hann, father of William and Frank, drowned in the waters of the Burdekin River in 1864. Merna Edgar, daughter of a north Queensland stockman who worked in the region before the Burdekin Dam was constructed, stated in a personal conversation in August 2003, that even when passable, crocodile attacks were a constant possibility for stockmen while crossing the Burdekin River. As such, the Burdekin River prevented efficient trade, movement of supplies and produce, stopped communication, and was a hazard to cross.

Mining populations

For a mining population with international origins, the concepts of the cognitive spaces of water were likely to be extremely varied. Larger bodies of water such as oceans and seas were the most efficient international and inter-colonial transport links between gold fields. European colonists,

pastoralists and miners, would have had an awareness of British naval power. During the period of the latter half of the nineteenth century people within the British Empire had relative freedom of the seas. By that time, following the Napoleonic wars, British *imperium* at sea was largely unchallenged. The long held mythology of Britannia ruling the waves was for a brief period a reality (Armitage 2000:100). The seas were the quickest and most reliable links between the parts of the British Empire. En-route to a gold field, smaller bodies of water such as rivers and creeks would have been regarded by miners as potential areas to be prospected, obstacles to be crossed, and as a resource for fresh water and food.

At the gold field, cognitive concepts of the mining spaces of water would be centred on water for survival, water as a resource in gold extraction, and the water table as a hindrance to efficient mining, particularly reef mining. Interestingly, Golas (1999:236) cites instances where water in copper mines was regarded by Chinese miners as an augury that a rich ore body was present.

Probably in excess of a third of the miners at Cape River during phases 3 and 4, (Chapter 3) were Chinese. Chinese cognitive concepts of water can be inferred from the advanced approaches to hydrology that had developed in China over centuries (Liu 2001). The Chinese had independently developed agriculture prior to 4000BC (Jixu 2006). Chinese agriculture was not originally dependent on irrigation but early historical narratives suggest some familiarity with irrigation by 2100BC (Jixu 2006:12-17). Agricultural control of water was virtually codified in several documents, one being the Nung Cheng Chhüan Shu, produced in the 17th century (Golas 1984:67). Ryan (1995:15-25) states that the Chinese who found their way to Victorian gold fields were from the Sze Yap dialect group, and in New South Wales and Queensland they were

predominantly from the Chungshan dialect group. Most of the miners in Australia thus originated from the agricultural peasantry of Canton (Guangzhou), where familiarity with water control techniques seems likely. Jackson researching the Chinese miners of eighteenth and nineteenth century Borneo, regarded the two strengths of Chinese gold mining as "an intensive use of hand labour and an elaborate use of water" in particular "they carried with them from their homeland a knowledge of ingenious techniques of water management and an ability to mobilise a large and industrious labour force" (Jackson 1970:31). The records of the consistent and repetitious nature of Chinese mining techniques allude to a substantial and widespread knowledge of water use and control. This may reflect a fundamental difference in the technological appreciation of water in mining between Chinese and non-Chinese miners.

Gold had been recovered in China for at least 3500 years, and can be discerned as a luxury item from about 500BC (Golas 1999:110). The most significant mining was alluvial, with gold being recovered from most areas of China (Golas 1999:119). From Golas's account it appears that much of the simple wash technology in use at gold mines throughout the world during the nineteenth century had its precedent in China. Archaeological evidence for the earliest washing pans date from the 7th and 6th centuries BC. There are possible archaeological sluicing technologies evident from the 11th to 8th centuries BC, with a definitive account detailing sluicing technology dating from approximately 1100AD (Golas 1999:247). A device operating on the principle of the cradle rocker was possibly independently invented in China while Golas (1999:251) also recognises the invention by American, Alexander Stephens.

The Chinese miners of the nineteenth century diaspora brought with them to Australia the traditions, technologies and conditions which the Chinese had been utilising throughout Asia for at least a hundred years before the gold rushes.

The final cognitive concept of water to be developed for the mining population is that of water rights at the gold field. The gold field regulations (Queensland Legislative Assembly Parliamentary Votes and Proceedings 1867:1197-1208) are a documentary source of the cognitive opinion of the government about water at gold fields. The regulations mentioned water numerous times, recognising the importance of the equitable access, control and distribution of water at a gold field. Water rights were directly addressed in regulations, 26, 27 and 28, and indirectly in regulations 3, 20, 22, 29, 30-33, 46, 47, 49, 83, 87 and 88. The regulations were amended in 1870 with no change to regulations 26, 27 and 28. The intent of the other regulations was retained, largely unaltered except for numbering. Regulations 26-28 enshrined a limited right to water under certain conditions, generally controlled by the Gold Commissioner. The regulations where water is indirectly referred to varied in their application. Regulation 3 gave the Commissioner the power to change the rules about washing to prevent injury. Regulations 30 to 33 dealt with the rights for creek and river claims, and Regulation 83 required miners to keep their shafts clear of water for the benefit of all.

In summary, the cognitive spaces of water for the non-mining populations would have primarily existed as spatial ideas about the survival of people and stock. Within the contestation at the pastoral frontier these would be cognitive spaces of strategies of control and conflict. In addition to existential needs, water courses may have had symbolic and spiritual meaning for Aboriginal

groups, this could have meant restructuring beliefs and traditions about certain water sources. The nature of their meaning as physical boundaries to exclusionary or inclusionary practises, if they existed, may have also changed.

For the mining population, following the need to secure water for survival, the cognitive spaces of water would centre on pre-existing understandings of water as a technological component of mining. Different levels of understanding, dependent on the type of mining and experience of the miner, would have existed. Excess water could be bought from race owners, and water could be stored in dams and reservoirs, again with the Commissioner's consent. It is also possible that water may have had spiritual meaning for miners, particularly the Chinese. Finally, water was considered so fundamental, that its use in mining practices was regulated by the government at gold fields.

Material spaces of water

The material spaces of water that would be known to participants at the Cape River gold field have already been pre-empted in the section above on the cognitive spaces of water. When miners moved from gold field to gold field, or when a person decided to become a miner, that move might involve travel across a body of water. For some this would have been an oceanic voyage from Britain, Europe or the Americas. It could have involved transport across the Pacific Ocean from the United States, across the Tasman Sea from New Zealand or movement through Australian coastal waters. For the Chinese it may have involved embarkation from Hong Kong, and from there down into Australian waters. Transport from Amoy to Singapore could have

landed an unfortunate emigrant a labour contract with the destination and type of work unknown (Ryan 1995:15).

As an island Australia was perceived by Europeans initially in terms of its maritime setting. For the early European traders in spices, Australia seemed to be a navigational sign to change course northwards and follow the coast to Java. In the eighteenth and nineteenth century it was perceived as territory, under the dominion of the British Empire. However, territory was only useful when it was understood. As a result, territories were explored, coasts and reefs were surveyed, and rivers and mountain ranges were mapped, and in this way the territory was appropriated, the central purpose being to determine the extent of resources and suitability for colonial settlement.

In colonial Queensland the coastal waterways were the most efficient means of connecting the districts to the capital before the implementation of a state wide rail network in 1924. Water was a well understood medium of transport and newly understood waterways provided easy access between places of interest. By the mid-1860s connection and communication was achieved through the regular trips of various steamers that connected the colonial ports of Sydney and Brisbane to the important regional ports at Rockhampton, Bowen and Townsville. Late in the 1860s, physical communication was supplemented with the telegraph.

Within the former Kennedy District, the most prominent water body was the Burdekin River. The Burdekin's headwaters form in the Seaview and Gorge ranges, west of Ingham. On its circuitous 732km length it is joined by the Clarke River, Suttor River, Star River and several

other rivers, exiting into the Coral Sea between the towns of Ayr and Home Hill. The Cape River fed into the Burdekin River via the Suttor River, prior to the construction of the Burdekin Dam, in 1987.

In 1861 Port Denison (Bowen) was established as the most northerly Queensland port, and served as the first administrative centre for the Kennedy District. Then as now, much of the pastoral interior to the west of Bowen was accessible without crossing the Burdekin River. Crossing the Burdekin River during the wet season was a dangerous and at times impossible task. During the wet season the pastoral runs of the inland northern coast were often isolated from supplies, services and communication. It was likely that problems such as these had contributed to the initiation of the settlement at Cleveland Bay (Townsville) by private pastoral interests (Gibson-Wilde 1984). Although not water bodies, as ports, Townsville and Bowen were significant interfaces between land and water.

At the Cape River gold field all bodies of water, the rivers, creeks and gullies, flow seasonally; supplied by the rainfall of the November to March wet season. The largest river within the field is the Cape River. Running Creek, Gorge Creek and Betts Mistake Creek are also significant water courses within the gold field. A network of named, re-named and unnamed creeks and gullies are tributaries of both the Cape River and Betts Mistake Creek, many of them were mined for their gold.

The nature of the Cape River has changed over time. The government geologist C.C. Morton remarked about the Upper Cape, “It must be borne in mind that most of the alluvial workings in

this locality date back to a period over 60 years when the rainfall of normal seasons was said to be sufficient to keep Gorge Creek running for more than half the year and the water table in the alluvial ground was significantly higher than at present." (Morton 1933:103). Additionally, Morton remarks "Nowadays the Cape River flows only for brief periods in the wet season" (Morton 1937:308-9). Previous to Morton's comments the Inspector of Mines at Charters Towers, E.W Laun, citing old miners, recorded "The old hands state that a strong feature of the nature of this river in the early mining days was the string of permanent water holes full of reeds and black soil banks." Laun (1922:451) (see Figure 6.3).

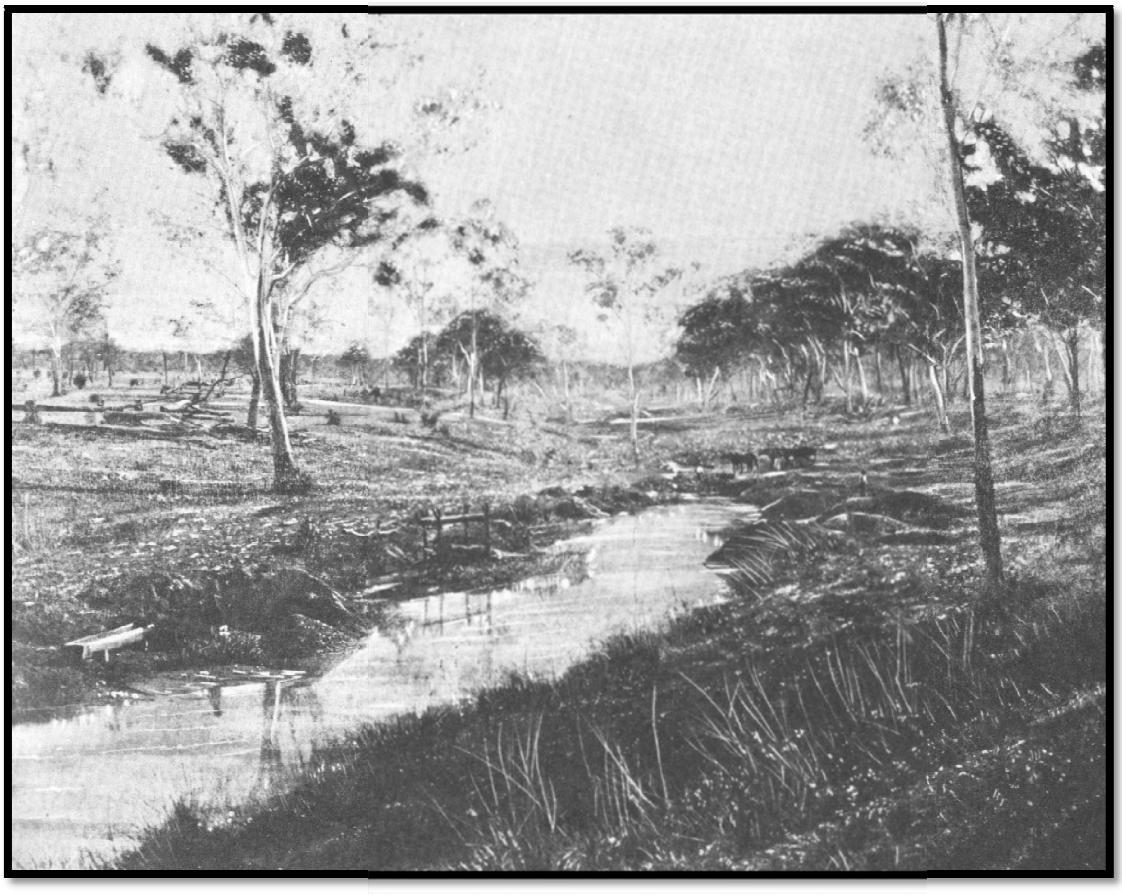


Figure 6.3 Cape River, Upper Cape (Daintree in Sanker 1977:21)

Laun goes further describing the sand nature of the current bed as being due to sluicing operations and runoff from cattle pads and roads further up the watershed. Laun also cites the loss of native grasses to bushfire as a contributor to the deposition of sand. These comments are also supported by photographs taken by Richard Daintree which show a much narrower channel and a rockier bottom, (see Figure 6.4). A comparative photograph of the same area shows large amounts of sand, (see Figure 6.5).

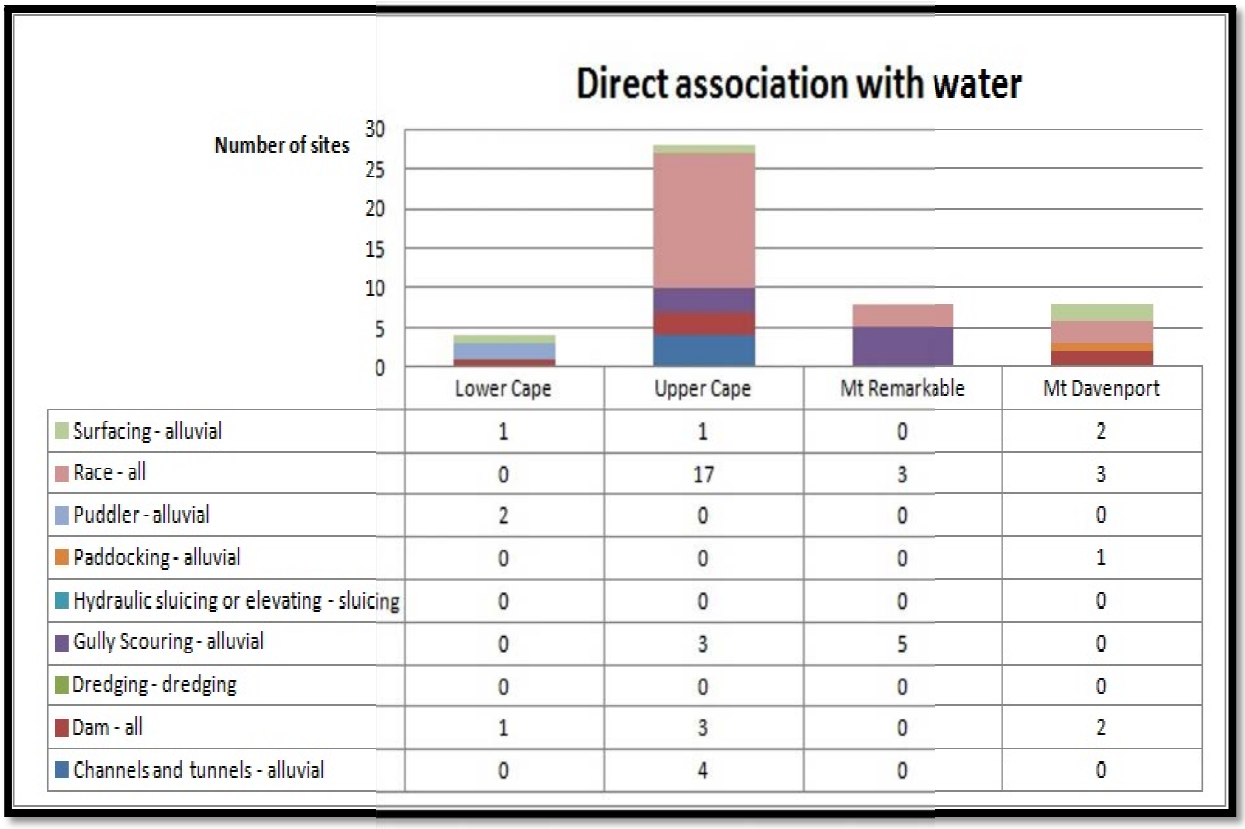
Figure 6.4 Cape River, Upper Cape (Queensland Museum n.d.)

Figure 6.5 Cape River bed, Upper Cape 2004 (facing downstream)

The Cape River gold field has revealed a significant material trace of gold mining activity. Some of this has been recorded for the first time as a part of this thesis, although mapping and reports by government geologists up to the 1940s had recorded many locations and mine descriptions. Additionally, Garrad recorded numerous named and unnamed mine locations in his thesis (Garrad 1996). Many of the previously recorded sites are directly associated with the storage or movement of water around the gold field.

From the sites database and typology presented in Chapter 4, eight of the site types are directly associated with water management or control and a further four are indirectly associated. This results in 48 of the recorded sites being directly associated with the material space of water, (Table 6.3).

Table 6.3 Site types directly associated with water



	Lower Cape	Upper Cape	Mt Remarkable	Mt Davenport
Surfacing - alluvial	1	1	0	2
Race - all	0	17	3	3
Puddler - alluvial	2	0	0	0
Paddocking - alluvial	0	0	0	1
Hydraulic sluicing or elevating - sluicing	0	0	0	0
Gully Scouring - alluvial	0	3	5	0
Dredging - dredging	0	0	0	0
Dam - all	1	3	0	2
Channels and tunnels - alluvial	0	4	0	0

Material spaces of water in Chinese mining

Whether Chinese diggings are significantly different from non-Chinese diggings is open to conjecture. The most common technological elements attributed to Chinese miners are round mine shafts and neatly stacked tailings. The variety of potential material culture expected to be associated with Chinese mining has been summarised by Marmor under three groupings; habitations, alluvial tailings and artefacts (Marmor 1998). Both habitations and mine tailings are material elements with an inherently spatial component, and potential association with water.

The ability of alluvial technologies, and specifically mine tailings, to indicate Chinese ethnicity has been discussed several times. Ritchie (1981) in New Zealand developed a typology of

tailings but he didn't assign any tailings patterns to the Chinese. Likewise, LaLande (1985) in Oregon was also unwilling to accept 'Chinese walls' as evidence of ethnicity. Richard Lundin, archaeologist and director of the Wandjina Research Institute, in a personal conversation on 8th January 2005, stated he thought that the presence of faced stone in tailings walls or dams is indicative of the Chinese. Marmor (1998:18) takes the view that "neatly stacked placer mining tailings in conjunction with other archaeological evidence....heighten the likelihood that a site containing these physical manifestations represents occupation by Chinese". In Australia, Pearson and McGowan (McGowan 2003, Pearson and McGowan 2000) have been similarly cautious, based on the association of tailings production with certain types of Chinese mining practises. McGowan (2003:17) asserts that "Vertically stacked tailing mounds, in particular, are very strong evidence of Chinese mining activities... however, in determining ethnicity we should have recourse, not only to the mining typology, but also features such as the location and disposition of hut sites, artefacts, and a wide range of other evidence". In summary then it appears that the patterns or neatness of tailings are not a singular ethnic marker for Chinese mining activities but in conjunction with a range of supporting evidence they could be part of that conclusion.

The Chinese were known to have worked all areas of the Cape River gold field and it not surprising that several sites with the potential to be associated with Chinese mining were located. The association is primarily based on toponymic references on contemporary maps that indicate a likelihood of a Chinese presence and references in government geologists mining reports and newspaper reports.

Figure 6.6 Stacked tailings formed into gully bank, Sharper's Gully (EM014)

Neatly stacked tailings and elaborate stone walling of creeks and gullies is found near Golden Mount in the Mt. Remarkable area of the gold field. The most extensive tailings and walls were located in Sharper's Gully (EM014), (Figure 6.6). Several of the alluvial creeks in this area were reported as have been worked by the Chinese. "Specimen Creek along with all the gullies running into it, have all been worked over more than once, and have yielded a large quantity of gold. Chinamen are still working at them but are getting very poor returns now" (Rands 1891:4). Although, anybody could have created these tailings the fact that the Chinese appear to be the last to work the area indicates that they possibly represent Chinese workings.

Further alluvial workings at the Upper Cape are reported to have been worked entirely by the Chinese such as the Canton Lead and Bluff Lead (Rands 1891). These areas have been almost completely obliterated by mining that occurred in the 1980s. Gorge Creek was according to Garrad (1996:43) worked to a depth of 6.5 metres during the 1980s. This has led to no identifiable workings from the Canton Lead. Although as mentioned in Chapter 4 some sites do remain, site OK048 is the most extensive remnant example of alluvial working in the Gorge Creek catchment.

A small unnamed creek in the vicinity of Chinaman's Creek was found to possess an elaborate system of ground sluicing extending for 500m along the edge of the creek. The site is recorded as CN023 and in addition to measuring the extent of the sluiced ground a portion was recorded in detail, (Figure 6.7). The date of these workings could not be established. A small fireplace designated CN003 was located adjacent to the sluicing and the only artefacts were several discarded Lea and Perrins, Worcestershire sauce bottles. Unfortunately, the design and dimensions of these bottles was consistent for the period 1850s to 1920s and the bottles did not assist with dating the workings (Lindsey 2013).

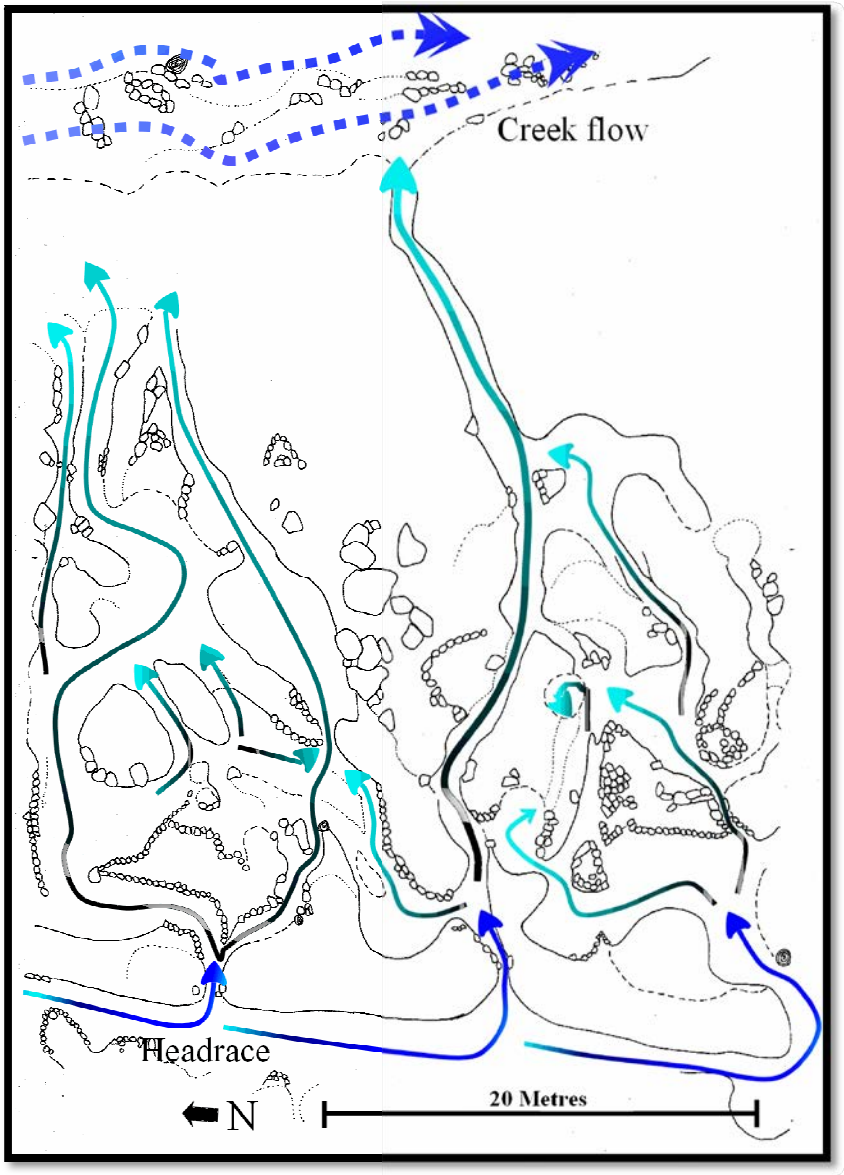


Figure 6.7 Survey of probable Chinese ground sluicing (CN023)

At Capeville the site CV003 also represents another example of a probable Chinese material space of water. The clear association of the dam, the mound circumventing the creek and the worked areas within the mound structure are consistent with Jackson's (1970) representation of ground sluicing in Borneo as practised by Chinese miners, (see Chapter 4). A single artefact was recovered from this site, an opium tin with cartouche clearly visible on the lid, (see Figure 6.8).

Figure 6.8 Lid from opium container, (CV003)

In addition to the material spaces of water that may be attributed to the Chinese, there are numerous sites that were potentially not constructed or utilised by the Chinese. At Paddy's Gully, there is an unusual square sectioned channel that is in close physical association with the quartz shaft. This channel drains into a worked creek bed which then flows into Running Creek (see Figure 6.9). There are numerous races that connect what appear to be small areas of gully scouring. Some of these races supply dams, others may have been supplying batteries, others were clearly supplying areas of ground sluicing, (see Figure 6.10).

Figure 6.9 Square sectioned, faced water channel (EM015)

Additionally, what is hidden by the data in Table 6.2 are the multi-component sites. Most of these contain workings, generally incorporating some form of ground sluicing, most of which are supplied by extensive systems of races. As material space, the natural and artificial waterways of the four individual fields form an internal network of utilisation, that appear to connect otherwise separate locales of processing.

Figure 6.10 Race and barrowway, Gorge Creek (OK020)

Social spaces of water

The gold rush

Some of the earliest evidence for the social space of water at the gold field is the amelioration in the potential for a rush to the gold field. The opinions of two men, Richard Daintree and Phillip Pinnock, both well respected within the Kennedy District community of 1867, provide the basis for understanding what transpired. Richard Daintree; pastoralist, experienced geologist and avid photographer was highly regarded by the community, for example the following, “As Mr Daintree’s geological knowledge is so well known in this colony we unhesitatingly put faith in his report” (CBE 1867a:13.7.1867).

Daintree expressed reservations about the generation of a gold rush at the Cape River diggings in a letter to the Police Magistrate at Townsville. Written on the 12th June 1867 it was published on the of 13th July in the Cleveland Bay Express, in part it is relevant to water supply;

> "At the same time I would warn intending miners that at present water is very scarce and a sudden pressure of population (especially of those who could not afford to pile their washdirt until the rainy season) would lead to disappointment." (CBE 1867a:13.7.1867)

A similar reservation about the scarcity of water was expressed by Bowen Police Magistrate Mr Pinnock who visited the field as a member of the first escort from Bowen in August 1867, he is reported to have warned:

> "There is hardly any water and none that is permanent within some miles of the field….
>
> It is therefore evident that unless persons – visiting the field have money enough to keep them during the four or five months that may yet elapse before rain falls, they will surely be miserably disappointed.
>
> I repeat – let no one start for the Cape River unless he has means at his disposal to support him for a time; let no one leave any present certain employment even if he has the money to spare. The country about the Cape although subject to heavy floods at times, is generally I should think, dry.

> In impressing upon the working men the necessity for great patience and caution before leaving for the Gold Fields, I can have but one object in view, vis, to save them from bitter disappointment and waste of time." (PDT 1866-68:31.8.1867)

Daintree's was an initially private letter that was published in the papers, and Pinnock's warning was an open letter to the editor. Both men's statements demonstrate a social conscience, although neither had an official responsibility at the time with the Department of Works that administered mining. Both men demonstrate local knowledge of seasonal rainfall. Both show concern for the potential dangers of moving a large population of ill-equipped people into the sparsely populated country without supplies or the means to obtain them. Both convey that the gold field will only be proven when rain falls and washing (of alluvium) is viable. It is likely that both men were aware of the Canoona Diggings debacle of 1858, which is discussed in more detail in Chapter 7. Daintree would certainly have been aware, and would want to have avoided a similar ill-fated rush. Pinnock states, "failure will doubtless have an injurious effect on the future prosperity of the Gold Field" (PDT 1866-68: 31.8.1867). The warnings, particularly Daintree's, were not only meant for local consumption but warned the government of potential consequences, as well as making it clear that this should not be the type of widespread rush experienced in the 1850s in Victoria or New South Wales.

The warnings for the population not to rush the field until there was sufficient water, appear to have had the desired effect. Numerical evidence for population change at the field derived from the Cleveland Bay Express, Port Denison Times and other sources show a steadily increasing rather than exponential climb in population.

In March 1867, Frank Hann was reporting diggers at Lolworth, and in June, Daintree had led six prospectors to the Cape River. As mentioned in Chapter 3, the first estimate of population in July 1867 was approximately 100. By August a Mr Fryer reported that there were 250 people on the field (PDT 1866-68:24.8.1867), although another report in August put the figure as high as 700 (PDT 1866-68:31.8.67). By late September the estimated figure was 500-600 (CBE 1867a:12.10.1867). Despite the continuing reports of a lack of water at the field, reports stating that miners were making wages and better induced more to join the rush. By late October the number of people on the field had increased to approximately 800 (CBE 1867a:9.11.1867) and by the close of the year this estimate had risen to over 1,000 (CBE 1867a:14.12.1867). In his report to the government in December 1867 Commissioner Charters estimates 1000 at the field, based on the butchery figures and general opinion (Charters 1868:489). The linear growth is illustrated in figure 6.11. The graph includes an estimate of 150 for the Aboriginal population up to July 1867 but not afterwards. It is unknown to what extent the Aboriginal population was reduced or forced to move away. It is recorded that about 100 Aborigines visited the main camp in April of 1868 (CBE 1868-70:10.4.1868). After July when the diggings were publicised the curve shows a roughly linear increase in population until January of 1868.

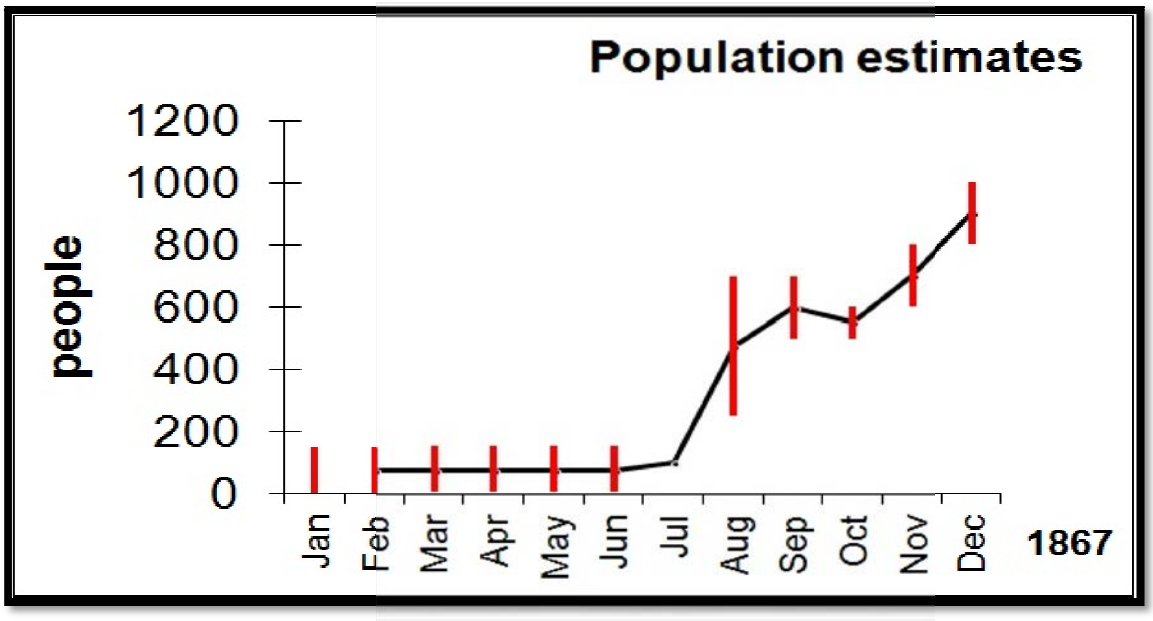


Figure 6.11 Population change during 1867 at Cape River gold field

As predicted by Daintree and Pinnock those that did mine rapidly faced difficulty from the lack of water. While the Townsville newspaper considered that Pinnock had been patronising when he advised a meeting of miners that they needed to construct dams for water storage prior to the wet season (CBE 1867a:31.8.1867), later reports indicate that this was necessary and was done (CBE 1867a:12.10.1867).

Whether the warnings of water scarcity had affected those contemplating travelling to Cape River by sea is difficult to determine. Newspaper evidence records the arrival of several parties of diggers. Among these were Victorian diggers (CBE 1867a:21.9.67), all arriving by steamer through the port of Townsville, although the reported numbers are never large. Commissioner Charters reports 100 Chinese from a population of 1000 in his March 1868 report (Charters 1868:489) but it is more likely these had travelled overland. Further parties are recorded by the Port Denison Times as arriving by steamer and departing for the diggings from Bowen (PDT 1866-68:24.8.67).

For the growing mining community, an important social space of water being referred to by the Cleveland Bay Express was the high prices being charged for the transport of wash dirt to water sources "Water is very scarce and miners have to bring their dirt some 1,2,3 miles by horse and bullock drays which are in great demand. The charge for a horse dray load is 8s and for a bullock dray 25s per load" (CBE 1867a:12.10.67). Earlier, the Port Denison times had reported that diggers were stacking dirt, with the little water being used for drinking (PDT 1866-68:31.8.67).

As a social space, the water resource, clearly impacted decision making as reflected in the tempering of the rush until the wet season of early 1868 when water supply was as secure as it would ever be.

The Chinese

The second social space of water developed here is that of the Chinese. The social spaces of water, particularly alluvial claims, of the Chinese were as much in the hands of the Gold Commissioner and the regulations which controlled water as it was other miners. Prior to the new act of 1874, the mining law and regulation in Queensland amalgamation of ordinary (alluvial) claims could occur by registration with the Commissioner (Clauses 9, 48). However the practicalities of this are not clear. As a part of the Royal Commission report into mining, Ratcliffe Pring had clearly stated that:

> "The mining laws hitherto in force, particularly those that regulate alluvial workings, by limiting the area of ground which may be taken up and worked by any one party, have

> discouraged the miners from attempting to combine together for the purpose of embarking in more systematic and economic modes of mining" (Pring 1871:574).

This suggests amalgamation was uncommon, or was discouraged by the Commissioners, or perhaps the cost of registration was excessive.

From the perspective of water and the documentary record of Cape River gold field, the Chinese at the field occupy a largely anonymous social space. Yet at the field's peak they comprised a third of the population. Commensurate with many other contemporary sites in Australia and The United States of America the Chinese at Cape River were engaged in primarily alluvial and lead mining. Hence, the social spaces they occupied were entirely dependent on good supplies of water. These supplies were shared supplies at Cape River, particularly at the Upper Cape, where water was required for the alluvial, and reef claims both located closely to one another but operated by the Chinese and non-Chinese respectively. If the social space was harmonious then water must have been in adequate supply for all who needed it.

The cognitive implications of pre-existing hydrological techniques, and the continuity and extent of the remains of alluvial workings at areas likely to be occupied by the Chinese suggest extensive co-operative effort over a long time frame. The potential effects of the restrictive regulation on the social spaces of Chinese mining practise are discussed in the next section.

Archaeological landscape of water

The archaeological landscape of water is produced in terms of the relationships of a dialectic. Occupying one pole of the dialectic, and stemming from the deterministic presence of water as a natural phenomenon, water is viewed as having the quality of *periodicity*. By this is meant that water is periodically, spatially distributed across the land, its presence in water holes and flowing bodies is also, especially in north Queensland, seasonally and annually periodic. Developing the material spaces has shown that water was periodically present in time and space and it was periodically encountered. At the opposite pole of the dialectic is an ideal situation where an adequate but not overly abundant supply of water is present for both the technological and existential needs of mining. Preferably, this supply would be close to the occurrences of gold, and would be occur in a constant but never excessive quantity. Existentially, water is required on a daily basis and therefore adequate daily supplies must be found. The amount for existential needs depends on the population but it might not be a large volume per head per day. For mining processes a limited supply would be an inadequate situation. Hence, the water supply had to exceed existential demands.

If we regard the archaeological landscape of water as the dialectical transformation of the periodic distribution and periodic supply of water, into a continuous existential resource and technological resource, the transformation can be viewed through the relationships of the tri-alectic as per Soja. The three relationships are the material-cognitive; the cognitive-social and the material-social, noting that these are two-way interdependent relationships.

For the lived space of water, viewed through the lens of the archaeological landscape of the attenuated rush, we can see that the socially responsible actions (social space) of Daintree and Pinnock for the welfare of any potential miners appear to be the paramount concern. This social relationship was demonstrated in both letter writing, secondary reporting in newspapers and public visits to the gold field. In this way Daintree and Pinnock were attempting the transformation into action of their cognitively held ideas (cognitive space) of the sporadic and uncertain nature of water (material space) in north Queensland. Daintree's direct experience of the land (material space), would have given him the understanding (cognitive space) that water was at best seasonal and that it was not abundant during the dry season. Additionally, his knowledge of geology and mining (cognitive space) and the known requirements for water large quantities of water to properly separate the gold from the wash would have added impetus to his calls for caution (social space). As the figures show, not everybody accepted the risks (cognitive space) being outlined by Daintree and the population did increase in a linear fashion until reports of good rain (material space), after which the population experienced a brief accelerated increase.

It is possible to instil the social spaces of Daintree and Pinnock with further layers of cognitive space. For Daintree, as a geologist he is likely to have been aware of the debacle of the failed Canoona Rush in central Queensland in 1858 (cognitive space). Additionally, as the proclaimer of the new gold field (social space) he would have wanted to avoid a repeat of that event, and this could be perceived as being at a personal level (cognitive space) to avoid personal responsibility or embarrassment, but also at a colonial level. Queensland was a new colony that was not yet financially secure; with a pastoral sector, of which he was a part, also financially

insecure (cognitive space). As a responsible colonialist, it is reasonable to hypothesise that Daintree would have wanted to avoid staining the name and potential stability of the Colony with a Canoona like disaster (social space). Likewise Pinnock's visit to the field, curiosity aside, also represents a dutiful nature (cognitive space). As Bowen's Police Magistrate he should have been aware of the desire to preserve order. In the absence of sufficient supplies of water to process the alluvial wash (material space), Pinnock may have been aware (cognitive space) that the miners may become restless. One way of preventing disorder was to keep the population busy. Hence, water in this case can be regarded as part of a strategy (cognitive space), for maintaining order (social space), while providing some necessary water infrastructure (material space) for the distant wet season.

For the overarching dialectic of the landscape of water, this example shows that the known unreliability (cognitive space) of water supply at the field, coupled with first-hand experience of its deficiency (material space), at the time gold was reported (social space) had successfully transformed the deficiency of water into a resource that was not overexploited by too great a population, too soon. The social phenomenon of the gold rush in this case was an attenuated rush, based on an understanding of the periodicity of water. When the rush happened it was because water supplies had approached the continuity of the ideal; at least enough to dispel any doubt.

For the lived space of water, viewed through the lens of the archaeological landscape of Chinese water use, we can see that the social spaces are largely anonymous. This anonymity reflects a broader pattern in the contemporary reporting of Cape River gold field in which the Chinese are

regarded either benignly, with curiosity and only occasionally with something approaching contempt. Often the Chinese entered the consciousness of Europeans via violence. Most often the Chinese were victims, but occasionally perpetrators. Conflict resulted either in the active exclusion of the Chinese from the field, or an existence at the periphery, processing lesser grade or previously worked deposits. It is likely that the lived spaces of water in these circumstances were also marginal in quantity and quality. The inference is always that the Chinese were probably less successful, had to be more hardworking, and had to be more frugal to make these sub-standard deposits pay.

The material spaces inferred for the Chinese at Cape River lack the conclusive evidence that ties together loosely held concepts of what Chinese hydraulic technology can look like (material space), to occupation sites containing ethnically specific materials that clearly indicate a Chinese presence (material space). In the absence of this substantive corroboration, the distribution of the Chinese miners is derived from contemporary maps (cognitive space), from contemporary news reports, and from government geologists' reports (cognitive space). The implications of this are that the largest concentration of Chinese at the field was north of the Cape River, at the diggings known as the Upper Cape. This is supported by Chinese named hotels frequently appearing in the Cleveland Bay Express at the Upper Cape (material space). Additionally, the Chinese were probably exclusively involved in the exploitation of the Canton Lead, and also the Pothole Lead (material space). The presence of Chinaman's Creek and Chinaman's Gully to the east of the Canton Lead indicates Chinese exploitation of these creek and alluvial deposits. It is not unreasonable to assume that the majority of the alluvial workings between Chinaman's Creek and the Canton Lead were Chinese diggings (materials space).

Using the three dialectical relationships or spatial transformations, material-social, social-cognitive, material-cognitive, we can begin to understand what these spaces mean. What we begin with is an absence of the social spaces of water; this absence though is actually an absence of the secondary expression by Europeans of their perceptions (cognitive spaces) of Chinese mining (material spaces). A combination of factors has resulted in this lack of expression (social space) by Europeans. What may have contributed to a lack of expression is that some Chinese probably arrived at the field quite early; after travelling overland from Peak Downs, and later by sea from more distant fields. The attenuated rush and the broad distribution of alluvial gold deposits may have kept conflict (social space) to a minimum. The Chinese successfully prospected what became the Canton Lead. Thus the Chinese may have, in response to previous experience (cognitive space), already established a spatially localised population, and were present in sufficient numbers to ensure the Canton Lead became and remained an exclusively Chinese mined deposit. The Canton Lead and the Deep Lead were located at similar times and were exploited at similar times. The size of the deposits (material space), the size of the population (material space), and the perception of what was a reasonable return (cognitive space) were for a short period stable.

The expression of the Chinese social space of water is not externally expressed as a recorded social phenomenon. It is however represented by the transformation of a set of natural, non-productive waterways (material space), using both ethnically derived and experientially learned (cognitive space) methods, into a system of interlinked hydraulic technologies for the processing of alluvial deposits (material space). In this case the transformed material spaces of water, guided

by the cognitive spaces of experience, are an expression of an ethnically closed social space. Although externally closed for Europeans to experience, that social space was still rapidly appropriated by Europeans via maps and names into further manifestations of cognitive space.

Is it possible that this closed social space of transformation was advantageous to the Chinese. The successful exploitation, solely by the Chinese, of one of the richest deposits at the field, the Canton Lead, occurred in close physical association and relative harmony with the European miners exploiting the reefing prospects of the Upper Cape. This occurred despite the necessity to share the potentially limited water resources of Gorge Creek, and that section of Cape River. The exploitation of the peripheral Chinaman's Creek, Chinaman's Gully and nearby creeks suggests another reason was at play. This reason is self-exclusion. While the concept of the Chinese voluntarily self-excluding is not novel, the reason most commonly cited is self-preservation. It is possible given the workload of the Gold Commissioner and the location of these workings across the river, that in the absence of the Commissioner, the Chinese were able to exploit a communal form of mining that was not actually permitted under the gold Field Regulations of 1866 and 1870.

If the Chinese had self-excluded it would enable them to exploit this spatially manifest loophole by combining resources to more efficiently exploit either a single claim, or have more men working separate claims, or have everybody working numerous claims as one large claim. In effect the social space of water would have been an internally expressed social space. Within this space the Chinese, via their hydraulic expertise, sought to manifest the dialectic, turning a periodic supply into a continuous existential and industrial supply.

That the physical transformations were not commented on by contemporary reports suggests that they were commonplace and were to be expected. It may also have been that the distance of 24 km and the prevailing belief that if the rich Deep Lead was the centre of the field, then what was at the relative periphery was less rich, and hence the Chinese were where they were expected to be.

Summary

The two examples of social space that comprise the exposition of an archaeological landscape of water, can both be viewed as being activated by the dialectical transformation, from *periodicity* to *continuity*. In the case of the gold rush, the attenuated nature of the rush indicates that the cognitive spaces of water, as defined by Daintree and Pinnock were recognised as accurate and valuable information. The social manifestation was a six month hiatus in a rapid build up of population until, the wet season rain of early 1868 happened and, the periodic winter spring seasonal supply became a more continuous and predictable summer supply. This is primarily reflected materially in the map, and documentary evidence which shows that measures were taken to control this supply by constructing dams. While dams were recorded as a part of this project they cannot be accurately shown to be those earliest examples, although the possibility exists that some are, or that they are on the same sites as earlier dams.

In the archaeological landscape derived from the Chinese social space of water the dialectical transformation to continuity of supply is demonstrated in the presence of water races and channels that supplied alluvial and elluvial diggings in those areas that we can be confident were

mined by the Chinese. Some inference was about how this social space was constructed and managed was drawn from the known cognitive spaces of Chinese water use in mining but the particulars at this field are not known. What is clear is that water supply via systems of races was not actively controlled through the regulations. Hence, the administration resulting from regulation is absent from the documentary record. Whether dams and races were constructed by companies, or by co-operatives, or by miners themselves is indistinguishable. Because of the absence of the Chinese from the sources that could document this social space, the mediation of water control by the Chinese appears to be an ethnically closed internal social space.

This archaeological landscape of water is centred on activities within social space, activity that has shown a move in water control from the vagaries of periodicity to greater certainty in continuity. That social space existed in a broader milieu of spatial ideas and documents that resulted in a yet broader creation of the material spaces of water. However, water is not the only approach that can provide insight into the spatial nature of archaeological landscape. The following Chapter utilises the three-fold derivation of the cognitive material and social spaces, around which the Archaeological Landscape of Mobility is constructed for the Cape River gold field.

Chapter 7 **Archaeological Landscape of Mobility**

Introduction

Mobility is the second essential attribute of a gold field that will be developed as an archaeological landscape for the Cape River gold field. It is the ineffable population movement to a specific gold field which defines a gold rush, "A sudden movement of numbers of people to a newly discovered goldfield; the people that take part in such a movement" (Moore 2000:135). However, once the rush had occurred, consolidation of the field in the form of hard rock mining or extensive lead mining guaranteed a longer period of prosperity (Lawrence 1995a). The persistence of the resultant population at the field was directly related to the continued availability of gold bearing deposits. Yet mobility is more complex than a definition, or the certainty of an axiomatic observation. Individuals move within and between fields; liaisons and partnerships form and dissolve; groups move together; businesses respond to demand where it exists; government agencies move to where their services are required, and people exercise a choice to be mobile between occupations at a gold field. Conversely, impediments to movement, either physical or cognitive, are aspects of mobility. The nuances of why certain members of the collective population chose different moments to enter and exit the various levels of the mining industry, and mining support occupations, is amenable to discussion through the development of an archaeological landscape of mobility.

Mobility is the primary defining feature of a gold rush. When some form of mass population movement occurs the rush has commenced, whether or not the field is later considered a success or a failure. Thus any movement to a gold field but particularly a concentrated movement always contained elements of risk. Despite what may have instigated the rush, there were no guarantees

of success. Travelling to some of the most remote places in the colonies involved both physical and financial risks. One of the factors influencing a decision to move was an evaluation of the risk versus the potential return. Once committed to the venture, encountering a 'duffer rush' was at least a waste of effort and money and at worst could be fatal.

As was the case with the archaeological landscape of water, the creation of the archaeological landscapes of mobility is done within the framework of an overarching dialectic. In this case that dialectic is the transformational nature of the relationship between *persistence* and *abandonment*. Following the methodology established in chapter 6, the landscapes will be developed by highlighting the tri-alectic of relationships between the three spaces outlined above; the material-cognitive, the social-material and the cognitive-social.

Cognitive spaces of mobility

The first cognitive space of mobility of temporal and geographical relevance to the Cape River gold field is derived from a brief discussion of the earliest gold rush in Queensland, the Canoona gold rush. The experience of Canoona provides a basis for understanding potential reasons that could spark a rush, sustain it, and conversely provide evidence for the avoidance of specific risks during future rushes.

Although it occurred prior to Queensland's 1859 separation, the Canoona or Fitzroy River rush is briefly mentioned in practically all references to the history of gold mining in Queensland. It is a useful example because it was widely reported, and had impacts both locally and inter-colonially.

The Canoona Rush of 1858 appears to have been most significant duffer rush in Queensland and perhaps Australia (Bird 1904). Canoona is approximately 60 Km north of Rockhampton in central Queensland. However, at the time it was a part of the Leichhardt District of New South Wales. Rockhampton at the time was not a surveyed town, although there was a small population servicing the coastal port (Fitzgerald 1982). The closest towns were Port Curtis (now Gladstone) 170 km away, and Maryborough a further 240 km south.

A number of books and manuscripts have significant entries that deal with the Canoona gold field (Bird 1904, Hogan 1898, Sinnett 1859) and several articles have been written (Crabb 2010, McDonald 1979, Rockhampton Historical Society 1961). Events at the field appear to have taken place in roughly the following sequence. The government resident at Port Curtis, Captain Maurice O'Connell, probably responding to the Governor's insistence, had tested for the presence of gold bearing deposits in the area. O'Connell reported to the NSW government that in the November of 1857 he had found "promising prospects of gold" (O'Connell in McDonald 1979:29). Following a public meeting, a party of men, including a man named Hardy who had some mining experience, set out to prove the ground. After a short stay in the area they returned with a modest amount of gold that was recovered relatively easily. The news disseminated in the local area and significantly it also disseminated south to Sydney, probably by O'Connell himself who was in Sydney during July 1858. By late August 1858 the Crown lands Commissioner W. Wiseman reported 200 miners on the field (SMH 1858b:11.9.1858:6). With these low numbers most were making fairly good money, water was being reported as being available via wells some distance from the diggings, and stores were reported as being cheap and in good supply.

Numerous reports of this nature, claiming to be uninterested and dispassionate were printed in the Sydney Newspapers through August and September and these were reprinted in the The Argus (ARG 1858:16.9.1858:6) and the Launceston Examiner (LAE 1858:18.9.1858:4) amongst others, and they aroused enormous interest. By September passenger boats were being laid on to move miners north. However, by late-September a more accurate picture of the field's prospects began to filter back with many returning miners having done little more than pay their way. Despite this poor news, the newspapers still reported instances of success and so interest in the field was still being generated. By mid-October it was clear that the field could not support the large influx of miners that were being landed at Rockhampton and it was widely declared to be a duffer by returning miners, and in the southern newspapers.

At the field, on seeing the conditions when they landed, many potential miners barely disembarked before booking a return passage (SMH 1858a:13.10.1858:5). Both the New South Wales and Victorian governments eventually despatched naval vessels to Rockhampton. Both governments were keen to return their miners home.

Statistically on its gold returns, the gold field was not a duffer, one estimate putting the yield of the rush at about 45,000 oz (Rockhampton and District Historical Society 1961). Estimates of the number of people embarking for Canoona lie between 15,000 and 40,000. A figure of between 15,000 and 25,000 is often mentioned. Bird (1904) believed the number to be close to 15,000 but added the important caveat that half of those did not even make it to the diggings. Reports from the diggings never estimated the population at any time as being over 700 (Special Reporter

1858); figures between 250 and 600 are quoted several times by correspondents (Anonymous 1858a, Anonymous 1858b, Turner 1858) .

Hogan (1898:121) elicits three reasons that the Canoona rush occurred as it did. Firstly, the location of the field, although distant from Sydney or Melbourne, was navigable by ship to within a few miles of the diggings. Secondly, many men were 'unsatisfactorily employed' elsewhere and were therefore inclined to take a chance. Thirdly, the gold was reported as being close to the surface and easily won. The last point is relevant because, especially at the Victorian diggings, deep lead mining had taken over from the initial alluvial rush. The deep lead was difficult to work with no promise of a return, and during winter a lack of water was making this more difficult. Therefore, easy gold seemed like a better prospect. However, it resulted in many heading for the diggings ill-prepared for even minor discomfort, any hardship, or failure.

The mass exodus and rapid return of such a large number of people had an immediate impact. There were exaggerated newspaper reports of destitution at the diggings which aroused public sentiment for the diggers and money was raised from the public by correspondence to provide for the destitute. It also aroused significant government action with the despatch of naval vessels to assist with the welfare and repatriation of the miners. In some cases this resulted in the movement of Victorian miners to New South Wales if they could arrange a safe passage on a New South Wales naval vessel. When the disappointed and impoverished miners disembarked in Sydney there were calls on the government to provide for the welfare of the men. At the very least, the majority of up to 15,000 people had left some form of employment and family life, spent significant savings on passage and equipment for no return. Hogan cites several diggers

who on returning to Melbourne hoped to disembark under the cover of darkness to avoid the shame of being seen (Hogan 1898).

The Canoona rush should have dispelled the idea borne of previous experience that good reports from a new rush automatically indicated a potentially large payable field. The large numbers of miners who returned worse off than when they embarked should have had a negative impact at least on their individual appetite for risk. One of these assumptions is that the Canoona field affected how people made their decisions about whether or when they would join the Cape River gold rush. In short, Canoona had exposed society to the risks, and that should have affected society's beliefs.

Some common factors that can be identified for both the Cape River field and the Canoona field are:

1. Like Canoona the Cape River gold field was located in a largely unpopulated area of remote Queensland.
2. The field was about the same distance from the nearest developed town and initial access for any distant prospector was by ship.
3. The initial find was publicised during the dry season (winter).
4. Authority figures did release accurate information but there was the potential that it could be misinterpreted by vested interests, including newspapers.
5. The Canoona Rush, and the resultant debacle, had only occurred nine years prior to the finds at Cape River.

As demonstrated in Chapter 3 and 6, the Cape River demographic information shows that the rush to the Cape River field was fairly restrained both in the rate of population movement and the total population at any given time. It is not unreasonable to assume that Canoona had some cognitive impact on slowing or preventing that mass movement. It is also acknowledged that the advent of the Gympie rush in late 1867, closer to the main population centre at Moreton Bay, may have also attracted some of the more risk averse population, away from Cape River.

The second cognitive space of mobility of temporal and physical relevance to the Cape River gold field is the establishment of Townsville. Townsville's inception implies a positive assessment of the risks inherent in the pastoral industry. The land in the Kennedy District had only been opened for settlement in 1861. The site of Townsville had only been established in late 1864 by the pastoral interests of J.M Black in conjunction with his financial partner Robert Towns to provide a place for the export of sheep and cattle products from the hinterland, and possibly to provide a resident population to sell meat to.

By 1865 Townsville had been gazetted as a port of entry, its population grew slowly and business also steadily improved (Gibson-Wilde 1984). Whether arriving by ship or overland, the new population was moving to an untested place, a further 100 nautical miles north of Bowen, without a guaranteed year-round land connection back. Some of the population came directly from Bowen, perhaps with the hope of becoming leading and successful citizens in a new town.

It was in this early period of Townsville's development, that the Cape River gold field was made public. Townsville was not yet successful, with a meagre population of less than 350 (Office of

Economic and Statistical Research 2009). As outlined in Chapter 1, the mid-1860s were becoming financially difficult times for the pastoral industry. It could be argued that the Townsville population consisted of people who were risk tolerant, as success and even survival were far from guaranteed.

Thus, I propose that the population base in the immediate vicinity of the Cape River gold field would have been subject to at least two influences on their cognitive space, both affecting how people perceived and then potentially dealt with risk. The first influence was being aware of the Canoona gold rush and its lessons in verifying the nature of the prospects of a gold field, and the potential negative connotations of not doing so. The second influence was an awareness and an acceptance of the risks involved in being isolated at the rough and expanding fringe of colonial Queensland.

Material spaces of mobility

The first material spaces of mobility to be developed for the Cape River gold field are the battery sites. Batteries were pieces of mining machinery that were used to pulverise gold bearing rock recovered from reef mining with water into a fine slurry. A rotating cam raised and lowered usually five, or multiples of five, heavy iron rods, each with a heavy iron shoe at the lower end. The sheer weight of the rods and the repetitive nature of the cam, pulverised the rock. The resulting sediment was mixed with water and then treated by one or more of several methods to extract the gold. The batteries were large and expensive pieces of equipment, (see Figure 7.1). They generally required some form of power to operate them, such as a water wheel or more commonly a steam engine. A reliable water supply was required for the steam engine and for

sluicing the pulverised slurry. Although they were large and cumbersome, the machines were able to be dismantled and transported often over the most inhospitable terrain; they were a form of mobile mining infrastructure. Their mobility at a field represents an assessment by their owners of the risk of failure against the potential for reward.

Figure 7.1 Ten head stamper with boiler, Palmer River gold field (author)

Several batteries are known to have existed at the Cape River gold field, and the material spaces of these will be outlined here. The location of at least three batteries can be identified from maps, reports, and newspaper bulletins, and at some time each of the four predominant diggings had a battery operating.

The first location on the field to obtain a battery was Specimen/Mt. Remarkable following the first pegging of a reef by Commissioner Charters in July 1868, (see Figure 7.2).

Reports of gold bearing stone had preceded the Commissioner's action, resulting in an early call for a battery in the Cleveland Bay Express, in March 1868. The first mention of an actual battery was in February 1869, reporting that one already present was not operational (CBE 1868-70:20.02.1869). By April, a half share in the machine was sold (CBE 1868-70:24.04.1869), and by the end of June this machine had been relocated to the Upper Cape and was named the *Perseverance* (CBE 1868-70:26.06.1869). In May, a Mr Lloyd from Sydney, brother of W.F. Lloyd of Townsville and Cape River, had decided to erect machinery. By July, Lloyd's machine was reportedly ready to begin crushing (CBE 1868-70:24.07.1869). Lloyd's machine receives another mention in the newspapers in April 1870 indicating it was in the bed of Cape River (CBE 1868-70:24.04.1870, and in September of 1870 a reporter speculates that Lloyd might bring his machine to Ravenswood (CBE 1868-70:10.09.1870). However, a further report in October of that year mentions that Lloyd's machine was still operating at the Upper Cape (CBE 1868-70:22.10.1870). It seems likely that *Perseverance* and Lloyd's machine were the same equipment.

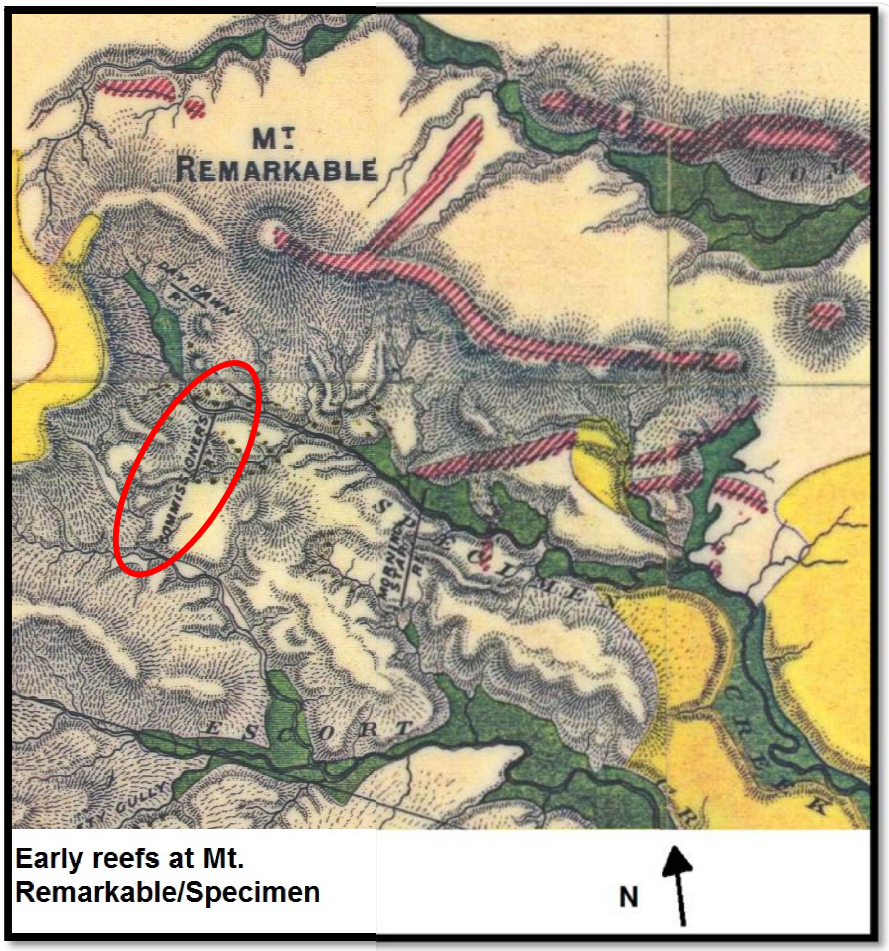


Figure 7.2 Commissioners Reef at Specimen (after Daintree 1869a)

A second machine, the Benton brothers' machine arrived in May 1869; originally destined for Mt. Davenport this machine was erected at Specimen (CBE 1868-70:24.4.1869) with the suggestion that it would be unable to crush the harder Mt. Davenport stone (CBE 1868-70:1.5.1869). It crushed stone mainly from the Upper Cape. In November 1869 it is reported that the Specimen machine was removed to Mt. Davenport because of a lack of water in its position at Specimen (CBE 1868-70:06.11.1869). In October of 1870 Benton's machine location was said to be three miles below Capeville (CBE 1868-70:22.10.1870).

The specific sites of the machines are not made clear in the newspaper reports and the general locations given in the digest report of 1870 are difficult to interpret. However, some maps do exist. It is possible that the site of Lloyd's machine is indicated on geologist E.J. Laun's original sketch of the Upper Cape (Figure 7.3).

Figure 7.3 Possible location of Lloyds 'Perseverance' stamper (Queensland Department of Natural Resources and Mines 1931)

The possible material space of Laun's 'site of old battery' was relocated as a part of the survey and is represented by site OK045. Very little of the former battery site remains, other than a raised stone surface. It is interesting to note that this machinery was recovered from the bed of Cape River after the wet season of 1870 (CBE 1868-70:23.4.1870), indicating that the low lying site was likely subject to flood. Subsequent floods may have also removed or covered archaeological material. Rands (1891:172) also mentions a five head battery on the river. While

it is possible OK045 is the site of the latter machine, Morton's 1937 map (Figure. 7.4) shows an 'old battery site' but set back from the River. Morton and Rand's sites may be one and the same.

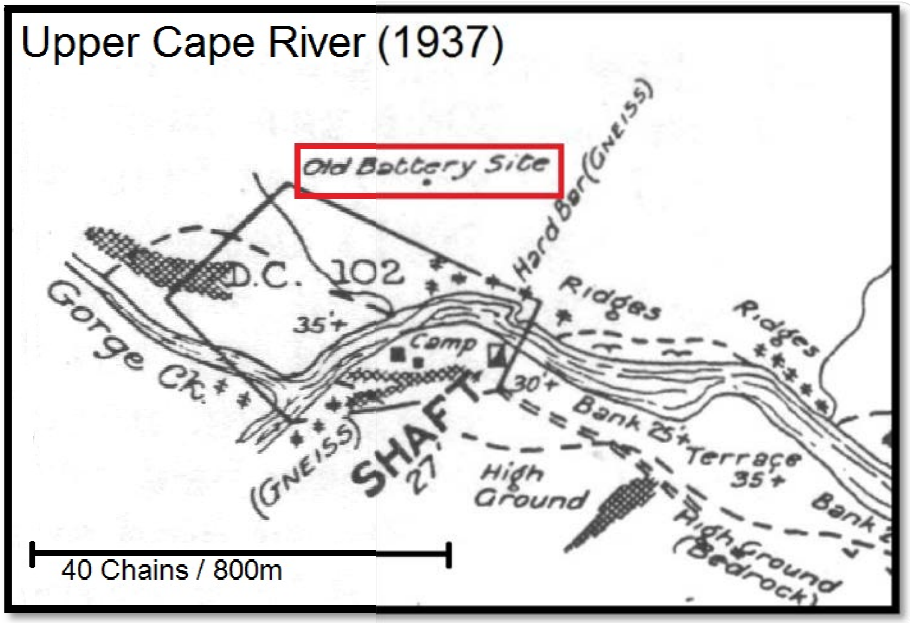


Figure 7.4 Upper Cape, old stamper site (after Morton 1937)

The site of the Benton's machine was not relocated, as no specific information was found that indicated its possible location. However, near the Specimen/Mt. Remarkable sites are two creeks on which the machine may have been located. The first is Specimen Creek that flows around the base of Mt. Remarkable eventually joining into Running Creek. It is possible that a machine was located along here because of the proximity of the creek to the early Specimen Reefs. Unfortunately, a lot of alluvial scouring of Specimen Creek occurred during the 1980s mining of the area, and it is possible that if a battery site was once located close to the creek it could have been destroyed. Daintree had reported a suitable location for an eight to twelve head machine would be on "the Running Creek" (Daintree 1869c:612). An additional possibility for its location is the site of Norwood, on Running Creek. Although located a few kilometres from the Specimen

Reefs, the 1880 Town of Norwood map shows that a battery called the *Hope* was located across the Creek from the settlement, (Figure 7.5).

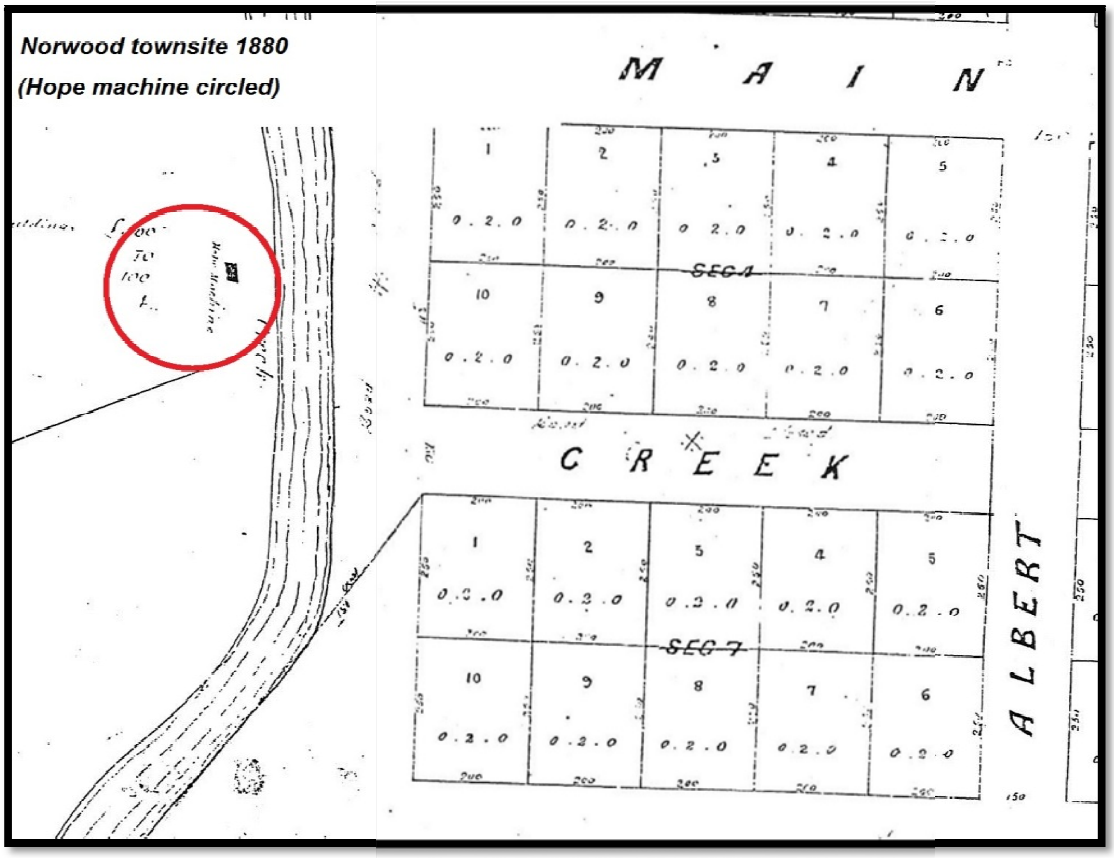


Figure 7.5 Hope battery site (circled) at Norwood

The presence of the *Hope* shows this was a reasonable site for a battery, and that it is possible a battery had existed there before. Despite an extensive search of the area where the *Hope* machine was situated nothing resembling machinery or a reinforced substrate was located that showed where the *Hope* may have stood. The *Hope* was said to have been removed to the Homestead diggings in 1883 (Hooper 1993:13).

The third battery site is that of the *Victory* machine. Although it only had a brief presence at Mt. Davenport its position relative to the Cape River was roughly outlined in the Cleveland Bay

Express, "..a drive from the well of 3x4 feet, for a length of about 20 feet and thence a race for about 50 feet to the bed of the river to provide enough water to begin crushing" (CBE 1868-70:27.8.1870). No evidence of the race, a well or the battery was located. It is also reported as being four miles below Capeville (CBE 1868-70:22.10.70). The word 'below' indicates a downstream location, and between 50 and 70 feet from the river indicates a location that may also have been subject to flood and loss of archaeological material over time. Three miles below Capeville was the second location of Benton's machine (CBE 1868-76:22.10.1870). This coincides with the later location of Hawthornvale station, of which little remains, near the confluence of Bulgin's Creek and Cape River. This site was not investigated.

The material spaces of the batteries at this gold field are truly ephemeral sites, with only one of four locations investigated showing any concurrence between mapping and material. In all cases the machinery was documented to have been removed, and, therefore, all that might be expected are the solid foundations upon which the machinery was erected and some traces of the water supply in the form of channels or a dam.

Material spaces of settlement

The second type of material spaces of mobility are those associated with occupation at the gold field. The evidence for these spaces of mobility will be illustrated by reference to the archaeological material obtained from the two excavated sites previously discussed in chapters 4 and 5. EM022 excavated in the vicinity of Escort Gully, and CV009, excavated in the vicinity of the Pentland Reefs.

Other than the scattered pastoral population and the estimated relatively small Aboriginal population we can be certain that intensive colonial occupation of the Cape River gold field area began in 1867. However, the persistence of occupation over the years to 1873, while alluded to in various official and unofficial reports generally refers to the major settlement at Capeville. The more isolated and disseminated occupation sites and the nature of their persistence are evidence of individual decisions to pursue risk, either directly or indirectly, through mining. The diggings along Escort Gully/Store Creek are rarely referred to and Daintree omits them completely from his 1868 report (Daintree 1869c:609-615), the waterway is referred to much later by Rands (1891:168) as being worked over more than once. Map evidence is provided by a very early map labelled *Cape River Diggings Main Camp* produced by the surveyor Roberts in July 1867 and reproduced by the Townsville City Council in 1981 (Matthews 1981). On this map Escort Gully has several small square boxes along its edge assumed to be either diggings or dwellings (see Figure 7.6).

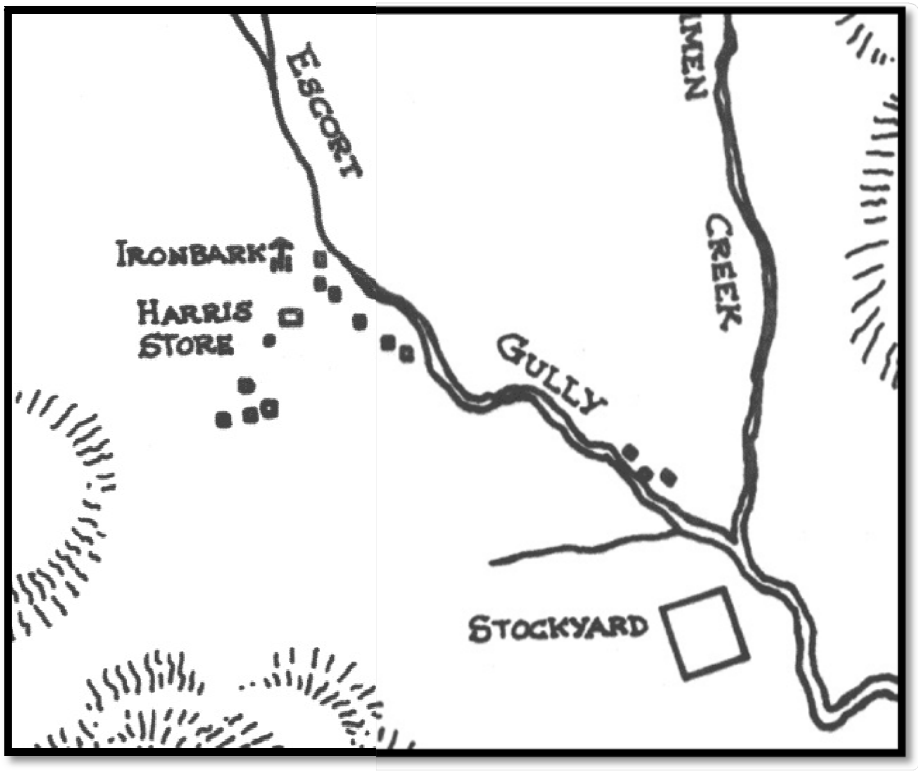


Figure 7.6 Escort Gully (Store Creek) showing possible diggings (after Matthews 1981)

As a result of this research obvious signs of workings were noted along the creek edge itself. As discussed in Chapter 5, an investigation of the chronological markers at the Escort Gully/Store Creek site showed that EM022 was a site that is likely to represent occupation during the earliest phase of mining in the Mt. Remarkable and Specimen region of the field. The main chronological markers were the glass artefacts. While an end date of occupation is not firmly established, a brief occupation period is indicated by the absence of later glass technologies. These absent technologies include bottle types such as the varieties of Codd bottle, and the absence of marked bottles indicating a local origin in places such as Townsville and Charters Towers.

As for the overall function of the site, and hence its role in the material space of mobility, the large variety of ceramic patterns in the pottery assemblage seems to indicate some form of commercial operation, probably a hotel. Numerous articles attributable to female attire were located, including thimbles, clasps, pins, corsetry and jewellery; hence a brothel was also not out of the question. The conclusion of a brief occupation fits the contemporary mapping that shows a dense occupation, at one of the earliest areas occupied at the Specimen diggings.

The second excavation and collection site is the Pentland Reef site, CV009. Dominated by a large remnant fireplace the area was littered with highly fragmented debris, comprising ceramic, glass and metals. Test excavations showed that deep deposits were unlikely. Chronological markers show the site could have been occupied as early as the mid-1880s for perhaps up to 15 years; although the small size of the assemblage indicates a brief occupation. The later date for occupation is indicated by the Warner's Safe Cure bottle fragments and a Wisconsin Glass Company bottle base. These are augmented by a relative lack of heavy black glass, despite ubiquitous green wine bottles being present. A brief period of occupation is also implied by the lack of specific glass technology. The elements lacking are traces of solarised amethyst glass or selenium glass, both indicative of very late 19th and early 20th Century occupation respectively (Lockhart 2006). No evidence of crown seals, also an early 20th century marker, was found amongst the glass ware.

The inference that this was a domestic site is based on the presence of the corset busk and the porcelain doll's arm, indicating the potential for a woman and child to have been present. The glass assemblage was varied indicating choices from a wide variety of food and beverages. There

were also a large number of tinned food cans, which may be indicative a domestic scale of consumption rather than a retail-commercial scale of consumption.

In summary the archaeological analyses showed that both sites were likely to have been briefly occupied. Both assemblages are archaeological expressions of the material space of mobility and are archaeological signatures of short term occupation at the gold field.

Social spaces of mobility

The batteries

As previously mentioned a gold field was considered as unproven until underlying quartz reefs or other gold bearing matrices, were located and exploited. These reefs enabled permanent mining populations and associated industry to be established. The efforts surrounding the procurement and establishment of the batteries at the Cape River gold field represent the social space of a response to risk. They could also reflect the desire to be a part of the establishment of permanency for a field, through the mobility of capital.

The primary social space of mobility is demonstrated by the substantial efforts of a single entrepreneur Mr William O. Hodgkinson, on behalf of some of the Townsville business community to develop a Quartz Crushing Company for the Cape River gold field. The first mention of the Cape River Quartz Crushing Company was made in March 1869, and a week later the prospectus appeared (CBE 1868-70:27.3.1869, 10.4.1869). The objective of this Company was to raise £3000, of which £2000 would be used to purchase a machine capable of crushing 100 tons of stone per week. The company was to issue 600, £5 shares (CBE 1868-70:

27.3.1869). By June this initial offer had collapsed (CBE 1868-70:5.6.1869). However, it appears that Mr W. O. Hodgkinson and his business partner Mr O'Meagher fulfilled a pledge to bring machinery to the Cape by procuring a machine from Rockhampton, presumably with the subscriptions that had been made. Unfortunately, on Tuesday 13th July 1869 this machinery was lost in transit to Townsville, when the Schooner *Boomerang* sank near Cardwell. The machinery was uninsured and was a total loss (CBE 1868-70:24.07.1869).

Subsequently, more money was raised in a float of the newly formed Cape River Quartz Crushing & Gold Mining Company. The 150 shares in the new venture were sold for £10 each (CBE 1868-70:4.12.1869). Of the 150 offered, 96 were subscribed and this provided enough cash, or security, to purchase another machine. The desperation to secure the funds boiled over into the public realm when P.F. Hanran claimed that he was tricked into signing a document pledging his support for £50 of shares by the manager of the Australasian Joint Stock Bank, Mr Beuzeville. Hanran, was aghast that a manager of a bank would so openly support the effort of a separate private company, especially so close to the collapse of the first company and loss of all funds (CBE 1868-70:20.11.1869, 27.11.1869). He may also have been slighted by the publication of his name in a list of subscribers in the newspaper, that showed him to be in debt to the company (CBE 1868-70:4.12.1869). How this was resolved is not clear.

Hodgkinson procured more machinery this time from Maryborough. It was a ten stamper battery, with each stamper of six cwt and was powered by a 12 hp horizontal engine. Hodgkinson was appointed as the manager of the battery by the company, and was tasked with preparing the site at Cape River for the machine (CBE 1868-70:4.12.1869). In early December it was published

that Hodgkinson had been removed in September as the temporary manager "solely for reasons of economics" (CBE 1868-70:4.12.1869), his association formally ceased on 2nd December 1869 (CBE 1868-70:25.12.1869) and it seems likely that 'September' was a typographical error in the original newspaper article. That the machine was slow in arriving from Maryborough appears was the fault of the manufacturer, not Hodgkinson (CBE 1868-70:4.12.1869). Perhaps he bore the responsibility and was removed for it. At the December 1869 company board meeting the temporary Board of Directors also resigned. Hodgkinson subsequently filed a claim to the courts for non-payment of his fees by the company, which he won (CBE 1868-70:18.12.1869). The machine arrived in Townsville just before Christmas 1869 (CBE 1868-70:25.12.1869). However, it was June 1870 before all of the machine arrived at the gold field (CBE 1868-70:11.6.1870) By August the machine was finally ready for operation and was christened *Victory* by Commissioner Charters on the 9th August 1870 (CBE 1868-70:20.8.1870). By the 10th September it was reported that 40 tons of stone from the Union Reef had produced no gold and 4 tons from the General Grant mine had produced only four dwt (CBE 1868-70:10.9.1870). In late 1870 the machine was said to have been located one mile below Benton's machine. While the *Victory* machine operated for a little longer at Cape River, it was removed to the Gilbert field later in 1870 where it was sold for £1200 (CBE 1868-70: 17.12.1870).

On behalf of its investors the Quartz Company had gone to extraordinary lengths to secure a crusher for the stockpiled stone from the Union Reef; risking and expending an extraordinary amount of money, and had essentially failed. Historically the demise of the company due to the failure to find any gold raises specific concerns about many things. These were articulated in the Cleveland Bay Express:

> "There must have been something altogether wrong in its management when such a quantity as 40 tons was allowed to go through without ascertaining by examination whether gold was being deposited or not. This should have been evident after the first ton or two had been passed through by merely running a thumb along the first ripple. The same want of knowledge is exhibited by the loss of 90lb of quicksilver, when it is stated that there was very little mundic in the stone. That 40 tons of stone known to contain gold, for it had been otherwise no miners would have gone to the trouble or expense of raising it, and no machine manager would have accepted it without payment beforehand – should be passed through a machine with such a result or anything like it – is without precedent in any part of the world...and that some half a dozen sluice heads of water were permitted to run through the stamper boxes, and over tables fixed at something less than 45 degrees, carrying everything before it. The machine was evidently not tried on its merits." (CBE 1868-70:17.12.1870)

Several aspects are not called into question such as the nature of the original assays and the security of the stone at the gold field during the procurement of the crusher. As the author above mentions the stone should only have been a disaster for the owner of the stone, not necessarily the operator of the battery, so it seems likely that the company must have also purchased the stone, for the battery to have been considered a failure. Even so, 40 tons would have had to yield about 10oz to the ton to have paid for the machinery, if the stone was owned by the company. If the company was receiving only a few shillings per ton for the crush, then it would have had to be expecting an enormous quantity of payable stone to be available for crushing.

The discussion shows that batteries were inherently mobile machinery, they were procured, transported, erected and re-erected, and sold-on to other fields. How the social space of mobility was manifest depended on a reliable source of stone and water. They also show that the success of the machines was dependent on the relationships between owners, managers and operators. Various batteries were moved around the field to alleviate these problems of supply. The imagined destiny of the *Victory* machine was not fulfilled; it did not result in the persistence of this gold field. Several circumstances led to its demise but it appears that a sustained period of investment without any returns had eroded investor confidence in the management and board. When that management was no longer present at the field, the company's stone assets may have been tampered with. In the absence of that management people inexperienced in crushing were procured and the crush failed.

Occupation sites

As social spaces of mobility the disseminated occupation sites represented by CV009 and EM022 are largely anonymous, appearing infrequently as unlabelled squares on early maps. As such, their role as social spaces of mobility is dependent on an accurate evaluation of the role of each site. As a social space EM022 displays an assemblage of ceramic and glassware that shows even at the earliest phases of the gold field a wide variety of items was present at the field. This could indicate that a variety of items were available for purchase, early in the field's occupation. Additionally, the variety in the ceramic assemblage may indicate an eclectic curating of pieces; obtained only when required. The ceramics may also represent remnant sets, indicating a high turnover of service wares. Both of these scenarios are not inconsistent with provision of food to a clientele comfortable with improvised crockery.

The site though appears positioned only for a temporary stay. The site is at the confluence of two water courses but it appears it could have been somewhat isolated by these flows. It is situated on a small alluvial flat in the lee of a range of hills, the whole area surrounded by numerous hills. As such this was never going to be an ideal site for a permanent or enlarged settlement. It is however expediently situated close to the centres of activity during the earliest stage of the diggings.

The assemblage from CV009 shows a limited variety of serving ceramics but a wide variety of foodstuff and drinks, in containers of a domestic scale. As social space the site is reasoned to be a small domestic mine camp, possibly a family camp. Structurally the dwelling may have been as rudimentary as a tent. It is situated close to several mines but cannot be directly associated with any one in particular.

As social spaces of mobility, both sites can be characterised as having a brief period of occupation. As such both are likely to have fulfilled a specific function directly associated with mining. Mining activity was the determinant of persistence of each occupation site.

Archaeological landscapes of mobility

Occupation sites

The archaeological landscape of mobility for the disseminated occupation sites, derived from social space is similar to the archaeological landscape of water for the Chinese; one of

anonymity in the historical record. While settlements at Cape River gold field are mentioned in some historical documents the disseminated and isolated settlements are not.

The impetus for mobility at the Cape River gold field, was presented earlier in the chapter as a response to the two cognitively held ideas that may have influenced an individual's assessment of the risk in joining a gold rush (cognitive space). Any form of movement, to join the rush, or to abandon a field, or join a new rush, involves abandoning the status quo (cognitive space). The occupation sites are obvious evidence that the status quo was abandoned. However, in terms of the dialectical tension inherent between cognitive perceptions of *persistence* and *abandonment*, the more productive questions are; how long did they persist? why are the occupation sites where they are? and why did they persist for that length of time?

Both of the excavated occupation sites would only provide the maximum information about the landscape of mobility if we knew whether their settlement and abandonment was directly tied to mining, or whether other factors influenced decisions. Such specific information is not available. Each site is primarily defined by its archaeological record; this record comprises two main components, the physical record of artefacts and features of the site (material space) and the spatial position of the material within the palimpsest of other sites and features (material space). The palimpsest of sites appears both as a physical construction as it is encountered at the gold field in the process of research (material space) but also as it appears on maps, contemporary historical or current (cognitive space).

The assemblage for EM022 (material space) provides a chronology for the site which supports the map evidence (cognitive space) of an early exploitation of this creek for gold (social space). While the actual early mining events are not able to be linked to the extant alluvial workings (material space), they are physically close to the site (material space). The assemblage supports an association with early mining by providing an indication of the end of occupation. This is primarily derived from a lack of evidence of bottles incorporating closures developed in the 1870s. A reasonable occupation span seems to be a brief occupation starting in 1867, and ending at sometime in the early-1870s.

The most likely site function inferred from the assemblage is that of a hotel (social space). This was inferred from the relatively high proportion of alcohol bottles and the diversity of patterns present in the ceramic assemblage (material space). This place was almost certainly occupied by at least one woman, inferred from the variety of female apparel parts, sewing paraphernalia and some possible jewellery items (material space). The site is located at the confluence of two creeks (materials space), when the creeks flowed the site might be difficult to access requiring an approach either from the west over Golden Mount or by crossing Escort Creek or Specimen Creek from the north, south or east (Figure 7.7).

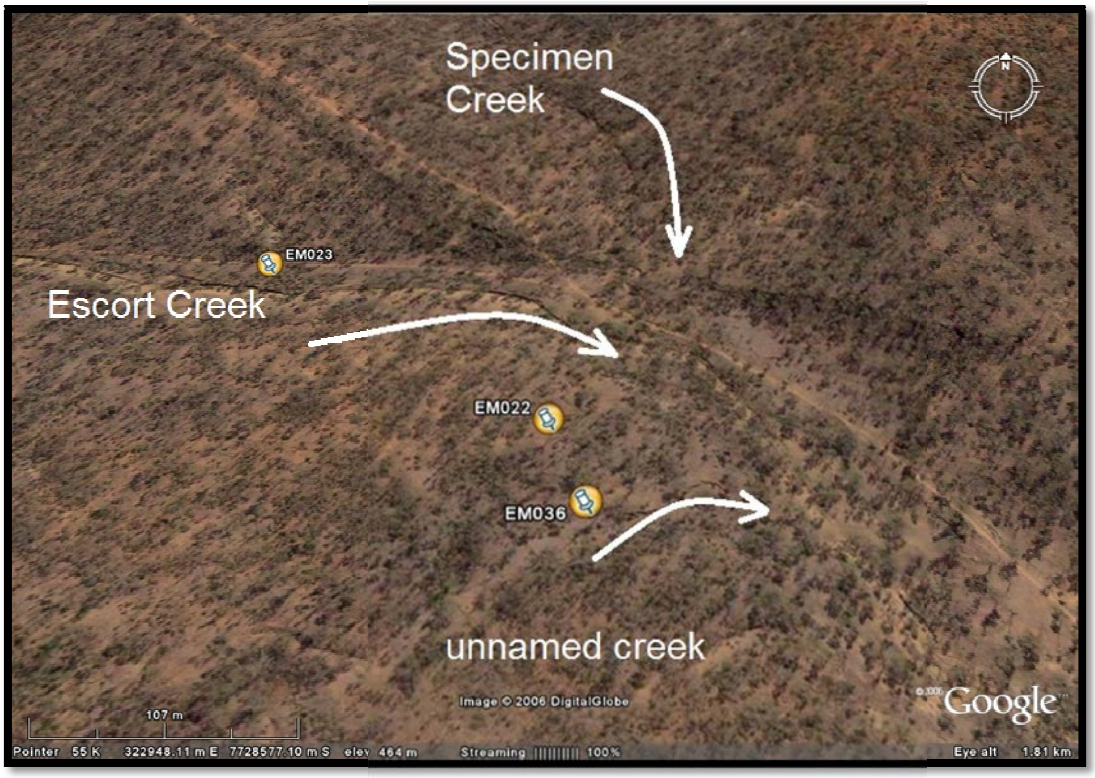


Figure 7.7 EM022 relative to hilly terrain and waterways

From its unusual position (material space), I infer that site was established at the centre of early mining activity (social space). That despite its apparent inaccessibility it was close-by and easily accessed by the miners who were exploiting the creeks and alluvial flats. As such it was considered by its proprietor as an essential but also an immediate component of mining (cognitive space). If the services provided (food, alcohol, and possibly sex) had not been high priority needs, then its position may have rendered this business less competitive than a more accessible establishment offering the same services. If these assumptions about accessibility and the services provided are correct, the reasons for an early abandonment are clear. The business had to move with the mining population to provide its services in a place most advantageous to the miners. The Cleveland Bay Express records the peripatetic nature of the miner as the population moved to new diggings within the gold field. This establishment may have been

essential to the miner's needs (cognitive space), and therefore it followed the internal rushes (material space). Its relatively inaccessible position indicates that the place was not established with a long duration in mind (cognitive space). The place (material space) was a service point, in the most useful position (cognitive space), for as long as its services were required (social space).

The assemblage for CV009 (material space) also provides a chronology for that site which also supports a brief occupation span, in this case concurrent with the brief exploitation of the Pentland Reefs during the mid 1880s to early 1890s (Phase 7). The initial occupation date from the assemblage is less sure, there is however little black glass which was common until the 1870s. It seems reasonable to assume that the site was occupied at least from 1881 until after 1891 but unlikely after 1900. The wax vestas also support this glass based date range (material space).

This settlement is also absent from the historical record (cognitive space), and again occupies an anonymous social space as it might be externally expressed. Physically the site is close to but does not adjoin any apparent workings (material space). In terms of the dialectic for mobility between *persistence* and *abandonment* the cognitive spaces of mobility developed earlier in the chapter are, due to the chronology of the site, not directly applicable. There is no indication in the historical record that that the increase in population for the gold field recorded for the mid-1880s actually constituted a new rush, in part because the total population for the period never exceeded a few hundred people. It is more likely that those exploiting the Pentland Reefs either worked in small groups or worked for a company. Neither of these possibilities was explored as a part of this research.

The site function inferred from the assemblage (material space) is that of a domestic settlement (social space). The ceramic assemblage is quite narrow and plain comprising mostly blue and white earthenware. There were numerous tin cans of various sizes. Alcohol bottles were present but did not comprise a predominant part of the glass assemblage. There was a wide variety of bottle types indicating a wide range of food and beverage types.

The assemblage supports that this domestic site was occupied by a family connected to mining one or more of the nearby Pentland Reefs (material space). Its location a few hundred metres away from the reefs may indicate the need to provide a safe environment for a child (cognitive space) away from the shafts and any machinery. As a domestic space occupied by a family, some degree of privacy (cognitive space), might also be implied by this location and the lack of similar sites nearby (material space). In terms of mobility, the site appears utilitarian, created as a domestic space for a family (material space), persisting as long as there was work available at the small reef mines (social space) and then abandoned. The lack of any structural materials, other than the robust fireplace, may indicate that the occupation was never a substantial structure, or that any mobile materials were transported away, or have been destroyed by natural causes. That the family chose to be close to the mine, rather than be established at the railways town of Pentland (social space); with the miner travelling the few miles to the mine, appears to indicate that the family was not wealthy and that the child(ren) were young, not requiring school, or did not attend school (social space). Alternatively, if the dwelling was insubstantial such as canvas and timber, perhaps the place was never intended to be permanent (cognitive space) and was abandoned when more suitable premises became available in Pentland.

Mobility at gold fields is the story of the rush to and the eventual demise of the field. The social space of mobility though is really about the reasons for persistence. The spaces of mobility are not just about the movement of people, they involve the movement of infrastructure and the capital risk it embodies. It also involves the movement of ideas, including ideas on how best to make money from gold.

Quartz crushing batteries

As social space, the batteries at the gold field are frequently represented in the historical record. Perhaps for the fledgling Townsville, the most significant of these was the *Victory* machine. The tri-alectic relationships between social-material, cognitive-social and social-cognitive spaces demonstrate a number of ways the batteries contribute to understanding the archaeological landscape of mobility through the dialectical relationship between *persistence* and *abandonment.*

Once the first reefs were pegged by the Gold Commissioner in July 1868, they represented the first indication of permanence for the field (cognitive space). The machine's procurement detailed above demonstrates that parts of the Townsville business community were willing to take a financial risk (cognitive space), with the hope of financial return. It also shows the beginning of a regional mobility of capital, through investment in mining. The misfortunes encountered in getting the machine to the field (social space) are countered by the persistence of W. O. Hodgkinson in ensuring that a crusher was provided for the investors. However, his dismissal from the company, demonstrates investor dissatisfaction with both his performance and

that of the board of directors (cognitive space). This frustration appears understandable in light of the growth of regional mining, particularly Ravenswood during 1869 and 1870 (material space). Townsville's Cape River investors, who were as a company financially stretched, had placed their faith both in the stone awaiting crushing at Mt. Davenport, but more importantly in the machine to do it (material space). The incredibly drawn out process of the machine arriving in stages, followed by its slow progress to the field and slower commissioning to an operative state (social space) consumed almost twelve months. It is indicative of the persistence of the company (cognitive space) but also represents a company with few other options, with its entire capital tied to the machinery (material space). No mention is made in the record of who was tasked with managing the transport and erection of the *Victory* machinery (social space) although Mr Lloyd was thanked at the opening for his assistance. For the reasons outlined earlier, the eventual failure, not of the machine, but of the extraction process (social space) was the end of the company's willingness to persist (cognitive space). Ultimately, the *Victory* machine must have been a signal for Townsville capital (cognitive space) to abandon not only the Cape River gold field (social space) but to get some return on investment, as the machine was sold on, rather than moved and tried at the newer fields by the Cape River Quartz Crushing Co.

The events surrounding the *Victory* contrast significantly to those of *Benton's machine* and *Lloyds Perseverance machine*. These machines had arrived relatively quickly and were the property of one person or a small partnership (social space). Both moved throughout the field after initially establishing at Specimen, where the earliest reefs had been located (material space). Eventually relocating close to new stone dumps and where there was an adequate supply of water (material space). This intra-field mobility demonstrates an assessment of risks at the

field derived from prcatical experience (cognitive space). This localised experience was lacking for the *Victory,* either through the ineptitude of the manager, or through interference from investors.

No trace of crushing machinery was located at the field (material space), hence the material spaces of the batteries are largely anonymous with some evidence alluding to a battery (OK045) and some locations on maps (cognitive space). In terms of the archaeological landscape of mobility the anonymous material spaces represent full mobility and abandonment (social space). All of the early machines were historically noted as moving on, and this is probably to be expected in a region where the opportunities for crushing machinery were just beginning to expand (social space). Based on the Cape River examples, the material trace that might then be expected at an early ephemeral field may be the footings of the battery if they were stone or brick, or any channels that supplied water. Despite these possibilities at Cape River even these were not clear from the research.

Summary

The two examples of social space that comprise the exposition of an archaeological landscape of mobility, can both be viewed as being activated by the dialectical transformation, from *persistence* to *abandonment*. In the case of the excavated occupation sites, the discrete material assemblages led to the conclusion of a brief period of occupation at each site. For the early site (EM022) once factors affecting the cognitive spaces of risk aversion were overcome movement within the field to new diggings appears to have been common. In this rush phase the social space of mobility is one of ever changing places of mining activity, leaving occupation sites and

diggings abandoned and creating new diggings and occupation sites. Its slightly isolated location indicates that it was likely to have thrived only when surrounded by its intended customers.

The context for the later site (CV009) is that persistence for the gold field had not been achieved except on the smallest scale. Locating these new reefs within a few kilometres of the main deep lead area of mining almost twenty years after the initial phase of mining, speaks to the readiness of miners to abandon a diggings if more favourable prospects appeared, rather than to prospect for the certainty that reefs provided. The site suggests a domestic arrangement, and the duration of its occupation appears intrinsically linked to the operation of the mine. Its presence in the vicinity of the diggings rather than in the Pentland township, perhaps indicates that being close to the mine was more important than being in a social setting. Its distancing from the mine indicates that a child or children were possibly being kept away from the danger of industry and mining shafts. It is also possible that there was a domestic arrangement that required a degree of privacy afforded by the distance from the workings. In the long run the Pentland reefs were not persistent at depth and these diggings were also largely abandoned. At both occupation sites the possibility exists that abandonment was expected.

In the instances of the social spaces of the batteries, mobility is clearly demonstrated in the two modes of operation of crushing machinery at Cape River. One mode comprises local, experienced and mobile operators, where the imperative for mobility was dependent on the supply of stone, to a place with adequate water. A contrasting mode is the inexperienced, inert and distant style of management exhibited for the *Victory* machine. At Cape River the material trace of the batteries is largely absent, there is no machinery, there are no obvious water supplies;

there are some instances of possible footings. The physical absence of the well documented batteries shows that abandonment, while a terminal action for this gold field, was part of the greater regional expansion of gold mining. The machinery was still useful, it was not in need of significant repair and the mobility of the machinery was economically feasible; persistence was pursued elsewhere.

Like the archaeological landscape of water, the archaeological landscape of mobility is centered around activities within social space. Mining mobility was demonstrated through the material evidence of battery sites and an examination of two occupation site assemblages. The social space of mobility at this field is seen to be influenced in-part by the intra-field and the broader regional expansions and contractions of mining. In the next chapter, the archaeological landscape of authority further demonstrates the advantages of approaching the material and documentary and records from the perspective of the archaeological landscape.

Chapter 8 **Archaeological Landscape of Authority**

8.1 Introduction

Authority is the third essential attribute of a gold field that will be developed as an archaeological landscape for the Cape River gold field. The chapter develops a single example; that of the authority exercised by the first gold commissioner at Cape River gold field, W.S.E.M. Charters.

The early Gold Field Acts and Regulations are the primary source for the cognitive space of authority. Because Queensland adopted the New South Wales Mining Act of 1857, it is reasonable to postulate that the legislation embodies the expectations of both government and miners on how a gold field should be effectively administered. The material spaces of the Commissioner are developed from the results of the archaeological survey undertaken as a part of this thesis, and from documentary research. The social spaces are derived from historical sources that document the Commissioner's experiences of administration at the gold field.

As was the case with the archaeological landscapes of water and mobility, the creation of the archaeological landscape of authority is attempted within the framework of an overarching dialectic. In this case that dialectic is the transformational nature of the relationship between *Centrality* and *Marginality*. Following the methodology established in chapter 6, the landscapes will be developed by highlighting the tri-alectic of relationships between the three spaces outlined above; the material-cognitive, the social-material and the cognitive-social. The following sections detail the cognitive, material and social spaces of authority at Cape River.

Cognitive spaces of authority

Gold Field Legislation and Regulation

Government authority present in the colonial Australian goldfields was partly a mechanism for the maintenance of order and partly a means to raise revenue. By royal mines doctrine all gold extracted in Britain and British Colonies was Crown property (Blainey 2003:6) but ownership was rarely enforced in the Australian Colonies. The law was not rescinded and when the first rushes to the gold fields of New South Wales occurred in 1851, Governor FitzRoy asserted the Crown's right to the gold. Even though this action was contrary to the New South Wales land regulations of the 1840s (Veatch 1911:94-97). Fitzroy introduced a licence, with a fee of 30 shillings a month, which allowed a prospector to dig a defined claim measuring eight by eight feet. The New South Wales rushes were quickly paralleled and then exceeded by the Victorian rushes, and as a matter of expediency the licence system was also introduced there. Queensland had yet to be created by separation from New South Wales at this time.

The primary purpose of the license was to raise revenue but it also served the administrative role as the active interface between government and mining communities. Secondly, the licence fee was designed to deter the movement of labour from agriculture to mining. In the Australian colonies, labour was an essential component of a pastoral political economy that was initially based on cheap convict labour, and that was later sustained by emancipated labour and immigration. The gold fields rapidly attracted people from across the social spectrum, and this threatened the colonial hegemony. Blainey cites Victorian Governor La Trobe's dismay at the mass exodus of so many of Melbourne's population to the gold fields (Blainey 2003:35).

Broader concerns over the moral validity of mining are not new. Agricola's, *De Re Mettalica*, one of the earliest published texts on mining begins with the author extensively reviewing many sources of classical literature regarding the morality of metals extraction. In parts of Europe during Agricola's time, mining and mine owners were obtaining recognition and an increasing status. However, it is clear from the thoroughness of Agricola's discussion that prior to the seventeenth century there was conjecture as to whether mining was morally justifiable (Agricola 1950 [1556]. Goodman (1994) presented a variety of opinions that express the contemporary polemics about nineteenth century gold mining in Victoria and California. At one extreme, gold was seen as a means of attaining a working-class utopia. At the opposite extreme was a fear that the existing class-structure would be permanently dislocated, to the detriment of all.

Ultimately, the license fee provided little initial deterrent to people rushing the fields and was largely unsuccessful as a mechanism of social control. On the other hand, its ramifications were serious on the gold fields. The imposition and administration of the license, caused problems when gold was 'hard won', or for the unlucky miner, was absent. Blainey (2003:46-58) suggests that although the licence system and its enforcement was often tedious and sometimes oppressive for the miner. It was not until the advent of deep lead mining at Ballarat that the inequities of the licence became most evident. Blainey cites several reasons for the resulting dissent that are peculiar to non-company, deep lead mining. Firstly, the licence limited each claim to a maximum of 576 square feet or the equivalent of four men's ground. However, mining at depth usually required as many as twelve licensed miners to dig the shaft, and pump it dry. This work could take up to eight months to bottom on a gutter that may or may not have contained payable gold. In essence, individual miners were investing their time and money and were taking all of the risk,

and the government was being paid in all cases. Justifiably, the license fee was viewed as a tax on labour. Secondly, a miner was required to show his licence on demand. As such, licenses accompanied their owners down the shaft, exposing them to dirt and damp, and when demanded, bringing them up as much as 120 feet to show the inspectors. Peaceful agitation against these difficulties resulted in a reduction of the licence fee down to 10s per month in New South Wales and £1 per month in Victoria. However, in Victoria in 1854 La Trobe's successor, Governor Hotham, increased the frequency of license inspections and thereby the miners' indignation. The technical difficulties of deep lead mining, exacerbated by an oppressively exercised authority, were contributing factors to the clash at Eureka (Blainey 2003, Veatch 1911). The Eureka clash is relevant here as it forced the Victorian Government to ease its policy on licensing; creating instead the miner's right, "a unique Australian document" (Kerr 1995:120).

When Queensland was separated from New South Wales in 1859, the new Queensland government adopted the New South Wales *Management of Gold Fields Act, 1857, 20 Victoria, No 29* (Kerr 1995:119-20). As a result, for a short time, Queensland miners were able to produce their own mining rules. As an example the extensive Gympie diggings, also dating from 1867, were governed by the Gympie Mining Warden Rules (Drew 1982:121, Kerr 1995:121). However in 1867 most of the small payable gold fields were administered in Queensland through the office of a Gold Commissioner. In 1866/67 there were four Gold Commissioners in Queensland (Queensland State Archives 1866-67). Between 1866 and 1874 the Gold Commissioners were appointed by the Department for Public Works and Mines (Kerr 1995:120-1).

In short the Commissioner's primary role was to ensure the gold field regulations were upheld, as Hirst has stated about the Victorian fields, "All official power on the gold fields came to rest in the commissioner's hands...the power to punish minor crime, settle small debt cases, and commit serious offenders to the higher court" (Hirst 1988:201, cited in Davies 1998)

In Queensland, The Gold Fields Act 1857 was in force for 15 years before being replaced by the Gold Fields Act of 1874. By that time the 1857 Act and its regulations were considered inadequate by many but, as Davies (1998) demonstrates, not by a majority of Queensland parliamentarians who rejected new gold fields' legislation on four occasions between 1867 and 1871. Despite the political recalcitrance, the need for administrative reform was evident, resulting in a Royal Commission into mining during 1870/1, under the Right Honourable Radcliffe Pring. Amongst several gold fields he visited, Commissioner Pring held hearings at Cape River. The findings of the Royal Commission eventually resulted in the adoption of the *Gold Fields Act, 1874, 38 Victoria, No 11*. Amongst several notable changes in this Act; the rights of the miner were established, and the administrative position of Mining Warden was created. It should be recognised that the initial 'rush to bust' period of 1867-1873 at Cape River, the examination of which lies at the core of this thesis, occurred under the effect of the Gold Fields Act 1857, and its regulations. Queensland mining legislation is reviewed in detail by Drew (1982), Kerr (1995) and Davies (1998). Additionally an American analysis of 19th Century Australian and New Zealand legislations was compiled by Veatch (1911) and includes a chapter on Queensland legislation.

The extent and effectiveness of the provision of authority is one of the parameters that influenced the development of all gold fields in nineteenth century Queensland. Ruth Kerr stated, "Government administration of mining in Queensland has served two principle purposes – to administer land tenure for mining and to collect royalties for the Crown" (Kerr 1995:116).

As was shown above, the legislation and regulations in effect at Cape River from 1867 to 1874 were part of an evolution of government administration. They stemmed from the Royal Mines doctrine; were influenced by the unprecedented gold rush phenomenon, and were further galvanized by the individual experiences of those involved in the global rushes. As an abstracted embodiment of this experience, and the continued government expectations of the day, the legislation and regulations comprise an accessible primary source of ideas about the cognitive space of authority at Cape River gold field, and contemporary Queensland gold fields.

The 1857 Act was a relatively short piece of legislation. In principle it affirmed the Crown's paramount right to gold and gold bearing lands. However, rather than relying on the coercive deterrent of punitive measures, mining administration was dealt with liberally; relying upon the expertise of commissioners, other appointees and miners to develop the gold fields. The Act attempted to manage mining by doing several things.

Firstly, the Act stated that anybody who wanted to mine on 'waste land' needed a 'miner's right' costing 10 shillings for twelve months. The miner's right was really a permit and did not enshrine any special rights for the miner, other than what was protected by the clauses of the Act. Conducting a business at a gold field required the purchase of a business license.

Secondly, mining leases could be granted over auriferous land. Significantly, pastoral leases over auriferous lands were suspended by the Act to accommodate mining.

Thirdly, the Act allowed for the creation of gold field rules and regulations and the administration of these by an officer whose primary role was to mark out the extent of any claim made under miner's right, lease or license. Neither the position of, nor the role of Gold Commissioner is mentioned in the Act. However, the Commissioner is recognised in the regulations as the interpreter of the act and implementer of the regulations (Queensland Legislative Assembly Parliamentary Votes and Proceedings 1867:1197, Clauses 3-6; Queensland Legislative Assembly Parliamentary Votes and Proceedings 1871:275, Clauses 3-5).

In the absence of an appointed official, a Justice of the Peace could determine whether a mining claim had been encroached upon and could be assisted by two assessors appointed by the justice. Under the Act, three months after the opening of a new field, a mining district could be created if at least 100 miners petitioned the government. A District Court could be established at a field and would be headed by a chairman, with nine other holders of a miner's right who were appointed for up to 12 months. The court could make rules and regulations, provided they were gazetted, and could make judgements on breaches of rules, and issue fines.

Thus as cognitive space, by adopting the 1857 Act, the exercise of authority at the gold fields was held at a distance by the Queensland government. While cursorily recognising gold as crown property effective and immediate control of that gold was physically beyond the capacity of the

centralised government. The required control was ceded to the small number of sometimes fallible administrators, the Gold Commissioners and to the miners themselves.

Within the gold field boundary the Gold Commissioner was the sole arbiter of the regulations. The Commissioner's responsibilities included issuing miner's rights, business licences, laying out reef and deep lead claims, and settling mining disputes. Cape River's Gold Commissioner had the additional duties of Police Magistrate and at times District Registrar. This plethora of duties for the Commissioner was common at several fields. The Cape River Gold Commissioner exercised judgement in criminal proceedings of a minor nature and forwarded larger cases to the District Court at Bowen. He compiled statistical information which included two censuses at Cape River, 1868 and 1871. During 1868 and 1869, Charters' was assisted in his duties by W.R.O. Hill who was Clerk of Petty Sessions, District Registrar and Commissioner for Affidavits (Pugh 1869:62). At Cape River, the Commissioner was also assisted by a small detachment of ten police. In practise the Gold Commissioner's authority was only possible with the good will of the mining population (Goodman 1994, Keesing 1967), but at Cape River this was not always forthcoming.

Material spaces of authority

Effectively, the material spaces of the Gold Commissioner correspond to the extent of the gold field. This extent was set by the Department of Works, and in the case of the Cape River gold field this was based upon information about the size of the field supplied by Richard Daintree. The gold field's boundary could be enlarged, reduced, or even absorbed into another field's boundary, each of which happened over the life of the Cape River gold field.

The public spaces of the Commissioner constitute the areas where he performed his duties. For the most part these are truly ephemeral areas at which a complaint may have been heard, or where a reefing claim was pegged out. The Commissioner was responsible for laying out reefing claims and in effect each of the early named reefs that have been relocated constitute these material spaces, although any direct evidence of authority is now non-existent. At the time however, the size and direction of the claims was direct evidence of authority in action. Six reefs are shown on Daintree's 1868 map, all of which would have had initial claims and surrounding claims pegged by Charters (Daintree 1869a), many more reefs were found in the ensuing years, although few persisted.

To pursue his responsibilities the Commissioner was required to travel throughout the gold field and occasionally beyond its boundary but it appears that the Commissioner also required a base or camp. The camp may have constituted his private space but is also likely to have been a place of business, as Hill documented of his residence (Hill 1907:47). The location of the Commissioner at Cape River gold field has been the subject of a previous investigation by Hansen (1999). In that unpublished manuscript Hansen describes the successful relocation of the Commissioner's camp. However, there is documentary evidence that Commissioner Charters actually had three camps within the Cape River gold field during the period 1867 to 1871. During 1871 he moved a fourth time to the new Broughton field and lastly in 1872 to the Charters Towers field, all this time retaining responsibility for the Cape River gold field.

Arriving at the Cape River gold field in October 1867, Charters most likely set up his first camp at the main camp, reported as being on Running River (CBE 1868-70:12.10.1867). The details of this camp's location are too indistinct to indicate a particular site, although the later (1880) town of Norwood (EM013) was also situated on Running River. Norwood was on flat ground to the north of Running River. It is situated where the track diverges to either the Golden Mount/Paddy's Gully (EM015) area of the diggings or to the Mt. Remarkable/Specimen area; two of the earliest gold producing areas. Charters stayed at his first location for a month until late November 1867 when he moved to Hann's station. This site is reported as being close to the racecourse and approximately 3 miles above the Capeville diggings, referred to as "the new diggings" in February 1868 (CBE 1868-70:29.2.68). On Daintree's 1868 map this location is shown as Commissioners Hill, (See Figure 8.1).

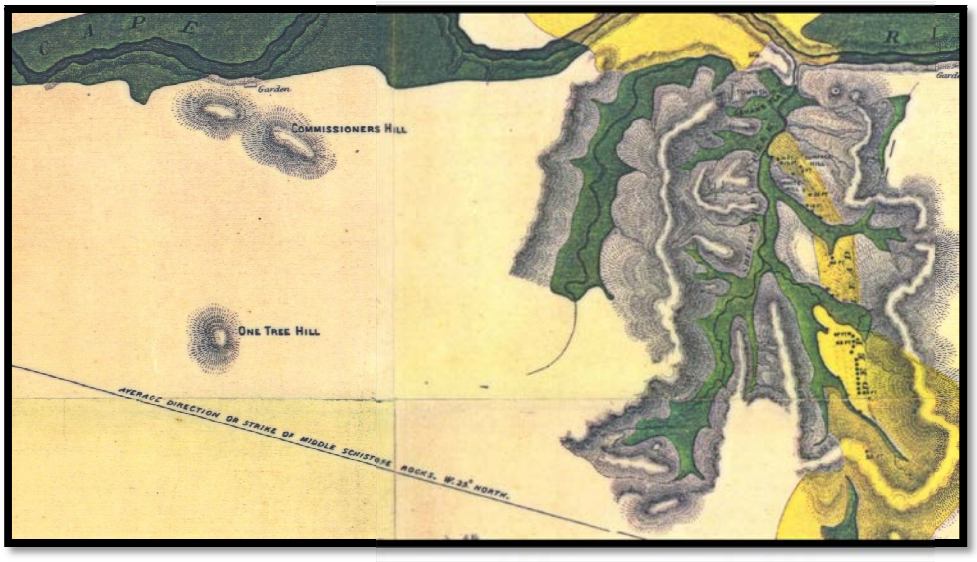


Figure 8.1 Portion of Daintree's 1868 map showing Commissioners Hill (Daintree 1869a)

It was this site that Hansen relocated. The location was also broadly indicated in the Cleveland Bay Express in an advertisement for a St Patrick's Day race meeting at the Commissioners Camp (CBE 1868-70:14.3.68). At some point Charter's moved again to the hill overlooking the

township at Gehan's Flat. Evidence of this is provided in an 1870 news report that describes the layout of Capeville town. "The township is situated on the west bank of the cape; a small creek runs through it; the Commissioner's Hill rises abruptly from the bank of the river, on top of which is the Commissioner's residence. At the foot of the hill are the police barracks, the hospital and the graveyard." (CBE 1868-70:22.10.1870) This is shown on Rands 1891 map of the area as "Charter's Hill" with "Commissioner's Hill retaining its original name (see Figure 8.2). The 1869 gazetted map of Capeville shows reserves for the police and hospital at the foot of what Rands indicates as Charters Hill, (Figure 8.3).

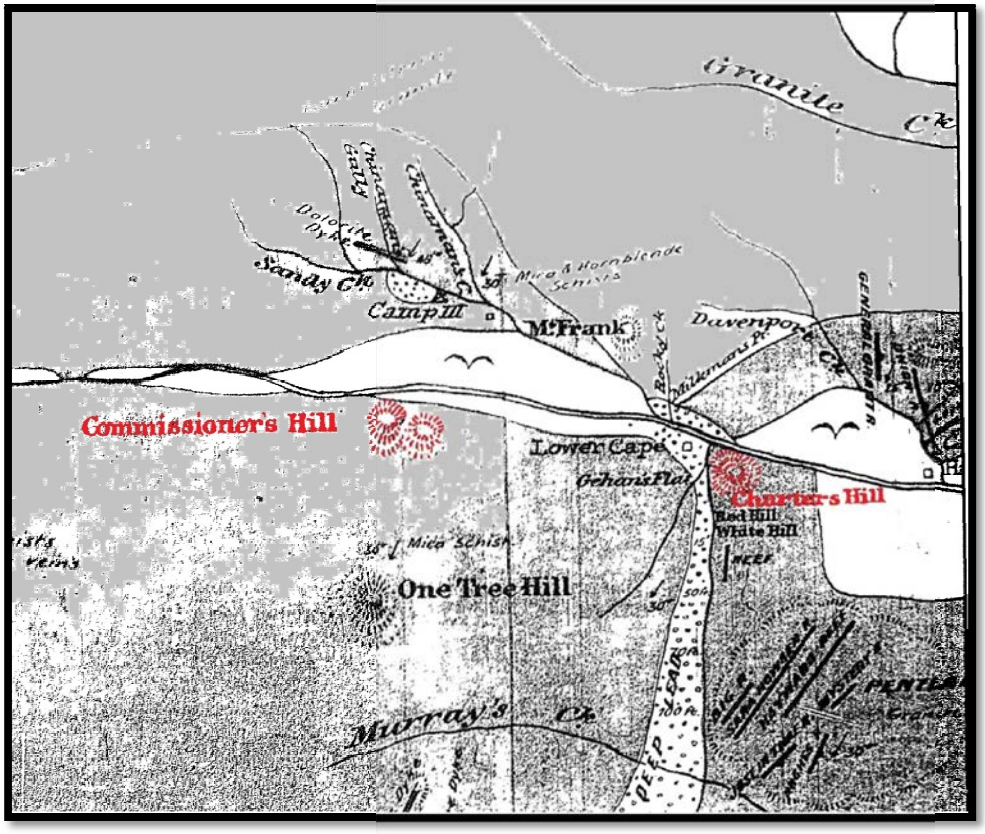


Figure 8.2 Charters Hill and Commissioner's Hill (after Rands 1891)

Further information was provided by Max Read, gold miner and owner of Capeville Station, who in a personal conversation in April 2003, recalled a low loopholed wall that was destroyed in the construction of 1980s mining infrastructure on top of the hill. A small section of wall (CV020) is all that remains (see Figure 8.4).

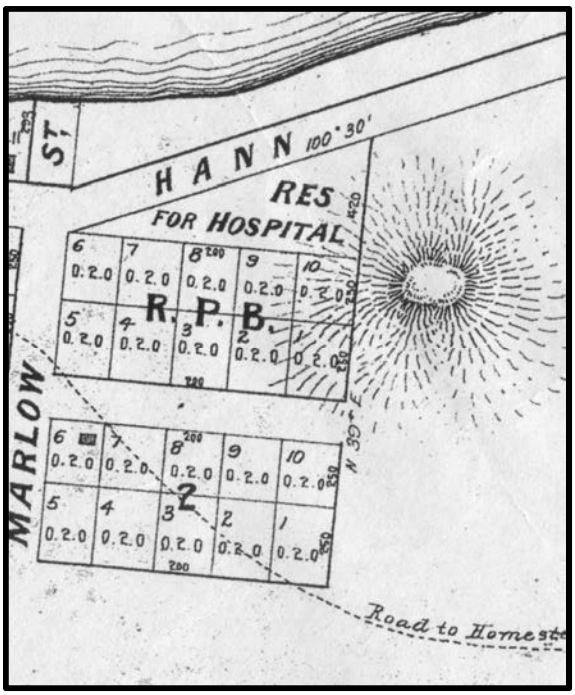


Figure 8.3 Charters Hill (right) with hospital and Police barracks reserves(RPB) in township below (after Queensland State Archives 1869)

Figure 8.4 Charters Hill, low wall (CV020)

There is insufficient evidence to relocate the site of the first camp. If it was at Norwood it would now be indistinguishable from it. Contrary to the Cleveland Bay Express' description of the main camp being located at Running Creek; G. Bennett, prospector, in a personal conversation in April 2003, named a spot within the Specimen diggings as Commissioner's Hill, and an associated site as the policeman's hut (EM009 and EM010). Both sites are possibly parts of the same occupation site but the EM010 building remnants and surface artefact scatters were sparse and not indicative of any particular function. The east of the site was located behind a low stone wall, which may have been a natural outcrop that was added to. It is not unreasonable to visualize the wall as fortified given its hilltop location; giving some credibility to the informants claim. However the site may be anecdotally called Commissioner's Hill because a significant reef nearby was named Commissioner's Reef.

The relocation of the second camp is based on the earlier work of Hansen and newspaper accounts. When Charters moved, the suggestion by the CBE was that the location was more central to the breadth of activity at the field, and that there was the possibility of a future town site close by. "Mr Commissioner Charters has moved his quarters to a more central position. He is now at Hann's station on the Cape River where the main bodies of miners are working." (CBE 1867a:23.11.67) and later "the new rush , situated some 3 miles below the Commissioner's Camp and on the same side of the Cape" (CBE 1868-70:29.2.68). Hansen claimed to have relocated a unique tree on what is now Commissioner's Hill that was evident in an old photo showing Charters at his camp. Hansen's site was relocated during pedestrian survey for this project in the area located site BA002. This was a strategically high point but also difficult to access from the north, east and west.

BA002 is comprises a large flat area with a border of low stones. The site directly overlooks the steep northern face of the hill. There was no obvious fireplace at this location. Interestingly, there was a glass scatter on the hill below the site which was determined to be out of the line of sight from the top of the hill and is thought to represent a discard area. Near the top of the hill there was a distinct earthen ramp. Close to BA002 is BA004 which comprises several bottle and rubbish dumps and small fireplaces (Figure 8.5).

Figure 8.5 Commissioners Hill, small fireplace (BA004)

Relocating evidence of Charter's final camp at Cape River was difficult but was presumably in the vicinity of CV020. It shows less evidence of occupation but this is because the site has been largely altered since the 1980s to accommodate large amounts of equipment for a gold processing plant. The scant archaeological evidence present is inconclusive as to the function or site occupants. However, the size of the hill and the CBE article (CBE 1868-70:22.10.1870) with the gazetted map (Queensland State Archives 1869) support this site as the third camp.

Social spaces of authority

Within liberal jurisdictions such as Colonial Queensland, the exercise of public authority is generally open to scrutiny and criticism. While the material space of Charter's authority was the boundary of the gold field, this boundary was permeable to ideas and actions, and appeal to official and unofficial authorities outside of the field could be made (Pring 1864:624).

Despite the fairly clear wording of the regulations giving the Commissioner wide ranging powers, Charters' judgements were not always received with equanimity. A letter exchange in the Cleveland Bay Express highlights the tensions inherent in the application of the regulations. The second letter was by a "Jesse Turner and party" and was published on the 8th of August, 1868 (CBE 1868-70:8.8.1868). The first gold reef was opened on the 6th of July 1868 and it appears that at the time Commissioner Charters incorrectly assigned 800 feet to the prospecting claim instead of 300 feet. He then marked off sequential claims along the reef to other applicants. When his error was noticed and he was informed, he reduced the size of the initial claim. At this time "Jesse Turner and party" pegged and claimed the vacant space that they viewed as surplus ground. According to them Charters ordered them off the ground and gave the ground to another party, which Jesse Turner and party believed was unfair, if not illegal (CBE 1868-70:8.8.1868). The letter also commented on a third party dispute that Jesse Turner and party were not involved in. This was a dispute between the "dam makers" and "No1 North owners" with adjoining but different types of mining claims. Jesse Turner and party suggest that the dispute was not settled the way it should have been and that in its resolution some rights of one party were ignored. They made what they thought were strong claims against Charters that in their opinion he was haughty, having stated, " 'he was the law' and was fully empowered to modify and make laws as

he saw fit" (CBE 1868-70:8.8.1868:2). They questioned whether Charters was entitled "to the respect of the miners, or is it becoming in a public officer and a gentleman" (CBE 1868-70:8.8.1868:2). Charters did not respond to the newspaper report.

A third complaint was published in the paper on the 22nd of August 1868 from George Knowling (CBE 1868-70:22.8.1868), a losing defendant in a case of claim jumping (illegal occupation of a mining claim). It appears that a series of transfers of ownership of half shares in an alluvial claim had occurred but the second of these had been done unlawfully by transacting it on a Sunday. As such, it appears Charters had viewed the subsequent share transfer as invalid and declared that the second purchaser was not entitled to work the half share and awarded the share and all of the property to the complainant. According to Knowling the Commissioner's attitude had caused witnesses to lose their senses, that he (Knowling) had been spoken to like a dog and that the Commissioner has said "he never budged an inch without a pound" (CBE 1868-70:22.8.1868:2). Further that "the Commissioner is like a tyrannising king was to his subjects, in olden times" (CBE 1868-70:22.8.1868:2). Charters did not respond to this public letter either.

Despite this lambasting, Charters did receive some public support. On the 12th of September 1868, a Bernard Colreavy attempted to set the record of all events covered in the first and second complaints (CBE 1868-70:12.9.1868). His main point appears to be, that if the Jesse Turner and party thought the Commissioner's decision was unjust, they should have been a part of the deliberations; by not putting a case forward they had tacitly approved of the decision. Colreavy also asserts that there was no dispute between the adjoining claims "No 1 North" and the "dam makers"; that Charters offered a solution that was accepted, rendering arbitration unnecessary

(CBE 1868-70:12.9.1868:2-3). Colreavy supported Charters' manner and that the Commissioner had not been as overbearing as mentioned in the complaints. On the 3rd October 1868 Jesse Turner and party countered Colreavy, and re-affirmed their position in a letter to the Cleveland Bay Express (CBE 1868-70:3.10.1868).

Archival correspondence shows that the first complaint against Charters, for denying Mr Deloory and others a part of the claim on 6th of July 1868, was pursued with solicitors Roberts and Hart who lodged a formal complaint with the Department of Lands. Charters was required to furnish a report on the incident, which he did countering that the claim was groundless on the basis of clauses 56, 57 and 58 of the regulations. (Queensland State Archives 1868a). The incident does not appear to have gone further.

It is also possible, even without all of the facts, to follow Charters' logic in the claim jumping case. If Charters viewed the first transfer from Mr Morrison to Mr Woodburn as invalid, then when Morrison left the claim he had effectively abandoned his share and property. Woodburn sold on the whole share and property to Knowling and recouped his money, but he had no right to do so because he was not the lawful owner of the whole share. Once the claim was unworked by Morrison for three days (Clause 13) the claim was judged to be forfeited. In effect Knowling, in not applying for a miners right over that claim was an unwitting claim jumper for the three days he worked the claim. In point 4 of his complaint Knowling asks what right had the Commissioner to dispose of Woodburn's half share and property. Left unanswered by Charters, the answer is that as neither Morrison nor Woodburn had worked the claim for three days it was forfeit. Ultimately Knowling had parted with £20 for nothing.

It appears that Charters' applied the regulations fairly. Claims that he wouldn't budge and inch without a pound refer directly to the fee the regulations levied for complaint resolution. This money was Government money, not the Commissioner's money and was forwarded to treasury (Queensland State Archives 1867-1875).

Archaeological landscape of authority

The Gold Commissioner

The archaeological landscape of authority for the Gold Commissioner can be considered through transformational nature of the dialectical relationship between *Centrality* and *Marginality*, as it can be understood through the relationships between the social-cognitive, material-social, and material-cognitive spaces.

The Gold Fields Act and Regulations, in place until 1874 (cognitive space), gave the Gold Commissioner, absolute authority on making mining related judgements (social space). In addition to this position the Gold Commissioner was delegated other positions of authority (cognitive space), which could potentially affect a miner such as Police Magistrate (social space). To do his job at Cape River effectively, Charters located and relocated himself three times (material space). Each time these places had the primary feature of being central to the predominant mining population (cognitive space). While the first location was not definitely identified, two possible sites were examined. The first may have been in the low-lying area of Running Creek near to the eventual site of Norwood (material space). As was explained this had the strategic locale of being at a junction of tracks leading to diggings higher in the hills

(cognitive space). The second was the possible site of the anecdotally named, policeman's hut at the Specimen diggings (material space). This site was in a strategic location, being near the top of a hill, close to running water and did appear to have some form of low wall (material space). Both possibilities can be seen to incorporate the need for centrality so that Charters was in the most useful place, for the majority of miners (cognitive space, social space).

Charter's second and third camps are much more clearly identified in the newspapers, on maps, and were identified on the ground much more securely (material space). The second and third camps reflected a move of the main impetus of the diggings from Specimen to the Lower Cape. The Commissioner located himself on the relatively flat top of a hill (Commissioner's Hill) close to the activity at Gehan's Flat but also close to the activity of the alluvial workings at BA001 (material space). This site was within walking distance of the racecourse (material space), between Commissioner's Hill and the Cape River (material space). It would appear that Charters' choice of camp subsequently influenced the location of an important social meeting point (cognitive space).

While close to the diggings this site also has the distinct attribute of being elevated above the mining activity, where the diggings were on the alluvial flats (material space). Charters had chosen a prominent location that reinforces the notion of centrality of authority (cognitive space). If miners came to see the Commissioner they had to climb to get there (social space). Located above much of the activity also affords the best available level of surveillance and scrutiny (cognitive space). In addition the site captures the breeze and, as was discovered during the research, it affords pleasant views (materials space).

The location of the third camp, appears to be a response to the movement of the majority of working from the alluvial ground near Gehan's Flat, to the exploitation of the Deep Lead which extended from Gehan's Flat southward for about 2.5 km. The township of the Lower Cape had emerged at Gehan's Flat. As was mentioned in chapter 3, within the context of the first phases of mining at the gold field it was a permanent nucleated settlement within which there was significant mining activity (social space). Charters again chose an elevated site, above the bustle of mining, and the activities of the town. This location would have provided the same centrality of authority, potential surveillance and some level of defensibility (cognitive space).

In his choice of camps Charters appears to have asserted his position of authority, by establishing himself in central positions. However the Commissioner's locations can also be viewed as being marginalised. His choice of physically aloof locations appears to match a sentiment that his decision making was also of the same aloof nature (cognitive space), mainly in the few challenges to his decisions that were openly questioned in the newspapers (social space) and through correspondence to the government (social space). Additionally, there is a period in Phase 5 of the history presented in Chapter 2 (1870-72), after the demise of the *Victory* machine and the waning of activity on the Deep Lead when the majority of the remaining population is employed at the Upper Cape, and was predominantly Chinese. However, the Commissioner does not relocate to the Upper Cape to be at the centre of mining, even though the Upper Cape had a non-nucleated settlement probably spanning the Cape River near the confluence of Gorge Creek (material space). In this instance Charters appears to marginalise himself from that central locale of activity (social space). One reason not to move is that Capeville (Gehan's Flat) was probably

closer to the roads connecting the gold field to the expanding region, and might have still been considered the gold field centre (cognitive space). It is also possible that by not moving Charters reinforces the perception of marginality of the Chinese at the field (social space).

The social spaces of authority at the gold field were sometimes contested spaces in which the Commissioner was arbitrator, but in this role he was occasionally perceived as holding a bias. Despite protestations in the newspaper's that challenges would be made in Brisbane, when the following question was put to Charters by Royal Commissioner Pring in 1871, "Have the Commissioner's decisions on this gold field generally given satisfaction?" Charters had replied, "I am not aware of any appeal having been made from my decisions" (Pring 1871:588). It had been noted in the Cleveland Bay Express during Charters' early months at the field that, "Disputes regarding claims were very infrequent and the judgement of the Commissioner invariably gave satisfaction. This gentleman has at all times gained the respect and esteem of all classes on the field and most assuredly he is the right man in the right place" (CBE 1868-70:14.3.1868). Thus, although there was the potential for his authority to have been marginalised, this does not appear to be a significant detriment to mining at Cape River.

Summary

The example of social space that comprises the archaeological landscape of authority can be viewed as being activated by the dialectical transformation, between *marginality* and *centrality*. The social space of the Gold Commissioner shows that the positioning of his camps and offices was at the centre activity as viewed by the Commissioner. In this way the Commissioner enhanced his exposure and position of authority and avoided being a peripheral or marginal

figure. The Commissioner's decisions and demeanour were occasionally challenged in the local newspaper and to some extent by official complaint, but no lasting damage to his reputation or ability to administer the field seems to have resulted. Only during the early 1870s when the majority of the population and mining activity was at the Upper Cape, can the decision not to relocate from the Lower Cape be seen as one where the Commissioner marginalises himself.

Like the archaeological landscapes of water and mobility, the archaeological landscape of authority is centred on activities within social space. While Charter's was occasionally idiosyncratic in his manner, he does not appear to have been incorrect in his application of the regulations. The social space of authority at this field is seen to have been something that the miners required so that their businesses and returns could be protected.

8.2 Integrating the Archaeological Landscapes

The preceding three archaeological landscapes are a heuristic device that provide access to the spatial nature of sociality at a gold field. Yet the archaeological landscapes are not derived from self contained sources of spatial information and as examples of social activity cannot be understood as discrete. The following section highlights examples where a different perspective of some of the social spaces reveals more connectivity and complexity between the archaeological landscapes, rendering a more holistic sociality.

The rush to the Cape River gold field was an attenuated population movement. By warning the population that they should not rush the field, Daintree and Pinnock had effected their cognitive and social concepts of the material truth of water supply in the region. Their actions in social

space were not only parts of the landscape of water. As a Police Magistrate in the case of Pinnock; and as pastoralist and professional geologist in the case of Daintree, their message carried the de facto authority of social position. Recognition of their authoritative contribution also broadens the concept of the landscape of authority. That the attenuated rush was demonstrated as emanating from, and contributing to, the landscape of water, masks the fundamental mobility of the rush's diverse constituents. The rush was only the first part of the mobility that generated its own trajectories within the gold field as new deposits were prospected at new diggings. Thus the social spaces of water are also a social space of mobility, contributing to the landscape of mobility.

Chinese hydraulic technology at Cape River was also demonstrated as a part of the archaeological landscape of water at the gold field. Even though the physical evidence thought to represent the Chinese presence is not strongly tied to other ethnic evidence, the material spaces are spatially tied to the cognitive spaces embodied in the maps of the gold field. The races, tailings and ground sluices are an intrinsic part of the landscape of water. Yet it is also possible that these same material spaces represent the physical manifestation of the marginalisation of authority. If the Chinese had located to a part of the gold field beyond the routine scrutiny of the Commissioner, the Chinese could have been employing their long-standing cooperative methods of mining that were allowed but must have been uncommon; possibly from application of the regulations of alluvial mining in place at the time. The location of the Chinese at the apparent periphery of the field could represent a purposeful response to authority. By avoiding the inherent surveillance at a more central location, the Chinese set up alternative ways of being at a gold field. This conclusion provides the basis for a broader view of the landscape of authority.

The Chinese consolidation of an ethnic presence at the Upper Cape comprises decisions about persistence at place, and hence also constitutes a part of the landscape of mobility. We can then hypothesise that the Chinese purposefully selected, created and abandoned their social spaces of industry (landscape of water) rather than viewing them as excluded, and forced to exploit the most marginal deposits, as has often been demonstrated. During 1870 and 1871 the Upper Cape that had previously been a marginal material space, had effectively become the central material space of mining at the field. Yet the Commissioner chose to remain at Capeville materially reinforcing his cognitive space of authority, and that of the police. His decision to remain would have allowed the Chinese greater freedom and an increased opportunity to consolidate their activities. This further enhances the complexity of the landscape of authority.

It has been shown that the landscape of mobility was not characterised by the movement of miners alone. The movement of essential machinery throughout the field, followed the mobility of miners to the most important reef deposits. However, decisions about these movements were influenced by the availability of a water supply. Despite the importance of the Specimen Reefs, Lloyds Machine was moved to the Upper Cape where there was an adequate water supply. However, the periodicity and unpredictability of the natural supply caused the machine to be washed into the river during one wet season. Choices about positioning, involved decisions about water. Despite concerns over the machine's suitability, *Benton's* was also moved to Mt. Davenport to crush there. Even with adequate water, the technology of separating gold using water flow appears to have been incorrectly applied to the *Victory* machine resulting in gold loss. Thus material spaces of the batteries contribute to a more complex understanding of the landscape of water.

Commissioner Charters repeatedly established the importance of his position by physically locating himself at the centre of activity, but his movements are also essential components of the landscape of mobility. While the law provided him with the power to establish his authority he was still subject to the determinism of the gold deposit. The deposit is not necessarily revealed logically or efficiently but is at the behest of the skills of the prospector. The Commissioner's authority not only relied upon the advantages of a fixed location but mobility was an inherent part of the position. Additionally, why Charters chose not to relocate to the Upper Cape where the main body of miners were in 1870/1, also adds complexity to the landscape of mobility.

The development of the three archaeological landscapes allows the gold field to be viewed as an amalgam of individual sources of spatially derived information. Integrating them in this chapter has demonstrated that the spaces also contribute to the complexity of more than one archaeological landscape. Hence the archaeological landscapes are not discrete entities and therefore contribute to a more holistic interpretation. While it may seem like a logical next step, I do not propose that this integration is a synthesis, and therefore an archaeological landscape of mining, or of a gold rush. Developing an archaeological landscape of mining, or the gold rush still carries with it the vernacular implication of a totality of understanding, which I view as hubris. More research may generate new linkages and disprove others; in all cases what is being created is a more specific, more local and greater elucidation of place.

The following final chapter summarises and evaluates the thesis before suggesting further avenues of inquiry raised by this work.

Chapter 9 **Discussion and Conclusions**

> "Artists, whatever their medium, make selections from the abounding materials of life, and organize these selections into works that are under the control of the artist.... In relation to the inclusiveness and literally endless intricacy of life, art is arbitrary, symbolic and abstracted. That is its value and the source of its own kind of order and coherence." (Jacobs 1961)

Overview

In Australia the gold rush literature is large and much of it is firmly historically based. Despite a greater amount of attention being paid to gold mining sites by archaeologists in recent years, a limited amount of work is devoted to social interpretations derived from archaeological information. In north and far north Queensland archaeologists have primarily attempted industrial- technological and cultural heritage treatments of gold fields. Only two gold fields in Australia have had specific social analysis that infer from archaeological data; Morabool, Victoria and Mt. Shamrock, Queensland.

This thesis began with the general desire to know more about the nature of the nineteenth century gold rushes as social phenomena by investigating their material remains. This choice led to the research question:

"How does the development of an archaeological landscape contribute to understanding the social phenomenon of the gold rushes, at a nineteenth century gold field?"

The Cape River gold field was known to be the first payable gold field in north Queensland. Its relatively short productive life and predominance of alluvial gold deposits meant that it was potentially a suitable case study to investigate the nature of the gold rush.

The concept of landscape in this thesis borrows from Ingold; who had temporalized the landscape but more importantly had socialised the landscape through his concept of taskscape. He conceived that landscape is fundamentally temporal; a lived concept that embodies experiences and imagination in the activities of dwelling; where the processes of the world's becoming are congealed as meaning in landscape. Landscape is the residue of activity, the art of life's performances. Ingold's landscape appears to encapsulate a similar ontological position as Soja's spatiality. Ingold's taskscape is the embodiment of a pattern of pretensions from the past and pretensions for the future that become, as "the experience of those who in the process of their activities carry forward their social life" (Ingold 1993:157). While Ingold appears to relegate space to the cartographic periphery, and landscape and space are definitely not equated, it is within the activity and movement, explicit in his taskscape, that spatiality is evoked if not espoused. Thus what Ingold leaves archaeology with is landscapes poised to reveal the meaning of their ontological becoming. These landscapes are comprised of the same essential qualities that Soja (1996) uses in his compositions for spatiality in the ontologies of being. Spatiality was effectively demonstrated as useful to archaeology by James Delle (1998). However, in this thesis, rather than simultaneously creating social space and spatiality as examples of contested lived space as Delle had done, cognitive, material and social spaces were used as separate sources to create archaeological landscapes. The transformational nature of the dialectic was

used to provide a creative framework in which the relationships between the three spaces interacted to be created as archaeological landscapes.

Discussion

Early goldfields were by almost all accounts untidy and erratic places, and exist now as distant imagery of a few important fields and many nearly forgotten places. The nature of this ephemerality, and the disconnected appearance of historical gold mines also inspired this project; and determining how this was manifest as a social phenomenon has been the subject of this thesis.

The gold fields are chronologically positioned in the mid nineteenth century technological and social changes of the industrial revolution. In Australia, gold mines are immersed in the state sponsored colonialism that supported the exploitative private capitalism of Great Britain. In Queensland during the nineteenth century gold was regarded as a panacea from economic ills that were besetting the new colony, and prospecting for gold was actively encouraged by rewards. Spatially, the Rev W.B. Clarke's early predictions of the potential for widespread gold deposits throughout the Great Dividing Range had opened up a national imagination to existing wealth waiting to be found.

In northern Queensland these conceived spaces were perceived by prospectors, and the professional work of geologists such as Richard Daintree, who applied their specific knowledge to vast tracts of land in prospecting for not only gold, but copper and coal. On the fringe of colonial expansion the resultant gold fields appear to have developed quite quickly as places that

successfully avoided a certain degree of control. Despite its obvious value to the colonies, the exploitation of gold was held at arm's length by the Queensland Government. This appears to be a result of the adoption by Queensland in 1859 of the New South Wales mining law which, along with the Victorian laws, were as much treaties between miners and governments - governments that had been unable to control the massive efflux of population into gold mining in the early 1850s. The laws ultimately enshrined the miners right, the individual's lightly administered right to procure gold at a gold field.

The alluvial deposit, a significant proportion of many gold fields was, through the nature of the Queensland regulations controlling mining, not available to large scale co-operative efforts to exploit. As such it existed outside of the influence of large scale capital to develop it, and to that extent was outside of the scope of capital's inherent mechanisms to control that means of production. Through the miner's right, individuals pursued their own futures. How this happened was mediated by the variety of spatial forms that are expressed at the gold field, some of which are revealed in this thesis.

The historical context developed in Chapter 3, showed that this gold field did align with the three phases of gold field development that has been espoused by earlier researchers. However, in the light of regional and local developments the historical context was demonstrated to be more complex and multi-phased. Despite the imposition of a regulatory regime that was derived from a long history of gold mining, there were specific local variations to how this was manifest.

Landscape's strength lies in its treatment of complexity; we can heuristically disassemble place temporally and spatially, allowing sociality to be discovered within its spatial and temporal parts. The temporal and spatial are guided back from a heuristic anatomising, into a corporeal construction by the quantity and quality of social expression.

Using a dialectical approach in the development of the archaeological landscapes has shown that as a social phenomenon the gold rush can be characterised as a complex interweaving of relationships. At Cape River these relationships started long before the gold rush, in places far removed from the eventual gold field. The gold rush is only a part of the trajectory of change for Cape River in a relatively narrow timeframe, as this thesis defines them. The development of the three archaeological landscapes shows that not all sources of data will be available to neatly construct the idea of landscape. At the gold field the ephemerality of some sources of information, is indicative of the broader ephemerality of the gold rush as a social phenomenon. However, landscape demonstrates that it is a flexible concept, and that as ideas were developed to compose landscape, further nuance became evident that created relationships between the heuristically separated archaeological landscapes.

In any of its forms landscape is a selective choice of physical and cognitive entities expressed through the creative and transformative processes of sociality. The archaeological perspective is methodologically privileged with its access to material culture; and through its methodological rigour gains validity as a source of information. The archaeological landscape has facilitated the development of a spatially mediated understanding of place. Even though this may be temporally limited, it is not necessarily contextually limited and the specificities of the Cape River gold field

may be broadly applicable to similar places. The archaeological landscape is developed as a construct, an assembly of information, a product of archaeological epistemology and of imagination, designed to stimulate the intellect of the audience

As a social phenomenon Cape River had been repeatedly characterised as violent, yet an exposition of its landscapes showed that one common form of violence, that directed towards the Chinese and evident at other gold fields, was not prominent. The field had been described as unruly and unlawful, yet an exposition of the landscape of authority showed that the Gold Commissioner with ten police dispensed mining and civil law, without inciting widespread unrest and dissatisfaction. The field did not develop into the region's premier field but that did not prevent entrepreneurs attempting to profit through investment in reef mining, the archaeological landscape of water showed how crucial water had been to the development of the field and in the success and failures of the multiple hydraulic technologies designed to control it. The archaeological landscapes have shown that each diggings, although existing within and contributing to the milieu of a social phenomenon, can be understood as places within the milieu. This rush did conform to previously documented broad patterns of experience but was also a discrete and local expression of gold mining. Our understanding of it is as dependent upon the individuals who created their experiences, as were those experiences on the place they encountered.

Directions for future research

Future research following after this project could contribute to a greater understanding of the Cape River gold field as a place, and could also contribute to a more diverse theoretical use of archaeological or other landscapes.

As was mentioned in chapter 1, the full extents of the Cape River gold field were not explored during this research. A further three properties still remain to be investigated for their material traces of mining. Within the properties already researched some specific locales were not recorded, such as the alluvial diggings at Golden Gully on Ellimeek Station. These sites may give a more comprehensive understanding of the breadth of archaeological material.

Within the sites that are recorded, several areas exist that could be explored further. As was mentioned in the excavation methodology in chapter 4 up to 13 sites were identified with a significant material trace that would be suitable for excavation. Additionally, survey recorded the trace of the township of Capeville as a nucleated settlement, additional non-nucleated and other disseminated settlements were also located and the archaeological nature of these could be more fully explored for their contribution to the material and social spaces of mining (and non-mining life) at the gold field.

As an investigation of a fuller understanding of the anthropology of place, the temporal scope of the project could be expanded to include any activities that followed mining, such as railways development, pastoralism and the continuity of an Aboriginal presence in the area. The continued presence of mining both gold and coal in the locale also point to a project that

investigates the meaning of place to those who variously use the land, and how different expressions and value can co-exist. This includes concepts of formalising the cultural heritage value of the place.

From a theoretical position the number of archaeological landscapes developed for Cape River could be expanded, to obtain a richer treatment of landscape and develop an ever more complex understanding from different spatial perspectives. The archaeological landscape of trade and commerce for instance might be pursued. While the landscape of authority has been pursued as it relates to the gold field legislation, the archaeological landscape of law as it relates to criminality could also be developed. Additionally, much more historical material exists than has been utilised here that could enrich the concept of the archaeology of mobility in particular.

Alternatively, one or more theoretically different landscape perspectives could be developed for this gold field. For instance the cultural landscapes of the various mining and non-mining populations could be developed. Dialectics could again prove useful to extrapolate the nature and extent of change within and between variously defined cultural landscapes.

The investigation of space through archaeological landscape as demonstrated in this thesis has broad application at other gold fields. Similar sources of spatial information could be derived for fields at the regional level, in North Queensland. In particular, the Palmer River gold field where the majority of the population during the height of the field were Chinese is in need of serious archaeological investigation. Here the remnant technological material spaces of water use will almost certainly be the product of Chinese endeavour, but where were the settlements for almost

18,000 Chinese? When they are located we can investigate the spatial relationships of the Chinese to each other, to authority, and to the minority European population.

Developing cognitive, material and social space from archaeological and documentary sources and combining them within the framework of a dialectic offers numerous opportunities for archaeology. In particular government documents that reveal where an agency has executed a physical program that is based on a documented position in the expectation of specific results, would lend itself to examinations utilising this spatial approach. Such documented positions would provide rich opportunities for developing notions of cognitive space. Both the archaeological record and documented outcomes of a program would be likely to provide the social spaces from which a dialectic could be developed, and around which a landscape might be activated. In particular this would apply when space has been explicitly utilised as a mechanism of separation or segregation, to further one part of society over another. Within Australian contexts, the operation of Aboriginal missions, quarantine facilities including lazarets, prisons, and the utilisation of convict labour are some examples where space appears to have been utilised to achieve goals of separation for the benefit of some part of society, possibly to the detriment of another. It is possible that an example from the recent past such as the operation of detention centres and the investigation of the spatial nature of their construction and locations could provide interesting insights into the meaning of space as an inclusive and exclusive mechanism of executive power.

Ultimately by understanding more about how people interact in their utilisation of space we will increase our knowledge of one of the underlying pillars of being, as individuals we have only three givens, space, time and each other.

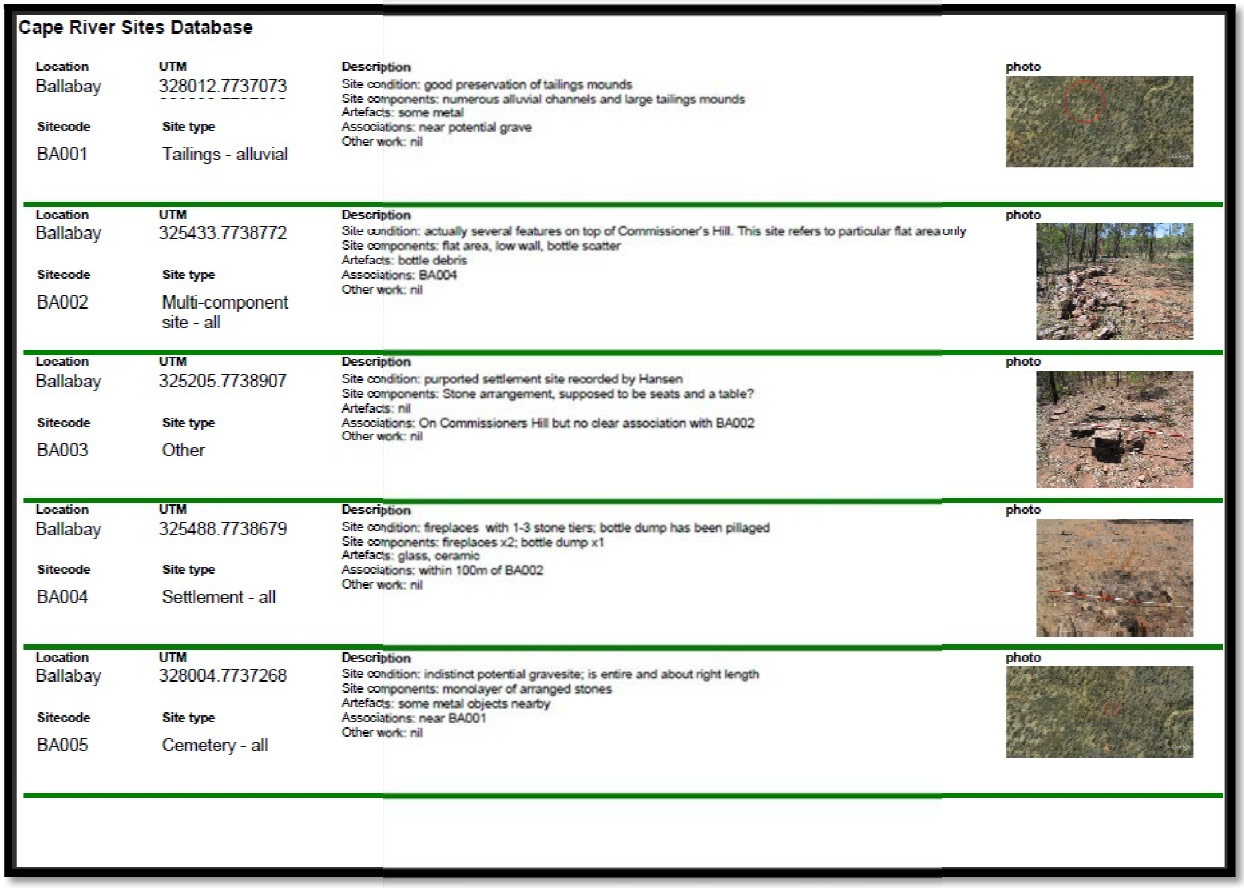
Final

The quote from Jacobs which prefaced this chapter indicates that art is a product of an artist's eclectic selections. In that product the artist is aiming to portray a truth, a truth of perception, or even a truth of deception, but moreover a truth of experience that in the artist's opinion, needs expression and is worth sharing. Landscape traces its lineage through art, and like art exhibits its own coherence, borne from the temporal and physical abstractions of the intricacies of social life we attempt to apportion to it. Archaeological landscape has taken a further abstracted view of landscape in a quest to understand one case study in the social phenomenon of the gold rush. By isolating social spaces and analysing how a dialectic enables us to access the nature of transformation; the influence of space as contributing to and resulting from the social phenomenon of the gold rush has been emphasised. Through archaeological landscape the gold rush is created as a complex manifestation of global and colonial factors that are articulated by individuals and groups locally and uniquely at a place. As such archaeological landscape provides us with a uniquely abstracted vision of truth.

Appendices

Appendix 1 Cape River gold field, site spreadsheet (see file on attached disc)

A pdf version of the sites database in a spreadsheet format; 33 pages. It contains references to 164 sites arranged by *Location* and then by *Sitecode* within the location. An example page is illustrated below in Figure A1.1.



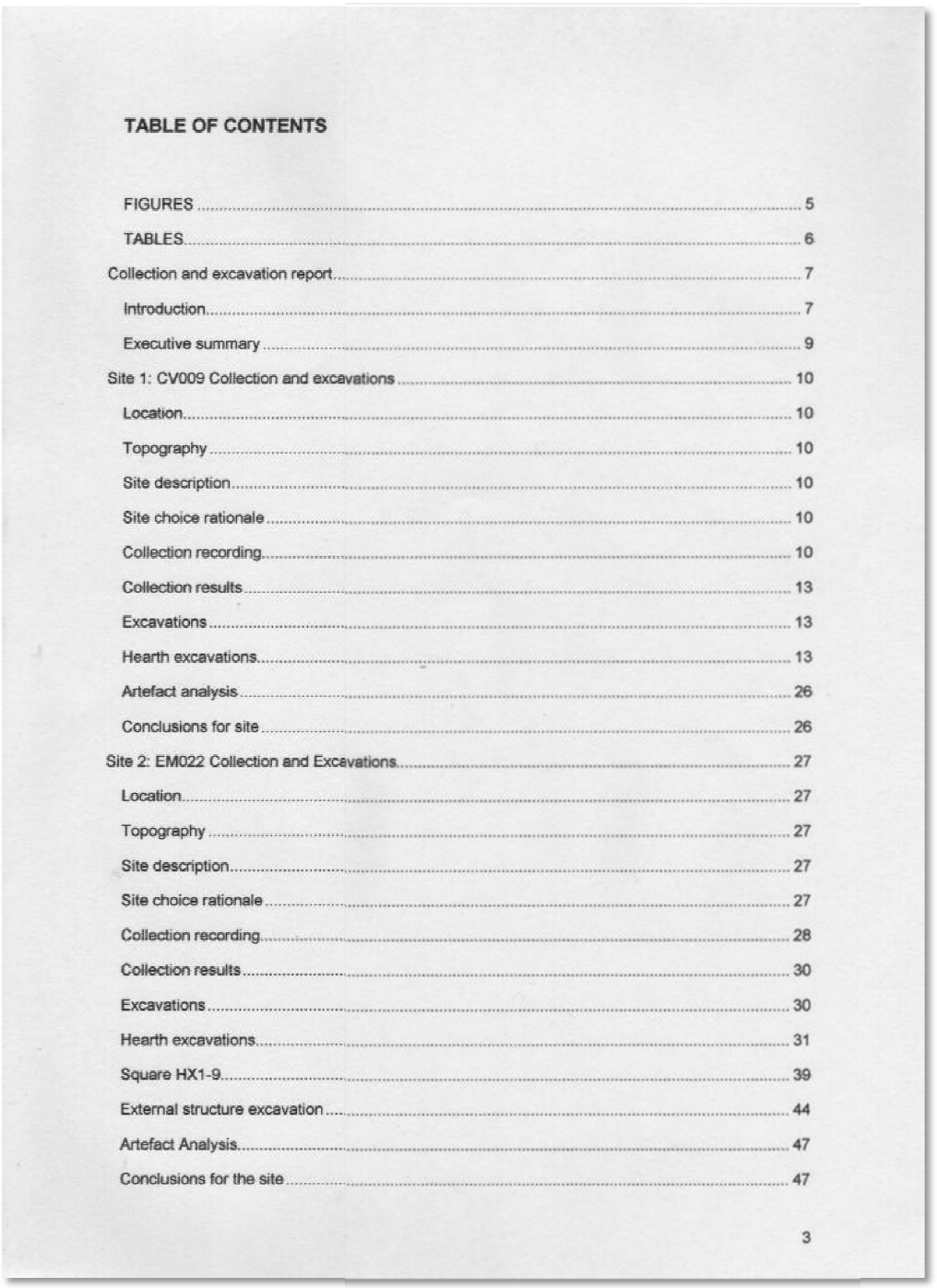
Cape River Sites Database

Location	UTM	Description	photo
Ballabay	328012.7737073	Site condition: good preservation of tailings mounds Site components: numerous alluvial channels and large tailings mounds Artefacts: some metal Associations: near potential grave Other work: nil	
Sitecode	**Site type**		
BA001	Tailings - alluvial		
Ballabay	325433.7738772	Site condition: actually several features on top of Commissioner's Hill. This site refers to particular flat area only Site components: flat area, low wall, bottle scatter Artefacts: bottle debris Associations: BA004 Other work: nil	
BA002	Multi-component site - all		
Ballabay	325205.7738907	Site condition: purported settlement site recorded by Hansen Site components: Stone arrangement, supposed to be seats and a table? Artefacts: nil Associations: On Commissioners Hill but no clear association with BA002 Other work: nil	
BA003	Other		
Ballabay	325488.7738679	Site condition: fireplaces with 1-3 stone tiers; bottle dump has been pillaged Site components: fireplaces x2; bottle dump x1 Artefacts: glass, ceramic Associations: within 100m of BA002 Other work: nil	
BA004	Settlement - all		
Ballabay	328004.7737268	Site condition: indistinct potential gravesite; is entire and about right length Site components: monolayer of arranged stones Artefacts: some metal objects nearby Associations: near BA001 Other work: nil	
BA005	Cemetery - all		

Figure A1.1 Sample page from site spreadsheet

Appendix 2 Cape River Excavation Report. 2004 (see file on attached disc)

Report produced to acquit the Queensland government Environmental Protection Agency, excavation permit; 80 pages. The report's Table of Contents is reproduced below.



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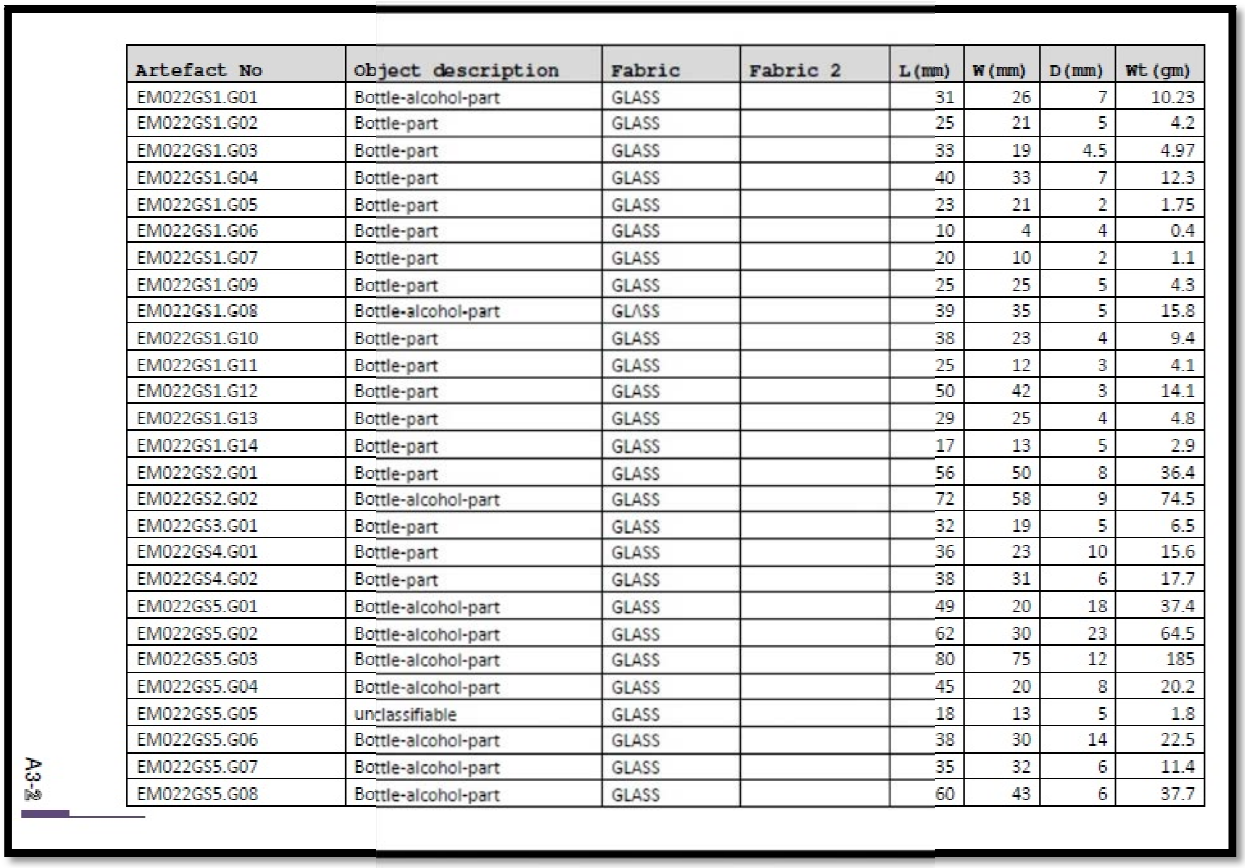
Appendix 3 Cape River gold field diagnostic artefacts list (see file on attached disc)

A spreadsheet format list with basic descriptive and metrical data for all diagnostic artefacts, excluding faunal specimens; 61 pages. A sample sheet is shown below in Figure A3.1.



Artefact No	Object description	Fabric	Fabric 2	L(mm)	W(mm)	D(mm)	Wt(gm)
EM022GS1.G01	Bottle-alcohol-part	GLASS		31	26	7	10.23
EM022GS1.G02	Bottle-part	GLASS		25	21	5	4.2
EM022GS1.G03	Bottle-part	GLASS		33	19	4.5	4.97
EM022GS1.G04	Bottle-part	GLASS		40	33	7	12.3
EM022GS1.G05	Bottle-part	GLASS		23	21	2	1.75
EM022GS1.G06	Bottle-part	GLASS		10	4	4	0.4
EM022GS1.G07	Bottle-part	GLASS		20	10	2	1.1
EM022GS1.G09	Bottle-part	GLASS		25	25	5	4.3
EM022GS1.G08	Bottle-alcohol-part	GLASS		39	35	5	15.8
EM022GS1.G10	Bottle-part	GLASS		38	23	4	9.4
EM022GS1.G11	Bottle-part	GLASS		25	12	3	4.1
EM022GS1.G12	Bottle-part	GLASS		50	42	3	14.1
EM022GS1.G13	Bottle-part	GLASS		29	25	4	4.8
EM022GS1.G14	Bottle-part	GLASS		17	13	5	2.9
EM022GS2.G01	Bottle-part	GLASS		56	50	8	36.4
EM022GS2.G02	Bottle-alcohol-part	GLASS		72	58	9	74.5
EM022GS3.G01	Bottle-part	GLASS		32	19	5	6.5
EM022GS4.G01	Bottle-part	GLASS		36	23	10	15.6
EM022GS4.G02	Bottle-part	GLASS		38	31	6	17.7
EM022GS5.G01	Bottle-alcohol-part	GLASS		49	20	18	37.4
EM022GS5.G02	Bottle-alcohol-part	GLASS		62	30	23	64.5
EM022GS5.G03	Bottle-alcohol-part	GLASS		80	75	12	185
EM022GS5.G04	Bottle-alcohol-part	GLASS		45	20	8	20.2
EM022GS5.G05	unclassifiable	GLASS		18	13	5	1.8
EM022GS5.G06	Bottle-alcohol-part	GLASS		38	30	14	22.5
EM022GS5.G07	Bottle-alcohol-part	GLASS		35	32	6	11.4
EM022GS5.G08	Bottle-alcohol-part	GLASS		60	43	6	37.7

A3-2

Figure A3.1 Sample page from diagnostic artefact list.

Appendix 4 Functional Analyses of artefact assemblages from CV009 and EM022 (see file on attached disc)

Functional analysis report for all diagnostic artefacts, 75 pages. The report's Table of Contents is reproduced below.

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