

# Ruined Castle Shale Mining Settlement, Katoomba NSW: Report on a Pilot Survey

Rebecca Parkes, Lantern Heritage <bec@lanternheritage.com.au>

Shawn Ross, Macquarie University <shawn.ross@mq.edu.au>

Adela Sobotkova, Macquarie University <adela.sobotkova@mq.edu.au>

Tanya Evans, Macquarie University <tanya.evans@mq.edu.au>

Penny Crook, La Trobe University <p.crook@latrobe.edu.au>

Susan Lupack, Macquarie University <susan.lupack@mq.edu.au>

Grace Karskens, UNSW Australia <g.karskens@unsw.edu.au>

Fiona Leslie, Jacobs <fional@faulco.com>

John Merson, UNSW Australia <j.merson@bmwhi.org.au>

## **Corresponding author**

Shawn Ross

Associate Professor of History and Archaeology

Macquarie University NSW 2109

Australia

Email: shawn.ross@mq.edu.au

Phone: +61 2 9850 7010

Mobile: + 61 401 758 300

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## Abstract

In April 2018 the Blue Mountains World Heritage Institute (BMWHI) sponsored a preliminary archaeological survey of shale miners' settlements in the Jamison Valley near Katoomba NSW. Traces of dwellings in the area, including the foundation of an 'overseer's cottage', can be seen from the Mount Solitary Track near Ruined Castle and historical records mention miners and their families living in the valley. This short report presents findings of the five-day survey, an overview of the 256 features identified and sets out some directions for future research.

## Introduction

In April 2018 the Blue Mountains World Heritage Institute (BMWHI) sponsored a preliminary archaeological survey of shale miners' settlements in the Jamison Valley near Katoomba NSW. Traces of dwellings in the area, including the foundation of an 'overseer's cottage', can be seen from the Mount Solitary Track near Ruined Castle and historical records mention miners and their families living in the valley. More foundations and surface artefacts were noticed by NSW National Parks and Wildlife Service catchment rangers during fire-control work in the vicinity, prompting a brief, informal inspection by several of the present authors in 2017. This casual search quickly revealed some two dozen masonry, drilled-boulder and other features, with the result that more systematic archaeological survey was planned.

In April 2018, a team of ten researchers and students from Lantern Heritage and Macquarie University conducted five days of survey along the Mount Solitary Track. This work extends an ongoing collaboration investigating the history and archaeology of mining in the Jamison Valley that also includes UNSW Australia, La Trobe University and National Parks. The survey focused on areas of potential settlement near the Ruined Castle shale

mines, which operated in the late-19th and early-20th centuries. It inventoried over 250 surface features, artefact scatters and isolated finds, indicating the archaeological potential of the area. Especially when combined with historical records, these material remains hold the promise of illuminating life in the pre-World War I mining communities of the Blue Mountains.

## Context

Torbanite (also known as kerosene shale, boghead and oil shale) deposits were first documented in NSW by a French scientific expedition in the early 1800s (Carne 1903:26). The value of such deposits was not initially recognised. It was not until 1850 that Dr James Young identified the practical utility of oil shale and founded the Scottish oil shale industry. Torbanite has two uses: the production of oil and the production of gas to produce light. Exploration and exploitation of deposits expanded through Europe and across the globe in the following decades (Carne 1903:1–5). Oil was first commercially extracted from Australian kerosene shale by the Pioneer Kerosene Works at American Creek, Wollongong district, in 1865 (Carne 1903:34). At the turn of the 20th century, Australia was recognised as having the most extensive and richest oil shale deposits in the world (Carne 1903:18). Joadja, in the southern highlands of NSW, is a particularly rich source of shale (Jack 1995:32) and became the largest and best-known oil-shale mining operation in Australia.

The discovery of oil shale deposits at Joadja in 1874 prompted the formation of the Australian Kerosene and Mineral Oil Co. in 1878. In 1880, oil shale was identified by John Britty North at Ruined castle, near Katoomba. North's career offers a window into Jamison Valley mining. An English migrant from Somerset, North arrived in Sydney in 1852 and worked as a merchant and later as an auctioneer. He went bankrupt twice, in 1856 and 1871, but recovered and entered the coal industry during the 1870s, with over 100 men employed at his Katoomba Coal Mine. As noted above, he discovered the oil shale seams at the Ruined Castle in 1880. Two years later he employed a miner called Garbett to undertake prospecting work and cut a track to the site from Katoomba. In 1885 the Katoomba Coal and Shale Co. was formed and ten tunnels were opened into the deposit. By the late 1880s the torbanite mine at the Ruined Castle and North Katoomba's mine employed between 40 and 62 men between them, with about 30 based at the Ruined Castle. The ropeway used to transport the shale collapsed in 1889, which brought much of

these mining activities to an end, at least for North and his team. In 1891 the Australian Kerosene Oil and Mineral Company, whose operations were expanding across the Blue Mountains, bought North's shale mines at the Ruined Castle. North directed his mining attentions elsewhere. By December 1893, 60 miners worked at Ruined Castle and many lived nearby. This year marked the peak of employment. The number of miners dropped to 40 by 1896 and the mine closed in 1897. It briefly reopened in 1903, when 17 men mined torbanite to produce gas rather than shale (Edgar 1974; Pells and Hammon 2009; Carne 1903:38, 203).

Evidence of settlement by miners in the Jamison Valley can be found in local archival sources including newspapers, Conditional Purchases of land documents and court records, as well as the memories, documents and artefacts maintained by local families. The Jamison and Megalong Valleys were settled sporadically from the mid-19th century, after early colonial settlers recognised the value of mining oil shale and coal in the area. The Jamison Valley was mined for oil shale in particular between 1889 and 1903. Conditional Purchases enabled wealthy entrepreneurs to establish enormous landholdings in the mountains, but the vast majority of settlers were ordinary people with little knowledge of how such purchases worked or who had access to resources. As a result they established small, temporary habitations while working for others in higher echelons of the mining industry before moving on to new opportunities elsewhere as the land became exhausted.

The miners' cottages near Ruined Castle were abandoned by 1905 (Kerry photo, Powerhouse Museum). Mining had left the area 'a desolate mess' and it took years for the land to recover to become the area of outstanding natural beauty that it is today (Pell and Hammon, 2009). Artefacts and features attesting to this habitation still exist in situ along the base of the cliffs near Ruined Castle where shale was mined.

## Survey Method

The project employed non-destructive surface survey. The difficult terrain and dense vegetation precluded a 'total coverage' survey (e.g., Bintliff and Snodgrass 1988), and even targeted transect surveys proved difficult. Because of this, the survey was conducted in three phases:

1. A preliminary exploration of three target areas by the entire team to gauge the extent and diversity of surface material. Prominent features were noted for later recording.
2. Once the team had established the limits of visible remains and identified common feature types, the study areas were divided into sectors and surveyed as systematically as possible given the terrain and the vegetation. Teams of two to three students under the supervision of Parkes, Ross or Sobotkova photographed and described each feature, artefact scatter and isolated find. Location, dimensions and interpretation (e.g. identification or function and date) were recorded. Parkes, Ross and Sobotkova reviewed records for completeness and accuracy on a daily basis, with errors rectified in the field and helped with interpretation. Additional, often subtle, features were often found nearby during the course of recording.
3. Finally, Ross returned and captured high-resolution photographs of features and scatters in situ and diagnostic artefacts against a neutral background. All photographed artefacts were returned to their find-spot.

Using this approach the team was able to inventory 256 features during five days of fieldwork.

**[Insert Figure 1: Artefacts and features within the largest scatter documented at Ruined Castle]**

## Digital Recording

Field recording was conducted digitally on mobile devices running the [Ruined Castle](#) customisation of FAIMS Mobile. FAIMS Mobile is open-source, customisable software designed specifically to support field research in archaeology and other disciplines. It allows offline collection of structured, text, multimedia and geospatial data on multiple Android devices, which are synchronised and backed up when they connect to a server (Ballsun-Stanton *et al.* 2018). External Bluetooth GPS receivers were connected to the tablets, achieving coordinate accuracy of less than 3 m, even under dense canopy. Each feature encountered was automatically numbered, a photo was taken with the device camera, coordinates recorded from the attached GPS, dimensions were recorded and the feature or artefact described and interpreted. Field sketches were drawn on paper and photographed using the device camera, thus attaching a digital copy to the record. High-resolution digital photos were taken using a mirrorless micro four-thirds camera, in camera

raw format (converted to the DNG archival format). These photographs were connected to records using a photo log built into the FAIMS Mobile customisation.

**[Insert Figure 2: FAIMS Mobile, Ruined Castle customisation]**

## Results

Three study areas were investigated, two on the lower part of the Ruined Castle Ridge adjacent to the Mount Solitary Walking Track and one farther downslope in a marshy area the Jamison Valley about 100 m below the track (see Figure 1). Features included collapsed brick and stone walls, foundation platforms, hearth or chimney bases, boulders with drilled holes or chiselled indentations, rectilinear pits (probably latrines or rubbish pits) and postholes. Artefact scatters were dominated by glass but contained also brick, ceramic and metal. Isolated artefacts include glass, metal and ceramic (Table 1). The artefact scatters comprised mostly blue, blue-green, clear and brown glass bottle fragments and ceramics including plain and relief-decorated earthenware. The northernmost concentration additionally contained a structure identified as the 'Overseer's House' noted in historical documents, on account of the quality of masonry (walls reaching 0.8 m) and prominent position on the track (from which its occupant could have controlled access to the site). The middle scatter pictured in Figure 1 occupied the largest area (50 x 150 m) thanks to the wider shelf just past the split between the Mount Solitary Track and the Ruined Castle Track. It was dominated by large boulders, many with holes or indentations (interpreted as the remains of sapling-built huts or lean-tos) and otherwise included the full range of features and artefacts noted above. The southernmost, downslope scatter centered on a marsh and comprised similar features and artefacts, but also included a hauling bucket from the Bleichert Ropeway (nearest approach approximately 500 m away), likely reused here to hold water.

**[Insert Table 1: Overview of categories of finds documented during survey]**

**[Insert Figure 3: Walls and platform backing to a boulder. Note vertical line of four chiselled indentations in upper right corner.]**

**[Insert Figure 4: Holes drilled in boulder. These holes are into a different face the same boulder pictured in Figure 3.]**

## Discussion and Future Work

Archaeological research concerning mines and mining settlements has been conducted across Australia. Examples include the gold mining settlement at Dolly's Creek in Victoria (1850s–1860s; Lawrence 1995, 2000); the Palmer goldfields in Queensland (1870s; Comber 1995); the Paradise settlement also in Queensland (1890s; Quirk 2008); the Upper Murchison region in Western Australia (1890s–1940s; Fleming 2016); Copper, chromite, and gold mining settlements around Gundagai, New South Wales (Carter 2001); and the gold mining settlement at Kiandra, NSW, investigated by ANU between 1995 and 2015 (1860s; Tybussek 2015). Other significant contributions include McGowan's (2001) doctoral research into the history of mining communities in regional New South Wales. These investigations help characterise the nature of 19th- and early-20th-century mining settlements. To date, however, very little archaeological investigation of oil shale mining in Australia has been undertaken. Ian Jack's (1995) investigation of Joadja is the only significant exception, although that study focused on the industrial remains rather than the mining settlement.

The research undertaken at Kiandra provides a useful comparison to Ruined Castle (Smith and Smith 1995; Smith *et al.* 1997; Smith 2003, 2006; Gant-Thompson 2008; Tybussek 2015). In particular, the Masters research undertaken at Kiandra by Christine Gant-Thompson (2008) incorporates data from over 350 architectural features. While variation existed across the dwellings, there were also general trends in things such as hut placement, chimney location, and door location (e.g. chimneys located on the long axis of the structure with the entrance either immediately adjacent or opposite; Gant-Thompson 2008:189). Gant-Thompson identified transient and sustained settlement at Kiandra. The former consisted of smaller dwellings with a sparser artefact assemblage related mostly to food preparation and consumption, whereas the latter featured bigger dwellings with correspondingly larger and more diverse artefact assemblages.

Susan Lawrence's (2000) work at Dolly's Creek is another relevant archaeological investigation of mining settlements. Excavations at Dolly's Creek demonstrated how the

mining community made efforts to make their residences homely (e.g. with the use of wallpaper) even when the settlement appears rather transient. More sustained family dwellings also contained tableware (including decorated ceramics), artefacts associated with women and children and other items of personal material culture (Lawrence 2000).

Finally, the informal mining settlement at Ruined Castle contrasts with the formal township established at Joadja, which was furnished with a church, a school of the arts, a public school, a sports field and a cemetery (Eardley and Stephens 1996; Faulkner 1973; Jack 1995). Joadja was described as a well laid out town, with oaks and pines planted along the streets (*Sun* 13 July 1930). In contrast, Ruined Castle is more similar to the ad hoc settlements like Kiandra that evolved around the outskirts of formally gazetted townships (Gant-Thompson 2008).

The preliminary survey results from just five days' work have already identified features including structural elements like stone platforms and drilled boulders, iron hearths, abundant glass fragments, and refuse or latrine pits attest to significant, if transitory, habitation. This range of features occurs at all three study areas, including the two on the Ruined Castle Ridge situated close to where mining took place, and the third lying farther away and downslope into the Jamison Valley, but offering easier access to water. In all, perhaps 20 structures are attested in the study areas, a plausible count in light of the population numbers for the Jamison Valley reported in historical sources (see above). This count should be considered only a first-pass estimate, however, as dense vegetation made it hard to relate walls to one another, delineate dwellings or to link potential dwellings with other features like rubbish pits. The mines were worked intermittently with different numbers of workers, moreover, so all dwellings may not have been occupied concurrently. The greatest insight into the nature of the mining settlement offered by this pilot project is the corroboration of written sources indicating a significant population resident in the valley, perhaps including women and families.

Considering the productivity of such a short survey, the archaeological potential of the area is high, with additional survey and excavation warranted. Structural remains extend beyond the three targeted study areas. Further survey is needed to delineate and document the full extent of settlements associated with shale mining near Ruined Castle and identify different phases of settlement. Systematic collection and analysis of brick, glass, and ceramic in particular could shed more light on how the settlement evolved over



time. Potential structures also needs further investigation; surface clearance and targeted excavation will be required to clarify the number of dwellings, their function, and relationships between them. Excavation of refuse pits or latrines could supplement surface artefacts, providing information about chronology and function, especially the range of activities undertaken within the settlement. Comparison with settlements such as Kiandra and Dolly's Creek could then be used to help identify which dwellings were inhabited more permanently, which were only transitory, which appear to have been occupied by families as opposed to single men, and which structures might have been commercial rather than residential.

In addition, re-mapping of mine shafts, adits, spoil, and remnants of other mining activity would help explain the relationship between the settlements and the mines that fostered them. Aerial LiDAR mapping of the area could extend the area surveyed on foot and complete the picture of both mining and settlement remains, especially since pedestrian survey is hampered by terrain and vegetation. Combining data from these approaches into a single, coherent geodatabase would multiply the value of each.

Archaeological results could then be integrated with historical data from newspapers, land records, historical maps, family records, interviews, and other sources. Pell and Hammon (2009) depict scenes of everyday life in 19th-century Katoomba, but we still have much to learn about the miners who settled in the Jamison Valley. Ian Jack's painstaking and detailed research on the Maxwells' slab structures in the Blue Mountains reveals the benefits of combining diverse forms of evidence, including material culture, textual archives, and family history, to reclaim powerful stories about the occupation of the Blue Mountains by poor miners, their families, and their many descendants (Jack 2009). Susan Lawrence's (1996, 2006) pioneering historical and archaeological work on small gold mining and whaling communities also shows the potential of this approach to reveal the lived experience of ordinary working Australians in this period. We know that these men and their families came from diverse migrant backgrounds, and many seem to have lived itinerant lives, moving from one mining area to the next. But did these men and women fit into the idea of a modern, white, progressive nation current at the time? Were their lives organised by clocks, wages, and set hours, and by the division between work and home? What does their material culture reveal about their needs, tastes, and aspirations? A multidisciplinary approach to future research will reconstruct not only the physical nature of this site but the human experience of this small and ultimately ephemeral working class

community, set in the wider context of economic boom and bust, emerging national mythmaking, and Federation.

Finally, this industrial heritage should be documented and a conservation management plan developed to ensure this important part of New South Wales's social, economic, and technological history is not lost. State heritage listing is likely warranted, perhaps in combination with the remains of the adjacent and associated Bleichert Cable Ropeway (Crook *et al.* 2015). The complex of mining infrastructure and associated settlement in the Jamison Valley is a rare example of oil shale mining that has ongoing strong associations with the local community. It is also a relatively unique example of such a physically isolated mining enterprise, where the settlement's location divorces it from formal town development. This complex of sites played a significant role in shaping the early European settlement of the Blue Mountains. They formed a significant part of the late-19th-century colonial economy and have the potential to provide information about local adaptation of mining techniques and infrastructure. Further fieldwork and historical research would bolster the case for such a listing and inform an interpretation strategy and cultural heritage management plan for the surviving settlement and infrastructure remains.

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