

## **IN SEARCH OF NOBBYS' TUNNELS**



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## **PREFACE**

This work began as a brief report to accompany the Coal River Working Party's proposal to the BBC Time Team in the UK in 2008. Since then I have carried out further research and field work to relate the history of quarrying of Nobbys Island *Whibayganba* for breakwater material, the tunnels dug for blowing up Nobbys and the final levelling to provide a platform for the lighthouse, to the geology.

## **COVER IMAGES**

Lower image: Part of a sketch of Nobbys Island *Whibayganba* by William Swainson, August 1851, after quarrying had removed some rock for building Macquarie Pier, visible in the foreground. From Coal River Working Party blog. The bulk of Nobbys is composed of tuff: layers of consolidated volcanic ash, the products of violent, explosive eruptions from a distant volcano 250 million years ago.

Upper image: Superimposed on top of the lower image is a section of a photo of Mt Yasur volcano erupting, on the island of Tanna, Vanuatu, taken by Shayne Kerr during our visit in 2007. The combined images represent a vision that some government officials had back in the 1850s, to reduce the height of Nobbys. A lighthouse was planned to be built on top of the remains!

## **ACKNOWLEDGEMENTS**

Shayne Kerr, my husband, who accompanied me on field trips to Nobbys and took fine photographs for the report.

Colleagues of the Coal River Working Party for providing much of the historical information used in the report, in particular: Gionni di Gravio (Chair), Cynthia Hunter, Russell Rigby, Doug Lithgow, John Fryer and Brenda Sullivan.

## **DATES FOR MACQUARIE PIER, NOBBYS TUNNELS AND NOBBYS LIGHTHOUSE**

1818 August	Building of the southern breakwater, Macquarie Pier, began from the mainland end. Named after Governor Lachlan Macquarie, who approved the construction of a pier/causeway connecting Nobbys Island <i>Whibayganba</i> to the mainland. Built with convict labour.
1823 January	Breakwater construction suspended because Governor Brisbane cut expenditure on public works.
1835	Breakwater construction was resumed after a 12 year break when a new batch of convicts was sent to Newcastle.
1839 late	Quarrying of Nobbys began for building the breakwater from the Nobbys end. Convicts doing this work were stationed on Nobbys.
1846	Macquarie Pier, connecting Nobbys Island <i>Whibayganba</i> to the mainland, was completed, 28 years after commencement.
1853 - 1854	Tunnels excavated into the base of Nobbys to place explosives to blow the top off the headland. Organised by civil engineers based in Sydney: Colonel George Barney and Gother Kerr Mann.
1854	Colonial government decided not to blow the top off Nobbys after considering the submission of a petition from some Newcastle inhabitants, masters of ships and other traders of Newcastle Port.
1855	Nobbys Head, already defaced by quarrying, was cut down to its present height and shape to provide a platform for building the lighthouse.
1857	Nobbys Lighthouse erected.
1858 January	Nobbys Lighthouse first shone.

## **NOBBYS' TUNNELS DATES - 1852 to 1854**

- 31 August 1852 Phillip King, chairman of the Select Committee on Newcastle Lighthouse, recommended to the government that Nobbys be cut down to 65 feet above the high tide mark.
- 18 April 1853 Convicts had already begun digging tunnels into Nobbys to place explosives to reduce the height of the island. Barney and Mann had visited Newcastle and conducted a preliminary survey and measurement of Nobbys.
- 14 May 1853 Barney and Mann requested a further 1,002 pounds to cover continuing tunnelling into Nobbys for 'demolition of Nobbys Island'. Their accompanying sketch of Nobbys is missing.
- 22 November 1853 Petition from some Newcastle residents, masters of ships and other traders of Newcastle Port to the government against the tunnels being dug for explosives to blow up Nobbys.
- 19 December 1853 Barney's explanation of the tunnelling - he claimed that he did not intend to blow up the island!
- 30 December 1853 Barney and Mann reported to the Colonial Secretary that two tunnels had been dug so far, to about 24 metres long each. A third tunnel was planned and possibly a fourth one. An accompanying tracing of the tunnelling and proposed work is missing. Barney and Mann recommended that Major Macpherson, in charge of convicts working on the tunnelling, be told to proceed faster with the work and be given extra labour if needed.
- Early January 1854 Macpherson had been instructed to hasten tunnelling.
- 31 May 1854 William Keene's geological sketch of the southeastern face of Nobbys Island shows two tunnels just above sea level, on either side of the dyke. Tunnels are labelled as 'Chambers excavating for blowing up Nobby's.
- 14 June 1854 Governor General asked the Colonial Secretary to table a copy of the petition presented to the Colonial Government against the destruction of Nobbys Island and all correspondence which had taken place on the subject. Barney indicated that the tunnels were ready for use. But he did not state how many were dug, their final lengths or the total time spent in their excavation. A motion was carried by the Legislative Council that Nobbys be left alone and the lighthouse be erected on Signal Hill.

- 21 June 1854 Public meeting in the Court House to petition the Legislative Assembly to inquire into the particulars of Barney's intention to blow up Nobbys.
- 18 July 1854 The papers tabled on 14 June 1854 for the Governor General were printed by the Government.
- 22 August 1854 Three tunnels had been driven into the base of Nobbys.
- 3 November 1854 The Select Committee on the Navigation of the River Hunter recommended that the top of Nobbys be prepared by levelling to provide a base for placing a lighthouse, instead of making explosions. So Barney's plan to blow up Nobbys, which had caused so much apprehension among the residents of Newcastle, was finally abandoned.

## 1. INTRODUCTION

In the 1850s tunnels were dug into the side of Nobbys Head to place gunpowder, for blasting the top off the headland. The tunnel entrances are no longer visible. But where were they located? How many tunnels were excavated for this purpose? And was the gunpowder ever ignited?

When Europeans first arrived, Nobbys Head stood as a rocky island at the mouth of the Hunter River. On his chart of Coal Harbour in 1801, surveyor Ensign Francis Barrallier estimated the island to be 203 feet (62 metres) high. Rigby and Fryer (2010) have estimated that the original height of Nobbys was actually less than this, at about 142 feet (43 metres). The height of Nobbys Head is now only 98 feet (30 metres).

Plans, paintings and sketches from the early 1800s depict rocky reefs and sandy shoals lying between the island and the southern shore of the river at Signal Hill (now topped by Fort Scratchley). Surf rolled through this shallow area. There was a narrow channel near the middle of the gap, suitable only for small craft. In 1818 Governor Macquarie sounded this channel at 7 feet (2.1 metres) deep at low tide, with a width of only about a quarter of a mile (400 metres). Sailing ships generally sailed around the northern side of the island to enter the river, by way of a deeper channel close to Nobbys Island (Figure 1.1).

Barrallier's chart of 1801 (Figure 1.2) shows that in plan view, Nobbys Island was triangular in shape with a large wave-cut rock platform extending and tapering southwestwards into the river. Part of this rock platform is visible today, below the breakwater on the harbour side, where it comprises mostly sandstone.

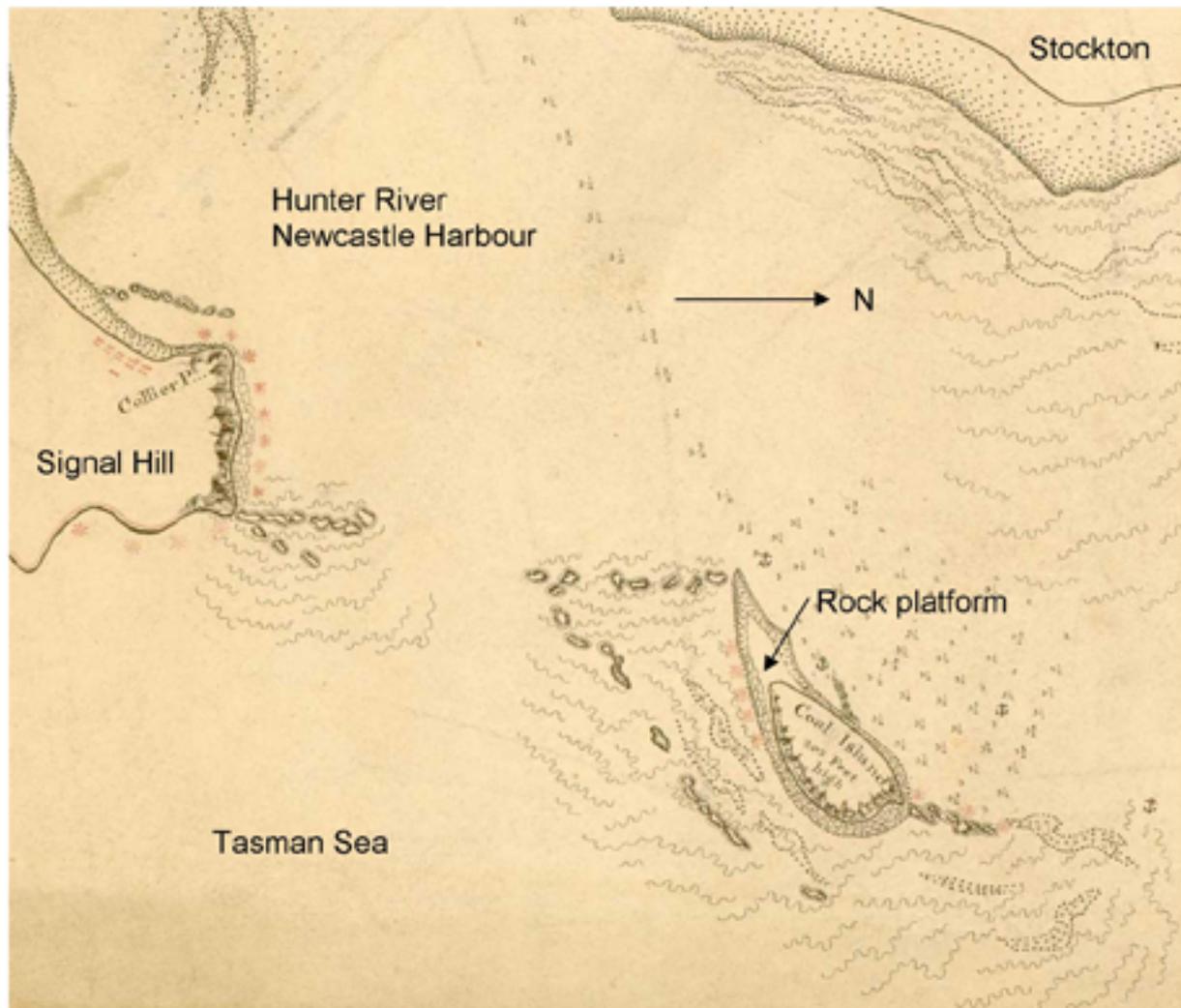
In the late 1700s/early 1800s, European traders and explorers referred to the island as Coal Island, as they could see two coal seams clearly (Figure 1.3). A lower seam outcropped at the base of the island close to sea level (Nobbys Coal Seam), whereas another seam was visible in the upper part of the cliff (Victoria Tunnel Coal Seam).

The sedimentary rock succession of the Newcastle Coal Measures, which makes up Newcastle's rocky coast, is illustrated in Figure 1.4. The rocks are Late Permian in age, 250 million years old. They originated as river gravels, sands and muds, peat swamps and volcanic ash. On burial and compaction they became conglomerate, sandstone, shale, coal and tuff respectively.

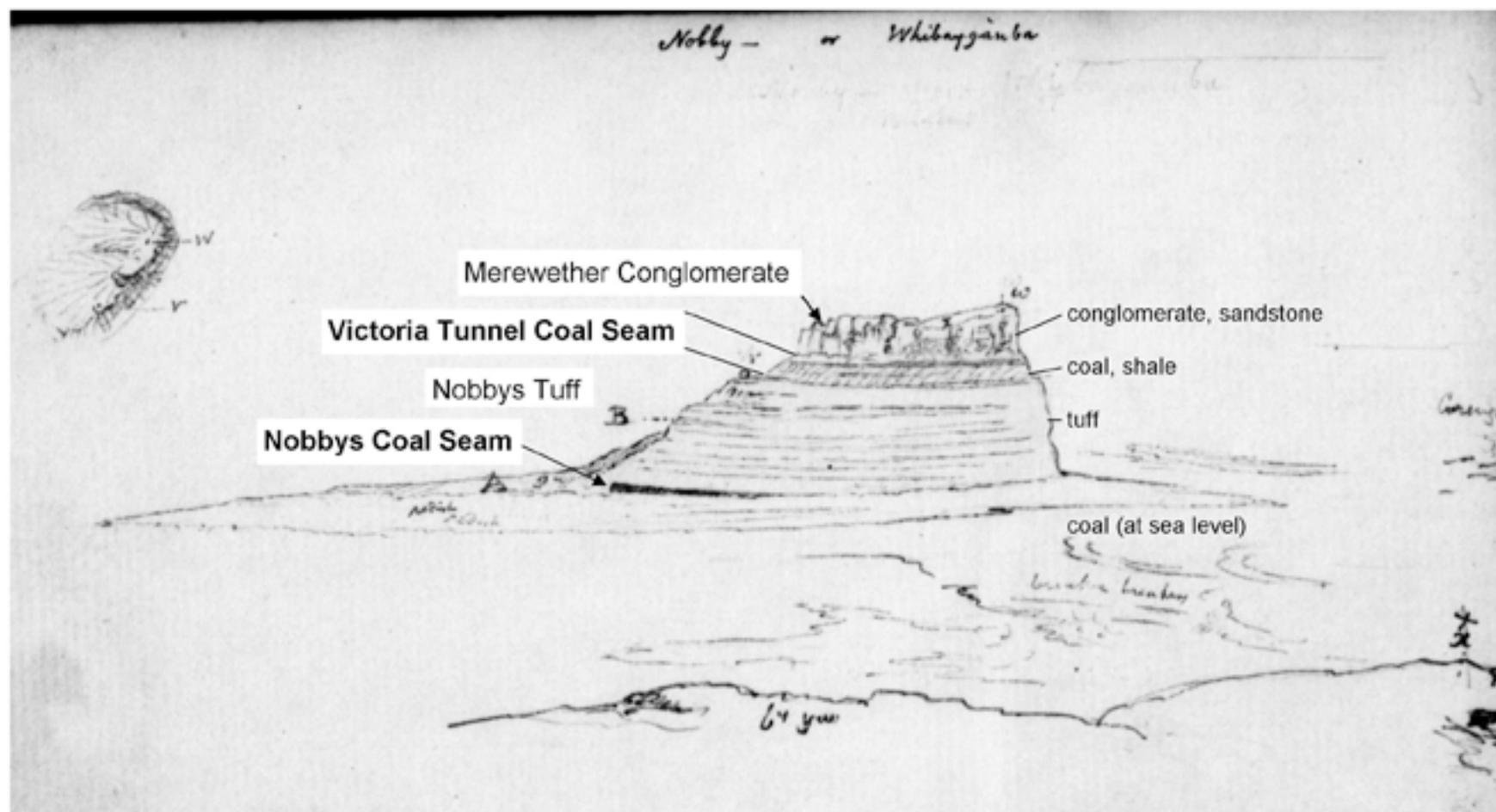
Along Newcastle's coast the coal measures are folded into an anticline (upfold) from Glenrock Lagoon to Nobbys Head. This structure is called the Shepherds Hill Anticline and has some faulting associated with it. As a result of the folding and faulting the Nobbys Tuff, which makes up the rocks of Nobbys Head from sea level to just below the top of the headland, appears much higher in the coastal cliffs of Shepherds Hill and Merewether. The tuff outcrops at sea level again further south at Glenrock Lagoon (Figure 1.5).



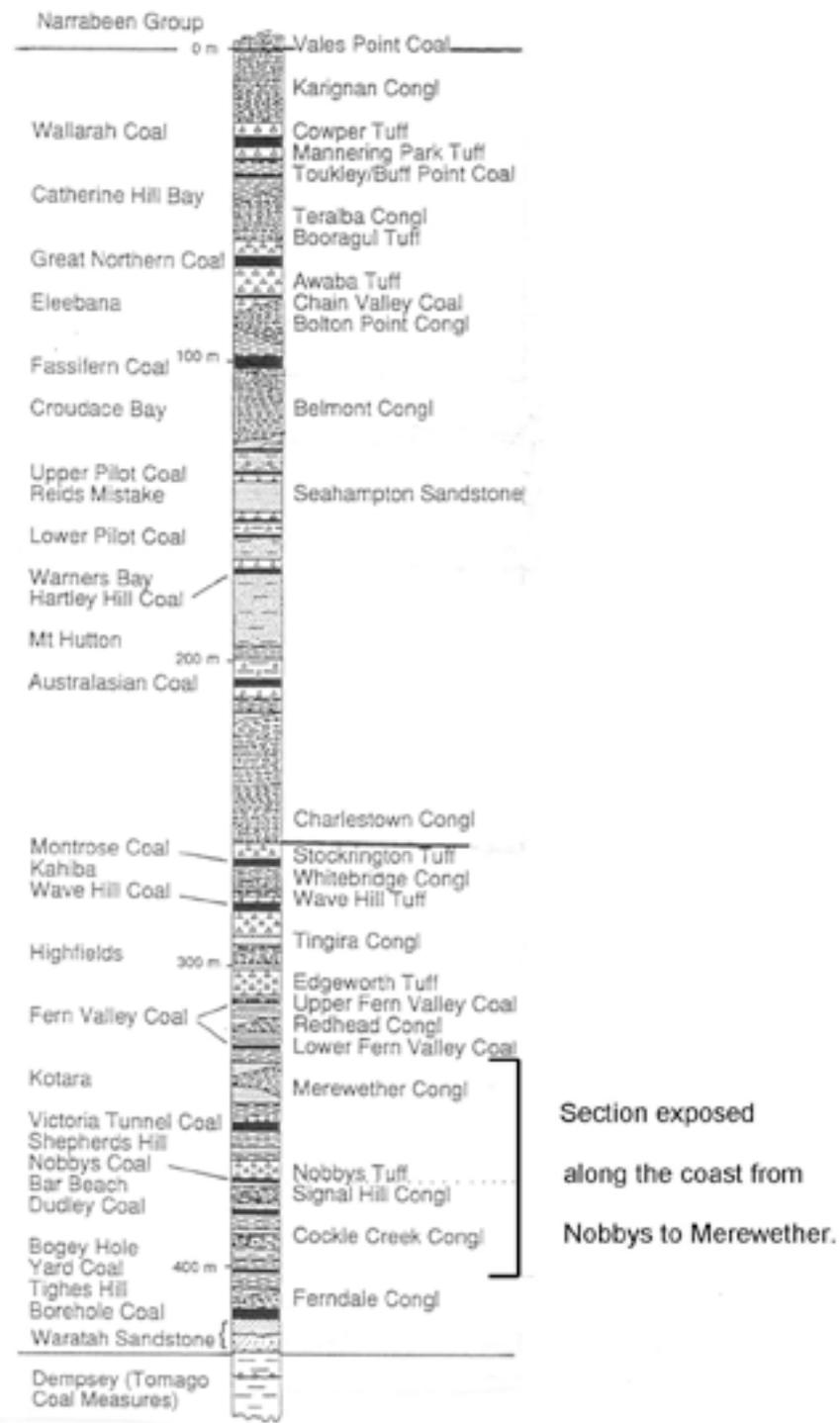
**Figure 1.1.** View of Nobbys Island *Whibayganba* looking northwards 1812, showing ships sailing around its northern side to enter the harbour, where the water was deeper. Surf is rolling through the shallow water separating Nobbys and the mainland. Intaglio engraving on paper. Drawn by I.R. Brown, engraved by W. Preston, Newcastle Region Art Gallery.



**Figure 1.2.** Part of Barrallier's 1801 chart of Coal (Newcastle) Harbour showing Coal Island (Nobbys Head *Whibayganba*) as triangular in plan and 203 feet tall. The author has added some labels. A rock platform extends southwestwards from Nobbys, tapering into the harbour. Today the platform consists of sandstone, but in 1801 it was probably covered by coal (Nobbys Seam). A line of rocky reefs projects southwards from the island towards the mainland. Another line of rocks projects northwards from the mainland towards Nobbys. Shallow water and surf separated the reefs. Macquarie Pier, built later connecting Signal Hill with Coal Island, now covers some of these rocky outcrops. Ensign Barrallier carried out the survey in His Majesty's Armed surveying vessel *Lady Nelson*. Coal River Working Party blog.

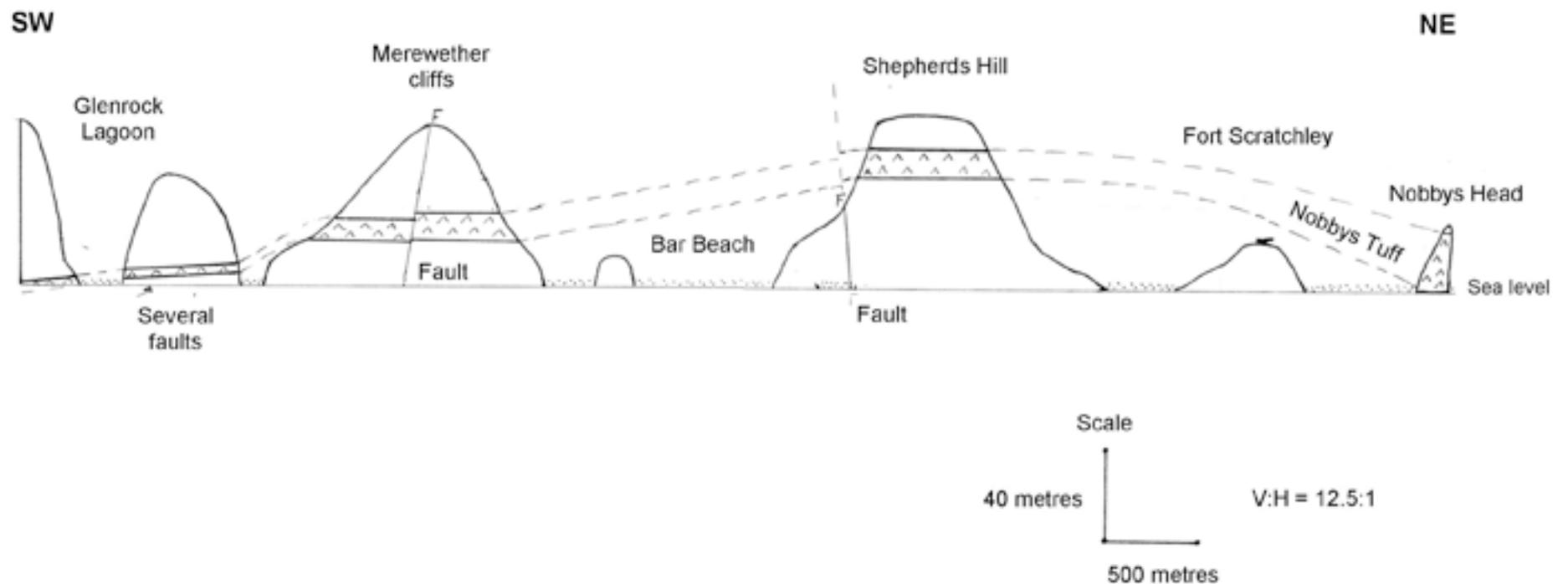


**Figure 1.3.** Sketch of Nobbys Island *Whibayganba* by Sir Thomas Mitchell 1828, looking north. The author has added the stratigraphy of the Newcastle Coal Measures on the left and the rock types on the right. The sketch depicts Nobbys before reshaping by quarrying and cutting down to provide rock for building the breakwater and a platform for the lighthouse. Coal River Working Party blog.



**Figure 1.4.** Stratigraphy, the sedimentary rock succession, of the Newcastle Coal Measures (after Herbert 1997).

coal  
  tuff  
  conglomerate  
  sandstone  
  shale



**Figure 1.5.** Cross section of the Shepherds Hill Anticline from Glenrock Lagoon to Nobbys Head, defined by the Nobbys Tuff. The sedimentary rock layers of the Newcastle Coal Measures are folded and faulted into an upfold along Newcastle Coast. As a result the Nobbys Tuff, the rock unit that makes up most of Nobbys Head, outcrops high in the cliffs of Shepherds Hill and Merewether, reaching sea level again at Glenrock Lagoon in the south (after Kerr 2000).

## **2. NIBBLING COAL AT NOBBYS**

The early European settlers took coal from an outcrop of the Nobbys Seam that formed a tongue just above sea level on the southwestern side of the island. The coal probably formed the top layer of the tapering rock platform visible on Barrallier's chart (Figure 1.2). Coal was easily laden into small boats anchored on the river side of the island. However, eddies from the surf crashing against the cliff and strong tidal currents could sometimes make this a risky venture. Another hazard was the presence of boulders lying on the rock platform and reefs, which rolled around like giant marbles in strong surges.

A tunnel was dug to follow the seam into the island. But no record has been found of where it was located or how far it penetrated. We do know that the tunnel was dug sometime before 1852. Coal from the Nobbys Seam was of poor quality, so only a limited amount of coal was removed.

By contrast, coal of superior quality was mined extensively and more easily from splits of the Dudley Coal Seam outcropping at Colliers Point on the river side of Signal Hill, at low tide level on the rock platform at the base of the hill, and in the underground convict mine beneath the hill. Loose lumps of coal eroded from coastal outcrops were also collected along the shoreline.

Explosives were not used for mining. Beneath Signal Hill convict miners dug coal out with picks. Convict labourers then shovelled the coal into wheelbarrows and pushed them from the coal face to the mine entrance, where it was loaded into baskets carrying one hundredweight (51 kilograms) each. With a basket on their backs, other convicts lugged the coal almost half a mile (800 metres) to the lumber yard.

### 3. CONNECTING NOBBYS

To make the river mouth safer and easier for sailing ships to enter the port, a breakwater was built joining Nobbys Island to the southern shore. The breakwater, named Macquarie Pier after Governor Macquarie who approved its construction, was built by convicts between 1818 and 1846.

Both sides of Signal Hill were quarried to provide stone for the southern part of the breakwater. The main rock type was sandstone. One quarry was located on the seaward, southern side of Signal Hill at the current level of Fort Drive and extending down onto the rock platform.

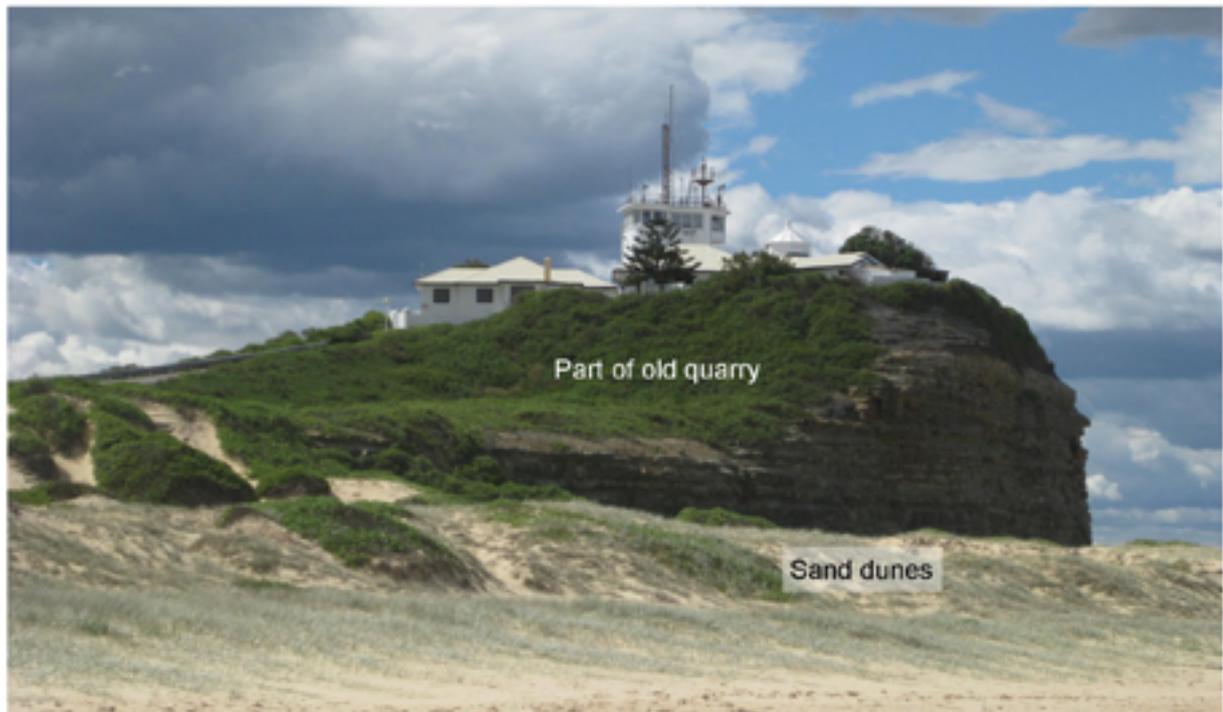
Breakwater construction also progressed from the Nobbys end, using rocks from the island. The island was gradually cut down and a quarry was excavated in its southern side. A remnant of the old quarry is still visible today, as a scooped out depression on the eastern side of the access road to the lighthouse (Figure 3.1). Rock types excavated from Nobbys Island would have been conglomerate and sandstone from the top, shale and coal from the middle, and tuff (silicified, sandy and shaly varieties) from the lower part (Figure 1.3).

Most of the local rock types used in the initial breakwater construction were not particularly stable in sea water, due to their high clay mineral content. As well, the construction method was not suitable for the high energy environment. So the early breakwater was continually breached by the sea, requiring regular repairs, even before it was completed.

After Macquarie Pier was completed in 1846, convicts continued to quarry rock from Nobbys Island to maintain the breakwater, at least up until 1850. Storms still regularly breached the narrow wall, washing away rocks particularly from the Nobby's end. Quarrying had substantially altered the shape of Nobbys so that it had an irregular, hacked out appearance (Figure 3.2).

From 1869, blocks of Waratah Sandstone were added to the breakwater to strengthen it. The sandstone was quarried from Braye Park, Waratah and transported by rail to the breakwater. Waratah Sandstone is a compact, light grey fine to medium grained lithic sandstone with a low matrix content and is a better quality building stone than the original material used. Blocks of Waratah Sandstone are still visible today along the breakwater (Figure 3.3). The Waratah Sandstone forms the basal unit of the Newcastle Coal Measures (Figure 1.4).

The new breakwater created a sediment trap for sand drifting northwards along the coast. The dominant southeasterly swell produces strong north-flowing longshore currents that transport sediment up the coast. The breakwater interrupts this flow so that sand gradually built up against the breakwater to form Nobbys Beach (Figure 3.4). The beach now protects the breakwater from storm waves.



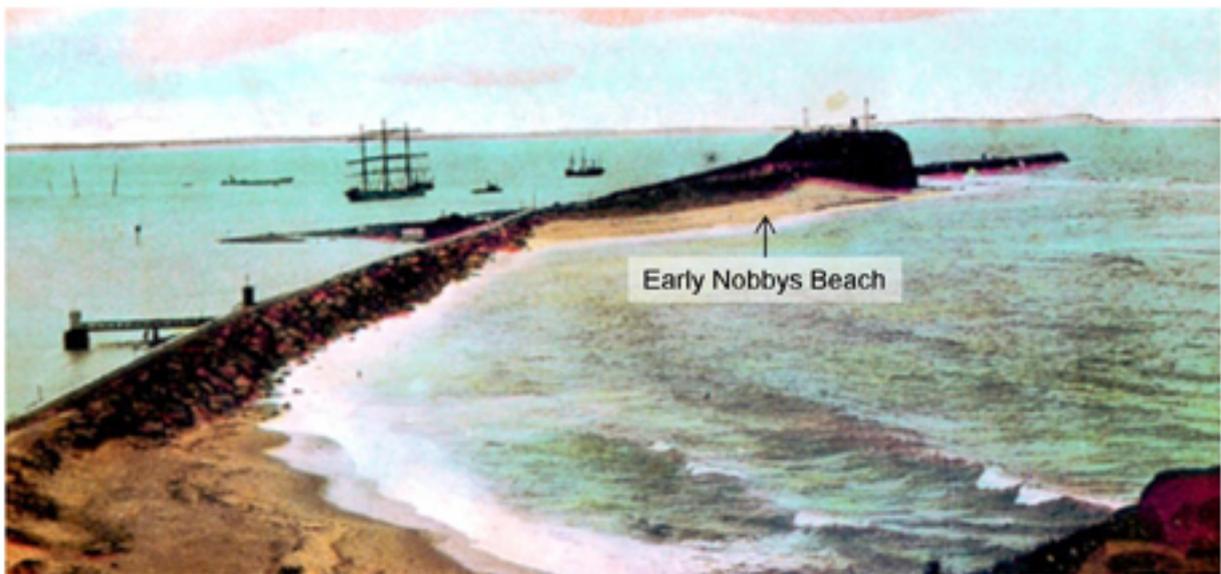
**Figure 3.1.** Southern side of Nobbys Head showing a remnant of a quarry excavated for rock to build Macquarie Pier. The old depression is now covered in vegetation. Note the sand dunes that have built up at the base of Nobbys since it was connected to the mainland. Photo by Roz Kerr.



**Figure 3.2.** View of Nobbys Island *Whibayganba* in 1851 looking north, showing that a great chunk of the upper southeastern side has been removed by quarrying, to supply rock for completing and repairing Macquarie Pier. Selected part of an image by William Swainson, August 1851, 'Newcastle Lighthouse and Nobby Island' Coal River Working Party blog.



**Figure 3.3.** Western side of Macquarie Pier showing blocks of Waratah Sandstone covering the original convict-built structure, to strengthen it. The stone was quarried from Braye Park, Waratah. Photo by Shayne Kerr.



**Figure 3.4.** Development of Nobbys Beach 1890. Macquarie Pier joining Nobbys Head formed a barrier to north-drifting marine sand. So sand began to be deposited against the structure, forming Nobbys Beach. This image shows how much sand had accumulated in 44 years since the pier was completed. Coal River Working Party blog.

#### 4. BLASTING FOR A NEW LIGHTHOUSE

Up until Macquarie Pier was completed in 1846, Newcastle Harbour's navigational signal system comprised a heap of ignited coal on top of Signal Hill. Now that Nobbys Island was joined to the mainland and the port was becoming busier, a better signalling system was needed.

Following a government survey in 1851, a select committee of the Legislative Council was appointed on 18<sup>th</sup> June 1851 'to inquire into and report as to the best position and means for the erection of a lighthouse at the entrance of the Harbour of Newcastle'. The committee was named the Select Committee on Newcastle Light House. Colonel Barney, who features in this story, was a member of the committee. Nobbys Island was the preferred site for the new lighthouse. However, there was disagreement about the height to which Nobbys should be cut down and levelled, to provide a platform for the lighthouse. The report of the Select Committee was published on 31<sup>st</sup> August 1852. Relevant parts of the report are summarised below.

When questioned by Mr Phillip King, the chairman of the Committee, Mr Alexander Livingstone, Harbour Master at Newcastle, said that the height of Nobbys blocked southwesterly to southerly winds from ships coming into Newcastle. They were suddenly becalmed and drifted towards the Oyster Bank, about 123 yards (112 metres) away. To prevent this inconvenience to vessels entering the harbour, he thought that Nobbys should be cut down to 25 to 30 feet (8 to 9 metres) above sea level. This was the height at which the inclined plane began to descend, and there was a small place cut where there was a tramroad.

In contrast, Captain John Bull, who supervised breakwater maintenance and had worked with the rocks from the island, recommended to the Select Committee that the island only be levelled to a maximum height of 92 feet (28 metres). He considered that this would be enough to remove the inconvenience to ships entering the harbour and to provide a proper foundation for a lighthouse. Conglomerate (Merewether Conglomerate) and the underlying coal and shale layers (Victoria Tunnel Seam) would be removed from the top of the island. This would leave a base of solid stone, now known as Nobbys Tuff, for the lighthouse.

Captain Bull presented two cross sections of Nobbys, one north-south, the other east-west, illustrating the strata and profiles of the island at that time. The north-south cross section shows that the top of Nobbys was 142 feet (43 metres) above sea level (Figure 4.1). Conglomerate made up the uppermost 37 feet (11 metres). It was underlain by 12 feet (3.6 metres) of coal and shale. Therefore a total thickness of 49 feet (15 metres) of rock - conglomerate, shale and coal - would have to be removed to expose the top of the Nobbys Tuff for a lighthouse platform. Nobbys Tuff made up the remaining 93 feet (28 metres) of the island down to sea level.

Although Captain Bull considered that the Nobbys Tuff would provide a solid base *in situ* for building a lighthouse upon, he described the rock as friable when added to the breakwater, where 'it falls to pieces after a shower of rain'. He also indicated that the stone that would be removed in levelling Nobbys was not suitable for building.

Committee member Mr Lamb asked Captain Bull if Nobbys were cut down to 65 feet (20 metres) above sea level, to the lower inclined plane (Figure 4.1), would this be enough to provide a foundation for the lighthouse? Captain Bull replied that it was unnecessary to cut Nobbys down to 65 feet as the foundation would be in the same rock type with the same stability if it were cut down to only 92 feet above sea level. In addition, the lighthouse would need to be taller if its base were at 65 feet above sea level, presuming the light was to be the current height of Nobbys, 140 feet.

In spite of this explanation, Mr Lamb still considered that Nobbys should be reduced to 65 feet above sea level. He may have chosen this height as it is about half way between Mr Livingstone's suggestion of 25 to 30 feet and Captain Bull's 92 feet.

To save on labour, Mr Lamb suggested that the rock be **blasted**. Captain Bull replied that more material would need to be removed after blasting down to 65 feet above sea level. Colonel Barney suggested that the blasted rock could be pushed eastwards onto the rocks below.

Mr Phillip King, chairman of the Select Committee, also ignoring Captain Bull's information, recommended to the government on 31<sup>st</sup> August 1852 that Nobbys be 'cut down to the level of 65 feet above the high tide mark, leaving or erecting, as may be found desirable, a parapet of six feet high round the edge of the rock to protect the dwelling and the base of the Light-house from the effects of the wind'.

So what happened to Nobbys after this recommendation? The story of what followed is taken from the 1854 document on Nobby's Island published by the Legislative Council of the New South Wales Parliament, as well as from newspaper articles in the Maitland Mercury and the Sydney Morning Herald published at the time. Transcriptions of the newspaper articles are given in Appendix 1.

In response to the feasibility of the recommendation to cut Nobbys down to 65 feet above sea level, the Superintendent of the Breakwater, Macpherson, informed the Colonial Secretary in Sydney early in 1853 that levelling Nobbys for a lighthouse platform was estimated to take 30 convicts nearly 3 years. The rock removed would be used for plugging up holes in the breakwater. There was already a building on Nobbys that could be used as a cookhouse for the convicts, and also a mess shed. A couple of boilers was all that was needed to prepare meals for the convicts, so that they didn't have to return to the jail on the mainland to eat during work time.

Three years to prepare the platform for a new lighthouse seemed a long time to the Colonial Secretary. So he suggested to two civil engineers based in Sydney, Lieutenant Colonel George Barney then the Chief Commissioner of Crown Lands and Gother Kerr Mann, that the work to reduce Nobbys Island to 65 feet high could be hastened by blasting the rock off the top. Barney and Mann enthusiastically embraced the idea of applying gunpowder. Barney, with teams of convicts, had already blasted the island of Pinchgut in Sydney Harbour to level it for the construction of Fort Denison.

By 18<sup>th</sup> April 1853 Barney and Mann had visited Newcastle and conducted a preliminary survey and measurement of Nobbys. They were preparing plans and calculations for

the Colonial Secretary. Groups of convicts had already begun digging tunnels into the island for placing explosives! As accuracy was most important, the convicts needed careful supervision. Barney and Mann requested 50 pounds for wires and other apparatus for constructing blasting equipment.

A month later, 14<sup>th</sup> May 1853, Barney and Mann requested a further 1,002 pounds to cover continuing tunnelling into Nobbys for the 'demolition of Nobby's Island'. An accompanying sketch of Nobbys was enclosed with their request, but unfortunately it has not been found. They estimated that the tunnelling would be completed in four months, providing there were no unforeseen difficulties or delays. The requisition included an amount for 'procuring the services of some steady men for charging the mines (tunnels) and in the laboratory' (to prepare the explosive devices). The most expensive item requested was 17 tons of blasting powder, at 765 pounds. The workers were to be lubricated by '2 gallons spirits of wine'. The Colonial Secretary granted 1,000 pounds worth of the requisition.

However, while tunnelling was proceeding under Nobbys, some Newcastle inhabitants, masters of ships and other traders of Newcastle Port became rather concerned. They had been informed that Nobbys was going to be totally destroyed by gunpowder, and that two tunnels had already been excavated for that purpose. They believed that the narrow channel into the port could be obstructed by its destruction. Nobbys also served a most important role in sheltering ships entering the port in southerly gales, and Nobbys was the most suitable place for a lighthouse. John Bingle Esquire J.P. from the concerned citizens sent a petition to the Governor General, signed by 49 people, on 22<sup>nd</sup> November 1853.

In reply to the petition Barney explained on 19<sup>th</sup> December 1853 that the entire removal of Nobbys was not planned. It was only proposed to cut Nobbys down to 60 feet (18.3 metres) above high water mark. The erection of a new lighthouse on this reduced height had already been authorized. The work would not destroy the shelter Nobbys provided to ships sailing into the port in southerly gales, nor would the rock removed obstruct the port's entrance.

At the end of 1853, 30<sup>th</sup> December, Barney and Mann reported on the progress of the work to the Colonial Secretary. They had chosen three places within the island to lodge the explosives and considered they would probably need a fourth spot. These locations were plotted on a tracing, which has not been found. The tracing showed the locations of the tunnels and how much of the planned tunnels had been dug, and how much remained to be done. After almost 9 months of digging with picks, convicts had driven two tunnels into the rock face, one to a distance of 77 feet (23.5 metres) and the other to 79 feet (24 metres). As tunnel digging progressed into the island, the rock became increasingly dense and hard. With the convicts also being inexperienced at mining, tunnel excavation was slow. Materials for wiring and the battery for igniting the explosives had been obtained, ready for assembling. Barney and Mann recommended that Major Macpherson, in charge of convicts working on the project, should be instructed to expedite the tunnelling by 'every available means in his power' and be given extra labour if needed. The Colonial Storekeeper had a sufficient supply of gunpowder for the job.

In early January 1854 the Colonial Secretary informed Barney and Mann that Macpherson had been instructed to hasten the tunnelling work!

In the Legislative Council of New South Wales on 14<sup>th</sup> June 1854 the Governor General asked the Colonial Secretary to table a copy of the petition presented to the Colonial Government against the destruction of Nobbys Island in preparation for building a lighthouse on it, plus all correspondence between the Government, the petitioners and other parties on the matter. These papers were printed on 18<sup>th</sup> July 1854.

The parliamentary proceedings and report at this time generated several lengthy newspaper articles on the topic (Appendix 1). From an article published in the Maitland Mercury on 17<sup>th</sup> June 1854 of the Legislative Council meeting of 14<sup>th</sup> June is Colonel Barney's explanation to the petitioners of his intentions:

'The Chief Commissioner of Crown Lands (Colonel Barney) stated that it was not intended to blow Nobby's up, but the operation of gunpowder was preferred because it would reduce the amount of labour required for cutting it down, and for accelerating the work. It was correct that, by use of gunpowder, work could be performed in six or seven months which would extend over three or four years by the tedious process of cutting down. The mines were at present in a fit state for use. The operation was intended to lower Nobby's to sixty feet above high water mark, and to make that the base of the lighthouse. By mining the lower portion of the promontory, which would be blown seaward, the upper part would fall down, but a base perfectly sound and untouched would remain, affording sufficient space for the erection of a dozen lighthouses. The action of the gunpowder had been too well calculated to admit of the possibility of the mass forced by the blast being blown into the harbour, but on the contrary, it would prove highly beneficial in reducing the expense of labour, and also afford materials for the protection of the breakwater. In fact, the intended process did not offer the slightest chance of damaging the harbour.....Colonel Barney recommended the use of gunpowder as more speedy and less costly. He believed that by the blasting process about a third of the island would be shaken seaward, leaving a sufficient base, while the stuff cast out seaward would add to the solidity of the breakwater in course of formation. He thought that the petitioners must be under a misapprehension, and that no injury would accrue to the harbour by the process intended.

Mr. Cowper, after the explanation made, was inclined to think the petitioners must have laboured under a misapprehension, as he had himself, that the whole island was to be blown up. Still he hoped time would be given to the people of Newcastle to express their opinions further upon the matter, for he had been assured, not only by masters of vessels, but by engineers, that danger to the port was to be dreaded. Mr. Livingstone appeared now also to be of opinion it would be better to leave Nobby's alone, and place the light-house where the beacon was now placed.

The motion was then put and carried.'

So by June 1854, Barney indicated that the tunnels were ready for use, but he did not state how many were dug, their final lengths or the total time spent in their excavation.

However, a long article of 22<sup>nd</sup> August 1854 in the Sydney Morning Herald, explaining the objections to the plan to blow up Nobbys, indicates that three tunnels had been driven into Nobbys just above the high water mark.

According to John Bingle in his Past and Present Records of Newcastle, New South Wales (1873, pp14-15), a public meeting was held in the Court House on 21<sup>st</sup> June 1854 to petition the Legislative Assembly to inquire into the particulars of Colonel Barney's intention to blow up Nobbys. The citizens were hoping that the tunnelling and proposed explosions would be stopped. John Bingle had previously sent a petition on this issue, signed by 49 concerned citizens to the Governor General in November 1853. However, Barney was still not deterred. A few days before the gunpowder was due to be ignited and Nobbys therefore demolished, Mr Thorn visited John Bingle, agreeing that Nobbys should not be blown up. On his return to Sydney, Mr Thorn, at Bingle's request, called upon the Governor inducing him to postpone the explosions.

This Mr Thorn was actually Mr George Thorne of Claremont House, Rose Bay, a Sydney business man and merchant who had a number of business interests in Newcastle (Gionni Di Gravio 29<sup>th</sup> September 2011 CRWP blog).

Unfortunately, John Bingle does not give the date that Mr Thorn consulted the Governor General, convincing him to stop Nobbys being blown up. Surprisingly, Mr Thorn's important visit to the Governor General and the Governor subsequently stopping Nobbys being blown up is not mentioned in the 1850s newspaper articles examined so far.

The Select Committee of the Legislative Council on the 'Navigation of the River Hunter', appointed on 4<sup>th</sup> July 1854, 'to inquire into the best means of facilitating the navigation of the river Hunter and the improvement of the harbour of Newcastle' considered the November 1853 petition opposing the cutting down of Nobbys Island and reducing its height by blowing it up, from some Newcastle inhabitants and others concerned with the preservation of the Port of Newcastle. The committee personally examined some of the petitioners, namely Mr Lodge, a master mariner and Mr Mulhall, master of the steamer Collaroy. Captain Moriaty the port master and Mr Livingstone, the harbour master of Newcastle, also gave evidence. The committee's report, dated 3<sup>rd</sup> November 1854 and published in the Maitland Mercury 11<sup>th</sup> November 1854, recommended:

'that the proposed lighthouse should be erected on the top of Nobby, and that that island should be merely prepared by levelling and thus making a ledge a few feet below its present summit. The adoption of this course will, it is believed, combine all the advantages which have been suggested as desirable by retaining the island for a landmark, and by placing the lighthouse not only in the most conspicuous place, but as preventing the necessity for making explosions, the idea of which has caused so much apprehension among the residents at Newcastle.'

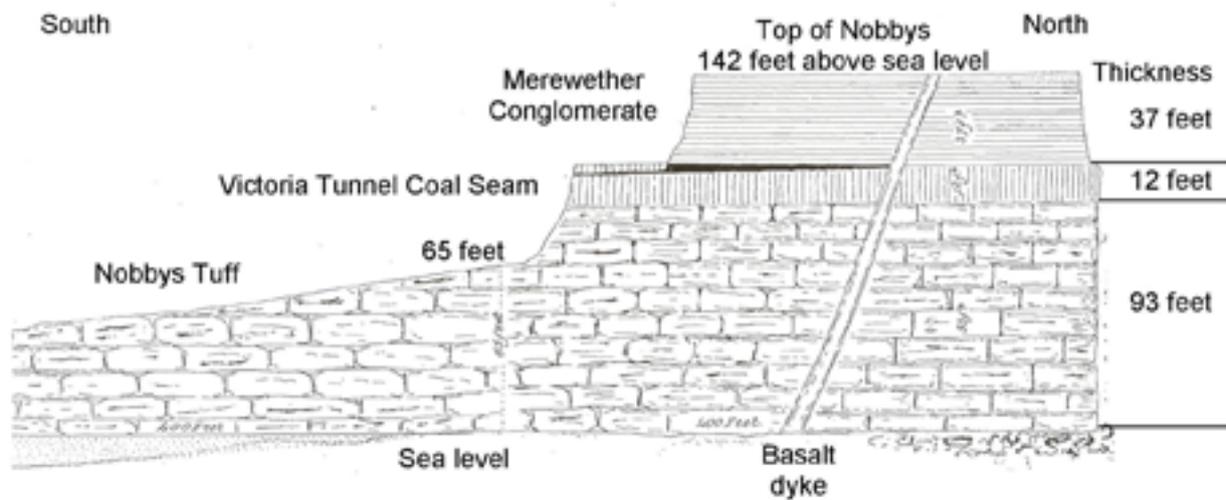
After this recommendation was made in late 1854 the plan to reduce the height of Nobbys by explosions, to be initiated in tunnels dug into its base, was finally abandoned.

In April 1855 Mr Wright, the contractor for the Hunter River Railway works, accepted the contract to cut about 25 feet (7.6 metres) off the top of Nobbys to make a flat surface on which the lighthouse could be built (Sydney Morning Herald 26<sup>th</sup> April 1855, Maitland Mercury 28<sup>th</sup> April 1855). The work was complete in July 1855 (Hunter 2001).

According to Captain Bull's cross section of Nobbys Head in 1852, the headland was 142 feet (43 metres) high before levelling (Figure 4.1). Nobbys now stands 30 metres high. Therefore levelling to provide a base for building the lighthouse removed a thickness of 13 metres. This is close to the thickness sensibly recommended by Captain Bull but rejected by the government in 1852. The government decided that Nobbys should be cut down further to 65 feet (19.8 metres) above sea level, requiring the removal of about 23 metres. The 13 metres of rock finally scraped off for the lighthouse platform comprised Merewether Conglomerate plus the upper part of the Victoria Tunnel Coal Seam. The conglomerate, sandstone, shale and coal were probably pushed seaward to add material to the breakwater.

Nobbys Lighthouse was erected in 1857 on a base of shale, within the lower part of the Victoria Tunnel Coal Seam (Figure 5.3a). Its light first shone in January 1858.

In spite of George Barney's ill-conceived and costly project to blow up Nobbys being stopped, he was rewarded with the appointment of Surveyor-General in succession of Sir Thomas Mitchell in October 1855.



**Figure 4.1.** North-south cross section of Nobbys Head by Captain Bull in 1852, showing profile of the headland and thicknesses of rock units. Geological unit names added by the author. From Appendix to Captain Bull's evidence on the Newcastle Lighthouse to the Legislative Council Select Committee, NSW Parliament 1852.

## 5. THE TUNNELS

### 5.1 EARLY TUNNEL IMAGES

Only one image from the 1850s of the tunnels has been found. The stratigraphic sketch of Nobby's Island dated 31<sup>st</sup> May 1854 by William Keene, Examiner of Coal Mines, shows the entrances to two tunnels on either side of the dyke, just above sea level on the southeastern side of the headland, with the caption 'Chambers excavating for blowing up Nobby's' (Figure 5.1).

Unfortunately, a sketch of Nobbys accompanying Barney and Mann's request in May 1853 for further funds to continue tunnelling into Nobbys has not been found. Also missing is a tracing by Barney and Mann that accompanied their progress report to the Colonial Secretary in December 1853. The tracing showed three or possibly four places that they had chosen within the island to place explosives. The progress of two tunnels already underway and how much remained to be dug were also illustrated.

Photographs of Nobbys Head taken in the late 1800s and early 1900s show two tunnel entrances at the base of Nobbys. The tunnels are located on either side of the dyke, but a lot further from it than illustrated by Keene. It appears that on Keene's sketch the locations of the tunnel entrances are not accurate, but just indicated that they existed.

One of the early photographs was taken by E.F. Pittman, Government Geologist, of the northeastern face of Nobbys, showing a tunnel entrance at the base of the cliff (Pittman 1901, facing page 309), (Figure 5.2a herein). The same tunnel is visible in a different photograph in Edgeworth David's 1907 Memoir, plate xiii, (Figure 5.3a herein). David noted that 'the tunnel at the base of the cliff is on the Nobbys Coal Seam'. So the tunnel probably follows the top of the Nobbys Seam into the cliff. Engel (1966, p34) stated that the Nobbys Seam is exposed at high water level at the northern end of Nobbys Head. Scree and sand cover the top of the seam today. However, after periodical beach erosion, the author has observed the Nobbys Seam at low tide on the rock platform beneath the beach, adjacent to the breakwater.

The tunnel entrance in the northeastern face is also visible in photographs taken by Snowball in 1880 and 1892. In an undated (maybe 2001) catalogue of historical photos of Newcastle and the Hunter, presented to the Newcastle Region Art Gallery by The Newcastle Herald to commemorate the newspaper's 125 years of service, photo no. 49 shows the tunnel in the northeastern face of Nobbys. It is titled 'The mysterious Nobbys Tunnels' and is undated. The same photograph is recorded in Newcastle City Council's Hunter Photobank as no.10200017.

In this report, the tunnel in the northeastern face of Nobbys is referred to as Tunnel 1.

A photograph of the southeastern face of Nobbys taken in 1890 shows the dyke as sketched by Keene, but no sign of any tunnel entrances beside the dyke. There is no evidence of back-filled tunnels as the strata are continuous across the width of the photo (Figure 5.4a).

Digital copies of the historical photos used in Figures 5.2a, 5.3a and 5.4a were obtained by Russell Rigby from David Barnes, Geological Survey of NSW.

All of the old photographs show very little scree at the base of the headland. Today, a large apron of scree (composed of clay and rocks fallen from the cliff above) masks the old tunnel entrances. Grass and bitou bush have grown over large parts of the scree surface. The most recent rock fall debris is not yet vegetated.

## 5.2 GEOLOGICAL ASPECTS OF TUNNEL EXCAVATION

The Nobbys Tuff, the geological unit that makes up most of the headland, overlies the Nobbys Coal Seam. The tuff consists of many layers of consolidated volcanic ash of differing grainsizes, textures and susceptibility to weathering. There are three main varieties of tuff: sandy tuff, shaly tuff and extremely fine grained silicified tuff. Silicified tuff layers (enriched in silica and referred to in early publications as 'chert') are hard and resistant to weathering and tend to jut out from the cliff. Shaly tuff layers are clay rich, making them soft and crumbly on weathering. Faster erosion of the crumbly shaly tuff layers undercuts overlying layers of blocky silicified tuff and sandy tuff, producing overhangs. Further undercutting of the overhangs causes unsupported blocks to fall. As a result, fallen blocks and soft clays accumulate around the base of the cliff as scree (Figures 5.3b & 5.4b).

Vertical joints (cracks) slice through the rocks. They are easily observed in the thicker, harder layers where they give the rock a blocky appearance. The spacing between the joints in a particular layer determines the width of the blocks produced. Weathering opens up the joints, forming planes of weakness in the rock layers. Exposed joint faces are generally coated with 'rust' - the brown and yellow secondary mineral limonite (hydrated iron oxide). Limonite is deposited by groundwater moving along the joints.

The prominent joint directions are NE-SW (about 043 magnetic) and NW-SE (314 to 322 magnetic). From its position on the northeastern side of Nobbys, it is probable that Tunnel 1 was excavated along NE-SW joints.

The vertical basalt dyke, standing prominently in the cliff on the ocean side, intruded the sedimentary layers along a NW-SE joint (Figures 5.4a & b). The dyke in this outcrop is about 3 metres wide and trends 322 magnetic. It is chemically weathered to a light green clayey rock speckled with white clay replacing feldspar crystals. Both Dana's sketch of 1840 and the 1890s photo show a ridge of harder rock parallel to the dyke outcrop on the beach (Figures 5.5 & 5.4a). This is interpreted as a baked margin of coal of the Nobbys Coal Seam, which is more resistant to erosion than the basalt. Today scree and beach sand cover the outcrop.

The dyke can be traced through the headland to the river side, where it has been eroded to form a gully behind the concrete fort (Figures 5.2b & 5.6). At very low tides, the dyke is visible on the rock platform below the breakwater on the river side (Figures 5.7 & 5.8). Here it is composed of fresh, dark grey basalt, 3.8 metres wide and trending 324 magnetic. A hard, baked margin of black coal lies on both sides of the basalt dyke. The zones of baked coal, about 2 metres in width, are more resistant to erosion than

the adjoining basalt and stand 0.5 metres above it (Figures 5.7, 5.8 & 5.9). The coal is the Nobbys Coal Seam, which has been eroded and mined from the top of the rock platform elsewhere.

Tunnel 2, thought to be located southwest of the dyke on the ocean side, would most likely have been excavated along NW-SE joints, parallel to the dyke (Figure 5.4b).

If Tunnels 1 and 2 were excavated along sets of NE-SW and NW-SE joints respectively, then the tunnels were dug in directions at approximately 90 degrees to each other.

If the dyke maintains its thickness of 3 to 4 metres through the headland and is composed of unweathered basalt within the headland, it would have been very hard for the convicts, who were inexperienced at mining, to excavate using hand picks. The dyke would have appeared as a solid, thick, hard vertical wall to the tunnel diggers. In this case, from a geological perspective, it appears unlikely that Tunnel 1 penetrated the dyke and that the two tunnels, dug on opposite sides of the dyke, meet inside the headland.

Alternatively, if the dyke is weathered right through the headland, then it may not have presented such a problem to the tunnellers.

The lower part of the Nobbys Tuff, below the dashed pink line in Figures 5.3a & b, 5.4a & b, is more thinly bedded and contains a higher proportion of shaly tuff beds than the section above. Combined with closer-spaced joints, these thin, fissile layers would have been less difficult to excavate than the thicker layers higher in the cliff. The interbedded hard, silicified tuff layers are also thinner in the lower section. The hard, siliceous nature observed in outcrop is a weathering feature, found where the rock is exposed to the atmosphere, at or close to the Earth's surface. In drill core and underground coal mines, silicified tuffs are less common. Therefore, as tunnelling progressed into the headland, the silicified tuff layers may have become softer.

However, after 8 months of digging, Barney reported in December 1853 that the rock became increasingly hard and dense as tunnelling progressed and that excavation by the convicts was slow (Section 4).

### **5.3 ENTRANCE TO TUNNEL 1**

Peter Sherlock and Adrian, surveyors from Monteath & Powys, Roslyn Kerr, geologist, and Shayne Kerr, photographer, carried out a field inspection to locate possible tunnel sites at Nobbys Head on Friday 11<sup>th</sup> July, 2008. By studying historical photos of the northeastern cliff face in the field, the location of Tunnel 1 entrance is interpreted to lie behind the second light tetrahedron from the breakwater, behind the scree (Figures 5.2a & b, 5.3a & b, 5.10).

From David's 1907 photo, the tunnel is estimated to have been about 3 metres high at the entrance. However, there may have been a step just inside the entrance, so that the tunnel had a reduced height inside the cliff.

## 5.4 ENTRANCE TO TUNNEL 2

According to Keene's sketch of 1854 (Figure 5.1), Tunnel 2 was located on the southwestern side of the dyke. In Figure 5.4a the photo of 1890 shows no indication of this tunnel. Noel Davies (personal communication to the Coal River Working Party meeting 7<sup>th</sup> July 2008, reproduced in Appendix 1), whose informant Maurie Lynch had played in both tunnels as a boy in the early 1920s, indicated that Tunnel 2 lay beyond the scope of the photo of 1890, that is, beyond the left-hand edge of the photo. Comparing the present cliff face with the 1890 view, the entrance to Tunnel 2 must lie southwest of the vertical pink line and the light tetrahedron, at the base of the cliff beneath the scree and beach sand (Figures 5.4a & b).

In May 2009, while viewing some historical photographs obtained by Russell Rigby from David Barnes of the Geological Survey of NSW, the author recognised the possible entrance to Tunnel 2 in a print of a glass lantern slide taken in the early 1900s. The slide may have been taken by Pittman in 1908 or 1916. The tunnel entrance lies at the base of the cliff, well south of the dyke, and falls within the zone that the author predicted for the entrance in Figure 5.4b. Comparing the photo showing the tunnel entrance with the current view of the cliff face, the entrance to Tunnel 2 is interpreted to be behind a large pile of scree, beneath two closely spaced old brick walls exposed in the top of the cliff (Figure 5.11).

This location matches the description Maurie Lynch gave to Noel Davies during a field inspection in 1994. Mr Lynch stated that the entrance to the tunnel was 'directly below brick wall' (Figure 5.12). The dark staining visible on the rocks below the brick walls today suggest the structures may be the relics of a toilet built on the cliff edge, associated with early lighthouse dwellings.

## 5.5 INSIDE THE TUNNELS

How long are the tunnels and what are they like inside?

In December 1853 Colonel Barney, reporting to the Colonial Secretary on the progress of the tunnelling, stated that two tunnels had been driven into the island for a distance of about 24 metres each. Figure 5.13 plots the interpreted positions of the tunnels on an air photo plan, assuming they started from the entrances already described and followed the trend of the major jointing in the rocks for 24 metres into the headland. Tunnelling continued into 1854, but there is no official report of their final length. If the tunnels did not progress much past these distances, then they do not meet. However, Tunnel 1 appears to intersect the dyke!

From tunnel stories in the newspapers and Maurie Lynch's account, young people were able to enter and explore inside the tunnels from the early 1880s until the early 1920s, over a period of 40 years or more (Appendix 1). Sometime between the early 1920s and 1939, scree and beach sand deposits gradually built up to cover the entrances, becoming too thick for individuals to penetrate. Did the damaging Newcastle-Hunter Valley earthquake of 1925, described by Cynthia Hunter (1991), shake loose many blocks of rock on Nobbys? This may have lead to substantial cliff failure and rock falls,

producing large amounts of scree that now hide the tunnel entrances.

An article in the Sydney Morning Herald of 13<sup>th</sup> May 1939 by G.A. King describes a tunnel that extended under Nobbys for about 35 feet (10.7 metres) in about 1914. A man could stand upright at the entrance and for a short distance in, but it became smaller toward the end.

This article sparked the memories of others who had ventured inside the tunnels. In the same paper a week later, 20<sup>th</sup> May, D.H. Stokes of Cremorne described two tunnels that he and his companions explored many times in the early 1880s. The tunnels were approximately at right angles to each other. He gave estimates of the dimensions of the tunnels and the chambers at their ends. Tunnel 1 was about 80 feet (24.4 metres) long and Tunnel 2 was about 100 feet (30.5 metres) long. Figure 5.14 shows his information plotted on a sketch map of Nobbys Head. The tunnels do not meet.

Another memory recalled in the same article of 20<sup>th</sup> May 1939 was that of Mr David Williams of Waverley. While working for the Department of Public Works he explored the two tunnels, but does not give the year. He said that the tunnels are of uniform height 4 feet 6 inches (1.4 metres) and about 4 feet (1.2 metres) wide. The name 'Lieutenant Sutherland' was written with red crayon on the face of Tunnel 1.

Mr Williams recalled his tunnel exploration again for an article in the Newcastle Herald 25<sup>th</sup> August 1945. This later story is longer and slightly different from his first account. Again, he does not give the year he entered the tunnels. He had little difficulty entering Tunnel 1, and found that the end of the tunnel ended like a capital T with a chamber constructed on each side. There was ample space to pack explosives and other materials. 'Lieut. Shortland' was inscribed on the face of the tunnel. He had to dig himself into Tunnel 2 as the entrance was almost blocked. The inside was finished off in the same way as Tunnel 1. Both tunnels were excavated into:

'the same bed of rock, above high-water mark about 4 feet high and 5 feet wide. The drives were damp, but there was no water on the floor of either. I saw no coal'.

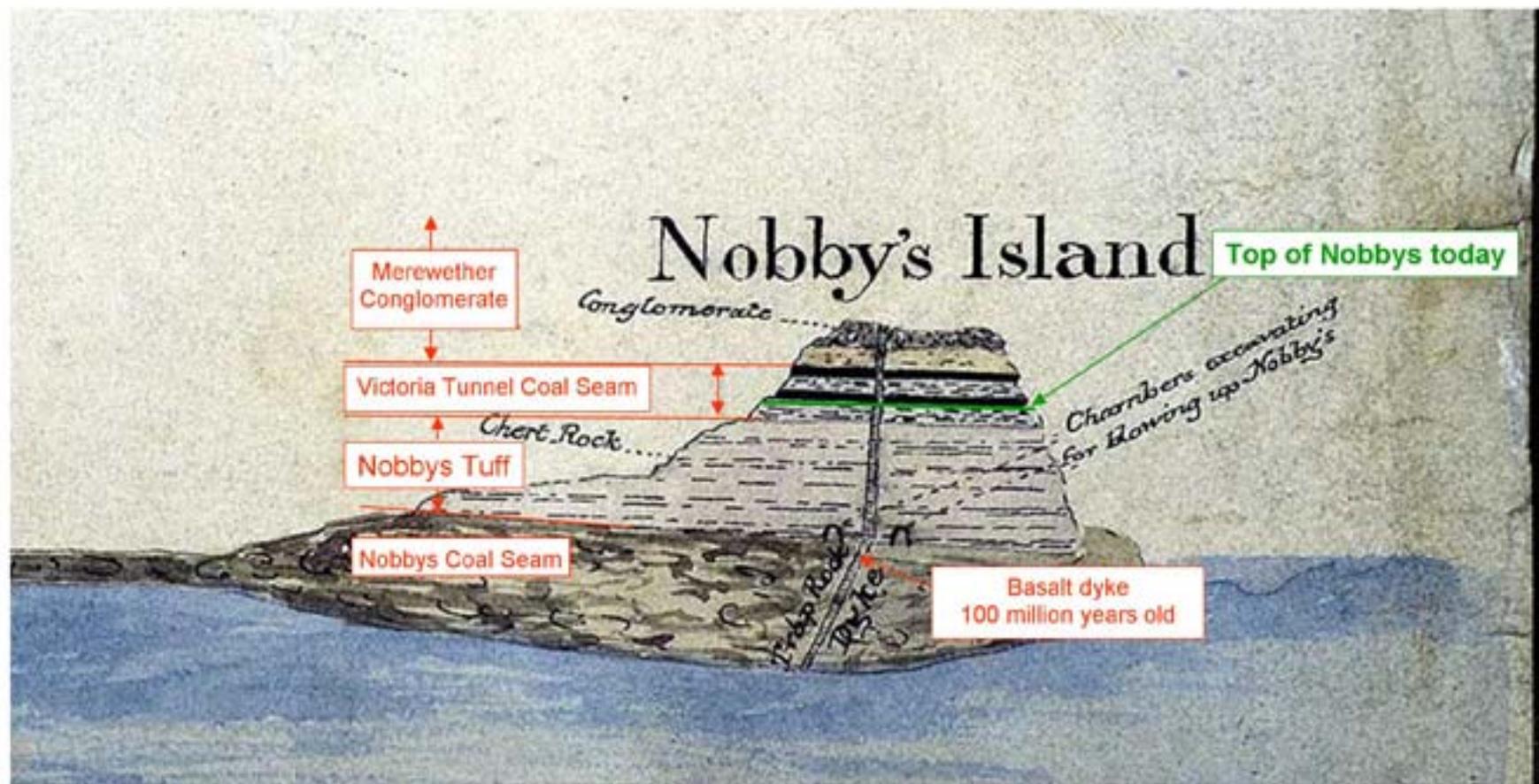
Two local men, Maurie Lynch and Hec Scott, played in the tunnels in the early 1920s when they were 12 or 13 years old. Hec Scott remembered:

'the walls being flat and smooth and some kind of seating arrangements in the chambers. The tunnels were level and well formed.' (Barney 1984)

'...the surface was well hewn, not rough and there appeared to be a chamber there with a table. It seemed to be too well finished to be only a tunnel bored there to place explosives to blow the rock up. I assumed people had slept in that tunnel.' (Scanlon's article Newcastle Herald 20<sup>th</sup> June 1994)

Maurie Lynch, in his visit to Nobbys with Noel Davies in 1994, recalled that the entrances to the tunnels were 8 to 10 feet (2.4 to 3 metres) above sea level, both at the same level, and both tunnels ended in a chamber 3 metres across. The tunnels do not

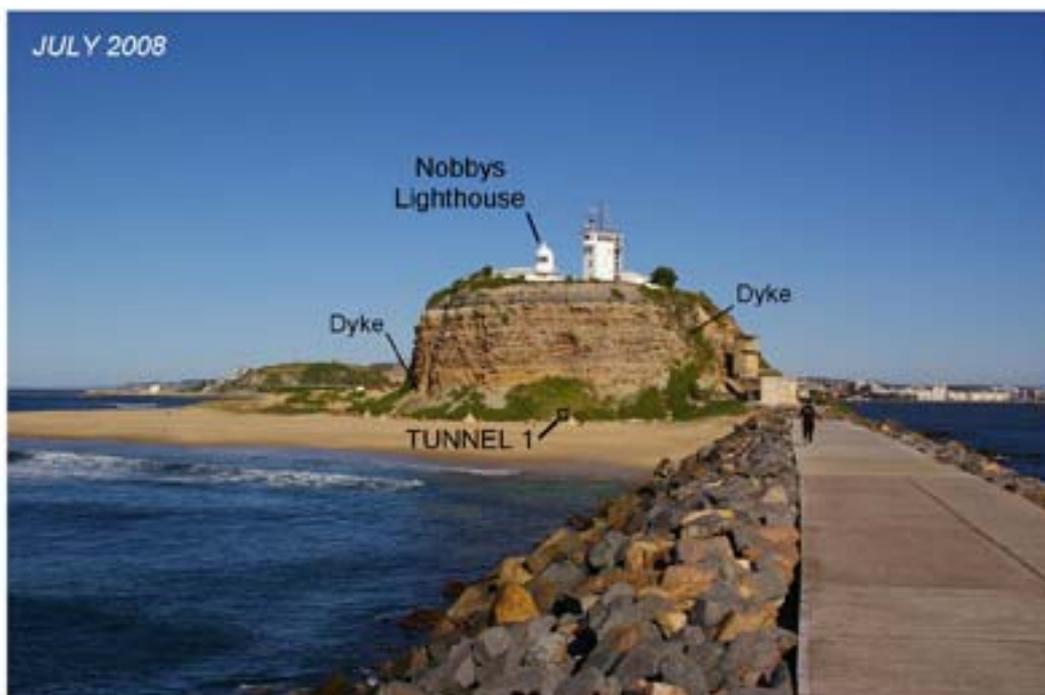
meet (Figure 5.12 and Appendix 1).



**Figure 5.1.** Stratigraphical sketch of Nobbys Island, looking northwest, by William Keene 1854. It shows two chambers (tunnels) that were being excavated for blowing up Nobbys. The author has added the stratigraphy of the Newcastle Coal Measures. The sedimentary layers are about 250 million years old. The dyke is a lot younger, having intruded the sedimentary rocks 100 million years ago. Coal River Working Party blog.



**Figure 5.2a.** Nobbys Head, looking SW in 1901. Entrance to Tunnel 1 is visible at the base of the cliff, below the lighthouse. Coal River Working Party blog and Pittman 1901.



**Figure 5.2b.** Nobbys Head, looking SW, showing estimated position of Tunnel 1, now obscured by scree. Like a wall, the basalt dyke cuts through the headland from the southeast (ocean side) to the northwest (river side). Photo by Shayne Kerr.

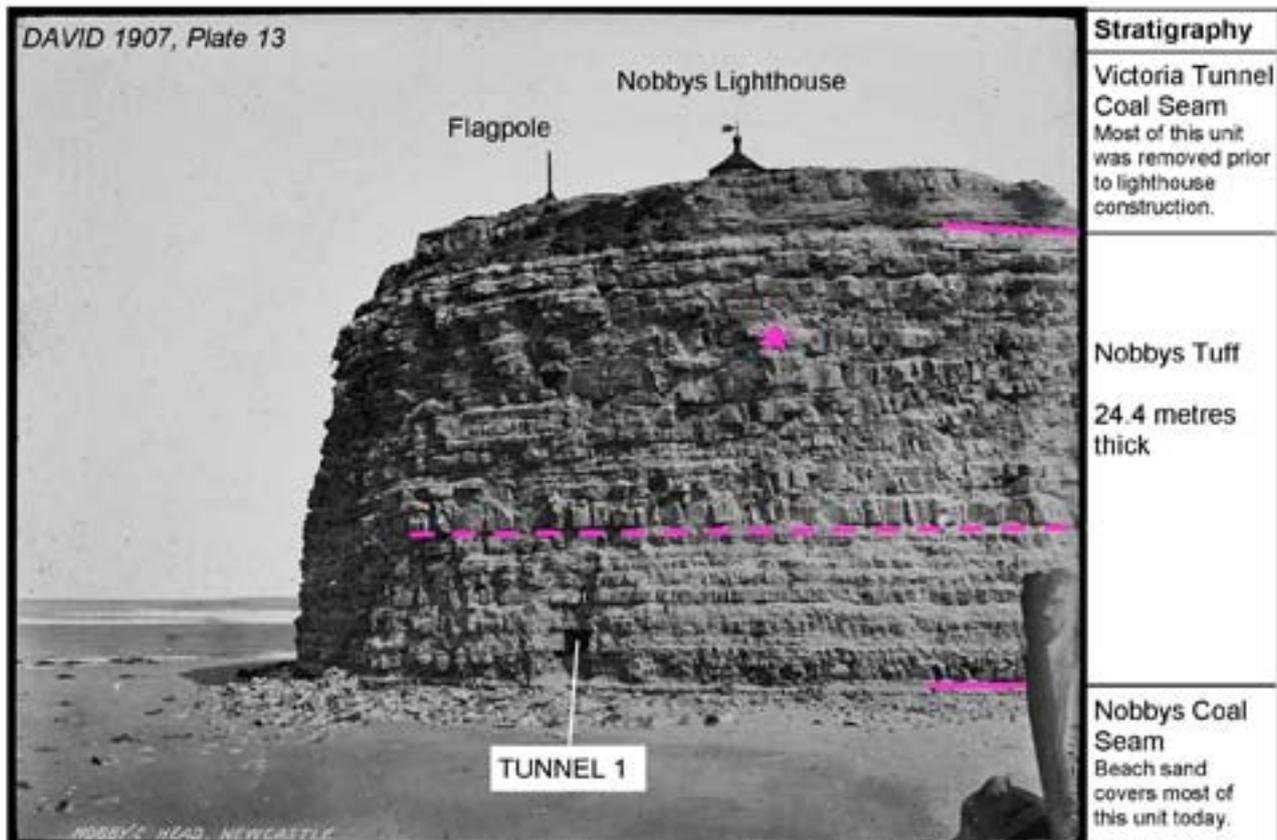
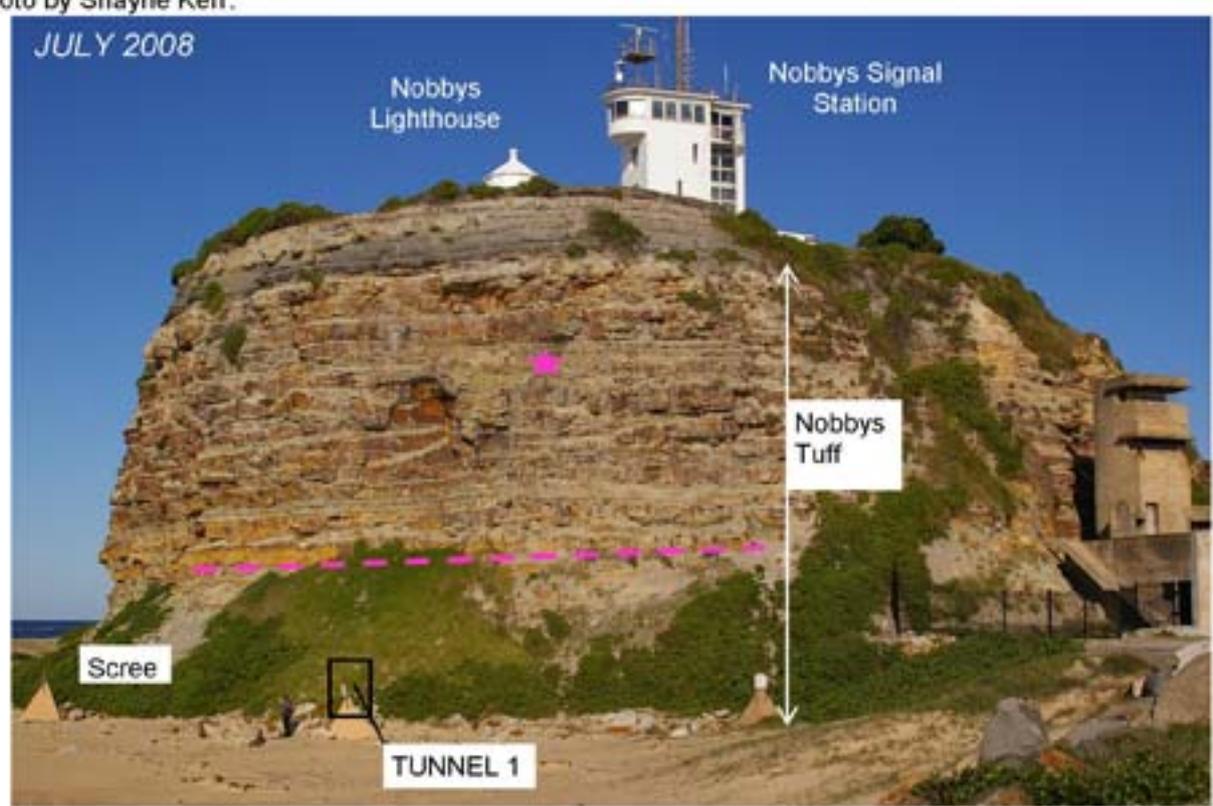
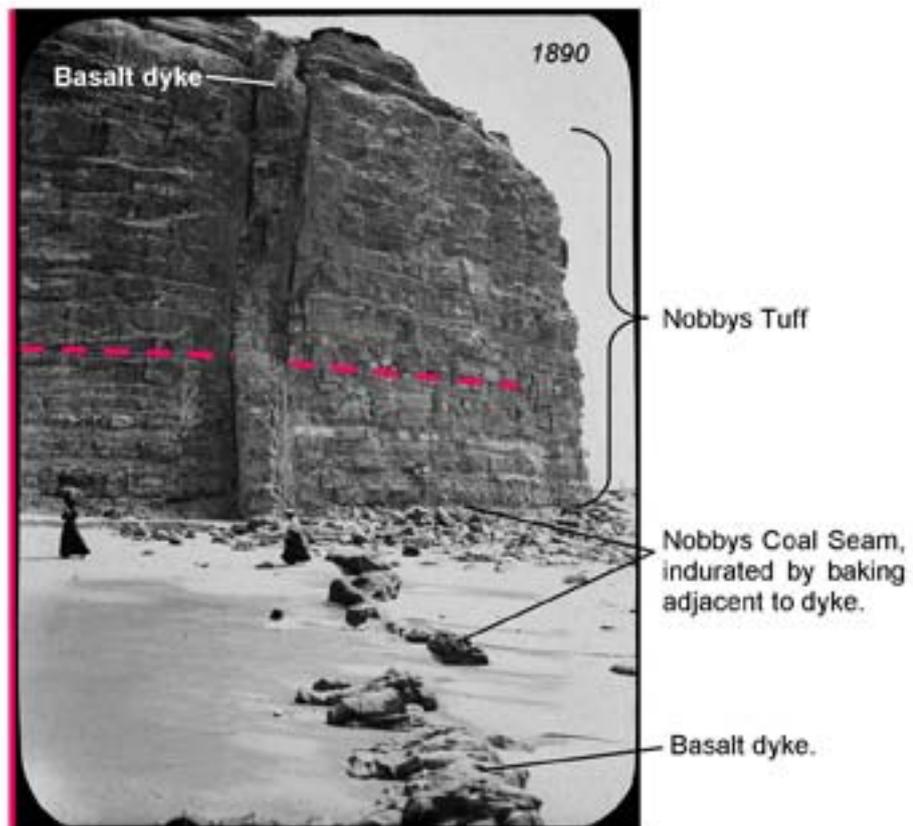


Figure 5.3a (above). Entrance to Tunnel 1 at the base of Nobbys Head, looking SW. CRWP blog.  
 Figure 5.3b (below). Nobbys Head looking SW, showing estimated position of Tunnel 1, behind light tetrahedron. Photo by Shayne Kerr.

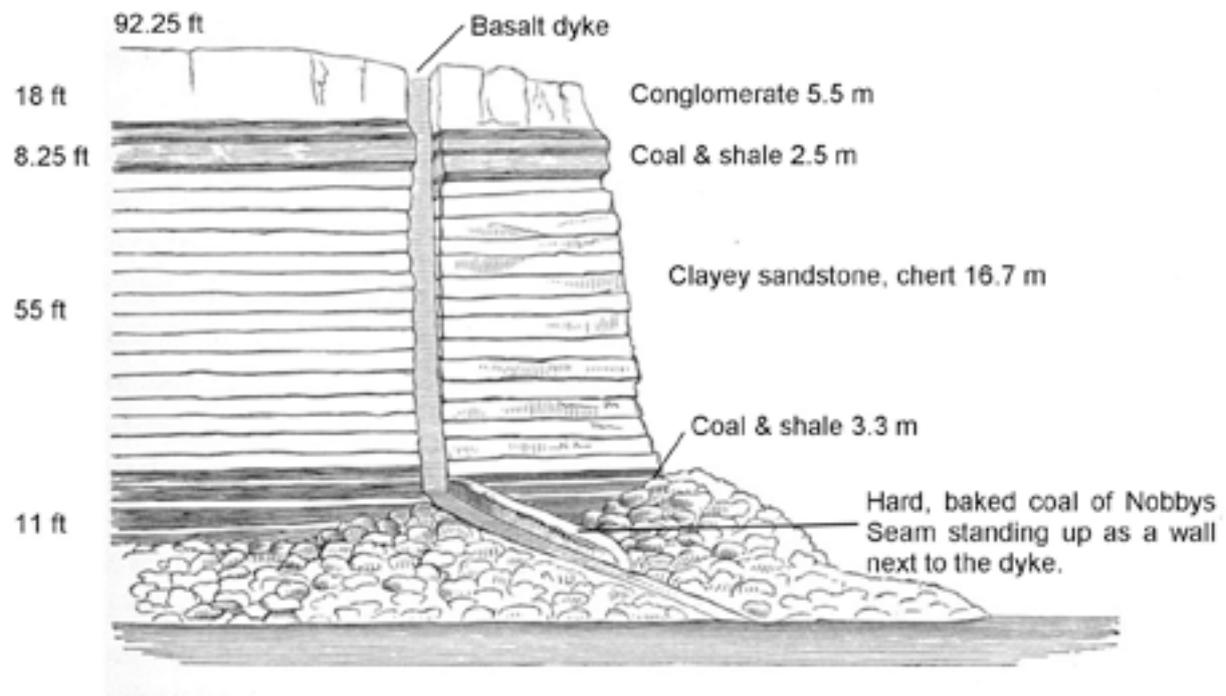




**Figure 5.4a.** Dyke cutting through Nobbys Head, looking NW. No tunnels are visible on either side of the dyke, although they were excavated in the 1850s, before this photo was taken in 1890. Coal River Working Party blog.



**Figure 5.4b.** Current view of Nobbys Head looking NW, compare to Figure 5.4a above. The entrance to Tunnel 2 is hidden by scree and beach sand, and lies somewhere to the SW (left) of the pink vertical line marking the left hand side of the 1890 photo above. Photos by Roz Kerr.



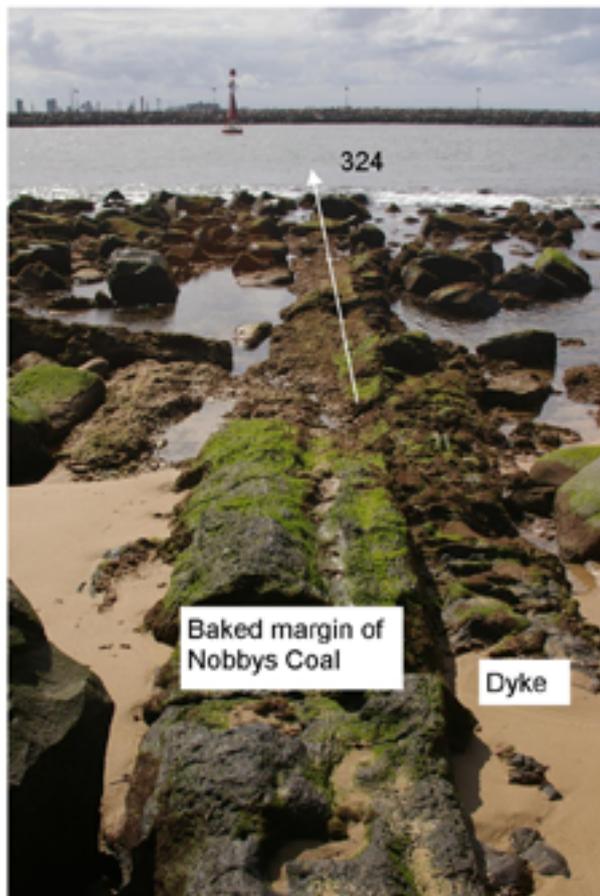
**Figure 5.5.** Geological sketch of the southeastern face of Nobbys Island by Dana in 1840. This was before Macquarie Pier was finished and before the tunnels were dug. However, quarrying of Nobbys to provide rock for building the Nobbys end of the breakwater has just begun. Dana estimated the height of the island to be 34 yards (102 feet, 31 metres). From his estimated thicknesses of strata, given down the left hand side, the height of this face was 92.25 feet (28.1 metres). The rock types as described by Dana are given down the right hand side. Dana (1848).



**Figure 5.6.** Gully eroded in the weathered basalt dyke on the river side of Nobbys Head. The basalt has been altered to soft clays by chemical weathering. It is eroding more rapidly than the more resistant Nobbys Tuff outcropping on both sides of the weathered dyke. Viewed from breakwater, with old fort on right hand side. Photo by Shayne Kerr.



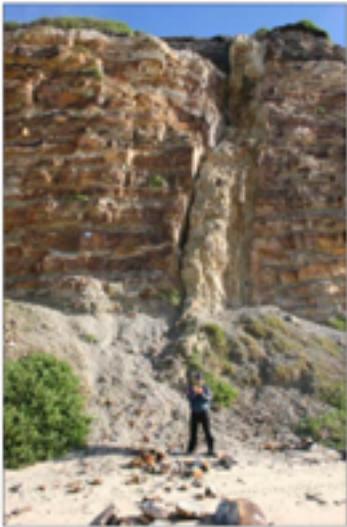
**Figure 5.7.** Outcrop of Nobbys dyke, visible on the rock platform at low tide on the river side of the breakwater, looking NW. The basalt dyke is 3.84 metres wide. Outcrop is discontinuous and sand has been washed into parts with lower relief. When the molten basalt intruded the Nobbys Coal Seam, it cooked the adjacent coal to form a hardened, baked margin about 2 metres wide on each side which is more resistant to erosion and stands 0.5 metres above the dyke. Photo by Roz Kerr.



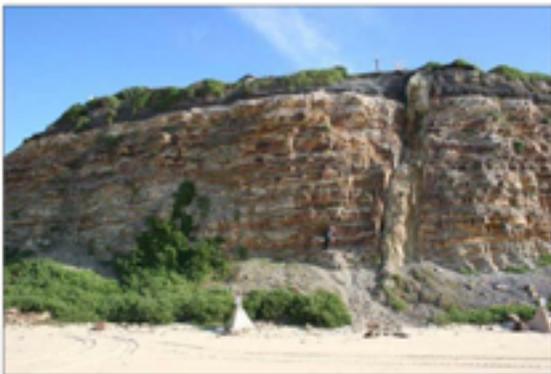
**Figure 5.8 (left).** Closer view of resistant baked margin beside dyke on the river side of Nobbys Head. The dyke trends northwest at 324 degrees magnetic. Photo by Shayne Kerr.



**Figure 5.9 (above).** Flow structure in baked coal, on river side of Nobbys Head. Lens cap is 56 mm across. Photo by Shayne Kerr.



**SURVEY LOCATION**  
MGA E 387872.5 N 6367080.8



**DYKE CENTRELINE LOCATION**



**SURVEY LOCATION**  
MGA E 387878.0 N 6367131.2



**TUNNEL 1 LOCATION**

**Figure 5.10**

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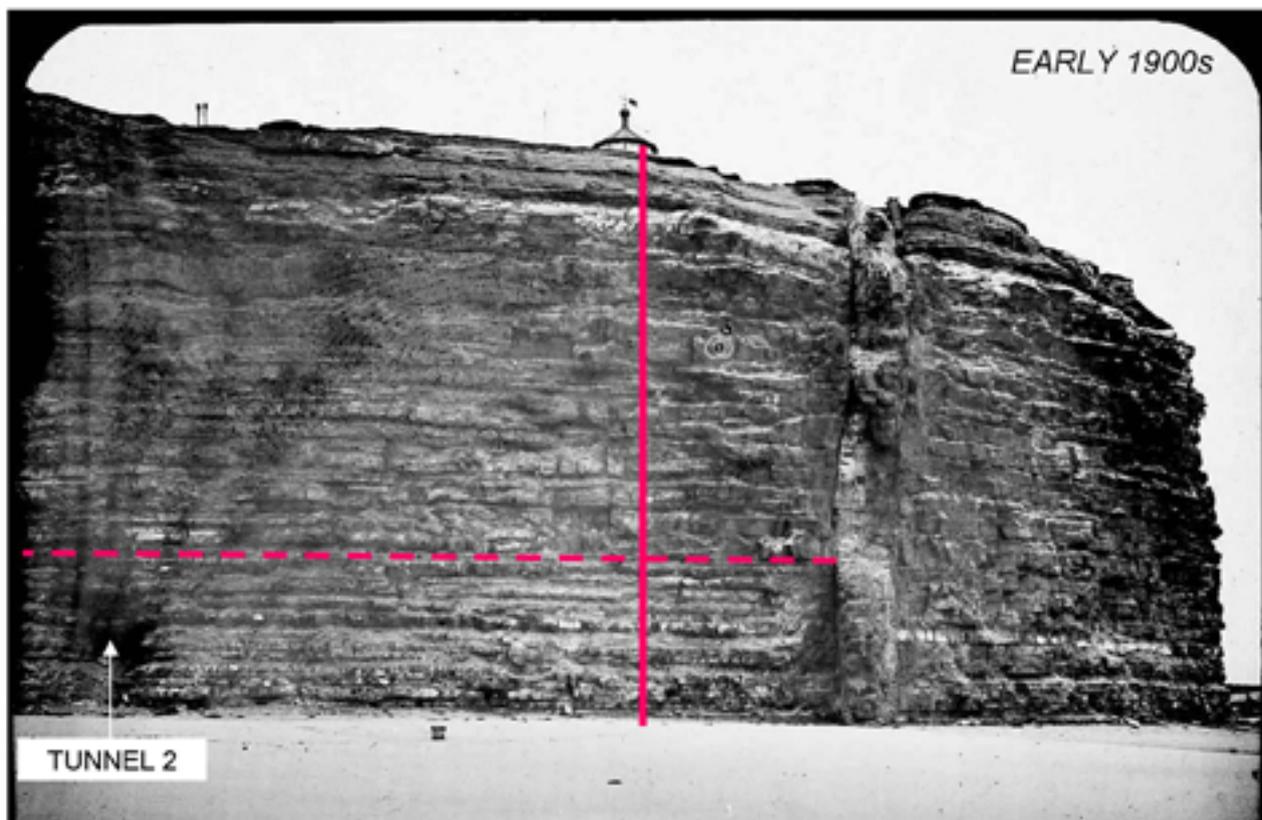
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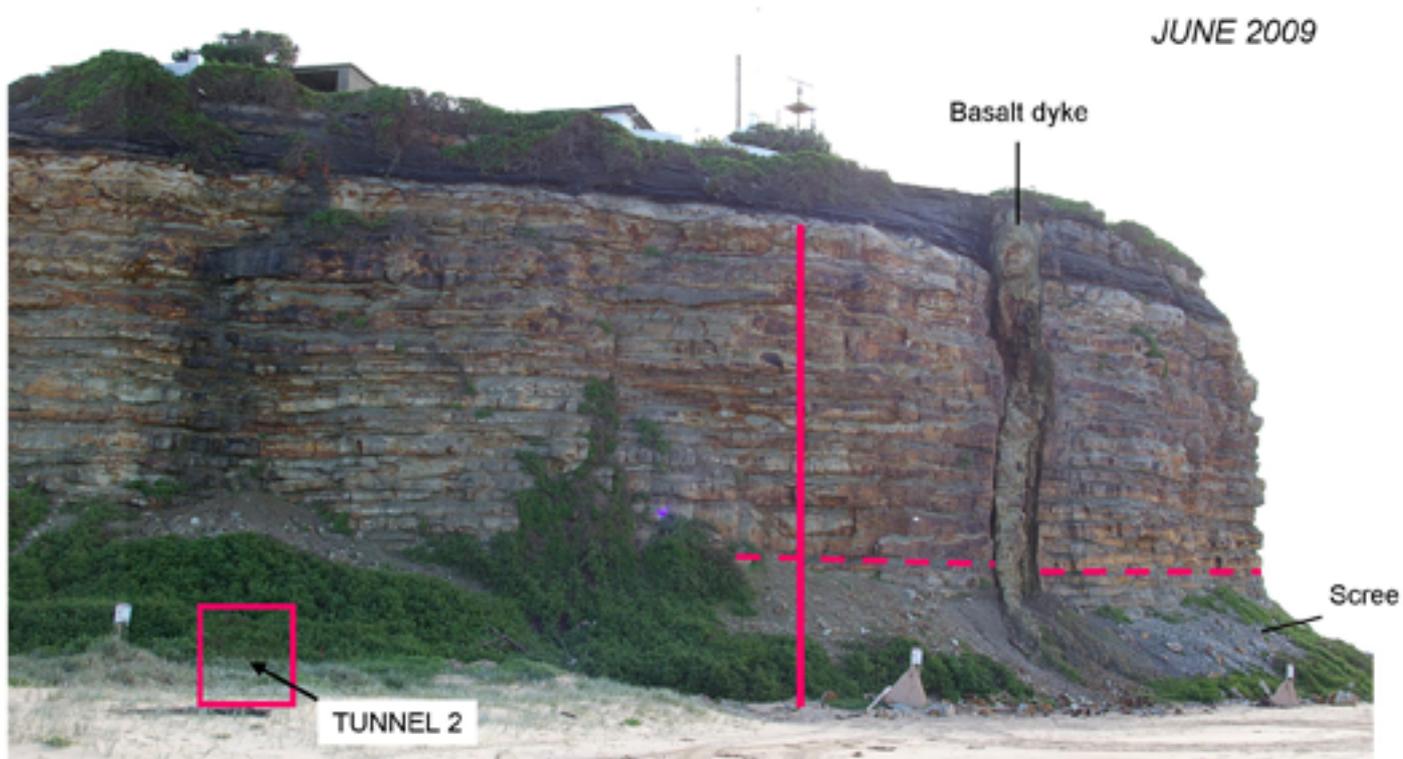
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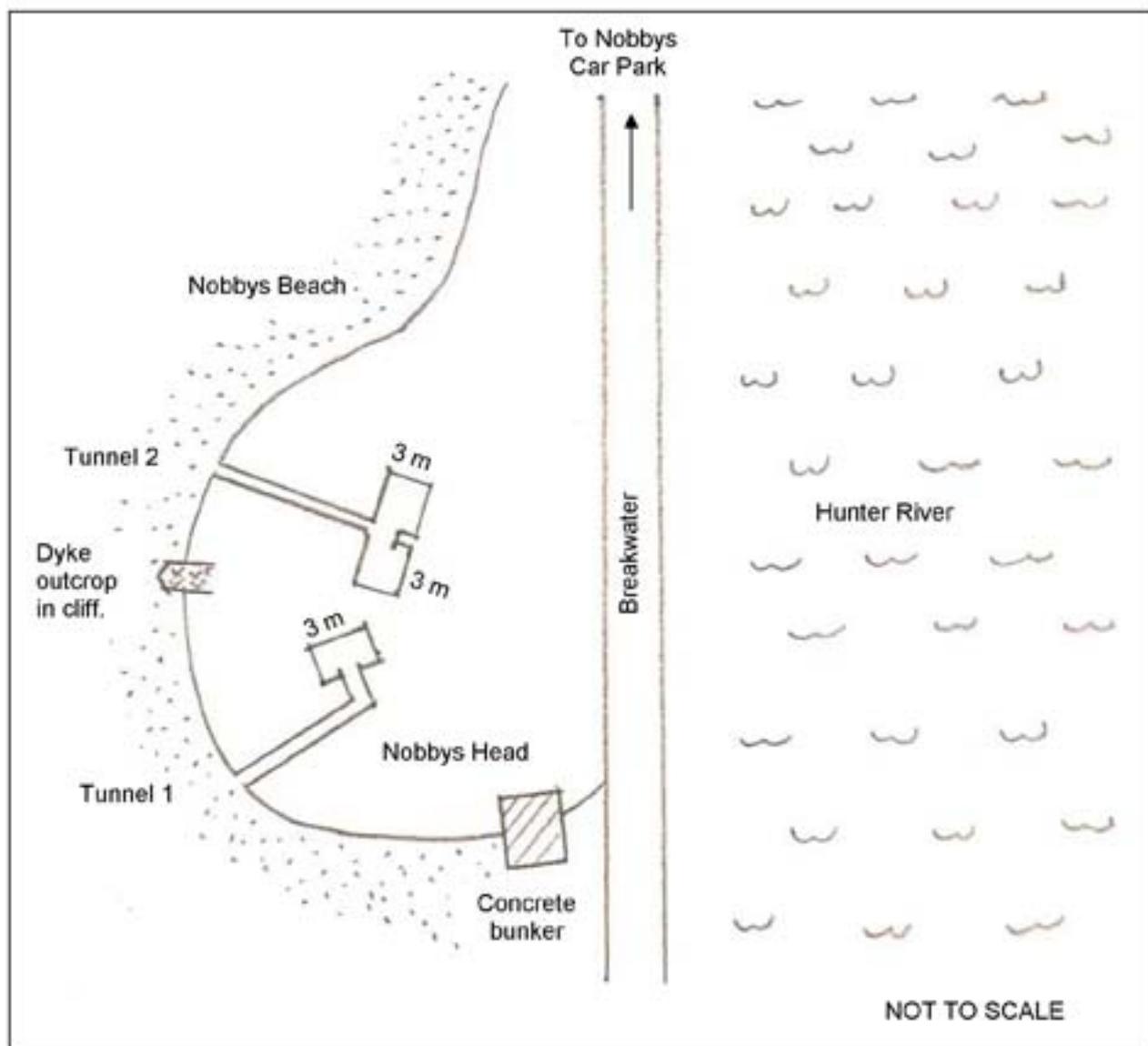
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**Figure 5.11a.** Entrance to Tunnel 2 at the base of Nobbys Head, looking NW. Pink vertical line corresponds to left hand edge of Figure 5.4a. Photo provided by Russell Rigby.



**Figure 5.11b.** Nobbys Head, looking NW. Pink square is the estimated position of Tunnel 2, visible on the old photo above, using geological strata and dyke as guides. Photos by Roz Kerr.



**Figure 5.12.** Sketch map of Nobbys Tunnels, redrawn from a sketch of Maurie Lynch's memories recalled to Noel Davies in 1994. Maurie explored the tunnels as a boy in about 1922. He did not give the lengths of the tunnels. Entrance to Tunnel 1 was 'identifiable by curve and fall away over entry'. Entrance to Tunnel 2 was 'directly below brick wall, coal seam above, where the shale is loosest and no grass growing, covered by 2 metres of loose shale'. Entrances were located on both sides of the dyke. Both tunnels ended in a chamber. The tunnels did not meet.

**Figure 5.13.** Plan view of Nobbys Head, showing interpreted positions of two 1850s convict-dug tunnels. Air photo base provided by Russell Rigby.

Dyke outcrop on rock platform on river side trends 324 magnetic and is 3.8 metres wide.

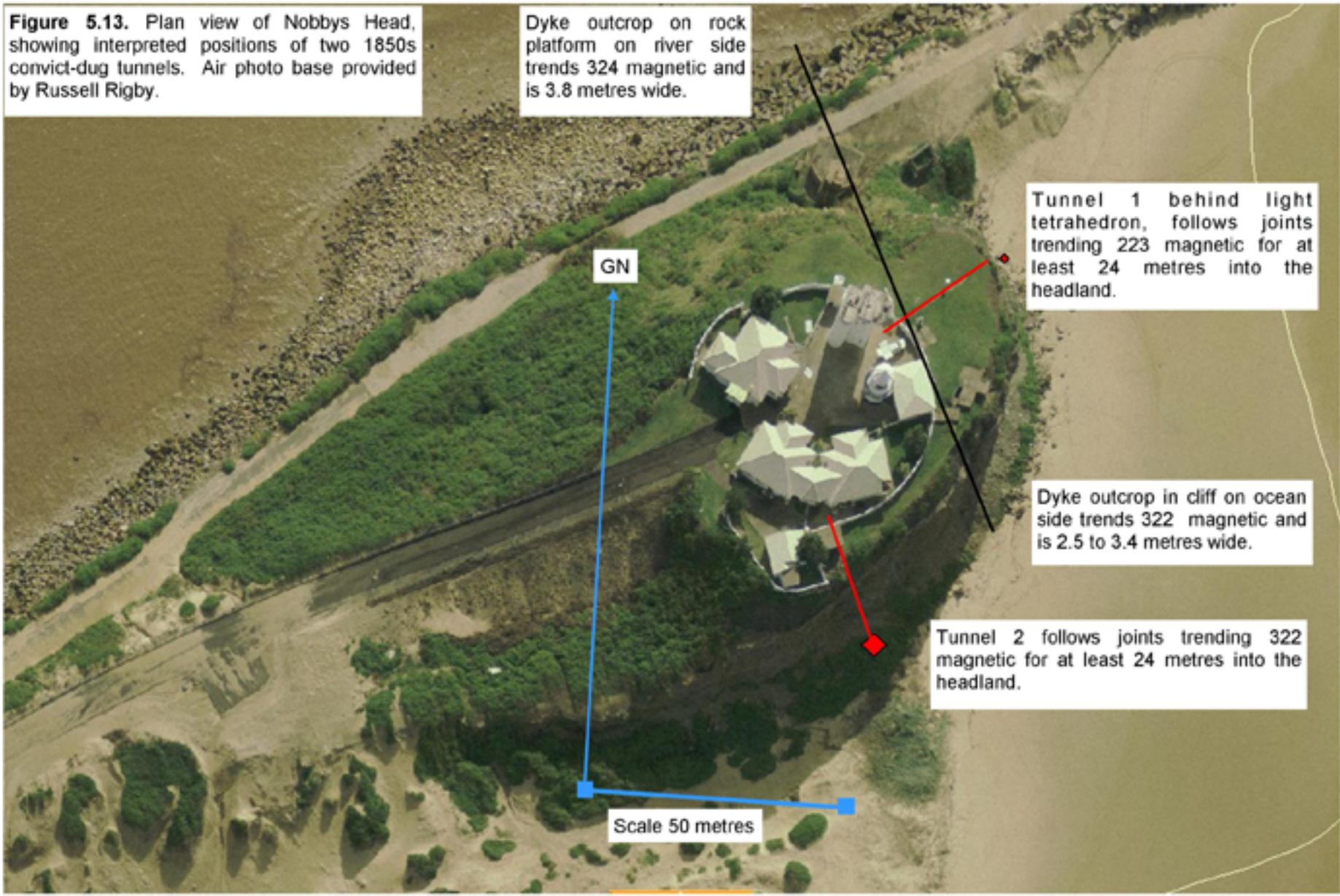
Tunnel 1 behind light tetrahedron, follows joints trending 223 magnetic for at least 24 metres into the headland.

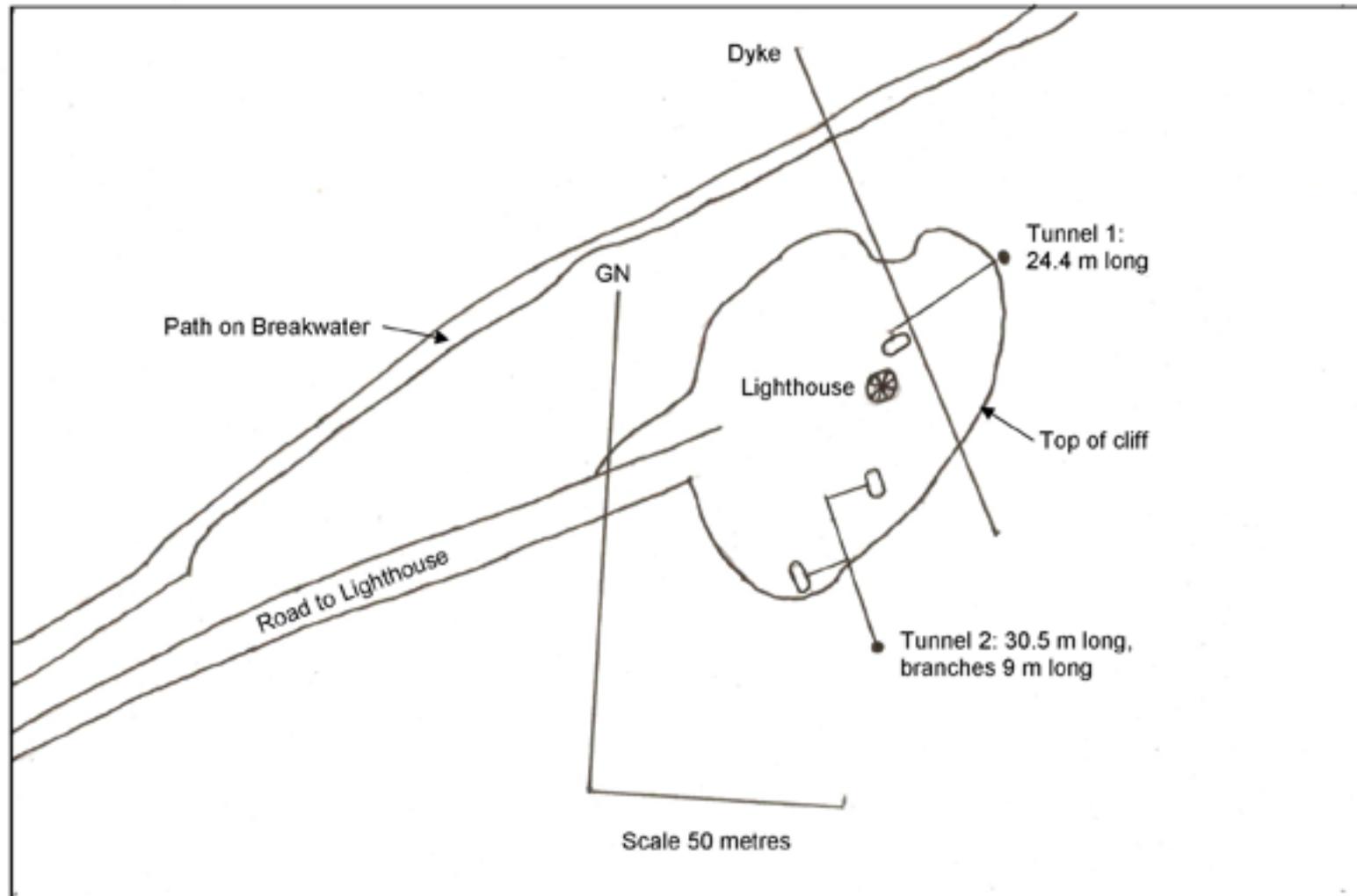
Dyke outcrop in cliff on ocean side trends 322 magnetic and is 2.5 to 3.4 metres wide.

Tunnel 2 follows joints trending 322 magnetic for at least 24 metres into the headland.

GN

Scale 50 metres





**Figure 5.14.** Sketch map of Nobbys Head showing the two tunnels as described by D.H. Stokes in 1939 (Appendix 1). He recalled exploring them in the early 1880s. The tunnels were no more than 1.5 metres wide and 1.8 metres high. The chambers were oval shaped and about 4.6 metres long, 2.4 metres wide and 2.1 metres high. He did not see any coal faces in the tunnels or any coal outside the tunnels at tunnel level.

## 6. CONCLUSIONS

1. During 1853 and 1854 convicts, using hand tools, excavated three tunnels into the base of Nobbys Head. The tunnels, authorised by the Colonial Government, were designed for placing explosives to blow up Nobbys. This was deemed the quickest and most efficient way to reduce its height to improve navigation into Newcastle Harbour and to provide a site for a new lighthouse.
2. The tunnels were planned by two civil engineers: Colonel George Barney, the Chief Commissioner of Crown Lands and Gother Kerr Mann.
3. Prolonged public protest against the plan, for practical and environmental reasons, eventually lead the Government to abandon the proposed blasting.
4. Historical photographs indicate the location of the entrances to two of the tunnels. The entrances are just above the high tide mark at the base of Nobbys, in the Nobbys Tuff. Scree and beach sand now cover the entrances. A long armed excavator would be required to remove this loose material to reveal the entrances. It is believed that the tunnels were never officially sealed.
5. Tunnel 1 is in the NE face and Tunnel 2 is in the SE face of Nobbys, both on the seaward side. The tunnels were dug at approximately 90 degrees to each other, following prominent SW and NW trending joints in the Nobbys Tuff. Tunnel 1 may intersect the basalt dyke.
6. Both tunnels are at least 24 metres long, and up to 1.8 metres high and 1.5 metres wide. They open out into larger chambers at the end. The tunnels do not meet beneath Nobbys.
7. The third tunnel may lie on the river side, its entrance covered by the breakwater, or on the southern side beneath the access road to the top of Nobbys.
8. Suggestions to find and open up the tunnels to the public have been made in the past, for Newcastle's 1988 bicentenary celebrations and for the city's bicentenary celebrations in 1997. Cynthia Hunter also recommended opening up one of the tunnels in her report on the Coal River Historic Site, for Newcastle City Council's Coal River Tourism Project in 2001. The suggestions have not been followed up.

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Coal River Working Party <http://coalriver.wordpress.com/>

Maitland Mercury Online <http://www.nla.gov.au/ferguson>

### **Newspaper Articles referring to Nobbys' Tunnels, transcribed in Appendix 1.**

Sydney Morning Herald 4<sup>th</sup> August 1853

Maitland Mercury 17<sup>th</sup> June 1854

Maitland Mercury 1<sup>st</sup> July 1854

Sydney Morning Herald 5<sup>th</sup> July 1854

Sydney Morning Herald 22<sup>nd</sup> August 1854

Maitland Mercury 11<sup>th</sup> November 1854

Sydney Morning Herald 26<sup>th</sup> April 1855

Maitland Mercury 28<sup>th</sup> April 1855

Newcastle Sun 2<sup>nd</sup> May 1918

Sydney Morning Herald 13<sup>th</sup> May 1939

Sydney Morning Herald 20<sup>th</sup> May 1939

Newcastle Morning Herald 25<sup>th</sup> August 1945

Newcastle Herald 20<sup>th</sup> June 1994

## **APPENDIX 1 - TUNNEL STORIES**

Newspaper articles and an eye witness account referring to Nobbys tunnels are presented below. Unless otherwise stated, the articles were transcribed by the author.

### **1853 NEWSPAPER ARTICLE IN SYDNEY MORNING HERALD 4<sup>th</sup> AUGUST page 2.**

**Extract from 'Legislative Council. Wednesday' August 3, 1853.**

Mr. Cowper found there were three public works progressing at Newcastle, performed by convict labour, - the breakwater, the erection of a light-house on Nobby's Island, and the wharfs: he wished to know under whose directions the convicts were instructed for these three works; and whether the convicts so employed were all under the superintendence of the superintendent of convicts? He also wished to know whether the works at Nobby's had been commenced, and what progress had been made in them?

The Colonial Secretary could offer no definite answer to the last question of the hon. member without further inquiry. A report on the subject had been required from Major Macpherson at Newcastle, who stated that to cut down Nobby's to the extent necessary would require large gangs of convicts. In consequence of this report, the Superintendent of Convicts and the Civil Engineer went down to Newcastle at the request of the Government, and had reported that the labour might be greatly decreased by blasting the rock, by forming chambers in it, and depositing large charges in them, to be fired by electricity. The rock so blasted would be thrown out eastward, and thus would form a support to the breakwater. He supposed the work of forming these chambers was going on. The disposition of the convicts was, of course, under the authority of the Superintendent; but he supposed the greater number were employed in the completion of the breakwater.

### **1854 NEWSPAPER ARTICLE IN MAITLAND MERCURY 17<sup>th</sup> JUNE.**

**Extract from 'Legislative Council. Wednesday, June 14, 1854. (Abridged from the Sydney papers.)'**

#### **LIGHT-HOUSE AT NEWCASTLE**

Mr. Cowper moved for returns of any petition presented to the government against the destruction of Nobby's Island at the entrance to the harbour of Newcastle, preparatory to erecting a light-house upon it; and for all correspondence on the subject. In making this motion Mr. Cowper remarked that he was a member of the committee which recommended that Nobby's Island should be cut down to sixty feet above high-water mark, so as to make a base for the erection of the light-house. But the inhabitants of Newcastle and the masters of vessels trading to the port were alarmed to find that instead of being content with this, the engineer superintending the works was boring chambers with the intention of blowing up the whole mass with gunpowder. And further consideration had indeed induced many masters of vessels frequenting the port, and other competent persons, to believe that it would be better not to

cut down Nobby's at all, but to erect the light-house upon Beacon Hill. And he believed that in December last a petition was forwarded to the Governor General from the inhabitants of Newcastle and the masters of vessels, praying that an enquiry might be made before Nobby's was blasted, and suggested that the light-house should be placed on Beacon Hill instead of Nobby's. He believed that the chambers for blasting were nearly completed. They had occupied a much longer time than the whole process was expected to take, and the work would cost far more than anticipated, 2000 pounds being the total estimate, while the gunpowder alone would cost 1000 pounds. But how ever the facts stood, it was evident that it was essential that the intentions of the government should be ascertained. While on the subject, he would urge on the government the duty of taking immediate measures for the improvement of the port of Newcastle, the trade of which was rapidly growing, and where forty or fifty vessels were lying. Yet the wharves were left in a disgracefully dilapidated and inefficient condition, and the masters of vessels complained that great damage was being done to the harbour by the sand coming down and drifting into it.

Captain King seconded the motion.

The Colonial Secretary, in replying, read the petition referred to. It stated that the entrance to the port was indicated to mariners by the remarkable promontory, formerly an island, known as Nobby's, which was most important in sheltering vessels from southerly gales, and a most eligible site for a light-house; that the memorialists had heard that it was intended to destroy the said promontory by means of gunpowder, which they believed would obstruct the entrance to the port, the channel being already exceedingly narrow, and they prayed enquiry, in order that the promontory might be preserved, for the purposes of shelter, and for erecting a light house thereon. This petition was referred to Colonel Barney, who in reply pointed out that it was not intended to entirely remove Nobby's, as appeared to be apprehended, but only to cut it down to sixty feet above high water mark; that the works in progress would not tend to destroy the shelter now afforded to vessels entering the port, nor to obstruct the entrance. The Colonial Secretary proceeded to explain that the use of gunpowder had been resorted to, because it would be much quicker and less costly than the process of cutting down; blasting taking six months, and cutting down three or four years.

The Chief Commissioner of Crown Lands (Colonel Barney) stated that it was not intended to blow Nobby's up, but the operation of gunpowder was preferred because it would reduce the amount of labour required for cutting it down, and for accelerating the work. It was correct that, by use of gunpowder, work could be performed in six or seven months which would extend over three or four years by the tedious process of cutting down. The mines were at present in a fit state for use. The operation was intended to lower Nobby's to sixty feet above high water mark, and to make that the base of the lighthouse. By mining the lower portion of the promontory, which would be blown seaward, the upper part would fall down, but a base perfectly sound and untouched would remain, affording sufficient space for the erection of a dozen lighthouses. The action of the

gunpowder had been too well calculated to admit of the possibility of the mass forced by the blast being blown into the harbour, but on the contrary, it would prove highly beneficial in reducing the expense of labour, and also afford materials for the protection of the breakwater. In fact, the intended process did not offer the slightest chance of damaging the harbour.

Captain King thought the explanation just made was satisfactory as to the cutting down Nobby's only to the desired height for the lighthouse, and removed the apparent apprehension that the whole island was to be removed. As to the other points, of the loss of shelter to vessels by Nobby's being cut down, and the danger of blocking up the channel by fragments thrown out by the blasts, he would say a few words. On the first point, the angle formed by Nobby's was so small, that it was dangerous for vessels to anchor within it, and when compelled to do so by necessity, they ought to warp up into the harbour, particularly during a gale from the south-east, when the swell was heavy. So Mr. Livingstone, the harbour master, whose long experience entitled his opinion to respect, said in his evidence, referring to the inconvenience caused to vessels entering, from the height of Nobby's, that with the wind at south-west, south-south-west, or south, they were down on the Oyster Bank before they got a true wind. Mr. Livingstone also was of the opinion that Nobby's was the best place for the light-house, and the Flag Staff Hill for a battery - although this latter position it had been suggested would not command some points where a ship might lie off and on and throw shot into the town, although it commanded the entrance. The report of the committee (of which he was chairman) was very brief, and simply recommended Nobby's to be cut down to sixty-five feet, leaving a parapet round; and this he thought from observations elsewhere made, would have been a very simple work. But the engineer superintending the works stating that it would take three or four years to cut down forty feet, Colonel Barney recommended the use of gunpowder as more speedy and less costly. He believed that by the blasting process about a third of the island would be shaken seaward, leaving a sufficient base, while the stuff cast out seaward would add to the solidity of the breakwater in course of formation. He thought that the petitioners must be under a misapprehension, and that no injury would accrue to the harbour by the process intended.

Mr. Cowper, after the explanation made, was inclined to think the petitioners must have laboured under a misapprehension, as he had himself, that the whole island was to be blown up. Still he hoped time would be given to the people of Newcastle to express their opinions further upon the matter, for he had been assured, not only by masters of vessels, but by engineers, that danger to the port was to be dreaded. Mr. Livingstone appeared now also to be of opinion it would be better to leave Nobby's alone, and place the light-house where the beacon was now placed.

The motion was then put and carried.

**1854 NEWSPAPER ARTICLE IN MAITLAND MERCURY 1<sup>st</sup> JULY, page 4.**  
Extract from 'Legislative Council. Tuesday, June 27, 1854 (Abridged from the Sydney papers)'

NOBBY'S ISLAND

Mr Cowper presented a petition from certain inhabitants of the city of Newcastle, masters of vessels, and others trading the port of Newcastle, praying that Nobby's Island may not be destroyed or reduced until further investigation. Petition received.

**1854 NEWSPAPER ARTICLE IN SYDNEY MORNING HERALD 5<sup>th</sup> JULY, page 4.**  
Extract from 'Legislative Council. Tuesday, July 4, 1854.'

Mr Cowper enquired if the Government intended to take any steps in consequence of the petition which he had on the former day presented against the destruction of Nobby's Island?

The Colonial Secretary was unaware of any intention on the part of the Government to swerve from the course they were at present pursuing with regard to Nobby's Island. In the course of proceedings going on they had been guided by the advice of their own officers.

**1854 NEWSPAPER ARTICLE IN SYDNEY MORNING HERALD 22<sup>nd</sup> AUGUST.**  
Extract from 'Newcastle, Burwood, and Stockton, No. 1'.

Inasmuch, as in the various plans suggested for the improvement of the navigation of the harbour of Newcastle, and the affording safer means of ingress and egress, the partial destruction of Nobby Island appears to be strongly recommended by some influential officers of the Government; (by whose orders, indeed, exploding chambers have already been constructed at its base on the seaward side) - it may be desirable to inquire into the expediency of this threatened proceeding which is contemplated with almost universal disapprobation, not only by the inhabitants, but by every well-informed shipmaster who trades with the port, and whose experience in respect to its navigation renders his opinion valuable. We will premise our remarks upon this island by reminding our readers that the Colonial Secretary, lately, in his place in Council, stated, that the officer who had recommended the partial destruction of Nobby desired only to reduced it to within 65 feet of the water level; or, merely to blow off the sea front of the island. Now, we will set out by expressing our utter inability to understand how *any part* of the island can possibly be left standing after the explosion of the large quantity of powder which it has been proposed to place in the three chambers, driven at a level, very little above high water mark. We feel perfectly assured, that by such an explosion as is contemplated, the *whole mass* of rock of which the island is formed must, necessarily, be so reft and rent, as to end in its entire demolition for any purposes of light-house foundation. Our reasons for expressing so unqualified an opinion, we proceed to explain; observing that the remarks we are about to

offer, are the result of a careful personal examination of the island.

The original formation of Nobby was mainly flinty *Chert* .....The *Chert* of Nobby is compact, and in many places laminar; of crystalline hardness; splintery, and conchoidal in its fracture; sharp in its fragments; opaque, but translucent on the edges; grey, green; red, and black in color.....When split into parallel *laminae* the *Chert* of Nobby makes an excellent slate, freely taking the lead pencil. Some specimens which we procured promise to make serviceable hones.....from Nobby and the rocks on the seaboard from Newcastle to Burwood - the line to which our inspection was limited, and which presents an interesting series of geological phenomena - most remarkable and valuable specimens may be procured.

...we return to our argument against the demolition of Nobby Island.

Having shown that its *original* formation was (nearly in whole) *chert*, or *keralite*, we have now to describe a more modern and a most important feature in its *present* composition, namely, the interesting geological phenomenon of a dyke of trachyte completely intersecting the rock from its base to the conglomerate at its summit. This dyke, whilst its invasion cut the island into two several parts, has made no sensible derangement of the planes of its stratification, but presents the appearance of a vertical and massive wall of masonry, running in a direct course, N. to E., across the island, which in all probability owes to this trappean invasion its preservation from the destroying cause which the sea waves, ever rolling at its base, presents. "There is nothing," says Sir Charles Lyell, "which affords so much protection to a mass of strata against the undermining action of running water as a perpendicular dyke of hard rock"; and this protection is, in every respect, afforded to Nobby by the dyke we are describing, and which consists of far harder materials than the strata which it traverses.

That dykes, or walls of trap-rock, such as this, are analogous to volcanic products, and distinctly referable to former submarine eruptions, no one, we presume, can for a moment doubt. The trap dyke, dividing Nobby, then, is of igneous origin, injected, it must be assumed, in a melted state through the older strata, but since forming a compact wall of lava, the parallelism of the opposite sides of which correspond almost as regularly as the two opposite faces of a massive artificial structure. In altitude, it is about 200 feet, in vertical extent about 300 feet at the base, diminishing, upwards, to 150 feet; in breadth 6 feet from the base to the summit. A coal-black coating, something like pitch-stone, is found at the contact of the dyke with the invaded strata; whilst the black compact lava, long since cooled down under the pressure of the sea, may be traced far into the water on both sides of the rock.

Such, then, is the composition of the strata and the intercalating dyke of Nobby, the sea-front of which, *only*, the Colonial-Secretary assured the Council it intended to blow down! Now, if the powder chambers had been driven only on the sea-side of the dyke, we can understand that the effect of the explosion

*might* be as desired. But, as there are chambers on each side of this volcanic wall, their explosion would so rupture the whole of the island that the remains would have to be taken down to the level of the chambers, and thus the now proud Nobby would present the same ludicrous appearance which Pinchgut already exhibits in the harbour of Port Jackson. The gallant officer, whose rock-destroying *penchant* we are considering, appears to regard all rocks as lifting their intrusive heads only to be “blown down”; just as a certain high legal functionary declares that his clerks exist only to be “blown up”.

...We have many precedents in England of the demolition of large masses of chalk cliff; but those rocks were of a much more homogeneous character than that of the thin layers of the *chert* of Nobby, which by such an explosion, or rather explosions, as proposed, would be shaken to pieces like a drystone wall. And *cui bono!* let us ask, if the result of the explosions were to equal the expectations of the engineer. In the first place, one of most picturesque landmarks of the Australian coasts would be wantonly destroyed and effaced from the charts of their navigation. Secondly, another foundation for a lighthouse would have to be sought, whilst now a most eligible one exists. Thirdly, the shelter from the south winds, which Nobby now affords to hundreds of vessels, annually, that safely anchor under the rock until the tide allows them to enter the port - would no longer be afforded; and, where one vessel is now driven on the Oyster Bank, in consequence of running too far to make the shelter of Nobby available, a hundred will (it is too probable) be driven there when the protecting rock no longer exists.

Having thus, at some length, referred to an important question, upon which very conflicting opinions have been submitted to the Legislature, we shall conclude by observing that, not only in our deliberate judgment is the site of Nobby the best that Newcastle possesses for the construction of a light-house, but from personal inspection we do not hesitate to say, that a sufficiently secure foundation is now ready for the erection of a shaft (say 100 feet high), on the platform at the end of the breakwater tramway....

In connexion with our protest against the destruction of Nobby, we would suggest, that the summit of the rock is naturally the most eligible site for the flag-staff and the signal station; as the platform already described is the most proper and legitimate foundation for the light-house. On the summit, according to actual measurement, an area of 150 square feet can be railed in - a space sufficient for all purposes of signal manoeuvring; and this, which is the highest point on this part of our coast line, would become much more prominent by the shaft and lantern of the light-house towering high above it. The connecting closely, by this means, the two establishments would be economical in the financial sense; seeing that the attendants of both would be under the surveillance of one superintendent.

**1854 NEWSPAPER ARTICLE IN MAITLAND MERCURY SAT 11<sup>th</sup> NOVEMBER, SUPPLEMENT.**

**Council Papers. Navigation of the River Hunter.**

**Report from the Select Committee on the Navigation of the River Hunter.**

**By chairman of the committee, Mr. George R. Nichols, Legislative Council Chamber and member for the Northumberland Boroughs, Sydney, 3<sup>rd</sup> November 1854.**

The select committee of the Legislative Council, appointed on the 4<sup>th</sup> July, 1854, "to inquire into the best means of facilitating the navigation of the river Hunter and the improvement of the harbour of Newcastle," and to whom were referred two petitions, one from certain inhabitants of the city of Newcastle, masters of vessels and others trading to the port of Newcastle, praying that Nobby's Island may not be destroyed or reduced without further investigation; and one from certain inhabitants of the Hunter River district and others interested in its prosperity, praying that measures may be taken for improving the navigation of the river Hunter - have agreed to the following report:-

Your committee considered it proper to examine personally some of the petitioners who had expressed themselves as opposed to the cutting down Nobby's Island, and still more to the reducing its height by blowing it up - for which preparation had been made by the Colonial Government. They therefore requested the attendance of Mr. Lodge, of Newcastle, who has been for many years engaged in the trade of the port as a master mariner, and of Mr. Mulhall, master of the steamer Collaroy. Their evidence will be found appended to this report. The committee have also taken the evidence of Captain Moriaty the port master, and of Mr. Livingstone, the harbour master of Newcastle. The evidence thus given is unquestionably conflicting, but having duly considered the various points urged by these gentlemen, and the opinions expressed by them respectively, your committee have determined to recommend that the proposed lighthouse should be erected on the top of Nobby, and that that island should be merely prepared by levelling and thus making a ledge a few feet below its present summit. The adoption of this course will, it is believed, combine all the advantages which have been suggested as desirable by retaining the island for a landmark, and by placing the lighthouse not only in the most conspicuous place, but as preventing the necessity for making explosions, the idea of which has caused so much apprehension among the residents at Newcastle.

**1855 NEWSPAPER ARTICLE IN SYDNEY MORNING HERALD THURS 26<sup>th</sup> APRIL page 5.**

Mr. Wright has accepted a contract for reducing the conical point on Nobby's Island, at the entrance to Newcastle, preparatory to the erection of a lighthouse thereon. The work will be commenced immediately.

**1855 NEWSPAPER ARTICLE IN MAITLAND MERCURY SAT 28<sup>TH</sup> APRIL SUPPLEMENT page 2.**

Mr Wright, the contractor for the Hunter River Railway works, has entered into a contract with the Government to cut about 25 feet off the top of Nobby's island, to make a flat surface on which a light-house can be erected. The soil is to be thrown out seaward, to strengthen the breakwater. The work was to be commenced yesterday morning, a number of the men who arrived for the Hunter River Railway being employed on it.

**1918 NEWSPAPER ARTICLE IN NEWCASTLE SUN 2<sup>ND</sup> MAY.**

**Extract from 'Newcastle Streets. History and Nomenclature. Great names recalled'.**

Bingle Street: Named after Captain James Bingle, who led a deputation to Sydney to preserve Nobbys. Captain Barney, then military commandant, had caused two tunnels each 150 ft long, with chambers for explosives to be driven into the landmark, which he desired to demolish so as not to rob of the wind sailing vessels approaching the port. The name of Lieutenant Sutherland is carved at the end of the tunnels where they met. Probably he was in charge of the working gangs.

**1939 NEWSPAPER ARTICLE IN SYDNEY MORNING HERALD 13<sup>TH</sup> MAY page 13.**

**Extract from 'NOBBY'S ESCAPE A Gunpowder Plot of the Fifties. By G A King.'**

That the proposal to remove Nobby's was regarded seriously is certain from the fact that a public meeting, held at Newcastle on June 21, 1854, protested against the scheme. An old book in which Newcastle is described says; "The Government at one time, acting upon the suggestion of Colonel Barney, of the Royal Engineers, intended to remove Nobby's by blasting".

About 25 years ago the tunnel extended under Nobby's for about 35 feet. At the entrance, and for a short distance in, it was high enough for a man to stand upright, but toward the end it was much smaller. In recent years rocks and debris have fallen from the cliff face, sand has been washed from the sea, and all trace of the tunnel has been obliterated. The entrance has been entirely obscured.

**1939 NEWSPAPER ARTICLE IN SYDNEY MORNING HERALD 20<sup>TH</sup> MAY, page 13. NOBBY'S TUNNELS.**

Mr. D. H. Stokes, Cremorne, writes:-

I read with great interest Mr. G. A. King's notes on the tunnel in Nobby's, Newcastle. There were two tunnels in the lower part of this rock. The one referred to by Mr. King as being on the seaward (eastern face) penetrated in a westerly direction for about 100 feet, midway of which was a branch to the left of about 30 feet, which terminated in a chamber. At the far end, the main tunnel turned to the right for about 30 feet, and terminated in a chamber.

The other tunnel was approximately at right angles to the first, and, entering the northern face passed in a southerly direction for about 80 feet, finishing with a short turn to the left and a chamber. The tunnels were not more than 5 feet wide and 6 feet high. The terminal chambers were about 15 feet long by 8 feet wide, of oval shape, and about 7 feet high.

With a candle, matches, one or two companions, something to eat, a toy cannon and some gunpowder, I explored these tunnels many times in the early eighties. I have no recollection of seeing any coal faces in the tunnels or indications of coal strata in the external faces of the rock at the level of the tunnels.

There were somewhat similar tunnels in a coal seam in what was then known as Allan's or Signal Hill.

The story current about the intention of blowing up Nobby's is correct, I believe, the reason given being that its removal would be an aid to navigation in and out of the port. Fortunately, wiser counsels prevailed.

Mr. David Williams, Waverley, writes:-

At the age of 25 years I was employed by the Public Works Department at Newcastle, when Mr. J. Walker, an official of the department, asked me to explore the tunnels, as the superintendent wanted some information regarding them. The entrance was almost closed by debris. After removing some dirt, I entered the eastern tunnel and, taking my time, walked to the face with the aid of a lighted candle. The drives are of the uniform height of 4 feet 6 inches and about 4 feet wide.

On the face of the eastern drive was the name, "Lieutenant Sutherland", written with red crayon. It is evident, to my mind, that the work was done for the purpose of blowing up the nob.

**1945 NEWSPAPER ARTICLE IN NEWCASTLE MORNING HERALD 25<sup>th</sup> AUGUST page 5.**

**When Nobbys was Tunnelled.**

Mr D. Williams, of Bondi, recalled recently an attempt that was made to drive a tunnel under Nobbys, the conspicuous headland at the entrance to the Hunter River. This is his story.

'I was for years employed in the Harbours and Rivers Department. At the time I speak of, Mr. Percy Allan was Superintendent of Public Works, and the foreman engineer under him was Mr. John Walker. It was popular talk that tunnels had been driven into Nobbys base. Mr Allan wished to know what they were, and whether they were driven above or below the coal, which is still to be seen in the outcrop there and in the hills running along in a southerly direction. I accepted the job to find out, being a practical miner. Armed with a pick and candles, I had little difficulty in entering the tunnel driven from the eastern face of Nobbys. After I got my eyesight I proceeded to the face, sounding the roof as

I proceeded. On the face of the tunnel there had been inscribed 'Lieut. Shortland', the name of the discoverer of the Coal (Hunter) River. Each side of the tunnel face chamber was constructed. The end of the drive resembled the capital letter T. Ample space was provided to pack explosives and other materials.

I had to dig myself into the drive, going into Nobbys from the south. It was almost blocked up at the entrance, but inside it was constructed and finished off just the same as was the other drive from the east. I found that the drives were driven in the same bed of rock, above high-water mark about 4 ft. high and 5 ft. wide. The drives were damp, but there was no water on the floor of either. I saw no coal. That mined from Nobbys was probably got from a tunnel down on the Newcastle side of the knob.'

This newspaper article was transcribed and supplied by Gionni Di Gravio. Article brought to our attention and provided courtesy of Mr Frank Maxwell.

**1994 NOTES BY NOEL DAVIES OF VISIT WITH MAURIE LYNCH TO NOBBYS 16<sup>th</sup> FEBRUARY.**

Visit to Nobbys with Maurie Lynch age 85 from 41 Stanley St Hamilton on 16-2-1994, 10 am. Day overcast, still, tide low.

Maurie's memory was perfect. Demonstrated by the location of prickly pears, harbour and coal seam. Both tunnels instantly located, pictures taken. Born in Zaara St. Lived in Shepherd St. Identified with 'Sandhills' - mentioned memorial slab at Baptist tabernacle as an address 'Sandhills'.

Visited caves at age 12-13 with his mate Hec. Scott. Had to dig away 2<sup>nd</sup> hole to enter, said 2<sup>nd</sup> hole was best. Stated that he thought the harbour blasting would have caused cave ins. 'I knew every rock by its first name'.

Fiesty old gentleman, did his time as a cabinet maker with David Cohens Furniture, put off during the depression. Keen Newcastle Surf Club (ski) man all his life. Fished and surfed Nobbys area.

Adamant about the tunnels and the fact that Barney was going to blow it completely up. Entrance about 8 to 10 feet above sea level, both at same level. Maurie insisted that the chambers existed. He did suggest that perhaps there were others from the breakwater side, but he did not see them.

Noel included a sketch plan of the two tunnels with labels (Figure 5.12).

**1994 NEWSPAPER ARTICLE IN NEWSPAPER HERALD 20<sup>th</sup> JUNE.  
Extract from 'Time to unlock secrets of Nobbys tunnels: historian' by Mike Scanlon.**

A prominent Newcastle historian is promoting the idea of opening up three

mystery tunnels beneath Nobbys headland as a way of generating greater public interest in Newcastle's bicentenary celebrations in 1997.

Dr John Turner said on site on Friday that the sealed tunnels, possibly from the city's convict past, had tantalised history buffs for generations....

He said he could not take credit for the idea of opening the tunnels, which was first mooted in 1988 by fellow history sleuth and author Mr Terry Callen, of Stockton.

Mr Callen said that in 1988 he had been warned that bureaucratic red tape might strangle a Nobbys tunnel project, but he did not believe it.

'Any suggestion we'd be opening the tunnels and I think we'd have half of Newcastle there,' Mr Callen said.

'Back then, the mines rescue people even volunteered to go in first once any tunnel was opened.

'And it might only take a bulldozer five minutes to remove debris from a tunnel mouth.'

Mr Callen said a 1892 photograph showed a tunnel 'cave' at the base of the rock directly beneath Nobbys Lighthouse.

Another tunnel was said to face south. The position of the third was unknown.

'Why the tunnels were there is all very mysterious,' he said.

'The late Mr Hec Scott, a Newcastle surfing identity, told me he once remembered going into one.

'He said the surface was well hewn, not rough and there appeared to be a chamber there with a table.

'It seemed to be too well finished to be only a tunnel bored there to place explosives to blow the rock up.

'I assumed people had slept in that tunnel.'