

Archaeological evidence thought to be associated with George Grey and his early explorations of the Western Australian coast

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Local residents from Kalbarri, Western Australia, discovered lead shot and other objects at a local beach. The shot are believed to be associated with the British explorer George Grey, who was wrecked in the bay in 1839. This paper presents a brief report on this isolated find, other finds declared over the years and assesses the most likely association, with a focus on the historical background of Grey's exploration of the area.

INTRODUCTION

The site, near Kalbarri, Western Australia (Figure 1), was first discovered by a local resident in 1995 who noticed a trail of lead shot in the sand dune leading to the waters' edge. He followed the shot back to where it originated and found a collection fused together in the shape of a small 'sack' in the sand dune. The bag had deteriorated but portions of the shot in one side of the bag were still fused together, maintaining the shape of the bag in which they had been kept. He informed the local Shire president of his discovery but was advised that the find did not warrant any further action and the matter lapsed. Over time, the finder informed two friends and local residents, who decided to carry out a metal detecting search over the area to determine if any other historic relics lay buried.

HISTORICAL BACKGROUND ASSOCIATED WITH THE AREA

Grey and his exploration of Australia's northwest coast

George Grey left Fremantle on 17 February 1839 aboard the 302-ton American whaler *Russel* to continue his exploration of the Western Australian coast including more inland areas. Grey planned to land north of Shark Bay with a supply of provisions sufficient for five months and to establish a provision depot on an island, which they could use as a base point from which to carry out their operations of examining undiscovered areas (Grey 1841:329). On 25 February, Grey and his team were disembarked on Bernier Island in Shark Bay. By the early morning of the following day, the men had finished burying their stores.

From Bernier to Dorre Island, Shark Bay

On 27 February Grey decided to travel along the shore southward; a violent surf, however, threw one of the boats side-on to the beach. With half a ton of stores weighted in the boat and the wind increasing at this point, the boat was knocked to pieces in the span of two to three minutes. Although the loss of this boat was a heavy misfortune to the team, Grey had prepared himself for such an accident and still had two boats for his expedition. The storm continued to worsen during the night but by mid morning the following day, the wind died down and the men launched what now became their second of the two boats left and eventually reached the northern extremity of Dorre Island around 3 pm.

By 1 March, the men managed to find very little water and Grey suddenly found himself in a very different position (Grey 1841:343). They were compelled to head for the mainland before returning to Bernier Island to replenish from

their ample stores buried there. However, the boats first had to be rendered seaworthy.

From Dorre Island to the Gascoyne

On the morning of Sunday, 3 March, the boats were launched and the crew travelled until they discovered a river on 5 March. Grey named it the Gascoyne River, after his friend Captain Gascoyne. The party spent the next several days exploring the parts of the Gascoyne, Point Whitmore, Babbage Island and Mangrove Point. Grey soon decided that they needed to return to Bernier Island in order to replenish their stores.

From the Gascoyne to Bernier Island

On 20 March, they left the Gascoyne for Bernier Island. When they landed, Grey noticed that parts of the island appeared to



Figure 1: Location of Kalbarri in Western Australia.

have been physically altered. Violent storms had caused some disruption to the island and Grey began to worry about the condition of their stores. This turned to alarm when Grey found staves of flour casks scattered amongst some rocks. They pressed on in the hope that these were the remains of casks which they had earlier used. Subsequently they came across a cask of salt provisions. Looking around they saw another flour cask that had its lid forced open and was half empty. This convinced them that this was their depot of provisions. With only one cask of salt provisions and half a cask of flour left Grey realised that he had to decide on a plan for the safety of his party. He decided he wanted to continue on his explorations southwards, which would take them toward Swan River, thereby approaching home.

Landing at Gantheume Bay

On 28 March, the men travelled along Perron Peninsula towards Dirk Hartog Island. The following few days Grey surveyed a portion of the island and then continued on course, tracing the shore until 31 March, when Grey realised that the character of the coast and unfavourable winds left him no way of landing the boats anywhere. The crew were by now exhausted, so Grey was determined to land in Gantheume Bay to search for water and allow the crew to rest.

The first boat, which Grey was in, sailed the length of the bay searching for such a place and where fresh water might be obtained. A site was eventually chosen and with Grey at the steering oar, the first boat attempted to land through the heavy surf. Grey describes the next few moments:

I stood at the steer oar, I saw this was a heavier surf than we had ever yet been in. We were swept along at a terrific rate, and yet it appeared as if each following wave must engulf [sic] us, so lofty were they, and so rapidly did they pour on. At length we reached the point where the waves broke; the breaker that we were on curled up in the air, lifting the boat with it, and when we had gained the summit, I looked down from a great height, not upon water, but upon a bare, sharp, black rock. For one second the boat hung upon the top of the wave; in the next, I felt the sensation of falling rapidly, then a tremendous shock and crash, which jerked me away amongst the rocks and breakers, and for the few following seconds I heard nothing but the din of waves, whilst I was rolling about amongst men, and a torn boat, oars, and water-kegs, in such a manner that I could not collect my senses (Grey 1841:411–12).

The crew of the second boat had not seen the accident because high waves had obscured their view. They also attempted to land but slightly further south. The second boat also became damaged when it struck the shore. The expedition carpenters examined the boats and reported to Grey that they could not repair either of the boats. Grey saw no alternative but to begin their long journey back to Perth on foot.

LOCATION AND DESCRIPTION OF SITE

The lead shot was found in a blowout in the first line of beach dunes just south of the main township of Kalbarri. The fore-dune, approximately 4 m high from mean sea level, runs down to a sand beach that slopes to the water's edge. The beach overlays a mudstone reef platform, which has crevices and gullies filled with pebbles and sand. Behind the fore-dune is a plateau rising to a secondary dune. The secondary dunes appear to be relatively stable and have a binding cover of vegetation including marram grass and coastal shrubs.

The steeply sloping fore-dune consists of fine, dry sand

that is affected by strong winds. While the general orientation and size of the foredunes appear stable, sand movement is caused by strong winds. Thus, the excavation area was not ideally suited to precise excavation due to fine loose, mobile sand on a steep slope (Rodrigues, 2006: 27).

PRELIMINARY SEARCH AND SURVEY

In October 2005, a GPS position of the site was recorded with the finders interviewed and the surrounds visually examined and recorded. During the 2006 visit, a preliminary search and survey of the wider area surrounding the swale was conducted before any excavation commenced. Metal detecting was carried out over the main site and its immediate surroundings outside of the main blowout site to delimit the size of the site. The detector was swept over the areas systematically so that all ground in the blowout and about a metre beyond its periphery were covered. Several of the blowouts 100 m to the north and south of the site were also surveyed systematically with the metal detector, including the beach areas in front and between these blowouts. Signals registered were indicated by markers placed at these points so as to plot their positions. A land survey was done of the area (the swale, fore-dune, shape of blow-out site and reef line), as well as the position of the trench corners and loose artefact finds marked with the Total Station. In addition, a search and survey of the reef area in front of the site and a further 200 m north and south were carried out.

EXCAVATIONS

The trenches were placed where the most prominent signals were registered, as well as being based on information from the finders. Documentary research did not pin-point a precise spot for where the wrecking took place. Two trenches were established and excavated over three days.

Trench 1

The 2 m x 2 m trench was excavated to a depth of 1.6 m on the high side and 60 cm on the low side (Figure 2). Marram grass and wooden planks were placed just above the western wall of the trench and pressed down as far as possible to shore the sides and stop sand from gravitating downwards into the trench. The sand just outside the western and southern walls were also occasionally made wet in order to compact it but at times this made sieving very difficult.

On completion of excavations, a signal was registered just



Figure 2: Trench 1, facing southeast (WA Museum).

outside of the western wall of Trench 1 (approximately at the -5.5 m elevation height). This was assumed to be lead shot because of its location (it falls within the pattern of gravitated line of shot in Trench 1) and the strength of signal detected, which was consistent with the other lead shot.

Trench 2

Trench 2, a 2 m x 1 m trench, was located higher up on the slope than Trench 1 and near the centre of the swale (Figure 3). It was positioned awkwardly and wooden planks and stakes were used to shore the western wall to stop sand collapsing down into the trench but with limited success. No artefacts were recovered from this trench, as excavation had not reached an ideal depth where artefacts may still be buried.



Figure 3: Trench 2, facing southwest (WA Museum).

ARTEFACTS RECOVERED

From 1995 to 2005

The lead shot are generally of two different sizes (Figure 4): 10 mm and 7 mm, suggesting a small calibre firearm. The size of the shot indicate that they are more likely to be birdshot. Some shot show evidence of having been moulded and others have a small protrusion or lip. Paper cartridges from this period were also known to contain different sized shot carried within in order to make them more lethal. Some farmers in the late eighteenth to mid nineteenth centuries were known to have carried similar shot to the ones discovered at Kalbarri.

The overall length of an iron fitting recovered in 2005 by the finders is 426 mm. Its width is 150 mm at its widest end and its thickness is 54 mm at its thickest end. The fitting is not thought to be contemporary with the lead shot.



Figure 4: Lead shot (KG 4603) first discovered in 1995 (WA Museum).

Materials recovered in 2006

A total of 41 artefacts were recovered on the surface or through excavations. The finds were found either singularly or in groups. KG 4617 (x2 lead shot), KG 4618 (x3 iron fragments), and KG 4619 (x1 copper nail) were recovered by one of the finders before the Museum expedition team arrived in late January. The lead shot and iron fragments (Figure 5) were found at the site, while the copper nail (Figure 6) was found in the reef not far from the blow out. The team was also informed that someone was known to have collected 'two handfuls' of copper nails from the same area from where he recovered the one copper nail. It is also worth noting that when the original finder mentioned to some local residents about his find in 1995, he was informed that others before him had found other kinds of archaeological material from the site, although they refused to detail what these were. Given the fragility and potential exposure of the site following storms and other natural elements, it is not surprising if buried materials had become exposed and were then removed by members of the public.

Iron fragments were collected from the area about 300 m south of the excavation site where a significant amount of iron, concreted within rock, was found through the use of the



Figure 5: Lead shot (KG 4611) recovered during 2006 test excavations (WA Museum).

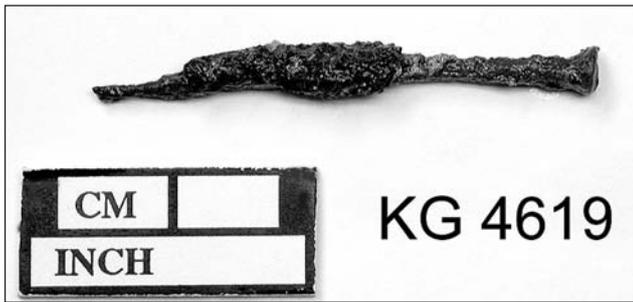


Figure 6: Copper nail (KG 4619) declared by a local finder (WA Museum).

metal detector at low tide. It is possible that this area is where Grey and his crew lost their two remaining whale-boats (Grey 1841:411?2; Ronan 1997) but it should be noted, however, that modern cray boats are also known to have been wrecked and stranded in this area. Based on further archival research, it is apparent that there may be additional sites associated with Grey in the Kalbarri area.

Finds reported in December 2006

In December 2006, one of the finders reported, and delivered, more finds recovered from the area, which are included in Table 1. These included another similar, though larger, metal fitting (described as a fire bar) as well as five objects that could be hand tools or bolts. At this stage, it is not certain if these are contemporary with the lead shot. A lead fairlead (Figure 7) was also recovered, and another 109 pieces of lead shot. As well, a small piece of double floral decoration was found. These are awaiting conservation treatment, and the removal of concretion will hopefully reveal more details to enable identification. These were found at the edge of the blow out and buried in the beach area just in front of the site excavated. The finder also reports that metal objects were sighted in the crevices of the reef but these are lodged in and extremely difficult to remove for a closer look.



Figure 7: Fairlead (KG 5122) (WA Museum).

ARTEFACT ANALYSIS

The lead shot were dated to pre-1850 by an early arms expert, who also advised that such shot were used commonly from long before the mid nineteenth-century. The method of manufacture included the use of a mould. Lead would be poured into the mould, left to cool and then dropped, whereupon the mould which had its own cutter, would be used to cut the spruce. This process leaves mould marks as well as spruces that could often be seen on many of the shot, particularly the smaller ones.

The copper nail KG 4619, found by Mr McDonnell (one of the three finders of the site), is a fastening from either a carvel or lapstrake vessel (McCarthy 2005:54–56 and 63–85). The copper fastening is consistent with the era of Grey's whaleboats but it cannot be definitely confirmed as these

Table 1: List of artefacts recovered or declared by local finders.

Registration	Year of recovery	No. of items	Description	Material
KG 4603	1995	363	Lead shot	Lead
KG 4604	2005	19	Lead shot	Lead
KG 4605	2005	1	Fitting, iron (similar to KG 5119)	Ferrous
KG 4610	2006 – WAM	5	Lead shot	Lead
KG 4611	2006 – WAM	14	Lead shot	Lead
KG 4612	2006 – WAM	1	Lead shot	Lead
KG 4613	2006 – WAM	4	Lead shot	Lead
KG 4614	2006 – WAM	8	Lead shot	Lead
KG 4615	2006 – WAM	1	Lead shot	Lead
KG 4616	2006 – WAM	2	Timber fragments	Miscellaneous
KG 4617	2006 – WAM	2	Lead shot	Lead
KG 4618	2006 – WAM	3	Iron fragments	Ferrous
KG 4619	2006	1	Copper nail	Copper/brass
KG 5078 A	2007	1	Metal object; possible hand tool. Bent to a curve.	Unidentified
KG 5078 B	2007	1	Unidentified metal object, possible hand tool	Ferrous
KG 5079	2007	1	Possible bolt, part covered in concretion	Ferrous
KG 5080	2007	1	Iron fitting (unid.), possible bolt or hand tool	Ferrous
KG 5079	2007	1	Possible bolt, part covered in concretion	Unidentified
KG 5080	2007	1	Iron fitting, possible bolt or hand tool	Ferrous
KG 5119	2007	1	Iron fitting, possible fire bar (similar to KG 4605)	Ferrous
KG 5122	2007	1	Fairlead	Lead
KG 5123	2007	2	Fastening	Non-ferrous
KG 5124	2007	1	Fastening	Non-ferrous
KG 5291	2007	109	Lead shot, of two different sizes	Lead
KG 5292	2007	1	Decorative Piece, two floral designs attached, with red stone in middle of each	Lead

copper fastenings have been in use up to modern times. No other earlier or secondary European material culture or contamination prior to the above nineteenth-century material was found.

SIGNIFICANCE ASSESSMENT

As already mentioned, the area is of historic significance because of its possible association with George Grey and his expedition team, who landed there in 1839. Grey was known to have carried firearms, which included a double-barrelled gun and at least one rifle (Grey 1841:347 & 356). Grey also mentions some articles carried by members of the crew after their landing at Gantheume Bay: a small pocket chronometer, a pocket sextant, a large sextant, some small instruments which Grey carried and his gun. If the site is confirmed to be associated with George Grey, it is significant in regards to the early post-colonial exploration of Western Australia by Europeans.

Although the shot are known to have been commonly used by soldiers and farmers in the late eighteenth to mid nineteenth century, the location of these finds on a beach seems to suggest a more likely association with a maritime aspect of Western Australia's history. The two damaged whaleboats abandoned by Grey at Gantheume Bay in 1839 are also of considerable significance. While it is very unlikely that any remains will be found from the boats, Worsley et al. (2008:143) claims that it is possible that a few metal fittings from the whale-boats could be found in the sand near where the boats were wrecked and abandoned.

ASSESSMENT OF SITE SIGNIFICANCE

Since the initial inspection in 2005, the site has been protected by Fisheries officers because of its significance, exposure, easy access and fragility. The site is automatically protected to some degree by the fact that the area is not a popular swimming or surfing beach, given the dangers posed by the reef and rough surf. The site is also currently the only one discovered to date with archaeological finds thought to be associated with Grey.

Site identification comments

Grey provides sufficient descriptions in Volume II of his journals to suggest that he and his men landed in the area and stayed for approximately two days in the Kalbarri-Wittecarra vicinity. He describes having walked along a stream where he discovers the Murchison estuary (Grey 1841ii, ch. D). On the second day, Grey attempted to convince his men to abandon some of the load they were carrying. Grey also carried a gun at this point (Grey 1841ii:6). It is certain that he carried a store of shot for the purposes of hunting and/or protection, although he does not mention what type of gun it is. Indeed a bag of shot would prove a heavy load to carry all the way back to Perth on foot. He would have carried a gun and some shot but left excess stores behind.

The site is possibly one of many associated with Grey and his men. According to Grey's journals, it is likely that he and his men may have deposited or abandoned personal belongings and stores at different points as they walked southward back to Perth. Based on the variety and date of material so far recovered, historical sources, Grey's journals and the site location, there is sufficient evidence to suggest that the site is most likely related to Sir George Grey and his expedition team. Other theories have been put forward as to the possible provenance of the lead shot, e.g. 'Anyone could have lost a bag of shot'.

Nevertheless factors to consider are:

- the lead shot is nineteenth-century (pre-1850) and therefore historic material;
- the combined quantity of all lead shot, consisting of pistol shot and bird shot is more consistent with a reserve supply of ammunition rather than an individual or day's shooting party's needs, and abandonment of such heavy weight consistent with Grey's 'inducements' to his men to abandon unnecessary loads for the walk south to Perth (Grey 1841 vol. 2:6);
- the known presence of further unexcavated historic material (lead shot) that remains buried in the dune and beach at the current site;
- amateur historical research that supports this area of beach in Gantheume Bay as the most likely location for the beaching of Grey's whale-boats (Ronan 1997);
- Grey's personal journal that narrates how the boats and supplies were hauled up onto the beach (Grey 1841 vol. 2:1 & 2).

These factors combined tend to suggest that the lead shot may well be related to Grey.

CONCLUSIONS

At this stage, the material evidence recovered from the sand dunes of Gantheume Bay does not confirm that the site is associated with George Grey. Given that Grey and his men managed to bring their boats to shore at Gantheume Bay along with their stores and belongings, it is the most likely place that any historic material belonging to the men may still be found, if not already removed by subsequent finders. It is unlikely that any of the locations where Grey and his men explored will retain any stores or materials that belonged to them because their task was to explore and chart the islands, coasts and other areas, and they were almost constantly on the move.

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BIBLIOGRAPHY

- GREY, G. 1983 [1839] *Journals of Two Expeditions of Discovery in Northwest and Western Australia, During the Years 1837, 38 and 39, Volume 1*, facsimile edition, Hesperian Press, Victoria Park.
- GREY, G. 1983 [1841] *Journals of Two Expeditions of Discovery in Northwest and Western Australia, During the Years 1837, 38 and 39, Volume 2*, facsimile edition, Hesperian Press, Victoria Park.
- McCARTHY, M. 2005 *Ships' Fastenings. From Sewn Boat to Steamship*, Texas A&M University, College Station.
- RODRIGUES, J. (ed.) 2006 George Grey's whalers, unpublished report for the Department of Maritime Archaeology, Western Australian Museum, No. 210. Western Australia.

- RONAN, F.J. 1997 *Grey's Epic Walk to Perth from Kalbarri 1839*, annotated map, Kalbarri, Shire Office.
- RUSSELL, R. 2001 *His Island Home, Sir George Grey's Development of Kawau Island*, National Library of Australia News.
- SINCLAIR, K. 2005 'Grey, George 1812–1898', in *Dictionary of New Zealand biography*, URL. <http://www.dnzb.govt.nz/>.
- STANBURY, M. 1994 *HMS Sirius 1790: An Illustrated Catalogue of Artefacts Recovered from the Wreck Site at Norfolk Island*, Special Publication No. 7, Australian Institute for Maritime Archaeology, Adelaide.
- WORSLEY, P., J. WORSLEY and D. TOTTY 2008 *A Windswept Coast: Western Australia's Maritime Heritage Between the Moore River and the Zuytdorp Cliffs*, Western Australian Museum, Fremantle.