

## **The Maitland Bar Nugget: A Key Link to the Gold Rush Heritage of New South Wales**

By KEN MCQUEEN<sup>1</sup> and ROBERT BARNES<sup>2</sup>

<sup>1</sup>*University of Canberra and* <sup>2</sup>*Industry and Investment, NSW*

**G**old nuggets were a feature and an attraction of the Australian gold rushes. Many large nuggets were discovered, but almost all were broken up and melted down. A few large nuggets survive including the Maitland Bar nugget, which is now the largest known remaining gold nugget from New South Wales. This nugget contains 313.093 ounces of gold and was purchased soon after its discovery in 1887 by the New South Wales Colonial Government for £1,236 14s 1d. The present value of the contained gold is around \$440,000, but the heritage and scientific value of the nugget far exceeds this amount.

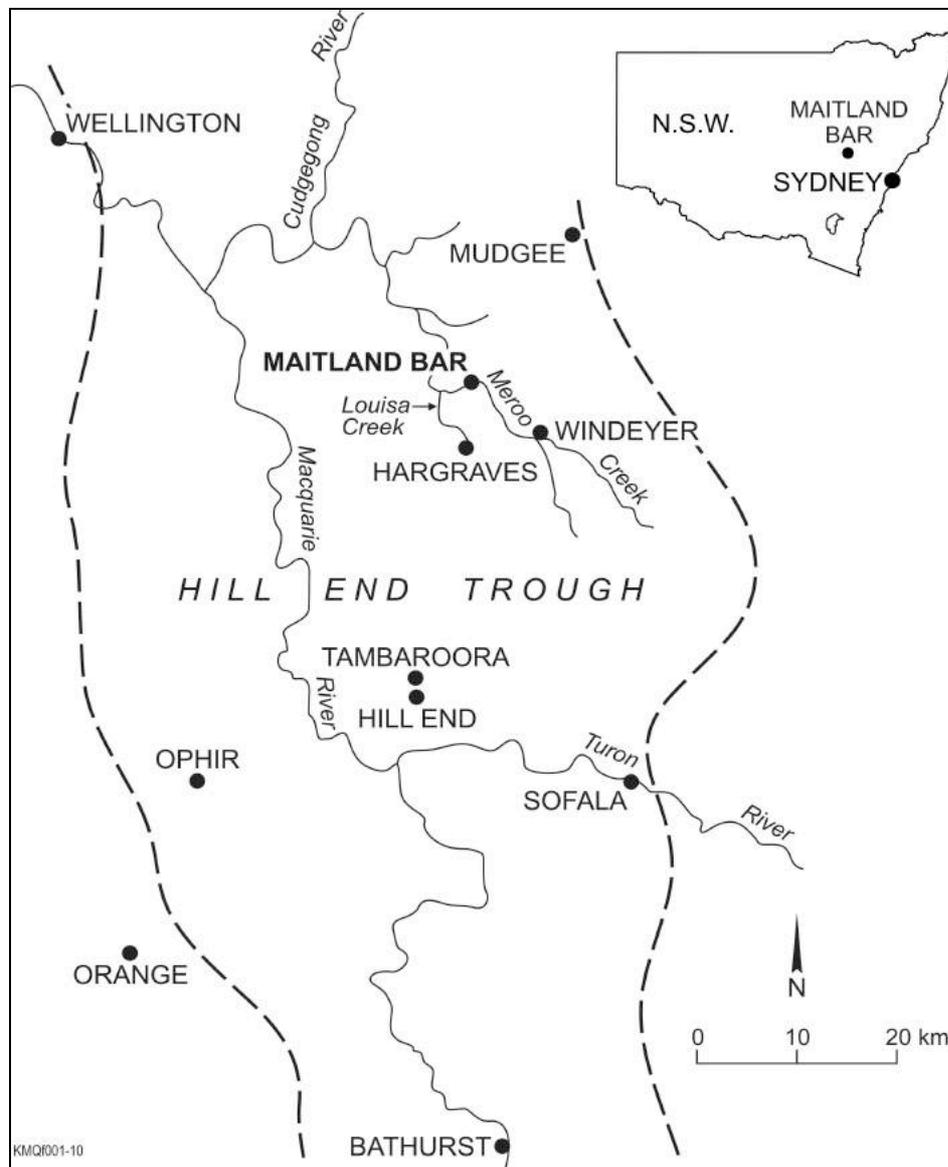
### **Provenance and origin of the nugget**

The Maitland Bar nugget is the sole survivor of a number of large gold nuggets found between 1851 and 1890 in the area of the Hargraves Goldfield, including the famous Meroo and Louisa creeks (Figure 1). This area, together with the adjacent Tambaroora Hill End, Turon River and Ophir goldfields to the south, was the most prolific producer of large nuggets in New South Wales. At least 14 nuggets greater than 100 ozs and many smaller nuggets have been recorded from this region.<sup>1</sup> The alluvial gold was derived from the erosion of gold-bearing quartz reefs, developed in slate, sandstone and volcanic tuffs in a geological structure known as the Hill End Trough (Figure 1). Rocks in the Hill End Trough are mainly mid-Silurian to mid-Devonian in age (i.e. deposited from 420 to 380 million years ago) and were deformed and folded just prior to, or about the time that circulating hydrothermal fluids introduced the quartz reefs and their contained gold.<sup>2</sup> Quartz reef styles include bedding-parallel reefs (particularly around Hill End), discordant leader veins and saddle reefs (more common around Hargraves).

Some large masses of gold were found in the quartz reefs of the Hill End Trough. Near the start of the gold rushes in June 1851 an aboriginal shepherd, named Daniel, who was employed by Dr W.J. Kerr of Wallawa station, discovered an outcrop of quartz containing 106 pounds of gold (ca. 48 kilograms).<sup>3</sup> This sensational discovery became known as 'Kerr's Hundred Weight' and the site was named Big Nugget Hill.

The location, just west of the present village of Hargraves, soon became the site of the first hard rock gold mining operation in Australia.<sup>4</sup> On the 19<sup>th</sup> October 1872 a blast at the Star of Hope mine on Hawkins Hill, near Hill End, revealed a ‘wall of gold’ over 2m high. A monster specimen of gold and slate weighing 630 pounds (286 kg) and measuring 145 cm high, 66 cm wide and 10 cm thick was extracted and brought to the surface.<sup>5</sup> This mine had been floated on the claim of Louie Beyers and Bernard Holtermann after the initial discovery of rich specimen gold in 1871<sup>6</sup> and the large mass of reef gold became known as the ‘Holtermann Nugget’, although it was not a true nugget.

**Figure 1:** *Location of Maitland Bar and the Meroo alluvial diggings. Also shown are the boundaries of the Hill End Trough.*



Source: Based on data from the Geological Survey of New South Wales.

The origin of alluvial nuggets has long been debated with two main theories proposed.<sup>7</sup> The first holds that gold nuggets are simply large pieces of detrital gold eroded and transported from reefs containing coarse primary gold. This is supported by the presence of reef quartz inclusions in some nuggets and the rounded and abraded shapes of many nuggets. The occurrence of nuggets with fine-grained detrital gold and in areas with bedrock gold reefs also supports this origin. The second theory proposes that nuggets are formed *in situ* in the weathering zone or alluvium by precipitation of gold from solution.<sup>8</sup> This suggestion is based on the observed greater abundance of large lumps of gold in these secondary environments than in the primary reefs. The mamillary form and presence of gold overgrowths on some nuggets, as well as the development of small delicate crystals of gold in weathering profiles have also been used as evidence for supergene gold precipitation and possible growth of nuggets. Many early prospectors believed that nuggets could ‘grow like potatoes’ in the soil or alluvium and there are a number of nugget localities in Australia, including along Meroo Creek, described as the ‘potato patch’. One of the earliest researchers to test these ideas was Archibald Liversidge, Professor of Chemistry and Mineralogy at the University of Sydney.<sup>9</sup> In the late 1800s he examined numerous nuggets and conducted experiments showing that gold could be dissolved in groundwater and re-precipitated under surface conditions.<sup>10</sup> Nevertheless his observations on the nuggets themselves, revealing their polycrystalline structure and grain twinning, indicated that they had undergone high temperature annealing and could not have formed under near surface conditions. The work of Liversidge was largely forgotten or ignored and many geologists and prospectors persisted in their belief that nuggets were of secondary origin. Recent research, initially conducted without knowledge of the early studies, has led to the same conclusion as Liversidge made, that most gold nuggets are detrital lumps eroded from primary deposits.<sup>11</sup>

Alluvial gold along Meroo Creek appears to have been shed from quartz reefs developed in the area north and northeast of Hargraves. Reef deposits close to Maitland Bar include the Queen of Sheba, Great Western, Little Wonder and Homeward Bound.<sup>12</sup> Early descriptions of the alluvial gold along the creek indicate that downstream from Avisford, including in the Maitland Bar area, the gold was coarse and nuggety, whereas above Avisford to Richardson’s Point (Windeyer), a distance of about 11 km, the gold was light ‘drift gold’. Further upstream the gold was coarse again.<sup>13</sup> This pattern is

consistent with derivation of coarse gold from the nearby reef systems intersected by the drainage.

### **Early alluvial mining on the Meroo**

Gold was discovered on Meroo Creek in early July 1851 by a party of miners prospecting the north-western slopes of the large tableland that drains westward into the Macquarie River between Mudgee and Sofala. This group, comprising George Cox, V. Cox, C. Blow, C. Keell and W. Lewis, had set out from Mudgee on the 30<sup>th</sup> of June with a cart and provisions for one week. After proceeding to Gratai Station, a farm occupied by a widow named Reeves, the party crossed and followed the road along Gratai Creek to its junction with Meroo Creek near a sheep station known as World's End. Here they noted abundant quartz veins in the steep country on either side of the creek, including an immense mass of quartz 'appearing in the distance like snow'. On a bar below this reef they commenced digging and after only two buckets of gravel found good gold dust in their cradle, similar in appearance to that of the Turon alluvial diggings. The following day they prospected up and down the creek and in every place they tried, some dozen spots, found gold.<sup>14</sup> By August there were about 500 miners on Meroo Creek and its tributaries and by October probably 1,000. At this time it was estimated that the average return to the individual miner was about 10 shillings per day (ca. 0.17 ozs of gold).<sup>15</sup> The main difficulty with the field was that equipment and supplies could only be transported along the creek by packhorse or 'humped' on the miners' shoulders. Periodic flooding would also prove to be a problem.<sup>16</sup>

The early alluvial miners on the Meroo mainly worked the creek bed and shallow alluvium on the banks, particularly at the various rock bars. Gold was found along the extent of the creek, with rich patches at Richardson's Point, Maitland Bar, and the World's End diggings.<sup>17</sup> Tributaries such as the Louisa, Devil's Hole and Long creeks were also gold rich. Most of the near surface gold was very fine, with the largest pieces found before September 1851 not exceeding a quarter of an ounce.<sup>18</sup> The shallow workings commonly stopped at a depth of about 2 feet at a layer of yellow clay with an oily adhesive character. This clay tended to form balls in the cradles resulting in significant loss of gold. However, when puddled or broken up with spades in a trough the clay was found to contain plenty of gold. Some miners, including a Mr Drew from Maitland, believed that rich deposits of gold would be found below the clay down to the bedrock.<sup>19</sup>

By October 1852 there was greater interest in the 'dry diggings' on the alluvial flats and terraces along the Meroo. These deposits were considered to be more extensive than those on the famous Turon diggings<sup>20</sup> and attention to them was partly prompted by heavy flooding and disruption of mining in the main creek at this time. In early October a miner attending to his horse along a blind creek near Maitland Bar on the south side of Meroo Creek picked up two or three small nuggets exposed by the recent rain. After informing other idle miners about fifty or sixty men were soon packed into the area grubbing out nuggetty gold.<sup>21</sup> This discovery, which appears to have been along the northern part of Sailors Gully, resulted in a new rush to Maitland Bar, where deep workings were developed in the terrace above the creek bed. The workings extended to a depth of 9-20 feet and initially involved the miners stripping away the whole of the overburden to reach the gold rich gravels, rather than sinking shafts and tunnelling. There were 20 or 30 mining parties operating in this area with about six doing better than 2 ozs of gold per day, although it was reported that as much as 12 ozs could be taken out of some claims. Most of the gold was coarse and well water worn with some nuggets up to 8.5 ozs and many pieces from 3 dwt up to 1.5 ozs.<sup>22</sup>

Other scattered areas of dry diggings were soon being worked in the terraces along Meroo Creek. These tended to be narrow in the steeper parts of the valley or developed in the flats between large bends in the river. One such site, upstream from Maitland Bar was referred to at the 'Potato Patch' because of the abundance of nuggets that could be dug out like potatoes.

After the initial rush, disappointed diggers drifted to other fields or returned to their former occupations. From late 1852 to 1856 the Great Nugget Vein Gold Mining Company, based in Hargraves, held large tracts of land along the Meroo, but a significant number of independent alluvial miners continued to work the creek and dry diggings, including an increasing number of Chinese. By the end of 1853 there were over 100 Chinese miners on the Meroo.<sup>23</sup> In 1856 the Great Nugget Vein Gold Mining Company and its joint venture partner the Colonial Gold Mining Company withdrew from the field, and this allowed independent miners to take up the vacated leases.<sup>24</sup> In August 1857 there was a new rush to Sailors Gully and additional gold was found both in the previously worked ground and further up the gully, including two nuggets of 43 and 17.5 ozs respectively.<sup>25</sup> Boosted by the increased activity and also the influx of Chinese miners, gold production needing escort from the Meroo in 1858 totalled 40,685 ozs.<sup>26</sup> In 1866 Maitland Bar had a population of 60 Europeans and about 200 Chinese,

with one hotel, the Coach and Horses<sup>27</sup> but gradually production decreased until 1879 when the field was considered worked out.<sup>28</sup>

The nature of the terrain and alluvial deposits along Meroo Creek made it difficult to work many of these in a systematic fashion. Irregular distribution of gold at the base of the alluvium on the slaty bedrock also meant that many early miners gave up if their initial deep shaft did not find gold<sup>29</sup> and consequently a considerable amount was missed. Subsequent reworking of 'mined' areas commonly produced additional gold allowing miners and fossickers to make a good living long after the field was thought to be worked out. The early miners also missed some of the largest specimens of alluvial gold, as was to be discovered in 1887.

### **Discovery of the nugget**

The Maitland Bar nugget was found on the 15<sup>th</sup> of June 1887 by a party of three miners working a terrace on the edge of Meroo Creek.<sup>30</sup> The miners were Jonathan Thorpe, Isaac Holmes and Frederick Leader, all were veteran alluvial gold miners who at the time were working an area previously mined during the early rush to the Meroo in 1851-52. The nugget was unearthed at a depth of 11 feet (3.4 m) in a spot surrounded by old shafts. The location of the find is described in an article in the *Sydney Mail* as 'just below Brennan's (formerly Harper's) old public house' at the Maitland Bar.<sup>31</sup> Another version of the discovery story, reported in 1907 as part of the obituary of Jonathan Thorpe, suggests that the miners were working in a shaft recently started by the Brennan family and abandoned by them.<sup>32</sup> The remains of Brennan's public house, also known as the Maitland Bar Inn, can still be seen in the ruined settlement of Maitland Bar close to Meroo Creek (Figure 2).

Between the ruins and the creek there is an alluvial terrace with numerous old shafts and it appears that this was the area where the nugget was discovered (Figs 3 and 4). At the time of discovery one of the miners working in the shaft, possibly Jonathan Thorpe, said laconically to his mate on the surface as he passed up the nugget 'here's a big stone for you'.<sup>33</sup> With the aid of publican, Patrick Brennan, the nugget was transported by spring cart to Mudgee, where it was displayed for several days at the Commercial Bank before being sent to Sydney. This was during the build up to celebrations of Queen Victoria's golden jubilee and there was some reference to the nugget in the press as the Jubilee Nugget.<sup>34</sup> The gross weight of the nugget when discovered was reported as 347 ozs 1 dwt.<sup>35</sup>

**Figure 2:** *Ruins of Brennan’s Public House at Maitland Bar with Sandy Sheridan (great, great, great granddaughter of Patrick Brennan). These ruins were the key to locating the discovery site of the Maitland Bar nugget.*



Source: Photo taken by Ken McQueen in June 2010

**Figure 3:** *The area just down from Brennan’s Public House where the Maitland Bar nugget was discovered. ). These ruins were the key to locating the discovery site of the Maitland Bar nugget.*

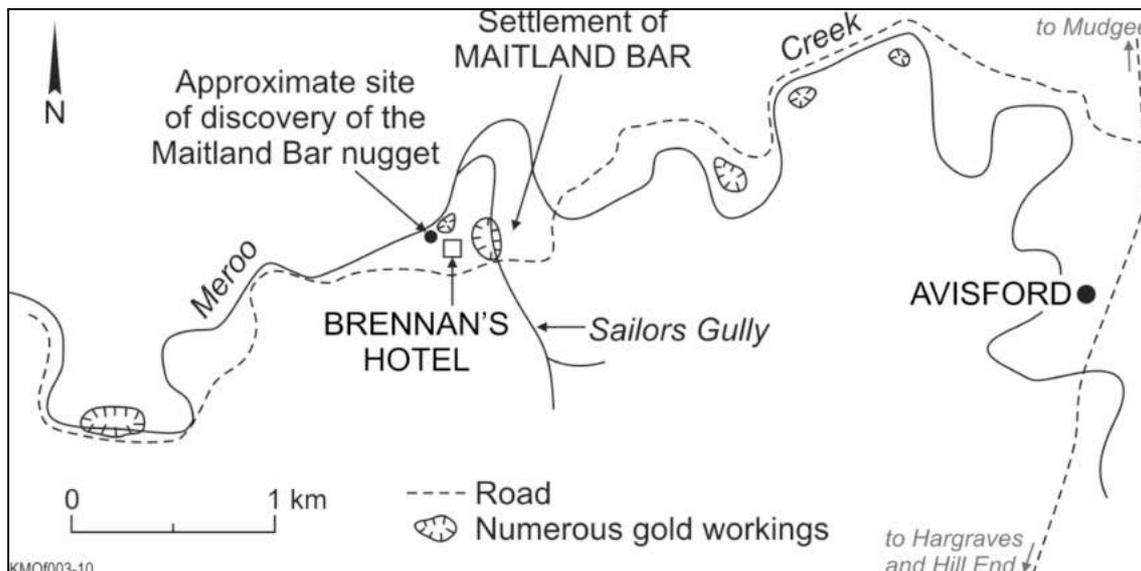


Source: Photo taken by Ken McQueen in June 2010

Shortly after the discovery, Mining Warden Steel from Hargraves inspected the site and reported that it was not far from where a large nugget had been found some years earlier.<sup>36</sup> The discovery re-awakened interest in gold fossicking at Maitland Bar but no other large companion nuggets were found in the vicinity. The discoverers no doubt appreciated their financial windfall, particularly Thorpe and Leader, who were in poor circumstances and considered very deserving of their luck by the local public.

Isaac Holmes had some independent income and was a miner more out of interest than necessity.<sup>37</sup> None of the men appear to have done anything extravagant with their proceeds. Frederick Leader continued as a miner in the area and lived for many years at Avisford. Jonathan Thorpe continued living in the Mudgee region and became a benefactor of the Mudgee Hospital, where he died on the 22<sup>nd</sup> of September 1907 aged 75. Isaac Holmes appears to have settled in Queensland where he died at Allora in 1908.<sup>38</sup>

**Figure 4:** Detailed map of the Maitland Bar area showing the area of discovery of the Maitland Bar nugget and other localities mentioned in the text.



Source: Compiled by the author using Google Earth as a topographic base.

### **Purchase by the New South Wales Government**

Discovery of the Maitland Bar nugget caused a local sensation and Mr John Haynes, MLA for Mudgee, suggested the New South Wales Government purchase it for display at the upcoming Adelaide Jubilee International Exhibition and also at the Centennial International Exhibition to be held in Melbourne in 1888. These exhibitions were very prestigious events for the various colonies at this time and the Premier, Sir Henry

Parkes, was persuaded that the nugget should be procured for display purposes. The government agreed to purchase at the mint value of the contained gold, thought to be between £1,200 and £1,400. However, there appears to have been a significant delay between the decision to purchase and the actual payment and delivery of the nugget to the Mines Department. In the meantime the Commercial Banking Company of Sydney purchased the nugget from the three discoverers and agreed to sell it to the Government subject to the finders' consent. The manager of the Commercial Bank at the time was Mr T.A. Dibbs, also a member of the Legislative Assembly.<sup>39</sup> Payment from the New South Wales Treasury appears to have finally occurred around the 8<sup>th</sup> of October and the Mines Department took delivery of the nugget on the 21st of October 1887.<sup>40</sup> The nugget was placed on view at the Mines Office before shipment to Adelaide for exhibition in November.<sup>41</sup>

### **Post-discovery history of the nugget**

In Adelaide the Maitland Bar nugget formed part of an extensive mineral and rock display mounted by the New South Wales Department of Mines. This display was ably organised and set up by Joseph Carne, Geological Surveyor and Curator with the New South Wales Geological Survey.<sup>42</sup> He was to be involved in a number of other exhibitions in which the nugget was a feature. The following year the nugget was exhibited in the New South Wales Court at the Centennial International Exhibition held in Melbourne.<sup>43</sup> This exhibition was part of Australia's centennial celebrations and drew crowds from all over Australia and overseas. Over the following years the nugget took on a nomadic existence, touring the world, featuring at numerous exhibitions and drawing great public interest (Table 1). A large mineral and mining display from New South Wales was a highlight of the New Zealand and South Seas Exhibition held in Dunedin from November 1889 to April 1890. The collection of gold samples, which included the Maitland Bar nugget as the show piece, won a First Order of Merit prize.<sup>44</sup> Following this exhibition the gold collection was taken to London for display at the International Mining Exhibition at the Crystal Palace from July 1890, and then brought back and exhibited at the Tasmanian International Exhibition held in Launceston from November 1891 to March 1892.<sup>45</sup> In 1893 the nugget was shipped to the World's Columbia Exposition, Chicago (also known as the Chicago World Fair).<sup>46</sup> The display of the New South Wales Mines Department was again organised and prepared by Joseph Carne and the collection of reef and alluvial gold specimens, including the

Maitland Bar nugget, won another award.<sup>47</sup> On return to Australia the nugget was displayed at the second Tasmanian International Exhibition held in Hobart from late 1894 to early 1895.<sup>48</sup> At this time the New South Wales Geological Survey did not have a sufficiently large or secure museum to house and display the nugget, possibly part of the reason for it being sent to so many exhibitions. From 1898 it was securely stored in the Sydney Branch of the Royal Mint in Macquarie Street.

**Table 1:** *List of exhibitions and displays of the Maitland Bar Nugget.*

<b>Year</b>	<b>Description</b>
1887	Adelaide Jubilee International Exhibition, Adelaide.
1888	Centennial International Exhibition, Melbourne.
1889-90	New Zealand and South Seas Exhibition, Dunedin.
1890	International Mining Exhibition, Crystal Palace, London.
1891-1892	Tasmanian International Exhibition, Launceston.
1893	World's Columbia Exposition, Chicago.
1894-95	Tasmanian International Exhibition, Hobart.
1905-1914	Displayed in London, including the Indian-Colonial Exhibition 1905, Franco-British Exhibition (?), 1908.
1915	Panama-Pacific International Exposition, San Francisco.
1922	Returned to USA for display.
1936	Displayed at Rural Bank, Sydney.
1937	Displayed at Commonwealth Bank 155 <sup>th</sup> anniversary celebrations.
1974	Displayed at Centenary of the Geological Survey of NSW.
1976	25 <sup>th</sup> International Geological Congress, Mining Museum, Sydney.
1981	Featured in ABC television documentary <i>Peach's Gold</i> .
1996	Gods Gowns and Dental Crowns Exhibition, Sydney Mint Museum.
1999	175 <sup>th</sup> Anniversary of New South Wales Treasury, Sydney.
2001	Gold and Civilization Exhibition, National Museum of Australia Canberra and Melbourne Museum.

Data from: Catalogue of the Exhibits in the NSW Court, Centennial International Exhibition, Melbourne 1888; J.E. Carne, ARNSWDM for 1889, p. 240 and Appendix 6a; Catalogue of the Tasmanian International Exhibition 1894-95; *The Argus*, 30 August 1890, p. 6; D.J. Bertuca, *et al*, *The World's Columbian Exhibition: A centennial bibliographic Guide*, 1996, p. 125; *Sydney Morning Herald*, 15 April 1905, p. 10; *Ibid.*, 8 December 1936, p. 12; Notes from the NSW Department of Mines in NSW Treasury file T96/1978; *The Sydney Mint Museum Newsletter* No 1, 1996; Stannage (ed.), *Gold and Civilisation*, Art Exhibitions Australia Ltd, Sydney, and the National Museum of Australia, Canberra, 2001.

In 1905 the nugget was shipped to London for an extended period of display with other Australian gold specimens.<sup>49</sup> While these specimens were on loan a number of gold nuggets disappeared, but fortunately, presumably because it was so large and valuable, the Maitland Bar nugget escaped pilfering.<sup>50</sup> It returned safely to the Sydney Mint in early 1914. The following year it travelled to San Francisco for the Panama-Pacific International Exposition from February to December. The nugget made a return trip to the United States in 1922 before storage in Sydney for a long period. In October 1926 the Sydney Branch of the Royal Mint was closed and the nugget was transferred to the vaults of the New South Wales Treasury.<sup>51</sup> The nugget then featured in several local

displays at banks in the 1930s, before being almost forgotten, but not abandoned, for 19 years.<sup>52</sup>

On the 25<sup>th</sup> of April 1956 an audit at the Department of Mines revealed that a 'famous gold nugget' had been sent to Treasury for safe keeping. As it had not been sighted for some time Treasury were requested to locate it. Account Ledger Keeper, Norman McPhee was asked if he knew of the nugget and, given the clue that in the late 19<sup>th</sup> Century the nugget had been to the United States, he remembered seeing in the vaults a rough, hewn wooden box with the words Wells Fargo painted in black. For some time this box measuring about 12 inches by 10 inches had been used innocently by Treasury Officers as a wicket for impromptu cricket matches amongst the safes. The box was located and opened with a hammer and chisel to reveal the forgotten nugget.<sup>53</sup> Thus the Maitland Bar nugget became part of Treasury cricketing legend.

Following its rediscovery the nugget appears to have remained in the New South Wales Treasury vaults for the next ten years. In 1967 Treasury moved to the new State Office Block in Philip Street, Sydney and the vaults were closed. Prior to this move the Maitland Bar nugget, together with some smaller specimens of gold (a nugget from Wood's Flat of 42.06 ozs, a specimen from Lucky Hit of 21 ozs, and 18.03 ozs of alluvial gold from Araluen) were transferred from Treasury to a safe deposit box at the Bank of New South Wales. Other less valuable gold and mineral samples were sent to the Mining and Geological Museum at the Rocks in Sydney.<sup>54</sup> The nugget made an appearance at the Centenary of the Geological Survey of New South Wales in 1974 and was a centrepiece in the Mining and Geological Museum during the 25<sup>th</sup> International Geological Congress held in Sydney in August 1976.<sup>55</sup> In 1981 it starred in the ABC Television documentary, *Peach's Gold*, about the early discovery of gold in New South Wales.

During the period 1967-1995 responsibility for the nugget rested with the Geological and Mining Museum Trust. Between displays the nugget was kept in safe deposit at the Bank of New South Wales and later at the National Australia Bank in Sydney. In 1989, the Geological and Mining Museum (formerly the Mining and Geological Museum) morphed into the Earth Exchange Museum. This was an attempt by the New South Wales Government to modernise the museum and to recover the cost of its operation. This attempt at commercialisation failed and the Earth Exchange was closed in 1995. The mineral collections were split up, some components going to the Australian Museum, others to the Powerhouse Museum, and some to the Department of

Mineral Resources Chemical Laboratory in Lidcombe and ultimately to the Department's core storage facility in Londonderry in western Sydney.<sup>56</sup> In 1996 responsibility for the Maitland Bar nugget was transferred to the Department of Mineral Resources, and in March of that year the nugget was loaned to the Sydney Mint Museum for public display at an exhibition entitled 'Gods, Gowns and Dental Crowns: the nature and uses of gold'.<sup>57</sup>

From 28<sup>th</sup> April to 28<sup>th</sup> July 1999 the Maitland Bar nugget was displayed at Parliament House Sydney as part of the 'Golden Heritage Exhibition'. This exhibition celebrated the 175<sup>th</sup> anniversary of the appointment of the first Colonial Treasurer, William Balcombe, and the foundation of the New South Wales Treasury.<sup>58</sup> Most recently the nugget formed part of the magnificent 'Gold and Civilisation' exhibition held at the National Museum of Australia in Canberra from the 14<sup>th</sup> March to 24<sup>th</sup> June 2001 and at the Melbourne Museum from 19<sup>th</sup> July to 21 October in the same year.<sup>59</sup>

### **Features of the nugget**

Following its transfer to the New South Wales Department of Mines in October 1887, Charles Wilkinson, Government Geologist, proudly described the Maitland Bar nugget as 'one of the finest and purest nuggets of gold in this country'.<sup>60</sup> Professor Archibald Liversidge listed the nugget in the gold chapter of his 1888 edition of 'The Minerals of New South Wales', but did not include a description.<sup>61</sup> There is mention of the nugget in the Handbook to the Mining and Geological Museum of 1902 where the curator, George W. Card noted that the nugget and 'many alluvial specimens are not displayed, the intrinsic value being considerable'.<sup>62</sup> A black and white photograph of the Maitland Bar nugget featured in E.J. Kenny's 1924 bulletin on gold in New South Wales, but again there is no description.<sup>63</sup> A brief description of the nugget was made by the Curator of the Geological and Mining Museum, H.F. Whitworth, in 1962. He noted that it still had a little of the original clay and iron oxide coating and went on to comment that 'although composed of gold of high degree of purity the nugget has assumed a slightly greenish tint during the 75 years since it was mined.'<sup>64</sup> At some stage an accurate Plaster of Paris model gilded with gold leaf was constructed and this was displayed at the Mining and Geological Museum for many years.<sup>65</sup>

The gross weight of the Maitland Bar nugget is 343.97 troy ozs (10.699kg) and its largest dimensions, according to Whitworth, are 21.59 cm by 16.51 cm by 1.62 cm. It has irregular, in some cases branch-like, rounded protrusions and cavities, as well as

inclusions of the original quartz reef from which it was eroded (Figure 5). The difference of 30.9 ozs between the total weight of the nugget and the weight of the included gold (313.093 ozs, calculated from specific gravity measurements) indicates that it contains about 9 percent by weight of quartz. An intriguing aspect of the nugget is its apparent loss of weight since its discovery. This is revealed by a number of weighings performed at the time of discovery and at subsequent audits (Table 2).

**Table 2:** List of some weight measurements of the Maitland Bar Nugget 1887-1979.

Weighing	Recorded weight (troy ozs)
1887 weight at discovery.	347.5
1888 weight at Centennial International Exhibition, Melbourne.	344.78
1914 weighed at the Royal Mint, Sydney, 1/9/1914.	344.54
1916 weighed at the Royal Mint, Sydney, 16/2/1916.	344.54
1926 weighed at closure of Royal Mint, Sydney and transfer to NSW Treasury, 27/9/1926.	344.54
1979 weighed on 'computerised scales', 10/10/1979.	343.97

Data from: Notes from the NSW Department of Mines in NSW Treasury file T96/1978; *Sydney Morning Herald*, 11 October 1979.

A number of explanations have been suggested for this loss. The initial reduction of 2.72 ozs was probably due to some 'cleaning up' of the nugget, prior to display, possibly including the removal of any weakly adhering pieces of quartz and embedded clay. The very small loss of weight between 1888 and 1914 was most likely the result of abrasion during wrapping and transport for the numerous exhibitions and displays of the nugget. The weight loss of just over half an ounce between 1926 and 1979 was probably also due to handling and movement, including during the occasional cricket match in the Treasury basement, but other suggestions include the use of more accurate scales at the later weighing.<sup>66</sup> It is highly unlikely that the latter could account for the loss recorded, as older gold balances using weights were not so inaccurate. It is interesting that Whitworth's description of the nugget in 1962 indicates that at this time it still had some adhering clay and iron oxide coatings.

### **Importance of the nugget**

As the largest known remaining gold nugget from the New South Wales gold rushes of the nineteenth century, the Maitland Bar nugget has outstanding heritage and scientific significance. It probably ranks within the top 30 largest nuggets ever found in Australia and is one of only a handful of large Australian nuggets still in existence, including

recent discoveries.<sup>67</sup> It is the largest nugget purchased specifically for display and preservation by an Australian government, and has been the highlight and drawcard of many mineral exhibitions mounted by the New South Wales Geological Survey.

The history of discovery, procurement and exhibition of the nugget has not previously been well known or documented, either being forgotten or shrouded in confusion, and to some extent this has detracted from its true historical value. The present investigation has revealed a rich historical context and highlights the importance of the nugget as a cultural and scientific item during the colonial and post colonial history of Australia. The Maitland Bar nugget has taken on a character of its own during its long and nomadic existence, both before and after discovery.

**Figure 5:** *Photograph of the Maitland Bar nugget.*



Source: Courtesy Minerals and Investment NSW photo collection

The nugget is an invaluable specimen for scientific study and reference. It retains clear evidence of its origin as part of a large gold mass in a quartz reef, providing important insights into the controversial theories of gold nugget formation. It appears that the nugget has not yet been subjected to a detailed scientific investigation and

description. Future studies, particularly of the surface morphology and chemistry of the nugget, as well as studies of the quartz inclusions could provide additional important scientific evidence for its origin and history.

### **Conclusions**

The Maitland Bar nugget has a fascinating history and it provides an irreplaceable physical link to the gold rush heritage of New South Wales. The present value of the nugget as a specimen probably exceeds \$A1m, but its heritage and scientific value would exceed this. It is important that the nugget be preserved and treasured for future generations of historians, scientists and the general public.

### **Acknowledgments**

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### **Glossary of some terms used in the text**

Detrital = material derived from the breakdown and erosion of pre-existing rocks.

Dry diggings = diggings in older alluvium or leads away from the present creek beds, usually in older alluvial terraces or colluvial sediments.

Hydrothermal = natural hot water commonly at 150-350° C, which can contain dissolved components.

Mamillary form = with smooth rounded surfaces typically formed by sequential precipitation of layers of material around a nucleus.

Supergene = originating from above, usually in reference to minerals or ores formed by groundwater and solutions moving down from the surface during weathering.

### **Units**

1 troy oz (the standard measure of gold) = 20 dwt = 31.10348 g; 1 dwt = 1.555 g; 1 pound = 0.454 kg; 1 inch = 25.4 mm; 1 foot = 0.3048 m; 1 yard = 0.914 m; 1 mile = 1.609 km

### **Pre-decimal currency**

£1 (pound) = 20s (shillings) and 1s = 12d (pennies).

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## Endnotes

- <sup>1</sup> R. McEvilly, 'New South Wales historical gold nugget and gold specimen compilation (1823-1945)', *NSW Geological Survey Report*, GS 2002/484, 39 pp.  
[http://www.treasureenterprises.com/Gold%20Prospecting%20Information/gold\\_prospecting\\_locations\\_New%20South%20Wales.htm](http://www.treasureenterprises.com/Gold%20Prospecting%20Information/gold_prospecting_locations_New%20South%20Wales.htm)
- <sup>2</sup> P.K. Seccombe *et al.*, 'Nature and evolution of metamorphic fluids associated with turbidite-hosted gold deposits: Hill End goldfield, NSW', *Mineralogical Magazine*, vol. 57, 1990, pp. 423-36; J. Windh, 'Saddle reef and related gold mineralization, Hill End gold field, Australia: evolution of an auriferous vein system during progressive deformation', *Economic Geology*, vol. 90, 1995, pp. 1764-75.
- <sup>3</sup> 'The Gold Field – A hundred weight of gold', *The Maitland Mercury and Hunter River General Advertiser* [hereafter *MMHRA*], 23 July 1851, p. 4 (reported from the *Bathurst Free Press* July 16); 'The Aboriginal Finders of the Hundred Weight', *ibid.*, 8 October 1851, p. 1; K. Cook and D Garvey, 'The *Glint of Gold*', Genlin Investments, Pymble, NSW, 1999, pp. 156-59.
- <sup>4</sup> *Ibid.*, pp. 158-159.
- <sup>5</sup> H. Hodge, *The Hill End Story, Book 2*, Hill End Publications, St Ives, N.S.W., 1965, 3<sup>rd</sup> edition, 1980, pp. 61-62. Following discovery of the 'Holtermann Nugget' Henry Parkes was asked in the NSW Legislative Assembly to secure the specimen for exhibition at the Intercolonial Exhibition, but before he could make a decision it was included in a crushing, *ibid.*, p. 62.
- <sup>6</sup> M.J. Hammond, *Remembered with Pride*, Maruba Press, Lewisham, N.S.W., 1988, pp. 133-38.
- <sup>7</sup> E.J. Kenny, *Gold Bulletin No 7*, New South Wales Department of Mines, Geological Survey, 1924, pp. 22-23; R.M. Hough, C.R.M. Butt and J.F. Böhner, 'The crystallography, metallography and composition of gold', *Elements*, vol. 5, 2009, pp. 297-302.
- <sup>8</sup> A.F. Wilson, 'Origin of quartz-free gold nuggets and supergene gold found in laterites and soil – a review and some observation', *Australian Journal of Earth Science*, vol. 31, 1984, pp. 303-16.
- <sup>9</sup> C.R.M. Butt and R.M. Hough, 'Archibald Liversidge and the origin of gold nuggets, 100 years on' in R. Pierson (ed.), *The history of geology in the second half of the nineteenth century; the story in Australia, and in Victoria, from Selwyn and McCoy to Gregory 1853-1903, Special Publication No 1 Earth Sciences History Group, GSA Inc*, Melbourne, Victoria, pp. 16-19.
- <sup>10</sup> A. Liversidge, 'On the origin of gold nuggets', *Journal and Proceedings of the Royal Society of New South Wales*, vol. 27, pp. 303-43; A. Liversidge, 'On the crystallization of gold in hexagonal forms', *ibid.*, pp. 344-346. Liversidge briefly described the Maitland Bar nugget in the section on gold in his classic treatise 'The Minerals of New South Wales', first published in 1876 and revised in 1882 and 1888. It is possible that he examined the nugget as part of his research on gold nuggets.
- <sup>11</sup> Hough, Butt and Böhner, *Elements*, vol. 5, 2009, pp. 297-302; Butt and Hough, *Special Publication No 1 Earth Sciences History Group, GSA Inc*.
- <sup>12</sup> Geological Survey NSW Metallogenic Map.
- <sup>13</sup> 'The western gold fields – The Meroo River', *MMHRA*, 10 November 1852, p. 4.
- <sup>14</sup> 'Mudgee', *The Argus*, 19 July 1851, p. 2.
- <sup>15</sup> B. Hodge, *The Goldfields Story, Book 1 Valleys of Gold*, Cambaroora Star, Penhurst, 1976, p. 37; 'The Gold Fields – Maitland News from the Diggings', *MMHRA*, 15 October 1851, p. 1.
- <sup>16</sup> 'The Gold Fields', *MMHRA*, 24 September 1851, p. 2.
- <sup>17</sup> Maitland Bar takes its name from a prominent ridge of slate and sandstone that forms a sharp bend in Meroo Creek. Many of the early miners to this area were from the Hunter River region and the area is on a relatively easy and close route from Maitland, an important inland port at the time. 'The Goldfields – The Meroo and its Tributaries', *MMHRA*, 19 November 1853.
- <sup>18</sup> *Ibid.*
- <sup>19</sup> 'The Gold Fields – Maitland News from the Diggings', *MMHRA*, 15 October 1851, p. 1.
- <sup>20</sup> 'The Western Gold Fields – The Meroo River', *MMHRA*, 10 November 1852, p. 4.
- <sup>21</sup> J.J. Harpur, 'Scenes at the Western Diggings', *The Empire*, 14 October 1852, p. 1515.
- <sup>22</sup> *Ibid.*
- <sup>23</sup> 'The Goldfields – The Meroo and its Tributaries', *MMHRA*, 19 November 1853, p. 4.
- <sup>24</sup> B. Hodge, *The Goldfields Story, Book 2 Frontiers of Gold*, Cambaroora Star Publications, Penhurst, 1979, pp. 197-200; 'Great Nugget Vein Gold Mining Company', *Sydney Morning Herald*, 2 February 1856, p. 5.
- <sup>25</sup> 'Gold News', *ibid.*, 7 September 1857, p. 3; 'Our Gold Fields', *ibid.*, 4 January 1858, p. 3.
- <sup>26</sup> Hodge, *The Goldfields Story, Book 2*, p. 200.
- <sup>27</sup> *Bailliere's Gazetteer 1866*.
- <sup>28</sup> Annual Report of the New South Wales Department of Mines for 1879, p. 54.

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- <sup>29</sup> 'The Gold Fields - The Meroo', *MMHRA*, 29 March 1854, p. 4.
- <sup>30</sup> 'Mining Intelligence - Mudgee', *Sydney Morning Herald*, 17 June 1887, p. 10.
- <sup>31</sup> 'Mudgee' *Sydney Mail*, 25 June 1887, p. 1347; 'Items' *ibid.*, 2 July 1887, p. 43. Brennan's Hotel (also known as the Maitland Bar Inn, may have originally been the Coach and Horses Hotel referred to as the single hotel in Maitland Bar in *Bailliere's Gazetteer* of 1866.
- <sup>32</sup> 'Death of mining pioneer', *Western Post*, 26 September 1907, p. 15.
- <sup>33</sup> *Ibid.*
- <sup>34</sup> 'Latest Mining News - the Jubilee Nugget', *Town and Country Journal*, 2 July 1887, p. 14.
- <sup>35</sup> 'Mining Intelligence - Mudgee', *Sydney Morning Herald*, 17 June 1887, p. 10.
- <sup>36</sup> 'Items', *Sydney Mail*, 2 July 1887, p. 43.
- <sup>37</sup> 'Mudgee', *ibid.*, 25 June 1887, p. 1347.
- <sup>38</sup> 'Death of mining pioneer', *Western Post*, 26 September 1907, p. 15; Australian Cemeteries Index, <http://austcemindex.com/inscriptions.php>
- <sup>39</sup> *Ibid.*; 'Latest Mining News - the Jubilee Nugget', *Town and Country Journal*, 2 July 1887, p. 14; 'The Mudgee Nugget', *Sydney Mail*, 2 July 1887, p. 28; 'Mudgee', *ibid.*, 9 July 1887, p. 95; 'Mining Intelligence', *Sydney Morning Herald*, 24 October 1887, p. 8; 'The Mudgee Nugget', *Town and Country Journal*, 29 October 1887, p. 908.
- <sup>40</sup> 'Record of letters received NSW Mines Department 87/13823, 87/13918, NSW State Records Container 19/2200; 'Mining Intelligence', *Sydney Morning Herald*, 24 October 1887, p. 8; 'New South Wales - The Mudgee Nugget', *Town and Country Journal*, 29 October 1887, p. 908.
- <sup>41</sup> 'Record of letters received NSW Mines Department 87/15282, NSW State Records Container 19/2200; 'Mining Intelligence', *Sydney Morning Herald*, 24 October 1887, p. 8.
- <sup>42</sup> Report by Mr J.E. Carne, Curator of the Mining and Geological Museum, ARNSWDM for 1887, p. 169.
- <sup>43</sup> Catalogue of the Exhibits in the NSW Court, Centennial International Exhibition, Melbourne 1888.
- <sup>44</sup> O. Meyer, *Report on the New Zealand and South Seas Exhibition in Dunedin*, NSW Government Printer, Sydney, 1890, pp. 10, 15; J.E. Carne, ARNSWDM for 1889, p. 240 and Appendix 6a; *New Zealand and South Seas Exhibition, Official Catalogue of Exhibits*, Evening Star Jobbing Printing, Dunedin, p. 242.
- <sup>45</sup> 'The International Mining Exhibition', *The Argus*, 30 August 1890, p. 6. 'Tasmanian Exhibition Notes', *The Mercury*, 27 January 1892, p. 4.
- <sup>46</sup> D.J. Bertuca, K.K. Hartman and S.M. Neumeister, *The World's Columbian Exhibition: A centennial bibliographic Guide*, 1996, p. 125.
- <sup>47</sup> J.E. Carne, *Report on World's Columbian Exhibition, Chicago*, ARNSWDM for 1893, p. 112.
- <sup>48</sup> Catalogue of the Tasmanian International Exhibition 1894-95; 'Exhibition Notes', *The Mercury*, 1 November 1894, p. 3.
- <sup>49</sup> 'Personal', *Sydney Morning Herald*, 15 April 1905, p. 10. Colonial governments were keen to display their products at international exhibitions in the late nineteenth and early twentieth centuries to stimulate immigration and capital inflow for mining and agricultural development; 'Alluring Immigrants', *The Advertiser*, 25 September 1905, p. 7.
- <sup>50</sup> I. Percival, 'State Treasures: the economic mineralogy and palaeontology Collections', *Minfo*, 54, 1997, pp. 36-38.
- <sup>51</sup> P.R. Broadbent, Notes on Maitland Bar nugget, 1979, NSW Treasury File NRS 9986, X64461, T96/1978, p. 38.
- <sup>52</sup> 'Banking Progress - Rural Bank Exhibition', *Sydney Morning Herald*, 8 December 1936, p. 12; 'First Railway Engine - Anniversary Historical Exhibition', *ibid.*, 31 December 1937, p. 8.
- <sup>53</sup> R. Carew, *Treasury's Legendary Wicket of Gold*, unpublished notes, 1996, NSW Treasury File NRS 9986, X64461, T96/1978, pp. 1-3.
- <sup>54</sup> 'Gold and other specimens in the Treasury Vaults', Minute Paper, Department of Mines, 1966, Misc 56/3173.
- <sup>55</sup> P.R. Broadbent, Notes on Maitland Bar nugget, 1979, NSW Treasury File NRS 9986, X64461, T96/1978, p. 38.
- <sup>56</sup> Notes on the Geological Survey Museum, <http://geo-sites.zoomshare.com/files/mining-museum.htm>.
- <sup>57</sup> The Geological and Mining Museum Trust, Letter to D. Cowell, NAB, from G. Lowder, Chairman Geological and Mining Museum Trust, 14 October 1996; I. Percival, 'State Treasures: the economic mineralogy and palaeontology Collections', *Minfo*, 54, 1997, pp. 36-38; 'Gods, Gowns and Dental Crowns', *The Sydney Mint Museum Newsletter* No. 1. March 1996.
- <sup>58</sup> 'Treasury History Exhibition', *Corporate Newsletter of the NSW Treasury Office of Financial Management*, pp. 1-3.

<sup>59</sup> T. Stannage (ed.), *Gold and Civilisation*, Art Exhibitions Australia Ltd, Sydney, and the National Museum of Australia, Canberra, 2001.

<sup>60</sup> 'Mining Intelligence', *Sydney Morning Herald*, 24 October 1887, p. 8; 'The Mudgee Nugget', *Town and Country Journal*, 29 October 1887, p. 908.

<sup>61</sup> A. Liversidge, *The Minerals of New South Wales*, Trubner & Co, Ludgate Hill, 1888, p. 11.

<sup>62</sup> G.W. Card, *Handbook to the Mining and Geological Museum*, Sydney, 1902, Government Printer Sydney, p. 27; Card also mistakenly notes that the 'Maitland Bar' nugget was found by Chinamen at Hargraves in 1887. This error has been propagated in a number of descriptions of the discovery of the nugget and may have arisen from the fact that a 255 oz nugget was found by some Chinese miners at Hargraves in August 1887, Liversidge, *The Minerals of New South Wales*, p. 11.

<sup>63</sup> E.J. Kenny, *Gold, Bulletin No. 7, NSW Department of Mines, Geological Survey*, Government Printer, Sydney, 1924, fig. 2.

<sup>64</sup> H.F. Whitworth, 'The 'Maitland Bar nugget'', *The Australian Gemmologist*, no. 16, October 1962, pp. 10-11.

<sup>65</sup> *Ibid.*

<sup>66</sup> 'Big gold nugget caught short by the computer', *Sydney Morning Herald*, 11 October 1979.

<sup>67</sup> Bill Birch, 'Gold as a mineral' in T. Stannage (ed.), *Gold and Civilisation*, p. 31; 'Major Gold Nugget Finds in Australia', *About the Perth Mint Fact Sheet*, <http://perthmint.com/aboutPM/precious/n>. The largest gold nugget found in Australia (in fact in the world) was the 'Welcome Stranger' nugget, found near Moliagul, Victoria in 1869. It weighed 2,315 ozs and was broken up and melted down soon after its discovery. The largest known Australian nugget still preserved in Australia is the 800 oz 'Normandy' or 'King of the West' nugget found in the Eastern Goldfield region of Western Australia in 1995. The 874 oz 'Hand of Faith' nugget found near Kingower, Victoria in 1980 was sold to a Las Vegas casino for \$1 million after protracted attempts to find a local buyer. The 256 oz 'Pride of Australia' nugget found at Wedderburn, Victoria in 1984 was purchased by the State Bank Victoria as its contribution to Victoria's 150th anniversary. It was stolen while on loan to the Museum of Victoria and has never been recovered, Birch, 'Gold as a Mineral' in T. Stannage (ed.), *Gold and Civilisation*, pp. 26-29.