Researching Chinese Market Gardening: Insights from Archaeology and Material Culture*

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Abstract: This paper explores the use of material culture evidence to uncover the economic and social environments of Chinese market gardeners in Australia and New Zealand. In particular it explores the multiple meanings that artefacts associated with Chinese market gardeners can embody and how they mediate between cultures. Four items of material culture are examined to discover how they can shed light on the daily lives of Chinese market gardeners and their social interactions. Two come from archaeological contexts; one is in a museum collection and one is in private ownership. They range in date from the late nineteenth century to the 1920s or 1930s. The first two are utilitarian items of technology: a garden rake and a Clutterbuck oil engine. The second two are more luxury items: an ornate silver fob watch and chain and a collection of fine bone china ceramics imported from Europe. What they have in common is that their owners and users were all Chinese market gardeners. Illustrating how material culture evidence can complement evidence from more traditional sources, the paper draws on documentary sources and oral histories to provide a context in time and place for each of these items.

Keywords: market gardening, material culture, archaeology, Chinese

Material culture sources are all too often neglected by historians in their emphasis on written documents, but there is increasing recognition of the value of sources beyond text, influenced by the multidisciplinary field of material culture studies.¹ Material culture sources are particularly valuable additions to documentary and oral sources when researching the history of the Chinese in Australia and New Zealand, as there are few written records left by Chinese immigrants themselves.

My aim in this paper is to explore the use of material culture evidence to uncover the economic and social environments of Chinese market gardeners in Australia and New Zealand. In particular I explore the multiple meanings that artefacts associated with Chinese market gardeners can embody and how they mediate between cultures.² I discuss four items of material culture that shed light on the daily lives of Chinese market gardeners and their social interactions. Illustrating how material culture evidence can complement evidence from more traditional sources, I also draw on documentary sources and oral histories to provide a context in time and place for each of these items. This work stems from a broader multidisciplinary study of Chinese market gardening in Australia and New Zealand, which utilises a variety of sources including documentary sources, oral histories, material culture and physical evidence in the landscape.

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By considering these objects together, and the multiple meanings that they embody, we can enrich our understanding of multifaceted aspects of the daily lives of individual Chinese market gardeners, including their agricultural practices, the work organisation of their enterprises, their interactions with Europeans and processes of technological change in market gardening. These artefacts also enrich our understanding of the more universal experiences of Chinese immigrants and the cross-cultural connections, exchanges and transformations which are so much part of the immigration process.

Ah Toy's rake
The first item of material culture is a four-tined garden rake, recovered from the site of Ah Toy's garden on Lone Star Creek, a tributary of the Palmer River in far North Queensland (figure 1). In 1984, Ian Jack and Katie Holmes surveyed and excavated part of the site, which was occupied by a series of Chinese leaseholders between 1883 and 1934. Ah Toy, after whom the site is named, was the third and last of the three leaseholders. He held the lease from 1900 until 1934, supplying vegetables to local miners, the population of Maytown and a Chinese storekeeper in Cooktown.3

Figure 1. Drawing of four-tined garden rake made from a broken ten-tined sluicing rake, recovered from the site of Ah Toy's market garden, Palmer River goldfield, North Queensland.


This site is an excellent example of Chinese market gardening on the goldfields, where Chinese immigrants engaged in mining, with market gardening as a means of earning supplementary income. The discovery of gold on the Palmer River in 1872 attracted thousands of gold seekers. By 1877 there were about 18,000 Chinese on the Palmer River, far outnumbering the 1500 Europeans.\(^4\) In this remote area where communications were difficult and natural food supplies were limited, Chinese market gardeners supplied much valued fresh vegetables, fruit and horse fodder. Their numbers declined as the fortunes of the gold fields declined. By 1900, when Ah Toy took over the lease of the garden, officially only 393 Chinese remained on the Palmer River and there were only thirteen gardens.\(^5\)

The evidence uncovered at this remote site illustrates the adaptation of Chinese agricultural practices to the climatic conditions of northern Australia. The design of the complex irrigation system, with its dam, water race and network of irrigation channels, shows ingenuity in coping with the climatic extremes of this tropical region and the great variations in water volume between the wet season and the dry. Numerous agricultural implements were found on the site, including two hoes and half a plough.

One of the most interesting finds was a four-tined garden rake ingeniously made by modifying a ten-tined sluicing rake originally used in mining operations to rake alluvial gravel. Three of the outer tines have broken off. Three tines on the other end were later sawn off to convert it to a useful garden rake.\(^6\) Thus, instead of being discarded the rake originally used in gold mining operations took on new life as a garden rake. It illustrates how artefacts can be modified through their lifecycle and take on new roles and layers of meaning, being used for tasks never intended by their original makers. The rake demonstrates bush “making do”, improvisation common to both Chinese and Europeans living in the Australian outback, where metal implements were valued and not lightly discarded. It also represents the economic transition between mining and market gardening as the main source of subsistence for Chinese immigrants and the hard manual labour involved in both occupations.

The rake also has technological significance, representing the continuity of Chinese horticultural practices that were transferred to Australia. The intensive agricultural methods employed by Chinese market gardeners, the small size of their plots and the wide variety of crops they grew limited the application of mechanisation. Most of their work was done by hand.

**George Ah Ling’s engine**

The second item of material culture is a Clutterbuck oil engine belonging to George Ah Ling, a Chinese market gardener who lived in Donald, Victoria from the late 1920s to 1984 (figure 2). The engine is part of a collection of Ah Ling’s possessions housed in the Donald Agricultural Museum. Including agricultural equipment, Chinese language books, Chinese medicine vials and an abacus, this collection is a unique resource that sheds light on the daily life of a Chinese market gardener. There are relatively few artefacts relating to Chinese market gardening in the collections of Australian museums. These tend to be scattered through different institutions and few have such a well-documented provenance. The fact that this collection has been preserved in the local museum is a testament to the respect in which Ah Ling was held by the Donald community.

\(^4\) ibid., p. 51.  
\(^5\) ibid., pp. 51–2.  
\(^6\) ibid., p. 56.
Figure 2. Clutterbuck oil engine, belonging to George Ah Ling, Chinese market gardener in Donald, Victoria.
Donald Agricultural Museum.
Photograph by Joanna Boileau.

Like Ah Toy, Ah Ling was a small-scale market gardener who worked alone for much of his life. George Ah Ling, also known as Lieu Ah Sam or Ah Foo, was born in Canton (present-day Guangdong) in about 1884. He first came to Australia in around 1900, to join his father who ran a store in Ballarat. Between 1908 and the late 1920s he returned to China several times, where he married and had four children. Leaving his wife and children in China, he settled in Donald to look after the market garden of his cousin Low Bao Ling (Harry).  

Ah Ling grew vegetables in Donald for almost sixty years, supplying the local community. He cultivated his garden using traditional Chinese methods and delivered his produce in a covered horse-drawn wagon and later a horse-drawn lorry. He lived in a simple shack with an earth floor and no electricity. It still stands on the outskirts of Donald, although in a dilapidated state. After Ah Ling’s partner Tim died in the late 1940s, he continued the market garden on his own. He was still growing a few vegetables for himself when he was in his nineties, long after he had stopped selling them commercially. Ah Ling moved to Melbourne in 1984; he died there in 1987.

The Clutterbuck oil engine is an Australian-made copy of the British Blackstone oil engine. It was manufactured for the agricultural implement making firm Clutterbuck Bros by the engineering firm James Martin & Co., in Gawler, South Australia. George Ah Ling’s engine is of particular interest in that it counters the stereotyped image of the patient, hardworking Chinese market gardener using primitive methods. Despite the

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7 Donald History and Natural History Group, Georgie Ah Ling: Donald’s Friend (Donald: Donald History and Natural History Group, 2006), pp. 5–6.
8 Ibid., pp. 7, 11 and 28.
9 The firm of Clutterbuck Bros was established in South Australia in 1879. Clutterbuck oil engines were made by Samuel Perry in the Phoenix foundry in Gawler after he took over James Martin & Co. in around 1907. They were first advertised in 1916. In addition to a range of oil engines ranging from three to ten horsepower, James Martin & Co. manufactured locomotive engines for the South Australian railways. Don Beatty, “Clutterbuck Oil Engine,” Gawler Machinery Restorers Club Inc. Newsletter, 18 (1993): 9–11; Advertiser (Adelaide), 4 April 1917, p. 10.
continuity of the Chinese horticultural practices that were transferred to Australia, many Chinese market gardeners in Australia and New Zealand adopted European technological developments that were appropriate to the scale and work organisation of their enterprises, particularly larger and more successful operations that could afford to invest in technology. These included steam and, later, petrol pumps to raise water for irrigation, rotary hoes, commercially-produced fertilisers and pesticides and, from the 1920s, motor vehicles and tractors. An advertisement for the British-made version of the Clutterbuck engine, published in the Chinese-language Tung Wah Times newspaper in Sydney in 1907 (figure 3), is an indication that manufacturers saw a potential market for their products among Chinese market gardeners and that Chinese gardeners were open to adopting new technologies.

Figure 3. Advertisement for Blackstone oil engine, Tung Wah Times, 19 January 1907, p. 5.

Complex social and economic factors influence the take-up of technology beyond individual differences in willingness to take risks and experiment. The owners of smaller, less successful market gardening operations, such as Ah Ling, were less likely to have the capital to invest in advances in technology. Ah Ling, who ran a small one-man operation for much of his life, was conservative in many respects compared to some other Chinese market gardeners. Yet at some time he purchased the Clutterbuck oil engine to pump water from the reservoir adjoining his garden, easing the heavy work of lifting water by hand. Although he was relatively isolated from other Chinese people after his partner died, he had regular social contact with the local European community, who assisted him in many ways and apparently were influential in encouraging him to adopt some new technology. For example, local resident Clive Barrance recalls that in the 1940s his father would sometimes take a tractor to Ah Ling’s garden and help him pump water from the dam into his irrigation channels.10

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10 Donald History and Natural History Group, Georgie Ah Ling, p. 30.
Ned Chong’s fob watch and chain

The third item of material culture is a fob watch and chain once worn by Ned Chong, a Chinese immigrant who arrived in Darwin from the port city of Amoy (now Xiamen) around 1865 (figure 4). According to family history Chong first worked in market gardens and a store. There are large gaps in his story; like many Chinese immigrants Chong was very mobile. In 1870, records show that he was living in Adelaide and working for a Chinese market gardener there, and he also worked on the construction of the overland telegraph from Adelaide to Darwin.\(^1\)

![Ned Chong's fob watch and chain](image)

**Fig. 4. Watch chain belonging to Ned Chong, converted to a bracelet.**

Private collection, Jennifer Martiniello.

Photograph courtesy of Jennifer Martiniello.

From the 1890s Ned Chong ran a market garden at Hookey’s waterhole about four miles outside the desert settlement of Oodnadatta, initially in partnership with a countryman Cherry Ah Chee. Chee was married to an Aboriginal woman, Minnie Bell. In 1911 Chee died, leaving his wife and five small children. In April 1913 Ned Chong married Minnie and they had two more children. Chong cultivated a wide variety of fruit and vegetables and relied on irrigation in the arid conditions. A 1913 description of a visit to his garden, written by a correspondent known only by the initials E.S.A., highlights his precarious existence:

> We were met at the entrance to the garden by Ned Chong, the owner, who received us kindly …. His philosophy was plainly visible in the wonderful Edenic garden which unfolded itself like a marvellous carpet before my astonished eyes. We were conducted through a maze of vegetable beds to view the remarkable water system. … We had come at a low-ebb time, when very little water was available, and when Ned Chong was in deep anxiety concerning whether he could keep the garden going much longer.\(^2\)

It is not surprising that Chong branched out into other enterprises to supplement his income from market gardening. He expanded his market gardens to include a piggery and later established a butcher’s shop and bakery. In the 1940s he ran a store and boarding house in Alice Springs for several years. He and his family provided essential

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\(^2\) Register, 18 November 1913, p. 9.
services to the multiracial communities of Oodnadatta and Alice Springs. Ned Chong died in Oodnadatta in 1949, aged around 100.¹³ His obituary in the Centralian Advocate newspaper, commenting on his “good-nature, kindness and unfailing honesty”, reveals the great respect in which he was held in the community.¹⁴

Jennifer Martiniello inherited her grandfather’s fob watch and chain. Well-worn and dented in places, the watch is made of Mexican silver, a material more affordable than gold but not the cheapest metal available. The chain is inscribed with simple linear motifs along the links. As Martiniello remarks, they are items purchased for their durability, but with an eye for quality. As symbols of Western affluence, they give insights into Chong’s life and character.¹⁵ The watch and chain represent his business success, his position in the community and his ability to bridge the gap between the dominant European culture and marginalised groups, both Chinese and Aboriginal. They also symbolise Chong’s upward mobility; he was a successful entrepreneur whose market garden was a springboard for expansion into other business enterprises. An 1880s photograph of him survives, dressed in Chinese cap, Western waistcoat, shirt, tie and jacket, hair tied back in a pigtail, trousers and boots scuffed and worn (figure 5). Across his waistcoat he wears his fob watch and chain. In Martiniello’s words, it is an eloquent portrait of a hardworking Chinese immigrant of the late nineteenth century, living between two worlds.¹⁶

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¹⁵ Martiniello, “As Strands of Plaited Music,” p. 27.

Figure 5. Portrait of Ned Chong, c. 1880s, wearing the fob watch and chain. Private collection, Jennifer Martiniello. Photograph courtesy of Jennifer Martiniello.
Ah Chee family ceramics
The final item is the ceramics excavated from the site of Chan Dar Chee’s (or Ah Chee’s) market garden in the Auckland suburb of Parnell, which he operated from the 1870s to 1920 (figures 6 and 7). This excavation, conducted in 2008, is the only archaeological investigation undertaken of a Chinese site in the North Island of New Zealand. Unusually, Ah Chee lived with his wife Rain See (also known as Joong Chew Lee) and family in the main house on the garden. She was one of the few Chinese women in New Zealand at the time. Most Chinese market garden enterprises in New Zealand during this period were operated by all-male partnerships, reflecting the fact that Chinese emigration to New Zealand was predominantly male. However, Ah Chee was naturalised in 1882, enabling him to bring his wife to New Zealand. They were married in a registry office ceremony in Auckland in January 1886 and they had three sons. The features and artefacts recorded in the excavation throw light on the daily lives of the Ah Chee family and those of the workers who also lived on the garden. The ceramics excavated from the site fall into two groups. Traditional Chinese tableware and domestic ceramics form the majority of the assemblage. These are items commonly found in overseas Chinese archaeological sites. Unlike other overseas Chinese sites there is an absence of Chinese tea wares, which is unusual given the presence of other Chinese domestic ceramics.

Another unusual feature of the site is the presence of fine bone china tea ware imported from Europe, excavated from the site of Ah Chee’s house. They include two matching bone china cups and saucers (Doulton willow pattern), two cups and matching side plate with a gilt banded design and a Rockingham style teapot. The manufacturer’s marks indicate that the Doulton cups and saucers date between 1891 and 1902. Combined with other items recovered such as a pressed glass dish, aerated water bottles and children’s toys, these European tea and serving wares indicate a middle class existence with luxuries that could be seen as a sign of aspirations of upward social mobility. This interpretation is supported by evidence of a gas supply and a water closet in Ah Chee’s house, both luxury conveniences.

This material culture evidence is complemented by the documentary and oral history evidence we have of Ah Chee’s life. Like Ned Chong, Ah Chee was a successful Chinese market gardener who became an entrepreneur and was comfortable operating in the European world. Born in Guangdong, he arrived in New Zealand in 1867 with his two brothers in search of greater opportunities. According to family history, Ah Chee first worked as a market gardener and itinerant hawker, selling vegetables in central Auckland. In 1882 he leased a seven and a quarter acre market garden in Parnell, initially with a partner, Ah Sec. From this base he expanded his operations, establishing a number of other market gardens around Auckland in the 1890s and early 1900s. Using a fleet of carts, he supplied produce to his own stores in the city centre, other retailers, hotels, boarding houses and ships. Ah Chee’s success in market gardening enabled him to move into a range of business enterprises including fruit and vegetable retailing, importing and exporting, and banana and ginger plantations in Fiji. He assisted many

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18 These include a majority of brown glazed stoneware vessels used for storing food (Nga Ka Pi alcohol bottles and spouted jars for storing liquids such as soy sauce or vinegar), green glazed ware, and porcelain (rice bowls, spoons and a wine cup). Hans Dieter Bader and Janice Adamson, Koong Foong Yuen, The Garden of Prosperity: Final Report on the Archaeological Excavations at Carlaw Park, Auckland (Auckland: Archaeology Solutions Ltd, July 2011), pp. 138–9.
20 Bader and Adamson, Koong Foong Yuen, p. 167.
21 ibid., pp. 163–4, 222–3.
22 ibid., p. 221.
23 ibid.
Chinese to come to New Zealand, including many of his kinsmen, employing them in his businesses and providing them with accommodation.  

Ah Chee’s descendants recall that he and his family had a comfortable, if not lavish lifestyle. According to May Sai Louie, the daughter of Ah Chee’s nephew, Sai Louie, the family had servants who helped with household tasks and sewed their clothes by hand. She also recalls that Ah Chee’s three sons, Clement, William and Arthur, had a privileged upbringing and were taken on extended return trips to China. They also became integrated into European society in New Zealand, attending Wellesley School and Auckland Grammar School, enabling them to operate comfortably in both cultures. As they grew up they followed their father into his businesses and he came to rely on their education and skills.

The European ceramics found in the site of Ah Chee’s market garden embody multiple layers of meaning. There is not necessarily a direct relationship between these more expensive ceramics and the status of the occupants of the site — historical archaeologists such as Jane Lydon warn against making an unproblematic link between changes in material culture and culture change. However, when contrasted with the other Chinese domestic ware, they reflect class divisions within the Chinese community.

Figures 6a and 6b. Willow pattern cup, excavated from the site of Ah Chee’s market garden and dwelling, Carlaw Park, Auckland. 
Photograph courtesy of Archaeology Solutions Ltd.

Figures 7a and 7b. Doulton willow pattern saucer, excavated from the site of Ah Chee’s market garden and dwelling, Carlaw Park, Auckland.
Photograph courtesy of Archaeology Solutions Ltd.

24 Ibid., pp. 31-44.
25 Ibid., pp. 34-35, 46.
and the characteristic work organisation of larger market gardens, with a division between partners and managers and ordinary workers.\textsuperscript{27} The agricultural implements recovered from the site such as hoes, shovels and seeding implements reflect the hard manual labour involved in market gardening. In contrast, the European ceramics and other items found on the site of the Chee family’s house counter the general impression of frugality presented by the assemblage. They are indicative of a more middle class existence.\textsuperscript{28} They are also indicative of the status and acceptance Ah Chee and his family enjoyed in European social circles and his ability to operate in two worlds. They conjure up notions of gentility, respectability and middle class manners, and social expectations when entertaining Europeans. In March 1894 the \textit{Observer} newspaper reported that Lady Glasgow (wife of the Governor, David Boyle, Seventh Earl of Glasgow) and her daughters paid a visit to the Ah Chee family at their home in the gardens:

\begin{quote}
On a recent Monday afternoon Lady Glasgow sent a note to her greengrocer (Ah Chee) that she and her daughters would pay him a visit at his home in Mechanics Bay. At the time appointed the ladies duly arrived, and were entertained by Mrs Ah Chee. The ladies Boyle played and sang, partook of afternoon tea, fruit etc, and the whole party (yellow and white) had a good time.\textsuperscript{29}
\end{quote}

We don’t know the precise reason for this visit; it appears to have been simply a social call. However, it suggests that Lady Glasgow was a regular customer of Ah Chee and also that Ah Chee supplied produce to the upper echelons of Auckland society and was well respected.

**Conclusion**

These four artefacts illustrate a multidisciplinary approach to understanding the Chinese agricultural practices that were transferred to Australia and New Zealand and the daily lives of those who were engaged in market gardening. As Lydon’s work on the Chinese in the Rocks in Sydney has shown, material culture sources enrich our understanding of the worlds inhabited by Chinese immigrants to Australia and New Zealand, revealing the diversity within the Chinese community and the complex connections and convergences between Chinese and European communities. Thus artefacts are carriers of ideas and information between cultures and mediate processes of accommodation and innovation.\textsuperscript{30}

By taking a multidisciplinary perspective and utilising a range of methodologies, material culture studies open up a range of new questions and interpretations about form, function and patterns of life.\textsuperscript{31} Artefacts present new evidence against which to test historical arguments, or suggest new arguments, explanations and avenues of enquiry.\textsuperscript{32} By studying material culture we can learn much about human behaviour and creativity. In particular the artefacts I have discussed in this paper shed light on the impact of economic, environmental, and technological forces on the daily lives of Chinese market gardeners, and their place in Australian and New Zealand society.

\textsuperscript{27} ibid., p. 35.
\textsuperscript{28} ibid., p. 221.
\textsuperscript{29} Observe, 31 March 1894, p. 6.
\textsuperscript{30} Lydon, \textit{Many Inventions}, pp. 8, 191 and 199.