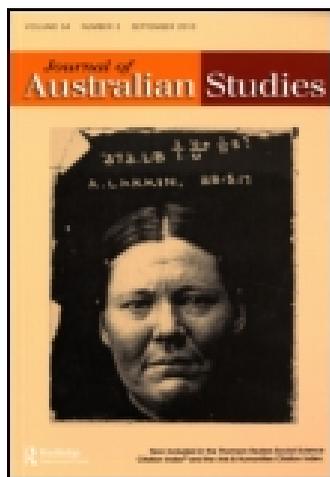


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Smallpox at Sydney Cove – who, when, why?

Christopher Warren*

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This article sheds new light on the outbreak of smallpox at Sydney Cove in 1789. It draws on local Eora traditions, corroborated by medical and historical sources, as a basis for gaining fresh insights into this event, for reviewing recent literature, and for re-examining several circumstances that could have led to the outbreak. The records suggest that the marines landed at Port Jackson with insufficient manpower and insufficient equipment for the tasks they were to confront. I argue that by early 1789 the colony faced huge difficulties, from the number of indigenous people opposing the settlers, from problems with agriculture, and from the lack of marines' capability to defend the settlement, that deploying smallpox became a viable option as a means of defence. This article concludes that, on balance, British officials probably spread smallpox as the only means left to defend the colony.

Keywords: smallpox; First Fleet; British marines; first contact; Aboriginal history

Introduction

The early interactions between Europeans and indigenous peoples across the globe have long interested historians, but major questions remain about “what really happened” when British settlers and Eora clans encountered each other in New South Wales. A critical issue concerns the 1789 outbreak of smallpox at Port Jackson. Recent articles by Campbell Macknight¹ and Michael Bennett² have reignited controversy over the origin of this outbreak.³ Macknight maintains that it originated from Macassar (in the Celebes). On the other hand, Bennett suggests that the case for infection from the Indonesian archipelago remains weak and that “smallpox in some form arrived in Australia with the First Fleet”.⁴ Bennett proposes that if the First Fleet was the source, then the outbreak was probably a local, deliberate event either by rogue marines or convicts.⁵

Contrary to Macknight, this article argues that smallpox could not have reached Port Jackson from Macassar before 1789. In line with Bennett, I argue that the smallpox outbreak was a deliberate event, but where Bennett suggests convicts may have been the source of the disease, this article demonstrates that senior marines were most likely to have deployed the virus when they faced extra tasks protecting a new settlement at Parramatta.

Smallpox

Smallpox virus (scientific name, variola) is highly infectious. A single virus particle can unleash the disease.⁶ However, smallpox is not particularly contagious.⁷ Outbreaks of the

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type observed near Sydney (*variola major*) did not transmit across continents.⁸ In most circumstances, outbreaks of *variola major* self-terminated due to low populations,⁹ restricted travel due to rainy seasons,¹⁰ and the lack of mobility from the severe illness itself. Smallpox was not usually spread by brief, casual encounters, such as walking down the street beside an ill person or by being in the same shop or business for a brief period.¹¹ Smallpox spread only after prolonged face-to-face contact for a number of hours.¹² Not every susceptible person who merely talked with a smallpox patient caught the disease.¹³

Due to the lack of records, we are unable to say exactly to the day, when, or exactly to the acre, where the outbreak first occurred near Sydney; however, we can probe the issue in more general terms. Also, we are not able to identify specific individuals who may have initiated the outbreak, nor can we determine with certainty how far the 1789 outbreak finally spread. It appears it spread across the Sydney basin as far as Port Hacking in the South, the Hawkesbury in the West, and to Broken Bay in the North. In later years, smallpox marks were noted further afield – south at Jervis Bay, west of the Blue Mountains, even into Victoria, western South Australia, and southern Queensland.¹⁴

Outside the tropics, natural smallpox was a winter disease spreading into the spring.¹⁵ It usually needed 16 days to spread from one person to the next.¹⁶ While a virgin outbreak, such as that around Sydney, may have different characteristics, including shorter periods between cases, in general, any sudden, concentrated outbreak in the late summer into autumn (i.e., February to April) is unlikely to have been a natural event, and the circumstances need to be explored. In the case of the 1789 outbreak, these circumstances include the difficulties faced by the British colony during the first year of settlement.

The colony's difficulties 1788–89

After a couple of seasons, the British settlement at Sydney Cove was in great difficulty. Due to damaged seed, adverse weather, and poor soils, the expected scale of agriculture did not eventuate. Livestock had been taken by Aborigines, killed by dogs or lightning, or otherwise lost. Food was becoming scarce, and Phillip pinned his hopes for producing more on the success of a new farm at Rose Hill (now Parramatta). The colony's chief surgeon, John White, worried about the many deaths from scurvy and over the lack of cleared land to grow vegetables needed to counter the disease. He also worried about the loss of stock and tools and felt that "the prospect before us is not of the most pleasing kind".¹⁷

From the middle of 1788 to early 1789, difficulties with local tribes escalated. On 9 July, Phillip wrote to Lord Sydney, secretary of state for the Home Office, indicating he believed one of the Aborigines had been murdered, that several had been wounded, and that the Aborigines found "procuring a subsistence very difficult for little fish is caught".¹⁸ Separately, he informed Admiralty Secretary Philip Stephens that three convicts "have been killed by the natives".¹⁹ In August, Phillip's secretary, David Collins, reported that the "natives continued to molest our people whenever they chanced to meet any of them straggling and unarmed".²⁰ There were violent incidents over food, such as over fish, or when Aborigines threatened settlers who tried to stop them appropriating a goat.

In September 1788, Phillip reported that the Aborigines "continue to attack any of the convicts ... and two or three have been lately wounded".²¹ By October, according to Collins, it was "absolutely necessary to compel (the natives) to keep a greater distance

from the settlement”.²² During November, relations continued to sour. On 5 November, Aborigines attacked a fishing party,²³ and a marine captain, Watkin Tench, noted that “unabated animosity” now prevails between the Aborigines and First Fleeters.²⁴ In the same month, an anonymous female convict, bypassing local censorship, wrote that the Aborigines “do us all the injury they can ... I know not how many of our people have been killed”.²⁵

Phillip sought to resolve these issues, but he probably made matters worse. In December, he sent marines out to capture some Aborigines, and several musquets were fired and rocks and spears were thrown. One native, Arabanoo, was captured. Shortly after, he was displayed in front of his home clan in a rather naïve effort to show them he was still alive. It is more likely they saw this parading as some sort of threat or provocation. In this environment of increasing Eora resistance to British expansion and of mounting antagonism, a key issue is the capacity of the marines to deal with the consequences. As we know, the First Fleet was supplied with a detachment of marines to protect the settlement. However, the marines’ capacity proved inadequate as they ran out of ammunition and were short of manpower.

Ammunition

Through some error, the marines left Portsmouth without their main supply of ammunition (musquet balls and cartridge paper) and without armourers’ tools to repair their flintlocks. Although Phillip obtained 10,000 musquet balls at Rio de Janeiro, this amounted to only 50 balls per musquet, and without cartridges, this quantity meant little. The *Sirius* and *Supply* had some ammunition, and there were at least 200 pounds of small shot and buck shot, although Phillip had complained earlier, that this quantity was “very insufficient”.²⁶ The marines would have had individual stocks of cartridges and musquet balls but only to serve during the voyage.²⁷ According to artefacts recovered from the wreck of the *Sirius* and other records, some First Fleeters had a number of fowling pieces, rifles, blunderbusses, pistols, carbines, and hand grenades.²⁸

The reasons for the missing ammunition are not clear. In his letter to Lord Sydney of 5 June 1787, Phillip writes, “I understood when the marines ... were embarked that they would be furnished with ammunition”. He then outlines the omission:

but since we sailed find that they were only supplied with what was necessary for immediate service while in port and we have neither musquet balls, nor paper for musquet cartridges, nor have we any armourers’ tools, to keep small arms in repair.²⁹

Phillip requested Lord Sydney to “give orders that these articles may be sent out by the first ship” as otherwise the settlement “shall be much distressed”. This was no small matter. Phillip sent a similar missive to Home Office Under Secretary Evan Nepean adding that the Fleet had only “what little the *Sirius* can supply” and that the inability to repair small arms would “put us to many inconveniences”.³⁰ Five days later, as the Fleet left Santa Cruz, Phillip sent duplicates of these letters to Nepean.³¹

Except for Charles Lyte, historians have tended to pass over the missing ammunition and the lack of tools. However, as Lyte noted, the missing ammunition was a dangerous circumstance.³² Other writers have taken a different view, either suggesting that the “error could be righted at Rio de Janeiro”³³ or that the lack of musquet balls did not concern Phillip because, supposedly, he knew he could obtain them en route.³⁴ These suggestions

are unsustainable as, even after obtaining supplies at Rio, Phillip again wrote to Nepean restating his need for musquet balls, paper cartridges, and tools.

Phillip may have suspected that the possibility of Nepean obtaining an extra ship to transport supplies was minimal and therefore suggested that the missing supplies be sent by the ship “that goes for the breadfruit” (*Bounty*).³⁵ The *Bounty*, captained by Lieutenant William Bligh, was moored at Spithead throughout November 1787 and could have visited Botany Bay by November 1788 or thereabouts. In continuing the voyage from Rio, Phillip appears to have placed substantial faith in the *Bounty* delivering supplies and in the settlement having enough resources to deal with the minor resistance they expected until an extra shipment arrived. Given the risks involved in eighteenth-century seafaring, this would have been a gamble. An alternative would have been to dispatch a vessel from Santa Cruz to Portsmouth to collect the stranded equipment.

Even later, on 9 July, 1788, from Sydney Cove and obviously with the *Sirius* and Rio supplies in mind, Phillip again wrote seeking armourers’ tools, gunpowder, musquet balls, and cartridge paper but, significantly, now adding swan and buck shot.³⁶ Unfortunately for later events, despite receiving Phillip’s letters, it appears that Nepean and Sydney either took no action or they received such inadequate cooperation within Whitehall that the missing items were not dispatched until the *Lady Juliana* sailed at the end of July 1789 and the *Guardian* in September. The two-year gap in action from July 1787 is inexplicable.

The missing ammunition may not have worried the marines during the voyage, but more serious concerns would have developed as the local circumstances revealed themselves. Each week a party of marines set off for Botany Bay expecting to meet a ship from England.³⁷ This expectation of a resupply may have allayed concerns for a period but, at some point, marine officers would have considered that any ship carrying their supplies must have come to grief.

The marines appear to have worried over the fragility of their advantage from musquets. They were particularly concerned to ensure that the Aborigines did not learn that it was necessary to load and prime a musquet before firing it.³⁸ Captain Tench expressed concerns that the terror initially caused by musquets would not continue and,³⁹ as early as April 1788, Aborigines were not all running away from musquets.⁴⁰ Later colonists reported that Aborigines became used to single-shot guns,⁴¹ having observed misfires,⁴² missed hits, the need to reload, and the delay between the flintlock’s flash and any impact from a musquet ball.

First Fleet musquets had other limitations. They had no rear sight and only a rudimentary foresight that was obscured if a bayonet was attached. Musquets were accurate only at short ranges (within 40 yards) and usually hit stationary targets (2 by 6 feet) at 50 yards.⁴³ They often missed at 75 yards.⁴⁴ Due to the delay between when the trigger was pulled and firing, British flintlocks had little chance of hitting a moving target. This meant that accurate fire at distant or moving targets, such as Aborigines darting amongst the trees and behind rocks, was impracticable.

In general, eighteenth-century flintlocks were no more effective than native weapons and could not compensate for being outnumbered or for being caught unawares.⁴⁵ On 20 January, 1789, lieutenants King and Dawes were threatened by Aborigines and retreated because they had only three marines against 12 Aborigines.⁴⁶ In February, a party consisting of Captain John Hunter and 15 others, also with only three musquets, was overwhelmed by “a great number of armed men”.⁴⁷ Any rain made firing and reloading almost impossible.⁴⁸ Here was the hard reality – whatever firepower there was

from musquets, this was diminished in practice by the marines being outnumbered, by misfires, by poor accuracy at moderate ranges or against moving targets, by the need to reload, and through the effects of wet weather.

Other factors aggravated matters. Musquets were falling into disrepair. In November 1788, the commanding officer of the marines, Major Robert Ross, reported that five musquets were unserviceable and two firelocks were with the blacksmiths who were unable to attend to them. Ross also pointed out that the marines' stocks of paper were spongy due to mildew and were almost totally useless.⁴⁹ Over time, these problems would have seriously weakened the marines' capabilities, thereby threatening the colony. However, the colony's security was probably threatened even before the Fleet sailed into Botany Bay. Here, Phillip and Collins highlighted a key issue.

Manpower

While still in England, Phillip and Collins were concerned that the First Fleet's military force was "very weak" and would be inadequate to protect the settlement.⁵⁰ In particular, Phillip feared that any losses to the detachment would create "a critical situation",⁵¹ and soon after arrival, these fears were realised. Phillip and officers such as Lieutenant Newton Fowell noted that the Aborigines were "far more numerous than they were supposed to be"⁵² and, on one occasion, that the "whole place was covered with them".⁵³

From the instant of first contact, local tribes opposed the British and the French. After experiencing the harsh reality and given the need to establish farming at Parramatta, Phillip realised he required an additional 400 to 600 hundred soldiers "in order to cultivate lands".⁵⁴ However, in late 1788, the survival of the settlements at Sydney Cove and Parramatta depended on a mere 212 marines (160 privates) facing an angry enemy of possibly around 1,000. Given this imbalance, matters only worsened as marines died or became incapacitated. By February 1789, 11 marines had died and two were returned to England.⁵⁵ Although marines from the *Sirius* and *Supply* replaced some losses (see [appendix](#)), this source was soon exhausted.

After a few months of settlement, the marines would have found their circumstances surprising and challenging. They needed to keep Aborigines at bay near Sydney Cove, Farm Cove, and at east Balmain where Major Ross had his farm but, in October 1788, were then required to displace Aborigines from Parramatta.⁵⁶ Initially, some marines opposed the Parramatta plan due to insufficient manpower, and Phillip originally conceded he had to defer it "until a detachment can be made".⁵⁷ While Captain Tench was aware that the soil around the existing settlement was "indifferent", he cautioned that cultivating in other parts would require "constant protection by an armed force for some years".⁵⁸ This created an immediate problem as Tench maintained that marines could not "be spared from the present detachment".⁵⁹ It appears that Lieutenant Clark also worried over the dispersal of the marines, so, presumably, other officers held similar views.⁶⁰

According to Commissioner Bigge,⁶¹ October and November were the appropriate months for planting corn in new land, so, at this point in time, Phillip's options were dwindling. Only dire need would have caused Phillip to force the issue at the end of September⁶² given the earlier resistance by some officers and the inadequacy of just 160 privates for protecting an expanded territory day and night.⁶³

The need for marines at Parramatta then escalated. On 2 November, 11 marines were posted, then, on 22 November, 17 were sent. On 15 February, the contingent was increased further to 21.⁶⁴ In the context of Tench's and Clark's earlier recognition of an

insufficiency of marines, these increasing imposts probably created serious anxiety for Major Ross and his officers.

In these circumstances, it is reasonable to consider whether some marines, worrying over their predicament and fearing a catastrophe, used bottles of smallpox to protect themselves and the settlement. After all, the safety of the settlement was seriously compromised by the factors outlined above: the missing ammunition, muskets falling into disrepair, the impact of marines falling sick or dying, the unexpected strength of local tribes, fears over muskets losing their psychological impact, and, most critically, a dawning realisation of a possible calamity once the hoped-for resupply by the *Bounty* did not materialise. Possibly from the point of view of the marines, the last straw was Phillip's order to establish the new settlement at Parramatta.

Smallpox deployment

By the 1770s, it appears that deploying smallpox had been an irregular military tactic for some time. Writing in the *Journal of American History*, Elizabeth Fenn demonstrated that British commanders used smallpox against North American Indian tribes in 1763.⁶⁵ Using smallpox was promoted in a military tract of the period, Major Robert Donkin's *Military Collections and Remarks* (1777). As Donkin served with the marines, he and some First Fleet marines possibly crossed paths in North America or elsewhere. Donkin was particularly enthusiastic over his experiences with the marines, saying:

In justice to the marines, no troops have distinguished themselves more; I have had the honor of serving on shore with them at Belleisle, Martinique, and never desired to be brigaded with better ...⁶⁶

This rapport suggests that First Fleet marines could have learnt of deploying smallpox either by meeting Donkin or by hearing of his 1777 manual. However, it is possible they heard of using smallpox against Aborigines independently as some marines served under General Gage. Gage was one of a number of eighteenth-century British officers advocating or deploying smallpox in North America.⁶⁷ In any case, inoculation was a standard procedure in the British army,⁶⁸ including the marines in North America and the armed forces in India,⁶⁹ so the necessary knowledge was not rare. Given that the military task to defend the settlement in New South Wales was similar to the military tasks pursued in North America, it is possible, as in America, that some marines considered using smallpox purely from recognising their predicament and the insufficiency of regular military resources.

Another option, proposed by David Day in 1996,⁷⁰ is that convicts, angered by native attacks, could have spread smallpox. Bennett's recent article revives this theme and proposes that "it was convicts rather than the soldiers ... who had most contact with the Aborigines, and whose malevolence toward them is most evident". Bennett suggests that many convicts would have been familiar with using smallpox scabs for inoculation and that "one or more of them may have seen ... an opportunity to seek revenge".⁷¹

Convicts?

At first glance, Day and Bennett's convict speculations appear reasonable, particularly as a First Fleet convict, John Irving, had a medical background and probably had access to

medical supplies.⁷² Certainly, convicts attacked Aborigines but by rather simple and direct means. The most serious instance was in March 1789 when, after the death of a fifth convict, a group of convicts set off to seek revenge. They met their foe near Botany Bay but were soundly beaten, and a sixth convict was killed. The marines walked to the site of the skirmish, retrieved the body, and rescued a wounded boy.⁷³

Despite this conflict, a closer inspection of the outbreak appears to exclude an initiative by convicts. One feature was that both the origin and major impact were not near Sydney Cove. Near Sydney, smallpox was observed only on the far side of the harbour. By early April, the epidemic was well established “down the harbour”⁷⁴ (i.e., towards the Heads), and boats were already “Sent down the Harbour for no other Purpose than to Bury Dead Bodies”.⁷⁵ The description “down the harbour” and the spread of the disease on the north shore indicates that boats were used for smallpox deployment. This effectively rules out any act by convicts (or others) which was not facilitated by some authority as, from 1 June, 1788, boats were not allowed out of Sydney Cove,⁷⁶ and any marines leaving the Cove without leave were court-martialed and punished.⁷⁷

Recollections reported by J.H.L. Cumpston that “the southern shore of Botany Bay and the shores of Port Hacking were strewn with the bones of aboriginal natives” indicate a possibility that other smallpox events occurred well away from Sydney Cove and therefore also beyond the range of convict initiatives.⁷⁸ Significantly, both localities, “down the harbor” and Botany Bay, were places where Aborigines were particularly “troublesome”.⁷⁹

As some victims were already dead when live cases were being rowed into Sydney Cove, some time, around one to two months,⁸⁰ must have elapsed from the original release of smallpox until the first observations of advanced disease and corpses by First Fleeters. This delay also indicates that the earliest instances occurred well away from Sydney Cove.

Eora traditions

Historical analysis of the 1789 outbreak can be assisted by accessing Eora traditions arising from the event. As Provost Marshal Charles Wentworth noted, the outbreak would “long survive in the traditionary songs” of local tribes.⁸¹ A hundred years later, in the 1880s, according to ethnologist Edward M. Curr, several such traditions “were still extant”.⁸² Initially, these traditions probably associated smallpox with the Berewalgal (the Eora’s term for men from a great distance),⁸³ but modern renditions now focus on the particular Europeans who resided locally – the English at Port Jackson and the French (La Perouse) at Botany Bay.⁸⁴

The spread of smallpox on the north shore is remarkably consistent with Eora history about Balmoral. According to Denis Foley, a tradition is that (at Balmoral):

there were blankets with red markings on them, a stripe of words or a crown. The attractive red our people saw as some token of prestige. Those who took them died a horrible death of fire under their skin and the pus of a thousand festering sores, the white man’s smallpox.⁸⁵

Of course, oral traditions may contain hearsay and later embellishment. Nonetheless, they are useful for historical analysis to the extent they are corroborated by other facts and circumstances. The Balmoral tradition of fire under the skin is corroborated by general descriptions of smallpox that the body “burns like fire”,⁸⁶ that the disease produces

“burning thunderbolts”,⁸⁷ and that pustules are an “invisible fire”.⁸⁸ The crown and wording could be the cipher of George III plus other embroidered marks that typically branded government property.⁸⁹ The attractiveness of red was recorded elsewhere in the 1890s by ethnologist Walter E. Roth.⁹⁰

Additional corroboration of Eora oral traditions can be obtained from the general distribution of Aboriginal burials near Sydney. Frederick McCarthy and J.V.S. Megaw both felt that the quantities of Aboriginal remains were associated with an outbreak of smallpox.⁹¹ The archaeological record suggests a concentration of sites near Botany Bay, Port Hacking, Middle Harbour, and northwards to the shores of Broken Bay. Without carbon dating and with no means of recovering lost burials, evidence from what remains must be tentative.⁹² However, the sites mapped by L. Freedman tend to corroborate the pattern suggested by the records and oral traditions.⁹³

Significantly, concentrations of native bones were found at Balmoral as roads and a promenade were constructed. Sufficient quantities were found for some to mistakenly suggest Balmoral was a native burial site.⁹⁴ This also corroborates the oral history related by Foley.

Who else?

Any group of settlers able to take boats out of Sydney Cove could have deployed smallpox, including any informal group of senior marines without being noticed by Tench, Collins, or Phillip. For the purposes of this article, it is not necessary to determine precisely which individuals may have arranged any such act. The important point is that any release could have occurred only if some senior officials authorised it – senior enough to have authority to take boats out of Sydney Cove or marines to Botany Bay.

Alternatively, it has been suggested that Macassan seafarers could have spread smallpox, and therefore its appearance near Sydney Cove may have been a coincidence.⁹⁵ Due to the recent currency given to this speculation by Macknight and others, this possibility needs to be addressed.⁹⁶

Macassans

A Macassan theory for the 1789 outbreak originated around 1912 when it was proposed by J. Burton Cleland, principal assistant microbiologist, Government Bureau of Microbiology, Sydney.⁹⁷ Despite a lack of detail, it was often promoted, even finding its way into the *Australian Encyclopaedia* in 1968. In 1983, the Macassan theory was contested by Butlin. Subsequently, it gained a fresh impetus from Judy Campbell's 2002 book *Invisible Invaders*.⁹⁸ More recently, in 2008, the Macassan theory was re-examined by Craig Mear and again found to be untenable.⁹⁹ In 2009, Bennett also concluded that the “case for a chain of infection from the Indonesian archipelago to Sydney Cove remains weak”.¹⁰⁰ In effect, Bennett's article corroborated Mear's earlier work, and so, by 2009, the Macassan theory had been largely eclipsed by both Mear and Bennett.

In the absence of new materials, this should have been the end of the matter. However, Macknight's recent paper casts doubt on this understanding. Macknight maintains “there is no difficulty in sourcing (smallpox) back to Macassar” and that suggestions of smallpox originating from the British settlement are “far-fetched and unnecessary”.¹⁰¹ These claims are excessive and do not take into consideration the scholarship since 2002.

Recent promulgation of the Macassan theory may be relying on a false premise – namely, that by early 1789, any smallpox virus imported by the First Fleet was sterilised by several months of tropical and summer heat. This claim appears to have misled Campbell into assuming there was no evidence for a British introduction of smallpox, and, on this basis, she considered that “other sources must be explored”.¹⁰² In his *Botany Bay Mirages*, Alan Frost similarly dismissed the First Fleet supply as a likely source based on the same false premise.¹⁰³ As I demonstrated elsewhere,¹⁰⁴ the presentations by Frost and Campbell were seriously flawed. Neither author accessed the temperature records of the First Fleet nor made appropriate use of the scientific literature. In any case, the Macassan theory itself has several difficulties accounting for the 1789 outbreak.

A major difficulty is the fact that early European visitors to northern Australia reported “nothing in the form of epidemic or contagious disease in the population”.¹⁰⁵ In 1803, a few seafarers from Macassar were found north of Australia with slight pitting from smallpox, but these instances cannot be associated with the outbreak near Sydney as such scarring may have resulted either from the outbreak at Macassar in 1789 or from later outbreaks throughout South East Asia.¹⁰⁶ As far as is known, Dutch East India Company (VOC) records do not mention any outbreak at Macassar before 1789, even though the VOC stationed several surgeons there from at least 1753¹⁰⁷ and maintained a hospital during the 1780s.¹⁰⁸ But more importantly, if boats visiting northern Australia transmitted disease, then Papua and New Guinea, having a higher population density, being closer to the Indonesian archipelago, and having greater trade links would have experienced smallpox as well and probably sooner. Much later, in the nineteenth century, smallpox was observed in north Australia but reportedly “shortly after” the Macassans departed.¹⁰⁹ Presumably any smallpox associated with Asian visitors would have been observed shortly *after arrival* or at least in the following few months.

Aboriginal oral history appears to contradict the Macassan theory. One oral tradition from Groote Eylandt involving Macassan visitors suggests a chronology that first covers the arrival of Macassans (with no association with depopulation), then the arrival of white people, and then depopulation.¹¹⁰ This ordering of events tends to disassociate Macassans from any early introduction of smallpox.

Even if Asian visitors transmitted smallpox, there is no likelihood it traced its way to Sydney Cove without spreading elsewhere across Australia. The main bartering and exchange routes from northern Australia mapped by McCarthy¹¹¹ and Dale Kerwin¹¹² do not include coastal New South Wales and therefore do not support any spread of smallpox via such networks to reach Port Jackson.

The historical record confirms this view. In 1826, Robert Dawson, chief agent for the Australian Agricultural Company, reported that smallpox was unknown amongst Aborigines near Port Stephens and the Hunter River.¹¹³ If smallpox had passed through this region before 1789, Dawson would have noticed 40-year-old and older Aborigines with pockmarks. Similar reports along other Aboriginal trade routes are consistent. In 1826, Major Lockyer noted that Aborigines near King George’s Sound were free from disease. Lockyer noted that “their skins were sleek and without a blemish”.¹¹⁴ In 1826, there was no sign of smallpox on the east coast of Cape York Peninsula.¹¹⁵ Clearly then, up until 1826, smallpox had not spread across the Australian landmass.

Another difficulty with the Macassan theory is that the observed pattern of spread centred on the British presence. Eora traditions and other reports generally describe local clans fleeing away from Port Jackson and Botany Bay.¹¹⁶ Observations of smallpox are earliest “down the harbour”, then later near Lane Cove, Hawkesbury, and Pittwater. This

pattern would be unlikely if the Sydney outbreak was merely a part of a general spread of smallpox from the Indonesian archipelago. As Curr noted, local traditions “lead to no other possible conclusion than that Sydney was the point at which the disease was introduced.”¹¹⁷

All these factors tend to exclude the Macassan visitors as the source of the 1789 outbreak. Macknight’s statement that the “overwhelming probability must be that it was introduced ... by trepangers on the north coast” is not supported by the evidence.¹¹⁸

Discussion

In 1983, Butlin proposed that smallpox “could have been used deliberately as an exterminating agent”.¹¹⁹ Famously, he argued that when “matters of race relations came to a head ... It is possible and quite likely (the British) deliberately opened Pandora’s Box”.¹²⁰ These claims were not well received. Possibly, desires within popular culture that history serve a positive role in “shaping of national identity”¹²¹ or in underpinning reconciliation¹²² may have fostered an inherent bias against giving negative aspects of history equal treatment. However, any downplaying of negative elements may also represent an intrusion of modern values, not the values of eighteenth-century colonisation. Smallpox was released before British civilisation reached the levels of enlightenment and humanity which abolished slavery and implemented other social and political reforms. At the time the First Fleet was commissioned, native peoples (outside England itself) were excluded from legal rights and could be kept, destroyed, or insured as goods and chattels.¹²³ This legal status, highlighted by the infamous “Zong” slave ship insurance case is consistent with the use of smallpox in 1789.¹²⁴ As Fenn argues, in effect, eighteenth-century rules of European warfare permitted the extermination of “savage peoples” and the “law of nations” apparently allowed the deployment of smallpox.¹²⁵

Some authors have suggested that Phillip’s noble character or the terms of his official Instructions, calling for him to conciliate affection demonstrate that he would never countenance using smallpox against Aborigines.¹²⁶ However, any such desire to conciliate affection was probably eroded over time by the need to fend off native incursions. In any case, Phillip’s instructions were typical of the period. Other governors’ instructions had similar provisions for conciliating the affections of native populations.¹²⁷ As Justice Blackburn decided in the *Milirrpum v Nabalco & Commonwealth (1971)* case, British provisions appearing to protect the rights of Aborigines, such as *Letters Patent for South Australia*, were only intended to bestow a dignified status by affirming a principle of benevolence.¹²⁸ Despite appearances, such documents were not a basis for establishing native rights or for guiding British practice. Phillip’s Instructions were not Acts of Parliament, so little weight should be placed on the wording of such documents as other, overwhelming, factors drove events. Phillip clearly recognised a need to fire on Aborigines given an “absolute necessity” and he sent marines out to capture or kill Aborigines in revenge for their attacks on settlers.¹²⁹

As an early historian David Blair noted, the period from the later part of 1788 to April 1789 was “one of the darkest periods ever experienced in the history of the settlement”.¹³⁰ Other writers have also understood the first four months of 1789 as a period of serious want.¹³¹ At this time, food rationing commenced, which probably damaged public morale.¹³² The remaining First Fleet ships, *Golden Gove* and *Fishburn*, then sailed for England, and Captain Tench was moved to note:

... it was impossible to behold without emotion the departure of the ships. On their speedy arrival in England perhaps hinged our fate ... their absence carried the effect of desolation.¹³³

Presumably Tench was reflecting a shared view.¹³⁴ By now, some officers, such as lieutenants William Bradley and Ralph Clark, appear to have hardened their earlier views of the Aborigines.¹³⁵ These emotions and hardening attitudes may have spread through the settlement and, in combination with a pervasive atmosphere of threat and desolation, could have impacted on any consideration of whether or not to deploy smallpox.¹³⁶

The spread of smallpox clearly benefited the colony. As military historian Jeffrey Grey notes, once the disease spread, the strategic situation changed.¹³⁷ Phillip was now able to reduce the force needed at Parramatta and send 15 marines to Norfolk Island where they were sorely needed. In early 1790, Phillip noted another benefit. He informed Lord Sydney that “a less force will be wanted for the security of the settlement than what I considered as necessary soon after arrival in this country”.¹³⁸

First Fleet smallpox challenges the manner in which some frontier history has been constructed, typically as a peaceful annexation of “practically unoccupied” territory, as expressed by the Privy Council in 1889.¹³⁹ By reducing the Aboriginal population and opposition, the spread of smallpox may have created an artificial basis for an overly pacific historical interpretation. Some rewrite was inevitable, and the 1960s witnessed a reforming interest in Aboriginal history, which sought to distinguish itself from earlier historians, who, C.D. Rowley suggested, “tended to down play the continuing effects of white settlement on Aboriginal life” and who “bowdlerised in the school history books”.¹⁴⁰ In 1968, W.E.H. Stanner challenged a particular “genetic-historic bias”, which he suggested suffused the old nineteenth-century atmosphere.¹⁴¹ Stanner criticised a past “indifference” and “contempt” that suited the “mood and needs of a transplanted people (i.e. British)”,¹⁴² and he, in effect, called for “another kind of history”.¹⁴³

During the 1970s, more materials became accessible, including Lieutenant William Dawes’s meteorological data, medical research on smallpox, and details on its prevalence in Macassar.¹⁴⁴ Consequently, better informed and more sophisticated interpretations of old issues could be developed, which, to some extent, addressed Stanner’s concerns. These new materials tend to support the conclusion that, faced with attacks from Aborigines and confronted with a dire need to expand to Parramatta, some marines may have felt an “absolute necessity” to drive out the indigenous inhabitants to secure desperately needed farming land.

Conclusion – who, when, why

It appears that today’s evidence only provides for a balancing of probabilities, and this is all that can be attempted. While Macassan theorists assert “it is without doubt”¹⁴⁵ that smallpox was introduced from Macassar and that a Macassan source is an “overwhelming probability”,¹⁴⁶ the evidence appears to demand a more cautious approach. As Bennett intimated, it appears that smallpox was released locally. The records suggest that one site was “down the harbor”, and Eora traditions point to Balmoral. As explored above, due to the distance from Sydney Cove, such a release could only have been a deliberate event. It appears that British officials, possibly without Phillip’s knowledge, initiated the outbreak. This would have been an act of last resort after the expected relief ship (*Bounty*) had not appeared and probably also after the number of marines being dispersed to Parramatta

was increased. Convicts or rogue marines acting alone could not have spread smallpox in the manner indicated by the evidence.

Given all the circumstances, British officials are the most likely candidates to have released smallpox due to:

- the serious errors in ordering or supplying marines' equipment,
- a fatal insufficiency of military manpower due to a gross misjudgement as to the size and character of the native population in New South Wales,
- a failure within the British administration to respond to Phillip's letters from Santa Cruz,
- the presence of viable smallpox virus in bottles at a critical juncture,
- the requirement for official sanction to row boats down the harbour, and
- the range of military tactics used against native peoples in the late eighteenth century.

Deployment may have been a private act by senior marines, possibly with assistance from a convict with access to medical supplies or, more likely, a surgeon. Given their dire predicament, the marines may have considered they had no choice than to send smallpox into the camps of their adversaries. If the Fleet had been supplied with sufficient military force and all necessary equipment, smallpox may never have been released.

Notes

1. Campbell Macknight, "The View from Marege: Australian Knowledge of Makassar and the Impact of the Trepong Industry Across Two Centuries," *Aboriginal History* 35 (2011): 121–43.
2. Michael J. Bennett, "Smallpox and Cowpox Under the Southern Cross: The Smallpox Epidemic of 1789 and the Advent of Vaccination in Colonial Australia," *Bulletin of the History of Medicine* 83.1 (2009): 37–62.
3. We can be confident that the outbreak near Sydney and spreading across the Blue Mountains was smallpox because Aborigines near Bathurst with pockmarks were immune to smallpox in 1829–30. This immunity would not have occurred if the 1789 outbreak was any other disease. See J.H.L. Cumpston, *The History of Small-Pox in Australia 1788–1908* (Melbourne: Commonwealth of Australia Quarantine Service, 1914), 153.
4. Bennett, *Smallpox and Cowpox*, 43, 46.
5. Bennett, *Smallpox and Cowpox*, 48.
6. Although around 300 infectious particles per ml. may be required for a 50% success rate from deliberate doses – using analogy with vaccine virus, see Frank Fenner et al., *Smallpox and its Eradication* (Geneva: World Health Organization, 1988), 684, Note a, Table 14.15.
7. John M. Neff, "Variola Virus (Smallpox)," in *Principles and Practices of Infectious Diseases*, ed. Gerald L. Mandell et al. (New York: John Wiley & Sons, 1979), 1350a.
8. Neff, *Variola Virus*, 1350b. The largest and longest epidemics were caused by variola *minor* (common name, alastrium).
9. As in Yemen, see Fenner, *Smallpox and its Eradication*, 1034f.
10. Fenner, *Smallpox and its Eradication*, 1015.
11. Martin I. Meltzer et al., "Modeling Potential Responses to Smallpox as a Bioterrorist Weapon," *Emerging Infectious Diseases* 7.6 (November–December 2001): Appendix 1, 2.
12. Hayley Hughes, *Information Paper Smallpox Disease and Smallpox Vaccine* (Falls Church, Virginia: United States Military Vaccine Agency, 2008), 2.
13. Section 3, *Smallpox Disease – What it is – Answers*, Military Vaccine Agency, accessed September 1, 2013, <http://tinyurl.com/MIL-smallpox>.
14. Noel Butlin, *Our Original Aggression Aboriginal Populations of Southeastern Australia 1788–1850* (Sydney: Allen & Unwin, 1983), 23.

15. Fenner, *Smallpox and its Eradication*, 179.
16. H. Nishiura and M. Eichner, "Infectiousness of Smallpox Relative to Disease Age: Estimates based on Transmission Network and Incubation Period," *Epidemiology and Infection* 135.7 (2007):1146.
17. John White [1790] in *Journal of a Voyage to New South Wales by John White with a Biographical Introduction by Rex Rienits*, ed. Alec H. Chisholm (Sydney: Angus and Robertson in association with the Royal Australian Historical Society, 1962), 133.
18. Phillip to Sydney, July 9, 1788, in Frank M. Bladen, ed. *Historical Records of New South Wales*, vol. 1.2 (Sydney: Charles Potter, Government Printer, 1893), 150. Also, on death and wounding of natives, see William Bradley, *A Voyage to New South Wales The Journal of Lieutenant William Bradley RN of HMS Sirius 1786–1792*, facs. (Sydney: The Trustees of the Public Library of New South Wales, 1969), 112; George B(ouchier) Worgan, *Journal of a First Fleet Surgeon* (Sydney: The Library Council of New South Wales, 1978), 51.
19. A vegetable collector plus two rushcutters. Phillip to Sydney, July 10, 1788, *Historical Records*, vol. 1.2 167–69.
20. David Collins [1798], *An Account of the English Colony in New South Wales with Remarks...*, Volume 1, ed. Brian H. Fletcher (Sydney: AH & AW Reed, 1975), 32.
21. Phillip to Sydney, September 28, 1788, *Historical Records*, vol. 1.2 191.
22. Collins, *An Account of the English Colony*, 1, 36.
23. Robert Brown, "Extracts from a Journal kept by Robert Brown, on the Fishburn, Storeship," *Historical Records of New South Wales* (Sydney: Charles Potter, Government Printer, 1893), vol. 2, 410.
24. Watkin Tench [1793], "A Complete Account of the Settlement in New South Wales," in *Sydney's First Four Years*, ed. L.F. Fitzhardinge (Sydney: Angus and Robertson in Association with the Royal Australian Historical Society, 1961), 137.
25. Anon, *Letter from a Female Convict*, November 14, 1788, in *Historical Records*, vol. 2, 747.
26. Phillip to Nepean, January 4, 1787, in *Historical Records*, vol. 1.2, 45.
27. Ralph Clark had his own box of shot; see Ralph Clark in *Journal and Letters of Lt. Ralph Clark 1787–1792*, ed. Paul G. Finlon and R.J. Ryan (Sydney: Australian Documents Library in Association with the Library of Australian History Pty Ltd, 1981), 94. Sergeant James Scott on the Prince of Wales found 196 cartridges damaged. Phillip told Lord Sydney that they "were only supplied with what was necessary for immediate service while in port". See Phillip to Sydney, June 5, 1787, *Historical Records*, vol. 1.2, 106f.
28. Myra Stanbury, *HMS Sirius 1790: An Illustrated Catalogue of Artefacts Recovered From the Wreck Site at Norfolk Island* (Adelaide: Australian Institute for Marine Archaeology Special Publication no. 7, 1994), 83.
29. Phillip to Sydney, June 5, 1787, *Historical Records*, vol. 1.2, 106f.
30. Phillip to Nepean, June 5, 1787, *Historical Records*, vol. 1.2, 107f.
31. Phillip to Nepean, June 10, 1787, *Historical Records*, vol. 1.2, 108f.
32. Charles Lyte, *Sir Joseph Banks 18th Century Explorer: Botanist and Entrepreneur* (Newton Abbot, Devon: David & Charles, 1980), 230.
33. Wilfrid Oldham, *Britain's Convicts to the Colonies* (Sydney: Library of Australian History, 1990), 140.
34. Alan Frost, *Arthur Phillip 1738–1814: His Voyaging* (Melbourne: Oxford University Press, 1987), 153.
35. Phillip to Nepean, September 2, 1787, *Historical Records*, vol. 1.2, 111.
36. Phillip to Nepean, July 9, 1788, enclosure, *Historical Records*, vol. 1.2, 155.
37. Tench, "A Complete Account," 162. This practice was discontinued when a signal flag was established on South Head at the entrance to Sydney Harbour.
38. Worgan, *Journal*, 50.
39. Watkin Tench [1789], "A Narrative of the Expedition to Botany Bay with an Account of New South Wales ... A Complete Account of the Settlement in New South Wales (1789)," in Fitzhardinge, *Sydney's First Four Years*, 48.
40. John Cobley, *Sydney Cove 1788* (London: Hodder and Stroughton, 1962), 107.
41. George Caley in *Reflections on the Colony of New South Wales*, ed. J.E.B. Currey (Melbourne: Lansdowne Press, 1966), 40.

42. On 17 August, 1788, Hunter's musquet misfired; see John Hunter [1793], *An Historical Journal of the Transactions at Port Jackson and Norfolk Island ...* (Adelaide: Libraries Board of South Australia Facsimile, 1968), 83. Musquets misfired at Manly Cove in September 1790; see Tench, "A Complete Account," 180.
43. Theodore Ropp, *War in the Modern World* (Durham, North Carolina: Duke University Press, 1959), 34, note 30.
44. Brian J. Given, *A Most Pernicious Thing: Gun Trading and Native Warfare in the Early Contact Period* (Ottawa: Carleton University Press, 1994), 103.
45. Joan B. Townsend, "Firearms Against Native Arms: A Study in Comparative Efficiencies with an Alaskan Example," *Arctic Anthropology* 20.2 (1983): 1–33; H.A. Parsons, *The Truth About the Northern Territory*, (Adelaide: Hussey and Gillingham, 1907), 5; Dorothy Shineberg, "Guns and Men in Melanesia," *Journal of Pacific History* 6 (1971): 77.
46. Cogley, *Sydney Cove 1788*, 22.
47. Hunter, *Transactions*, 54.
48. R. Money Barnes, *A History of the Regiments & Uniforms of the British Army* (London: Seeley Service & Co., 1951), 62; George Grey, *Journals of Two Expeditions of Discovery in North-West and Western Australia During the Years 1837, 38 and 39...* (London: Thomas W. Borge & Co., 1969), 1, 105.
49. Ross to Stephens, November 16, 1788, *Historical Records*, vol.1.2, 215–18.
50. David Collins to George Collins, February 1, 1787 in *David Collins, A Colonial Life*, ed. John Currey (Melbourne: Melbourne University Press, 2000), 33; Phillip to Sydney, March 12, 1787, in *Historical Records*, vol. 1.2, 56–57.
51. Phillip to Sydney, March 12, 1787, *Historical Records*, vol. 1.2, 56f.
52. Phillip to Nepean, July 9, 1788, *Historical Records*, vol. 1.2, 153.
53. Newton Fowell to his Father, July 31, 1790 in *The Sirius Letters - The Complete Letters of Newton Fowell*, ed. Nancy Irvine (Sydney: The Fairfax Library, 1988), 115.
54. Phillip to Nepean, July 9, 1788, *Historical Records*, vol. 1.2, 153. Phillip told Lord Sydney that he wanted to send three or four companies to Parramatta (head of the harbour); see Phillip to Sydney, July 9, 1788, *Historical Records*, vol. 1.2, 150f.
55. See Appendix to this article.
56. See George Raper, *Plan of Port Jackson, coast of New South Wales...as Survey'd by Cap'n Hunter 1788*, National Library of Australia, accessed September 1, 2013, <http://nla.gov.au/nla.map-rm3458>.
57. Phillip to Nepean, July 9, 1788, *Historical Records*, vol. 1.2, 153.
58. Watkin Tench in *An Authentic Journal of the Expedition Under Commodore Phillips to Botany Bay with an Account of the Settlement ...*, An Officer (London: C Forster, 1789), 27.
59. Tench, "A Narrative," 74.
60. Ralph Clark to William Collins, September 30, 1788; see Ralph Clark, in Fidlon, *Journal and Letters*, 269.
61. John Thomas Bigge, *Report of the Commissioner of Inquiry on the State of Agriculture and Trade in the Colony of New South Wales* (London: The House of Commons, 1823), 12.
62. Phillip to Sydney, September 28, 1788, *Historical Records*, vol. 1.2, 189.
63. Aborigines attacked fishing parties with spears at night; see Jacob Nagle in *The Nagle Journal, A Diary of the Life of Jacob Nagle, Sailor, from the year 1775 to 1841*, ed. John C. Dann (New York: Weidenfeld & Nicolson, 1988), 96.
64. John Easty, *Memorandum of the Transactions of a Voyage from England to Botany Bay, 1787–1793: A First Fleet Journal* (Sydney: The Trustees of the Public Library of New South Wales, 1965), 107, 109, 112. A release of smallpox at this point could produce the epidemic observed in April.
65. See report of 1763 Fort Pitt smallpox event in Elizabeth A. Fenn's "Biological Warfare in Eighteenth-Century North America: Beyond Jeffery Amherst," *Journal of American History* 86.4 (2000): 1553f.
66. Major (Robert) Donkin, *Military Collection and Remarks* (New York: H. Gaine, 1777), 215f.
67. Sir Jeffrey Amherst, Colonel Henry Boquet (and Captain Simeon Ecuver) in 1763; see Francis Parkman, *The Conspiracy of Pontiac and the Indian War After the Indian War* (London: MacMillan & Co., 1907), 44f; General Thomas Gage and possibly Sir William Howe in 1775; see Elizabeth A. Fenn, *Pox Americana The Great Smallpox Epidemic of 1775–82* (New York:

- Hill and Wang, 2001), 88f; Concerning John Murray (Earl of Dunmore) in 1775–76, Major Robert Donkin in 1777, Generals Alexander Leslie and Charles Cornwallis in 1781, and Guy Charleton in 1775–76, see Fenn, *Biological Warfare*, 1567–73. Concerning British commander of Fort Mackinac (Mackinaw) in 1782, see Helen Jaskoski, ed., *Early Native American Writing New Critical Essays* (New York: Cambridge University Press, 1996), 146f and an alternative account at 147f. Another account is by William W. Warren in *History of the Ojibway Nation* (Minneapolis: Ross & Haines, Inc., 1957), 259–62. For British commanders at Montreal circa 1757, see Jaskoski, *Early Native American Writing*, 141–45.
68. Fenn, *Pox Americana*, 92.
 69. Cyril Field, *Britain's Sea-Soldiers* (Liverpool: Lyceum Press, 1924), 153, footnote 4. In south India, a General Order to inoculate all East India Company soldiers was issued in December 1787; see Niels Brimmes, "Variolation, Vaccination and Popular Resistance in Early Colonial South India," *Medical History* 48 (2004): 202.
 70. David Day, *Claiming a Continent a History of Australia* (Sydney: Angus & Robertson, 1996), 63. Robert Murray had previously included a deliberate spread by "a scared or vengeful convict or soldier" – see Bob Murray, "Epidemic Wiped out Half the Population," *Sun-Herald*, January 31, 1988, 45.
 71. Bennett, "Smallpox and Cowpox," 49.
 72. Mollie Gillen, *The Founders of Australia A Biographical Dictionary of the First Fleet* (Sydney: Library of Australian History, 1989), 188f.
 73. Collins, *An Account of the English Colony*, 47.
 74. Collins, *An Account of the English Colony*, 53.
 75. Fowell, *The Sirius Letters*, 113. The British probably burnt some corpses; see Foley, *Repossession of Our Spirit Traditional Owners of Northern Sydney* (Canberra: Aboriginal History Inc., 2001), 56.
 76. Alexander Logbook entry for June 1, 1788 in *Historical Records*, vol. 2, 401.
 77. Easty, *Memorandum of the Transactions*, entry for December 29, 1788, 108.
 78. Editorial, *New South Wales Medical Gazette*, 1871–72, cited in J.H.L. Cumpston, *The History of Small-Pox in Australia 1788–1908* (Melbourne: Quarantine Service: Commonwealth of Australia, 1914), 148.
 79. Concerning Botany Bay, see Phillip to Lord Sydney, October 30, 1788, *Historical Records*, vol. 1.2, 208. Concerning down the harbour, see Arthur Bowes Smyth, Journal, entry for March 4, 1788.
 80. First cases would have been relatively mild, as inoculation cases. Second and third generation instances, one to two months later, would have been more lethal. There was an interval of two to three weeks between each generation of cases – see Fenner, *Smallpox and its Eradication*, 208.
 81. William Charles Wentworth, *Description of New South Wales*, facsimile edition (Adelaide: Griffin Bros., 1978), 44.
 82. Edward M. Curr, *The Australian Race: Its Origin, Languages, and the Routes by Which it Spread Itself Over That Continent* (Melbourne: John Ferres, Government Printer, 1886), 226.
 83. See William Dawes Notebooks, Book C, 9, accessed September 1, 2013, <http://tinyurl.com/berewalgal>.
 84. Davis, "First 150 Years," in *Aborigines of the West Their Past and Their Present*, ed. Ronald M. Berndt and Catherine H. Berndt (Perth: University of Western Australia Press, 1980), 58. Davis's comments were attacked by Peter Biskup, Canberra College of Advanced Education, as indicating a "biased, one-sided brand of new Australian history, as false as the old one has been." See Biskup, "Aboriginal History," in *New History Studying Australia Today*, ed. G. Osborne and W.F. Mandle (Sydney: Allen & Unwin, 1982), 30. In his thesis "Aboriginal Dreaming Tracks or Trading Paths: The Common Ways" (Phd Arts, Griffith University, 2006), Dale Kerwin notes "Aboriginal people have long argued that smallpox was introduced by Europeans in 1788," 45. There is no material basis for implicating the French in releasing smallpox in New South Wales. Such suggestions in Aboriginal lore and from Watkin Tench (1795) and Dr Thomas Jamison (1804) date from before the spread of smallpox was sufficiently understood. See "La Perouse at Botany Bay," in *History of New South Wales from the Records*, ed. G.B. Barton (Sydney: Charles Potter, Government Printer, 1889), 1, 522ff;

- and G.W. Rusden, *History of Australia*, 2nd ed. (London: Melville, Mullen & Slade, 1897) 1, note 7, 128f.
85. Foley, *Repossession of Our Spirit*, 96–98.
 86. Peter Sköld, *The Two Faces of Smallpox: A Disease and its Prevention in Eighteenth and Nineteenth Century Sweden* (Umeå: Sweden: University of Umeå, 1996), 77.
 87. Pan S. Codella, “The Case of Smallpox of Theodorus Prodomus (XIIIth Cent. A.D.),” *Bulletin of the History of Medicine* 20 (1946): 212.
 88. Joel N. Shurkin, *Invisible Fire The Story of Mankind's Victory Over the Ancient Scourge of Smallpox* (New York: G.P. Putman's Sons, 1979), 58.
 89. Replica blankets can be viewed as part of the *Endeavour* display at the National Maritime Museum, Darling Harbour, Sydney.
 90. Walter E. Roth, *Ethnological Studies Among the North-West-Central Queensland Aborigines* (Brisbane: Edmund Gregory Government Printer, 1897), 100.
 91. J.V.S. Megaw, “Marks of Natives Everywhere,” *Mankind: Official Journal of the Anthropological Societies of Australia* 8.3 (1975): 231. Frederick McCarthy, “Artists of the Sandstone” (typescript, MS 3495, Australian Institute of Aboriginal and Torres Straits Islander Studies, n.d., Canberra), 593.
 92. Without carbon dating, the age of burials can be vastly exaggerated. See Colin Pardoe's note, *Stop the Press*, in “Sharing the Past: Aboriginal Influence on Archaeological Practice, A Case Study From New South Wales,” *Aboriginal History* 14 (1990): 221. Carbon dating cannot date material more recent than the seventeenth century.
 93. L(eonard) Freeman, “Metrical Features of Aboriginal Crania From Coastal New South Wales, Australia,” *Records of the Australian Museum* 26.12 (1964): 311.
 94. Jack Carroll, *The Mosman That Was* (Sydney: P. Leahy, 1950), 6; Les “Tummy” Kewin also reports a skeleton was uncovered near Balmoral Beach; see <http://tinyurl.com/Balmoral-NSW> (accessed 1 September 2013). Traditional burials were not concentrated into sites; see Jo MacDonald, *Salvage Excavation of Human Skeletal Remains at Ocean and Octavia Streets, Narrabeen Site #45-6-2747* (Sydney: Jo MacDonald Cultural Heritage Management Pty. Ltd., Australian Archaeological Consultancy Monograph Series, 2, Australian Association of Consulting Archaeologists Inc., 2008), 14.
 95. Maggie Brady and Yin Paradies, “Health and Wellbeing,” in *Macquarie Atlas of Indigenous Australia*, ed. Bill Arthur and Frances Morphy (Sydney: The Macquarie Library, 2005), 156.
 96. Lionel Frost, Janet McCalman, and Rebecca Kippen in *The Cambridge History of Australia*, vol. 1, ed. Alison Bashford and Stuart MacIntyre (Melbourne: Cambridge University Press, 2013), 295, 322; Peter Hiscock, *Archaeology of Ancient Australia* (Abingdon: Routledge, 2008), 13f; Malcolm Prentis in *A Study in Black & White: The Aborigines in Australian History*, 3rd ed. (Sydney: Rosenberg, 2009), 35.
 97. J. Burton Cleland, “Some Diseases to, or of Interest in Australia,” in Cumpston, *History of Small-Pox*, Appendix B, 167, 169.
 98. Judy Campbell, *Invisible Invaders: Smallpox and Other Diseases in Aboriginal Australia 1780–1880* (Melbourne: Melbourne University Press, 2002).
 99. Craig Mear, “The Origin of the Smallpox Outbreak in Sydney in 1789,” *Journal of the Royal Australian Historical Society* 94.1 (2008): 17.
 100. Bennett, *Smallpox and Cowpox*, 46.
 101. Macknight, *View from Marege*, 137.
 102. Campbell, *Invisible Invaders*, 66.
 103. Alan Frost, *Botany Bay Mirages* (Melbourne: Melbourne University Press, 1995), 202.
 104. Christopher Warren, “Could First Fleet Smallpox Infect Aborigines?,” *Aboriginal History* 31 (2007): 158.
 105. Campbell, *Invisible Invaders*, 107, citing assistant surgeon R.M. Davis.
 106. According to Boomgaard, smallpox occurred at Macassar in 1789. Presumably, there was no prior outbreak significant enough to be recorded; see P. Boomgaard, “Smallpox and Vaccination on Java, 1780–1860; Medical Data as a Source for Demographic History,” in *Dutch Medicine in the Malay Archipelago 1816–1942I*, ed. G.M. Heteren, A. de Knecht-van Eekelen, and M.J.D.Poullissen (Amsterdam: Rodopi, 1989), 120.

107. D. Schoute, *Occidental Therapeutics in the Netherlands East Indies during three Centuries of Netherlands Settlement 1600–1900* (Batavia: Netherlands Indian Public Health Service, 1937), 65.
108. From at least 1715, see Schoute, *Occidental Therapeutics*, 62.
109. Cleland in Cumpston, *History of Small-Pox*, 170.
110. Luise Hercus and Peter Sutton, eds., *This is What Happened: Historical Narratives by Aborigines* (Canberra: Australian Institute of Aboriginal Studies, 1986), 119ff.
111. F.D. McCarthy, "Trade in Aboriginal Australia, and Trade Relationships with Torres Strait, New Guinea and Malaya, continued," *Oceania* 10.1 (1939–40): 100 and Map 16 in *Oceania* 10.2 (1939–40): 191.
112. Six most important trade routes are detailed at Dale Kerwin, *Aboriginal Dreaming Paths and Trading Routes The Colonisation of the Australian Economic Landscape* (Eastbourne: Sussex Academic Press, 2010), 109–12.
113. Robert Dawson, *The Present State of Australia: A Description of the Country, its Advantages and Prospects ...* (London: Smith, Elder and Co., 1830), 323f.
114. Edmund Lockyer to Governor Darling, April 2, 1827 in *Journal and Proceedings Western Australian Historical Society* 2.19 (1936): 7.
115. Judy Campbell, "Smallpox in Aboriginal Australia, 1829–31," *Historical Studies* 20.81 (1983): 546.
116. For Botany Bay, see Iris Williams in *Talking Lapa A Local Aboriginal Community History of La Perouse* (North Sydney: New South Wales Board of Studies, 1995), 15. For Port Jackson, see Anita Heiss, *Life in Gadigal Country* (Sydney: Gadigal information Service, 2002), 12. Both sources lack authority by themselves but, taken together, present a consistent picture. Bradley notes that natives fled west ("up the harbour"). Fowell notes natives fled north.
117. Curr, *Australian Race*, 226.
118. Macknight, *View from Marege*, 137.
119. Butlin, *Our Original Aggression*, 17.
120. Butlin, *Our Original Aggression*, 22.
121. Brian Fletcher, "National History and National Identity in Postcolonial Australia," *Journal of the Royal Australian Historical Society* 83.1 (1996): 2.
122. Campbell challenged Noel Butlin's work on this ground; see Campbell, *Invisible Invaders*, 61.
123. According to J. Shyllon, "the law and public opinion in eighteenth-century England did not regard Africans as human beings...they were chattels or playthings". See J.O. Shyllon, *Black Slaves in Britain* (London: The Institute of Race Relations, 1974), 196–97.
124. The *Zong* was a ship carrying slaves. The owners claimed insurance when the ship's captain, Luke Collingwood, killed African-American slaves. If slaves died naturally, no insurance payout was available. Collingwood's deliberations and later court hearings shed light on British practices and values concerning native people in the 1780s. According to statements from British Solicitor-General Lee and Justice Buller, "a portion of our fellow creatures may become the subject of property" and murder does not apply if they are necessarily destroyed; see English Law Report, *Gregson v Gilbert* (1783) 3 Doug. 232. According to Lord Chief Justice Mansfield, throwing African-American slaves overboard was the same as if horses had been thrown overboard. See Jeremy Krikler, "The *Zong* and the Lord Chief Justice," *History Workshop Journal* 64 (2007): 36. The *Zong*'s captain reasoned: If slaves died naturally, ship owners would lose, but if slaves were necessarily destroyed, insurers would lose; see *Substance of the Debates on a Resolution for Abolishing the Slave Trade which was moved in the House of Commons on 10th June 1806...*(London: Phillips and Fardon, 1806), 178.
125. Fenn, *Biological Warfare*, 2000: 1574–1576.
126. Charles Wilson proposed that it may have been "the commonsense Englishman in (Phillip) that bound him to respect the instructions of his Royal Commission;" see Wilson, "Aboriginal Depopulation a Rejoinder to Noel Butlin," *Quadrant* (July 1985): 18. Wilson similarly claimed that Arthur Phillip and his principal officers "carried out their Commission to protect Aborigines and live in amity with them with unbelievable patience" in "History, Hypothesis and Fiction: Smallpox and Aboriginal Genocide," *Quadrant* (March 1985): 29, and he argued that Governor Phillip "took the terms of his commission and especially his duty to the Aborigines in deadly earnest" in *Australia 1788–1988 The Creation of a Nation* (London: Weidenfeld and Nicolson, 1987), 78. Frank Welsh in his *Australia - A New History of the*

- Great Southern Land* (Woodstock & New York: The Overlook Press, 2004) says “it would also be completely at odds with Phillip’s character”, see note 11, 588. Also see, Anon., “The Dreadful Havock Sydney’s 1789 Smallpox Epidemic,” the *Site Gazette*, Friends of the First Government House Site 14.4: 4b, suggesting that eighteenth-century concepts of honour, duty, patronage, and the authority of superiors meant they would not unleash smallpox. Phillip’s Instructions are at *Historical Records*, vol. 1.2, 84–91.
127. See Adam Shortt and Arthur G. Doughty, eds., *Documents Relating to the Constitutional History of Canada 1759–1791* (Ottawa: Canadian Archives, 1918), 199, 319f.
 128. See Justice Blackburn’s *Milirrpum v Nabalco & Commonwealth* (1971), Decision at 17 FLR 141, section (5)(b)-(c).
 129. Phillip to Marquis of Lansdowne, July 3, 1788, *Historical Records*, vol. 2, 411.
 130. David Blair, *The History of Australasia* (Glasgow: McGready, Thomson, & Niven, 1879), 259.
 131. Marjorie Barnard Eldershaw, *Phillip of Australia: An Account of the Settlement at Sydney Cove 1788–92* (Sydney: Angus and Robertson, 1972), 151. Jan Kociumbas describes the situation as “propitious for a genocidal response;” see “Genocide and Modernity in Colonial Australia, 1788–1850,” in *Genocide and Settler Society: Frontier Violence and Stolen Children in Australian History*, ed. A. Dirk Moses (New York: Berghahn Books, 2004), 80.
 132. October 2, 1788, Collins, *An Account of the English Colony*, 1, 35.
 133. Tench, *A Complete Account*, 136f. Fishburn and Golden Grove departed on 19 November.
 134. Captain James Campbell wrote to Baron Ducie, “There is nothing but distress staring us in the face”. See George Mackaness, *Admiral Arthur Phillip Founder of New South Wales 1738–1814* (Sydney: Angus & Robertson, 1937), 184. Collins felt that being left without a ship created a strikingly novel circumstance and a peculiar, precarious, situation. See Collins, *An Account of the English Colony*, 1, 46.
 135. Bradley, *A Voyage to New South Wales*, 125. Lieutenant Ralph Clark labels Aborigines as “beginning to be very troublesome” in his letter to Hartwell, July 12, 1788 in Fidlon, *Journal and Letters of Clark*, 266f.
 136. At this time, Lieutenant Clark writes privately, “I never was so Sick of any thing in my life as I am of this Settlement”. Clark to Reynolds, November 17, 1788 in *Journal and Letters of Clark*, 274f.
 137. Jeffrey Grey, *A Military History of Australia* (Cambridge: Cambridge University Press, 1999), 28. This is an understatement.
 138. Phillip to Sydney, February 13, 1790, in *Historical Records*, vol. 1.2, 310.
 139. *Cooper v Stuart* (1889) 14 AC 286 at 291.
 140. C.D. Rowley, *The Destruction of Aboriginal Society. Aboriginal Policy and Practice, Volume 1* (Canberra: Australian National University Press, 1970), 2, 6.
 141. W.E.H. Stanner, *The Boyer Lectures 1968 After the Dreaming Black and White Australians, an Anthropologist’s View* (Sydney: Australian Broadcasting Commission, 1968), 36.
 142. W.E.H. Stanner, “The History of Indifference Thus Begins,” *Aboriginal History* 1.1 (1977): 23.
 143. W.E.H. Stanner, “Foreword,” in *Aborigines Now, New Perspective in the Study of Aboriginal Communities*, ed. Marie Reay (Sydney: Angus and Robertson, 1964), viii.
 144. Available from 1972; see Phyllis Mander-Jones, ed., *Manuscripts in the British Isles Relating to Australia, New Zealand and the Pacific* (Canberra: Australian National University Press, 1972), 341.
 145. Richard Broome, *Aboriginal Australians A History Since 1788*, 4th ed. (Sydney: Allen & Unwin, 2010), 13, 187.
 146. Macknight, *View from Marege*, 137.

Appendix 1

Losses to detachment of marines as at February 1789 [Sourced from Gillen*]

30 April 1788	Harmsworth, Thomas	Died
30 November 1787	Creswell, Daniel	Died
20 November 1787	Talbot, Peter	Died
20 June 1788	Gannon, John	Died
22 June 1788	Petrie, Henry	Died
15 June 1788	Batchelor, John	Drowned
10 October 1788	Jones, John	Died
26 October 1788	Rogers, James	Missing
11 November 1788	Bullmore, Thomas	Manslaughter victim
2 February 1789	Shea, John	Died
24 February 1789	Edmondson, William	Died

Others permanently incapacitated

Maxwell, James	July 1788 Incapable of duty.
Collins, William	14 July 1788, returned to England.
Maxwell, George William	Mentally disturbed. Declared insane 26 December 1789.
Meredith, James	Unfit for duty – 16 November 1788.

On unfit list**

Privates	21	As at 9 July 1788
Drummer	1	As at 9 July 1788
Serjeants (sic)	2	As at 9 July 1788
First Lieutenant (Davey)	1	As at 9 July 1788

13 Privates unfit as at 16 November 1788

Replacements from naval ships

<i>Sirius</i>	<i>Supply</i>
George Flemming – 2 July 1788	Jonathon Woodman – 15 November 1788
Isaac Tarr – 2 July 1788	Richard Richardson – 15 November 1788
James Angell – 2 July 1788	James Mathews – 15 November 1788
Thomas Garvin – 21 June 1788	William Dawes – 24 May 1788.

* Gillen, Mollie, *The Founders of Australia A Biographical Dictionary of the First Fleet* (Sydney: Library of Australian History, 1989). ** *Historical Records*, 2: 411.