Balga, Boodja & Measles

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Abstract

There is documentary evidence that a severe measles epidemic hit south-west Australia in the winters of 1860 and 1861, and another in the winters of 1883 and 1884. The latter epidemic extended to the north-west of the state. These two epidemics, together with diphtheria, whooping cough, influenza, alcohol, venereal disease, and violence greatly reduced the indigenous Noongar people of the south-west corner, and led most of the survivors to abandon their traditional lifestyle. The survivors mostly left their home country (boodja) and moved to the outskirts of settler towns. This reduction in Noongar population, and the change in lifestyle of the survivors, must have affected traditional use of fire.

It has been found recently that the common grasstree (Xanthorrhoea preissii), known to Noongars as balga (balka, palka etc.), records fires as black marks on its stem. Given that these plants can live for over three hundred years, we can now reconstruct fire history back to times before 1829, when Europeans first settled on the Swan River. The commonest interval between fires at any one place was about three years, but there was some variation. Some places, probably grassy, were burnt more often, every two years. Some bare, gravelly ridges only burnt every 15-25 years.

On grazing country, Europeans kept up the traditional fire frequency until quite recently, at some places until the outbreak of World War 2, or even until the early 1960s, when some 99 year leases expired.

These reconstructed fire histories match well with the oral tradition of the Noongar community, and with the recollections of the descendants of early settler families. They also match well with fire practices reported in the journals and letters of early European explorers.

Rottnest Island was used as a prison for Aborigines from the 1830s to the 1930s. Committals of people from the south-west declined sharply after the 1860s. Committals from the north-west declined after the 1880s.

Sailing Ships, Steamers & the Measles Virus

The First Fleet of British ships to arrive in Australia in 1788 took more than 300 days to make the voyage. By the 1850s clipper ships such as the *James Baines* and *Marco Polo* were doing the journey in 60 days, and the introduction of steam ships at about the same time led to further reductions in the voyage time (Cliff *et al.* 1993).

In the early years of European settlement, Australia was free of measles, due to the quarantine provided by the long voyage from England. At Fremantle in 1843, Surgeon Dinely wrote "*Measles, small pox, typhus, or puerperal fevers, or any of those dire diseases to which the Mother Country is subject are here unknown.*" (Cumpston 1927). Those people, usually children, who were carrying the virus when they embarked, had either died or recovered by the time they reached Australia (Cliff *et al.* 1993). Faster ships, however, enabled the virus to break through. By 1850 measles outbreaks had occurred in Victoria and New South Wales. Tasmania followed in 1854, Queensland in 1857, South Australia in 1859 and Western Australia in 1860 (Cumpston 1927, Cliff *et al.* 1993).

Measles first arrived in Western Australia in the 1850s, but was successfully quarantined at Fremantle. In 1860, however, the virus arrived in the port of Albany, and spread among the local population, including the native Noongar people. It then spread up the Albany Highway towards Perth, visiting towns such as Mount Barker, Kojonup, Williams, Beverley, and York. A contemporary observer, the Anglican vicar's wife at York, said in her diary that "*Measles were brought into Western Australia, in 1860, from a ship that entered King George's Sound and landed one person ill with the disorder. It spread widely and rapidly, assuming a very virulent character, more especially among the natives, of whom so many died that both they and the colonists in alluding to the visitation spoke of it in terms that would have been almost applicable to a time of pestilence. A lady of our acquaintance told me that on getting up one morning, she found a native woman who had been suffering from measles lying dead outside the house... she presumed that the poor creature must have found herself abandoned by the other natives, in terror of the infectious nature of the disease.*"(Millett, 1872)

By 1870 the Noongar population had declined noticeably, due to measles, other diseases, and violence (Green 1979). As a result of decreased hunting pressure, the kangaroo population seems to have increased. The Colonial Secretary, the Honorable F. Barlee, introduced a bill in parliament to repeal the need for a licence to shoot kangaroos. In the first reading, he was reported as saying that "*Kangaroos and other wild animals had increased so greatly, that their destruction was absolutely necessary. The natives were not numerous enough to consume them, and besides they now lived more on flour etc. which they procured from the European population, than on the kangaroo and other animals."*

Mr. Monger and Mr. Shenton disagreed on the matter of the Noongar need for kangaroo meat. Mr. Monger said that "*The natives to the eastward of York live upon kangaroo, and it would be a great hardship to them if a license was given to have them destroyed*". Mr. Shenton said that "*Between Perth and Toodyay a number of natives live on kangaroo.*" Mr. Barlee replied that "*The kangaroos had increased so much while the natives had so decreased that their* [kangaroos presumably] *destruction was necessary as they ate up the natural grasses from sheep and cattle.*" However, Barlee agreed not to pass the bill if it would "*injure the natives*" (West Australian Hansard 1870).

A second measles epidemic broke out in 1883. Governor Broome wrote to the Secretary of State in London (Broome 1884). "*I regret to inform you that the disease of Measles has for some time prevailed in this Colony... The last occasion on which*

Measles was prevalent here was in the year 1861, when it caused great havoc among the Aboriginal population, and also severely affected the Europeans... Some, though not very many, of the Aboriginal natives, have succumbed to the disease at Esperance Bay, in the neighborhood of Albany, and elsewhere... But the native population have not yet been seriously affected as a whole, and certainly it has caused no devastation among them comparable to that which took place when it was epidemic twenty-two years ago. It must be recollected, it is true, that the natives are now much fewer in number; but there are still many in the more Northern Districts, and it is here that I fear grave results."

Broome's opinion on the relative mildness of the 1883/4 epidemic in the south-west does not match with other reports. One European observer said that "*The measles epidemic of the early 'eighties affected the natives of the South-West and East very much. They died off in great numbers; and the nature of those that were left was altered; they lost all interest in bush life; they did not care what the others did or where they went and they were never the same people again. They dropped their own tongue and used the white man's language; they drifted away from all laws, ceremonies and customs. When their old chief Winjan died in 1884, it was the end of the real Aboriginal of the South-West.*" (Hammond 1933).

The Colonial Surgeon (Waylen 1883) reported that "*...the general death rate was higher than it has been for some years... One or two circumstances have led to this result, chief amongst which may be mentioned an epidemic of measles which, up to the close of the year, had invaded all the Districts of the Colony, and was then spreading. It is 22 years since the last visitation of this malady, so that what in most parts of the world is looked upon as one of the diseases of childhood, became in this Colony one of adult life, frequently assuming a very severe form, characterised by intense fever, delirium, and bronchial complications.*" There is a probable link between measles virulence and conditions of poor nutrition, overcrowding, and intensive exposure (Morley 1969, in Cliff *et al.* 1993). These are exactly the conditions which Noongars would have experienced at that time, as they were driven off their own country, and forced to share with other groups.

In his next report (Waylen 1884), the Colonial Surgeon noted that "*By the end of the year measles had visited every district, with more or less severity, and but few families escaped; it spread amongst the aboriginals, especially about the Murchison and the Gascoyne, where, owing to exposure and want of proper care and nourishment, many died.*" Dr. Waylen did note that the epidemic was less severe in the south-west than the previous one of 1860/61. There were further outbreaks of measles in 1893, 1898, 1908, 1911, 1915, 1921 and 1924 (Cliff *et al.* 1993).

In the same year as Governor Broome's letter to the Colonial Secretary, a report on the treatment of Aboriginal prisoners (Anon. 1884) stated that "*It is a melancholy fact that throughout Australia the Aboriginal Race is fast disappearing... In what may be termed the Home District of this Colony, which is bounded on the North by the Murchison River, on the East by a line parallel to the coast and from 60 to 100 miles from it, and on the South and West by the sea, a great part of which has been occupied nearly fifty years, the fact that the aborigines are fast disappearing is apparent on all sides; and it is a mournful truth that, whatever is done, it appears to be an impossibility to avert this downward course.*"

Although the measles epidemics killed many Noongars directly, comments by several Europeans at or close to that time suggest that there was an ensuing effect of deep despair and depression on the survivors (Hammond 1937, Bates 1938). Such despair would lead to self-destructive behaviour such as alcoholism, collapse of family structure, lethal brawling, and a decline in libido and reproduction. Thus the Noongar population continued to decline for several decades after the epidemics, as older people died and there were few young ones to take their place. Combined with land dispossession and the breakdown of traditional values, introduced disease seems to have caused deep despair, depression, and even mental derangement amongst Noongar people (Bates 1938). To leave their *boodja*, or traditional country, was the ultimate disaster. A probable cause of the desertion was the unavailability of various traditional foods connected with those who had died. Such totemic plants or animals could not be eaten for some months after the death, and with many deaths, so many foods became unavailable that their *boodja* could no longer support them.

By the turn of the century, Daisy Bates found only a handful of pure Noongars left in the Swan Valley, or elsewhere in the south-west. She learnt the phrase "*Jangga meenya bomunggur*" - the smell of the white man is killing us (Bates 1938). The sharp decline of indigenous populations from diseases introduced by European colonists was not confined to Western Australia, nor to Australia in general. In New South Wales "... *half the Aborigines between the Hawkesbury and Botany Bay died from smallpox during April and May 1789...* "(Butlin 1983). There were lethal epidemics in both North and South America, New Zealand, and Pacific Islands such as Fiji, Tahiti, Samoa and the Cook Islands (Cliff *et al.* 1993). For example, "... *in some places where the Indians dyed of the Plague some fourteene yeares agoe, is much underwood, as in the mid way betwixt Wessaguscus and Plimouth, because it hath not been burned.*" (William Wood, Massachusetts, 1639, in Budiansky 1995). There is a strong case for considering disease, and the ensuing depression and self destruction, to be the major cause of decline in indigenous people following colonisation, far exceeding direct violence by firearms (Grenfell Price 1964).

The Balga Record

It has recently been found that the common grasstree (*balga, balka, palka* etc.) of south-western Australia (*Xanthorrhoea* spp.) retains, on its stem, black marks from past fires. There are also annual growth marks on the stems. Since *balga* can live for several centuries, we have a way of reconstructing fire history back to pre-European times (Ward 1996, Ward & Sneeuwjagt 1999).

A widespread survey of *balga* stems has been carried out in the jarrah (*Eucalyptus marginata*) forest of the south-west. The results are discussed elsewhere (Ward & Van Didden 1997), but the general trend in intervals between fires can be seen in Figure 1.

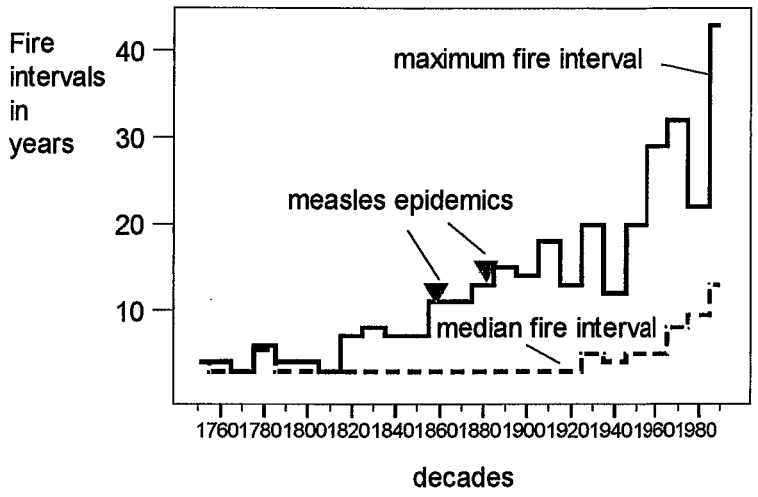

Figure 1: Fire intervals of the jarrah forest of south-western Australia

Two more surveys are currently under way – in Yalgorup National Park (tuart forest *Eucalyptus gomphocephala*) and John Forrest National Park (jarrah forest *Eucalyptus marginata*). The following graphs show the general trend in fire frequency for each National Park over the past two centuries.

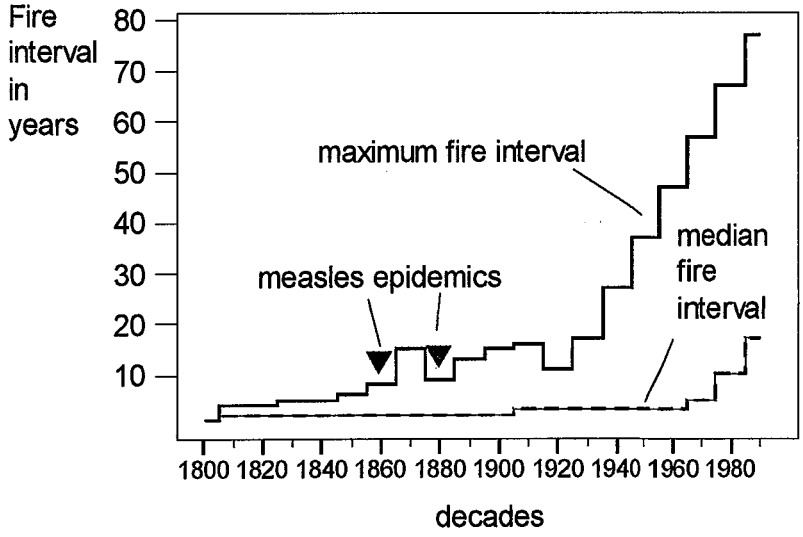

Figure 2: Fire intervals of the tuart forest in Yalgorup National Park

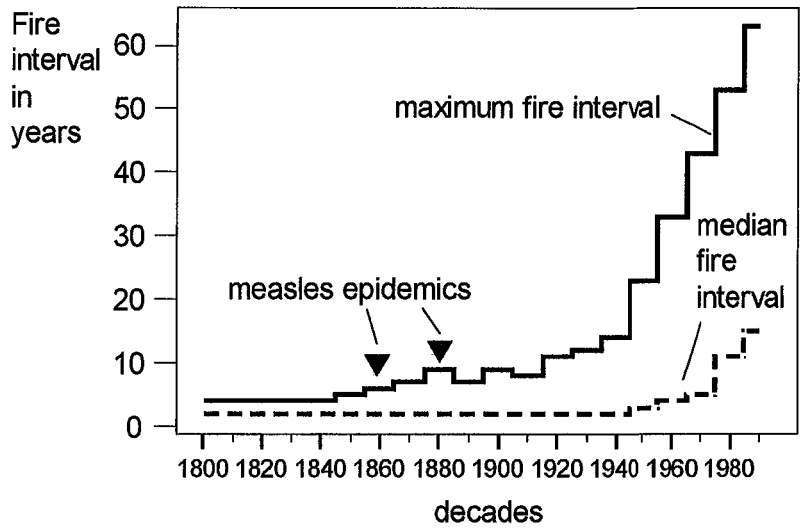

Figure 3: Fire intervals of the jarrah forest in John Forrest National Park

The Rottnest Records

Rottnest Island, off the West Australian coast, was used as a prison for Aborigines from the 1830s to the 1930s. Records of committals have been collated (Green & Moon 1997), and the following graphs show trends in total committals, split into north-west and south-west, and committals specifically for "firing the bush".

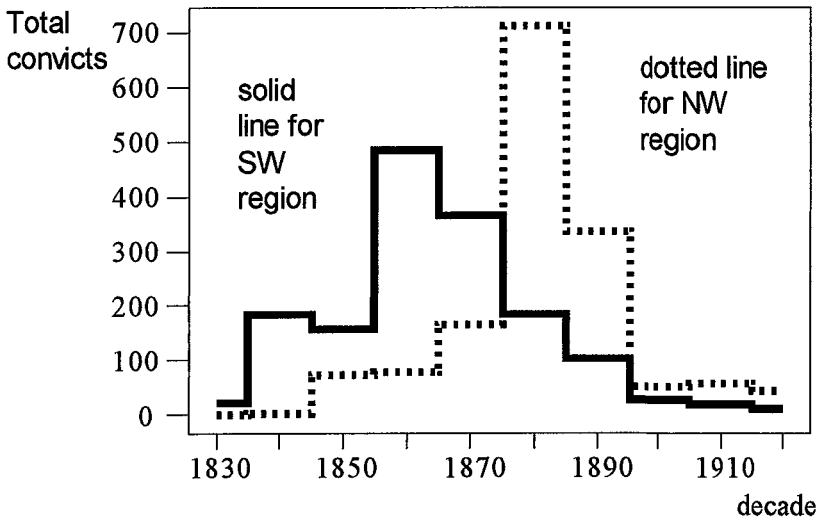

Figure 4: Aboriginal prisoners on Rottnest Island for all offences 1830s-1920s

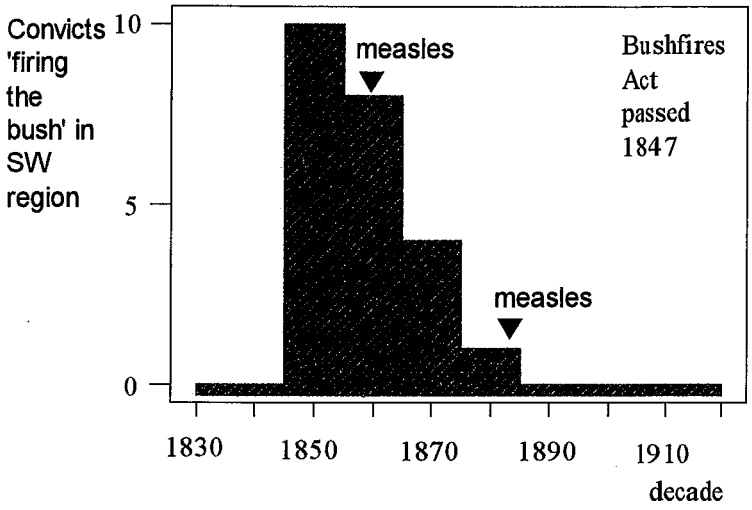

Figure 5:Aboriginal prisoners from south-west Australia on Rottnest Island for "Firing the Bush"

Conclusion

The frequency of bushfire prior to European settlement in Australia has been the subject of much debate and speculation (Ryan *et al.* 1995, Benson & Redpath 1997). It is of more than academic interest. The climate and vegetation of south-western Australia can lead to extreme fire behaviour under summer conditions. Both for conservation and for the safety of human life and property, we need to understand the role of fire, and how it can best be managed. History is an essential starting point for any fire study.

We know from early European accounts that Noongar people used fire frequently and widely (Nind 1831, Moore 1884, in Green 1979). Although European settlers imitated the Noongar use of fire, they did not fully understand the techniques and reasons for burning. Europeans were interested only in a simplified fire regime which aimed to improve grazing and give protection from wildfires (Hallam 1975). Noongars were interested in a wide range of plants and animals, and other values such as visibility and accessibility.

The unprecedented increase in intervals between fires over the past few decades can be attributed to the public and political influence of some naive ideas on conservation, which, due to a cultural bias, fail to mesh with the real history and ecology of fire in Australia. Over the past few decades there has been a campaign by some conservationists to exclude fire from public lands, or greatly reduce its frequency (Robertson 1997). The cultural origins of this opposition to fire are intricate, and the historical roots have been traced back to environmental desiccation theories of the eighteenth century, arising from the writings of the ancient Greek Theophrastus (Glacken 1967, in Grove 1995, 1998). These theories on forest removal, drought, and fire had great influence on the nineteenth century officers of the Indian Forest Service,

and thence on the U.S. Forest Service, and later on West Australian foresters such as Charles Lane-Poole and Stephen Kessell (Pyne 1991, Ward 2000).

The *balga* record is a useful step toward a realistic view on fire ecology, but there is much to be learnt about season of burn, techniques of burning, and effects of fire on plants, animals, and soil properties. It is known that Aboriginal people in northern Australia still have an advanced practical understanding of fire behaviour and effects (Stocker 1966, Haynes 1985, Rose 1997, Bradley *et al.* 1997, Russell-Smith 1997). Anecdotal evidence from Noongar survivors suggests that their ancestors understood these matters too, and burnt most places in south western Australia, on average, every 3-4 years (Eades 1999). To survive by hunting and gathering in a highly flammable environment for many thousands of years they must have well understood fire behaviour and the effects of fire on plants and animals. If we can combine that traditional knowledge with current science and technology, we will be able to care for the bush in a more understanding way. We also owe it, as a mark of respect, to the traditional custodians of the land.

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