





Baiame, the creator Spirit Emu, left the earth after its creation to reside as a dark shape in the Milky Way. The emu is inextricably linked with the wide grasslands of Australia, the landscape managed by Aboriginals. The fate of the emu, people, and grain are locked in step because, for Aboriginal people, the economy and the spirit are inseparable. Europeans stare at the stars, but Aboriginal people also see the spaces in between where the Spirit Emu resides.



DARK EMU

Dark Emu won both the Book of the Year Award and the Indigenous Writer's

Prize in the 2016 New South Wales Premier's Literary Awards.

Bruce Pascoe, who has been writing for many years, is currently working on

two films for ABC TV, a novel and various other contributions to Aboriginal

writings in Australia. He lives at Gipsy Point, Victoria, and has a Bunurong, Tasmanian and Yuin heritage.

Photograph courtesy Matthew Newton, Rummin Productions



Dark Emu

Aboriginal Australia and the birth of agriculture

BRUCE PASCOE



A catalogue record for this book is available from the National Library of Australia



Department of Local Government, Sport and Cultural Industries



First published 2014

Reprinted 2014 x3, 2015 x2, 2016 x7, 2017 x3, 2018 x2

New edition 2018

Magabala Books Aboriginal Corporation, Broome, Western Australia

Website: www.magabala.com

Email: sales@magabala.com

Magabala Books receives financial assistance from the Commonwealth Government through the

Australia Council, its arts advisory body. The State of Western Australia has made an investment in this

project through the Department of Local Government, Sport and Cultural Industries. Magabala Books

would like to acknowledge the generous support of the Shire of Broome, Western Australia.

Copyright © Bruce Pascoe, Text, 2018

Copyright © Photographs, maps, illustrations as credited

The author asserts his moral rights.

All rights reserved. Apart from any fair dealing for the purposes of private study, research, criticism or

review, as permitted under the Copyright Act, no part of this publication may be reproduced by any

process whatsoever without the written permission of the publisher.

Cover Design Jo Hunt

Typeset by Post Pre-Press Group

Printed and bound by Griffin Press, South Australia

To the Australians

Contents

[Introduction](#)

[1. Agriculture](#)

[2. Aquaculture](#)

[3. Population and Housing](#)

[4. Storage and Preservation](#)

[5. Fire](#)

[6. The Heavens, Language, and the Law](#)

[7. An Australian Agricultural Revolution](#)

[8. Accepting History and Creating the Future](#)

[Acknowledgements](#)

[Picture credits](#)

[Notes](#)

[Bibliography](#)

[Index](#)

Introduction

After my book on the colonial frontier battles, *Convincing Ground*, was published in Australia in 2007, I was inundated with more than 200 letters and emails — many of them from fourth-generation farmers and Aboriginal

people. Farmers sent me their great grandparents' letters and documents about the frontier war, and Aboriginal people sent new information on many of those same battles.

I already had a pile of information collected from research conducted too late to make it into *Convincing Ground*, and, after following the leads from correspondents, I discovered much more.

I began to see a consistent thread running through the material: not only that the frontier war had been misrepresented in what we had been taught in school, but also that the economy and culture of Aboriginal and Torres Strait

Islander people had been grossly undervalued.

I knew that if I were to use all the new material in another book, I would have to begin from the sources upon which Australia's idea of history is based: the journals and diaries of explorers and colonists.

These journals revealed a much more complicated Aboriginal economy than the primitive hunter-gatherer lifestyle we had been told was the simple lot of Australia's First People. Hunter-gatherer societies forage and hunt for food, and do not employ agricultural methods or build permanent dwellings;

they are nomadic. But as I read these early journals, I came across repeated

references to people building dams and wells; planting, irrigating, and harvesting seed; preserving the surplus and storing it in houses, sheds, or secure vessels; and creating elaborate cemeteries and manipulating the landscape — none of which fitted the definition of a hunter-gatherer. Could it

be that the accepted view of Indigenous Australians simply wandering from plant to plant, kangaroo to kangaroo, in a hapless opportunism, was incorrect?

It is exciting to revisit the words of the first Europeans to ‘witness’ the pre-colonial Aboriginal economy. In *Dark Emu*, my aim is to give rise to the possibility of an alternative view of pre-colonial Aboriginal society. In reviewing the industry and ingenuity applied to food production over millennia, we have a chance to catch a glimpse of Australia as Aboriginals saw it.

Many readers of the explorers’ journals see the hardships they endured, and are enthralled by their finds of grassy plains, bountiful rivers, and sites where great towns could be built; but by adjusting our perspective by only a few degrees, we see a vastly different world through the same window.

The first colonists had their minds wrought by ideas of race and destiny; by the rumours heard as children of the great British Empire. They were

immersed in these stories as infants, and later while marching in to school to

‘Men of Harlech’, standing to attention for ‘God Save the King’, and poring breathlessly over the stories of Horatio Nelson, the Christian Crusaders, King

Arthur, Oliver Cromwell, and, of course, Captain James Cook.

Europe was convinced that its superiority in science, economy, and religion directed its destiny. In particular, the British believed that their successes in industry accorded their colonial ambition a natural authority, and

that it was their duty to spread their version of civilisation and the word of God to heathens. In return, they would capture the wealth of the colonised lands.

Charles Darwin’s theory of evolution was still to come, but the basis of it, the gradual ascent from beast to civilised man, dominated the psychology of Europe at the time. The first British visitors sailed to Australia contemplating

what they were about to find, and innate superiority was the prism through which their new world was seen.

When Darwin’s theory was put forward, it gave comfort to those who believed it was their right and duty to occupy the ‘empty’ land. As anthropologist Tony Barta commented:

The basis of that view was historical: it held that the advance of civilization was a triumphal progress, morally justifiable and probably inevitable. When Darwin lent his great gifts and influence to making the disappearance of peoples 'natural' as well as historical, his theory ... could serve as an ideological cover for policies abhorrent to his humanitarian and humanist principles. Darwin's fateful confusion of natural history and human history would be exploited fatally by others. [1](#)

Under the influence of these cultural certainties, how would it have been possible for the colonists not to believe that Englishmen were on the steepest

ascent of human endeavour? How would it have been possible for them not to

believe that the world was their entitlement, and their possession of it ordained by their God?

To understand how the Europeans' assumptions selectively filtered the information brought to them by the early explorers is to see how we came to

have the history of the country we accept today. Linda Tuwahi Smith provides an analysis of imperialism, which reveals that it is more than an economic and military exercise; it's an act of ideology, the blatant confidence

to see 'others' as tools for the will of the European. [2](#)

It is clear from the journals of the explorers that few were in Australia to marvel at a new civilisation; they were here to replace it. Most were simply describing a landscape from which settlers could profit. Few bothered with the evidence of the existing economy because they knew it was about to be subsumed.

Skewed views and misconceptions

The following story serves as a good example of the power of these assumptions and the need for colonists to legitimise their presence in the colonial field.

The Beveridge family had prospered on the colonial plains around Melbourne to the degree that a district was named after them. Once their wealth was consolidated, they decided to send a son, Peter, and his friend, James Kirby, to an area of the Murray River that had never seen European occupation.

The young men drove 1,000 head of cattle from the outskirts of Melbourne to the Murray River in 1843. They came across some natives, and Beveridge

wrote in his diary:

[M]any of them had green boughs in their hands, and after ‘yabber yabber’ they began swinging the boughs over and round their heads, and shouting ‘Cum-a-thunga, cum-a-thunga.’ We of course did not know

what their meaning was by these antics, but we guessed that by it they meant we were welcome to their land, and we made them understand that we were highly pleased at their antics and quite delighted at the words 'cum-a-thunga.' When they saw we were so much pleased at their conduct, three or four of them jumped into the water, and swam across and gave us a lot more 'cum-a-thunga,' so much so that they almost made themselves hoarse with shouting 'cum-a-thunga'. [3](#)

You would have had to work hard to convince yourself, or the governor, that

Aboriginal people were delighted to give away their land.

In subsequent days, the two young colonials observed substantial weirs built all through the river system, and speculated about who might have built

them. As they were the first Europeans in the area, they conceded that they were probably built by the 'blacks'.

Later, they witnessed the people fishing with canoes, lines, and nets. The purpose of the weirs gradually became clear. They were made by damming the stream behind large earthen platforms into which channels were let, in order to direct fish as required. On one particular day, Kirby noticed a man by one of these weirs. He wrote:

[A] black would sit near the opening and just behind him a tough stick

about ten feet long was stuck in the ground with the thick end down. To the thin end of this rod was attached a line with a noose at the other end; a wooden peg was fixed under the water at the opening in the fence to which this noose was caught, and when the fish made a dart to go through the opening he was caught by the gills, his force undid the loop from the peg, and the spring of the stick threw the fish over the head of the black, who would then in a most lazy manner reach back his hand, undo the fish, and set the loop again around the peg.⁴

How did Kirby interpret this activity? After describing the operation in such detail, and appearing to approve of its efficiency, he wrote, 'I have often heard of the indolence of the blacks and soon came to the conclusion after watching a blackfellow catch fish in such a lazy way, that what I had heard was perfectly true.'⁵

Kirby's preconceptions of what he was going to find on this frontier are so powerful that he skews his detailed observations to that prejudice. The activity he witnessed was, in fact, a piece of ingenious engineering.

Peter Beveridge wrote a book about his experiences with Aboriginal people, in which he displayed all of his and Kirby's prejudices.⁶ Despite the fact that his work is crucial to what we know of the Wati Wati clan, and that his list of words is one of the most significant, he can't disguise his contempt.

He refers to the old women as hags, continually refers to the Wati Wati as savages, and appears to have completely ignored the moiety and totemic system of their society.

Modern histories of the area claim that Peter's brother, Andrew, was killed by the Wati Wati after a dispute about blacks killing Beveridge's sheep, but Kirby's description of the event offers a startling insight into the real motivation.

Heavily armed warriors advanced on the station and ignored all other Europeans until they found Andrew Beveridge, the man who they claimed had been violating women. He was isolated and speared, and his body symbolically daubed with ochre. [7](#)

The problems at the Beveridge property, Tyntynder, followed a very familiar colonial pattern: initial acceptance followed by increasing suspicion

and anger as the Europeans refused to allow the people to make use of their ancestral lands.

Kirby relates incidents of the war with relish, but always cloaks the killings in euphemism:

The blacks ran into the lake, but the shore shelved in so far that it was not deep enough for them to swim or dive, they thus became very good targets for us. A lot of these fellows never came near the hut again, nor

did they attempt to kill a man or beast, no! they were very peaceable after this ... Sir Robert [a Wati Wati man], for instance, *never killed anyone after this, he also may have died*.[8](#)

Kirby's emphatic words hint at a ghoulish glee.

His narrative continues: 'It was open war now. If they caught us unguarded they would kill us, and we in return would (if we caught them) *help ourselves*. '[9](#) The language Kirby uses may be euphemistic, but the meaning is

unequivocal. Tyntynder was at war with the Wati Wati, despite the fact that at this stage of the settlement only one European had been killed by the Aboriginal people from that area — and that was for molesting women.

When Kirby and Beveridge chose to interpret the Wati Wati shouts of 'cum-a-thunga' as an invitation to take their land, it set in train all the violence, bitterness, and hardship typical of the colonial frontier. It was a land

contest, and neither side would withdraw from the battle.

In the dictionary he wrote in his retirement at French Island, Peter Beveridge does not give a definition of the first Aboriginal words he heard, but an examination of other studies, and discussions with linguists of the Wati Wati and the neighbouring Wemba Wemba language, reveal a phrase, 'cum.mar.ca.ta.ca', recorded by the Aboriginal Protector, George Augustus

Robinson — one of the few who recorded language and cultural information.

Its probable meaning is ‘Get up and go away.’ It’s an exclamation given great

force, as Beveridge admits, and it is improbable that it represents an invitation to take the land.

There is also a strong possibility that within the phrase heard by Beveridge is the word ‘karmer’, meaning a long reed spear, combined and added to the strongly intensive verb affix, ‘ungga’, and further combined with the plural first-person pronoun, we, ‘angurr’. Thus, ‘karmer ungga’ translates as ‘We will spear you.’

In any case, Beveridge chose not to include in his dictionary the first phrase of Wati Wati addressed to him. Perhaps he was not keen to remember

it, having since learned the true meaning.

Kirby and Beveridge weren’t just pulling their own legs; they were pulling ours in an effort to disguise the means by which they took possession of a land. Their determination to seize the land had blinded them to the use the Wati Wati were making of it. In denying the existence of the economy, they were denying the right of the people to their land, and fabricating the excuse

that is at the heart of Australia’s claim to legitimacy today.

Eric Rolls, in his epic *A Million Wild Acres*, described the desecration by sheep of the grasslands in the Hunter– Pillaga region. Rolls was a passionate

man of the land who documented the misuse of soils and water by Australian

farmers. He noticed that dispossession of Aboriginal people and destruction of their villages was followed by an equally rapid deterioration in the soil, the

foundation of the pre-contact economy.

Farmers noticed the alarming drop in productivity over a mere handful of years as sheep ate out the croplands and compacted the light soils. ‘In Australia thousands of years of grass and soil changed in a few years. The spongy soil grew hard, the run-off accelerated and different grasses dominated. [10](#)

The fertility encouraged by careful husbandry of the soil was destroyed in just a few seasons. The lush yam pastures of Victoria disappeared as soon as

sheep grazed upon them, as the dentition of sheep allowed them to eat growth

right to the ground, destroying the basal leaves.

The English pastoralists weren’t to know that the fertility they extolled on first entering the country was the result of careful management, and cultural

myopia ensured that even as the nature of the country changed, they would never blame their own form of agriculture for that devastation.

At the height of its productivity, Australia supported large populations, and, even after plagues of introduced smallpox and warfare had devastated the Aboriginal population, 500 people attended the last ceremonies at Brewarrina in 1885. Similar reports of large gatherings were described in most parts of Australia around this time, despite the calamitous fall in population.

Colonial Australia sought to forget the advanced nature of the Aboriginal society and economy, and this amnesia was entrenched when settlers who arrived after the depopulation of whole districts found no structure more substantial than a windbreak, and no population that was not humiliated, debased, and diseased. This is understandable because, as is evidenced by the

earlier first-hand reports, villages were burnt, the foundations stolen for other

buildings, the occupants killed by warfare, murder, and disease, and the country usurped. It is no wonder that after 1860 most people saw no evidence

of any prior complex civilisation.

Moreover, the perishable nature of materials used in Aboriginal storage

devices ensured they would not be seen by archaeologists, and the ferocity of

the war meant that such large stores of food could never be compiled again.

The attacks by settlers on Aboriginals engaged in harvesting are much under-

rated as one of the tools of war. Nutrition and morale plummeted as the croplands were mown down by sheep and cattle, and people were prevented from protecting and utilising their crops. No better device, short of murder, could ensure the weakening of the enemy.

The archaeologist Peter White, in his ‘Agriculture: was Australia a bystander?’, argues that depopulation by disease and the arrival of sheep, which walked ahead of their shepherds, helped eliminate evidence of agriculture and its domesticates. This makes the evidence recorded by the earliest explorers and settlers so critical to our understanding of the pre-contact Aboriginal economy.

1

Agriculture

The use of the word ‘agriculture’ in relation to Australian Aboriginal people is not something many Australians would have heard. However, if we go back to the country’s very first records of European occupation, we discover

some extraordinary observations that provide a picture of what the Australian

explorers and pioneers witnessed, and how it refutes the notion that Aboriginal people were only hunter-gatherers.

When Europeans began their classification of eras and the peoples of the world, they decided that five activities signified the development of agriculture: selection of seed, preparation of the soil, harvesting of the crop, storage of the surpluses, and erecting permanent housing for large populations. [1](#)

Rupert Gerritsen outlined the various theories on the preconditions for incipient agriculture, but concluded that Australia may have gone well beyond the incipient stage.

‘People farmed in 1788, but were not farmers,’ Bill Gammage declared, and went on to say:

These are not the same: one is an activity, the other a lifestyle. An estate may include a farm, but this does not make an estate manager a farmer ... In 1788 similarly, people never depended on farming. Mobility was much more important. It let people tend plants and animals in regions impossible for farmers today, and manage Australia more sustainably than their dispossessors. It was the critical difference between them and farmers ... Europeans think farming explains the difference between

them and Aborigines. There must be a way of exploring those differences and their momentous consequences. [2](#)

We need to know more. We need more people to know it, so let us have another look at what the first Europeans saw.

Imagine you are riding beside the explorer and surveyor Major Thomas Mitchell (1792–1855). He's an educated and sensitive man, and great company, if a little eccentric. He's a great bushman, as well as a poet and painter, but also a hot head. Under some circumstances, he is obstinate and difficult, and is credited with fighting the last duel in Australia, although he only succeeded in shooting a hole in his opponent's hat.

As he crosses the Australian frontier, he describes what he sees: '[T]he grass is pulled ... and piled in hayricks, so that the aspect of the desert was softened into the agreeable semblance of a hay-field ... we found the ricks or

hay-cocks extending for miles.' [3](#)

And later:

[T]he seed is made by the natives into a kind of paste or bread. Dry heaps of this grass, that has been pulled expressly for this purpose of gathering the seed, lay along our path for many miles. I counted nine miles along the river, in which we rode through this grass only, reaching

to our saddle-girths, and the same grass seemed to grow back from the river, at least as far as the eye could reach through a very open forest.[4](#)

Charles Sturt, on his journeys into South Australia and Queensland, also noticed the system of stacking grain into haystacks ready for threshing. Just as

importantly, he commented on the frequency with which he encountered large, solidly built houses.

Mitchell also recorded his astonishment at the size of the villages. He noticed:

[S]ome huts ... being large, circular; and made of straight rods meeting at an upright pole in the centre; the outside had first been covered with bark and grass, and the entirety coated over with clay. The fire appeared to have been made nearly in the centre; and a hole at the top had been left as a chimney. [5](#)

He counts the houses, and estimates a population of over one thousand. He's

disappointed that nobody's home; it's obvious they have only just left, and the evidence is everywhere that they have used the place for a very long time.

One of Mitchell's party comments that the buildings were 'of very large dimensions, one capable of containing at least 40 persons and of very

superior construction'. [6](#)

If you had been with explorer George Grey in Western Australia in 1839, you might have wondered about the wisdom of your decision. Grey had no bush experience other than schoolboy idolatry of British explorers, and his Kimberley adventure was a disaster. The whale boats, overloaded and ill designed for the assignment, were wrecked on the beach at Gantheaume Bay,

and the party had to walk the remaining distance to Perth.

Thankfully, Grey was a prolific diarist and, despite his predicament, he recorded all that he saw. He was surprised to find a village on the Gascoyne River, where the houses were 'built of large-sized logs, much higher, and altogether of a very superior description to those made by the natives of the south-western coast' [7](#)

He was even more surprised to find land that appeared to have been cultivated. He wrote:

[Fell] in with the native path we quitted yesterday; but now became quite wide, well beaten and differing altogether by its permanent character, from any I had seen in the southern part of this continent ...

And as we wound along the native path my wonder augmented; the path increased in breadth and its beaten appearance, whilst along the side we found frequent wells, some of which were ten and twelve feet [3-4

metres] deep, and were altogether executed in a superior manner. We now crossed the dry bed of a stream, and from that emerged upon a tract of light fertile soil quite overrun with warran plants [the yam plant, *Dioscorea hastifolia*], the root of which is a favourite article of food with the natives. This was the first time we had seen this plant on our journey and now for three and a half consecutive miles [5.6 kilometres] traversed a piece of land, literally perforated with holes the natives made to dig this root; indeed we could with difficulty walk across it on that



account whilst the tract extended east and west as far as we could see. It is now evident that we had entered the most thickly populated district of Australia that I had yet observed, and ... more had been done to secure provision from the ground by hard manual labour than I could believe it in the power of uncivilized man to accomplish. After crossing a low

limestone range we came upon another equally fertile warran ground ... and (next day) passed two native villages, or as the men termed them, towns — the huts of which they composed differed from those in the southern districts, in being built, and very nicely plastered over the outside with clay, and clods of turf, so that although now uninhabited they were evidently intended for fixed places of residence. [8](#)

When John Batman, one of the founders of Melbourne and the colony of Victoria, left one of his men, Andrew Todd, to guard the stores at the first landing at Indented Head, Victoria, in June 1835, Todd whiled away the time

with the local Wathaurong people, talking to them and sketching.

Yam diggers at Indented Head, Victoria, 1835.

Yams were a staple of the First People's diet.

(J.H. Wedge)

One of these sketches shows a line of women digging for yam daisy, or murnong (*Microseris lanceolata*) tubers — a little sweet potato that was a staple vegetable of the Wathaurong. The area the women were working is perfectly clear, because they had made it so in order to most efficiently



harvest their crop.

A handful of yams, and three-generations yam.

(Vicky Shukuroglou)

In 1841, the Chief Aboriginal Protector of the Port Phillip District (1839–49), George Augustus Robinson, recorded:

[T]he native women were spread out over the plain as far as the eye could see, collecting Murnong, or in this language pannin, a privilege they would not be permitted except under my protection. I inspected their bags and baskets on return and each had a load as much as she could carry. [9](#)

When Mitchell arrived at the Victorian Grampians in 1836, he saw ‘a vast extent of open downs ... quite yellow with Murnong’, and ‘natives spread over the field, digging for roots’ [10](#) Captain John Hunter, captain on the First

Fleet, reported in 1788 that the people around Sydney were dependent on their yam gardens. [11](#) ‘The natives here, appear to live chiefly on the roots which they dig from the ground; for these low banks appear to have been ploughed up, as if a vast herd of swine had been living on them.’

In Sunbury, Victoria, in 1836, settlers, including Isaac Batey and Edward Page, observed that people had worked their gardens so well and for so long that large earthen mounds had been created during the process — but so little

consideration was given to this land management that, only a few years later,

Europeans couldn’t say who or what had created these prominent terraces.

This last observation is evidence of a deliberate farming technique, one which any modern farmer would recognise as good soil management. The fact that explorers and settlers report seeing such activity in so many different

parts of the country is an indication that it wasn’t an isolated technique.

Cultivation was a feature of Aboriginal land use. [12](#)

Charles Sievwright, the Assistant Protector of Aborigines of the Port

Phillip District (1839–42) before it became the colony of Victoria, decided to

introduce the European theory of farming to the Aboriginal people assembled

at his Lake Keilambete Protectorate. They took one look at his English ploughing technique, and immediately hoed the soil across the slope of the land and broke down all the larger clods. They'd been farming this land for thousands of years, and weren't about to allow erosion to ruin the land.

Similarly, Robinson, when entering the Mumbuller Valley near Pambula, New South Wales, was informed by a local Elder, Yow.e.ge, that all the land thereabouts was his farm. The Yuin man was aware of the word that Europeans used for their food-production sites, and this comment indicates he

was trying to impress on Robinson that his people were also cultivators.

Colonist Isaac Batey, when commenting on the disappearance of the yam daisy, remembers the women harvesting and washing the tubers in vast quantities. However, soon after his arrival in 1846 he notes:

Where once abundant they have become quite extinct for the district where the writer was raised in this 1909 might be searched without discovering a solitary example ... Elsewhere it has been intimated that our domestic animals had eaten them out, yet there was another factor of destruction in the soil becoming hardened with the continuous tramping of sheep cattle or horses. In proof of that Mr Edward Page said 'when we first came here I started a vegetable garden, the soil dug like ashes.'

It has to be added it was a spot free of timber or scrub of any

description, the soil a reddish loam of great depth.[13](#)

Dr Beth Gott, a renowned ethnobotanist from the School of Biological Sciences at Monash University, has established a garden at the university with examples of plants eaten and used by Aboriginals before colonisation. In

‘Ecology of Root Use by the Aborigines of Southern Australia’, Gott explains that the effect of the systematic and repetitive tilling process aerated

the soil, loosened it for seed germination and root penetration, and incorporated ash and compost material with the plants. She said that it ‘bore sufficient resemblance to agriculture/horticulture to be regarded as a sort of natural gardening’ [14](#)

Archaeologist and Emeritus Professor David Frankel quotes the early observations of Batey:

[T]he soil (on a sloping ridge) is rich in basaltic clay, evidently well fitted for the production of myrnongs [murnong , *Microseris lanceolata*].

On the spot are numerous mounds with short spaces between each, and as all these are at right angles to the ridge’s slope it is conclusive evidence that they were the work of human hands extending over a long series of years. This uprooting of the soil, to apply the best term, was accidental gardening, still it is reasonable to assume that the aboriginals

were quite aware of the fact that turning the earth over in search of yams, instead of diminishing that form of food supply, would have a tendency to increase it. On arriving in 1846 and thereafter myrnong digging was unknown to us, for the all sufficient reason that livestock seemingly had eaten out that form of vegetation.[15](#)

This is a description of terracing. So pronounced were the features that Batey

was convinced they would endure for one hundred years.

The unusual quality and friability of the soil was reported by many colonists in the first years of settlement. The kangaroo grass in the Colac region of western Victoria was so high it concealed the flocks of the first settler, GT Lloyd. Orchids, lilies, and mosses flourished among the grain crop, and: ‘The ground had been so protected by mosses and lichens so thick

that it was difficult to ride across the country at any pace exceeding the

“farmers” jog trot.’[16](#) Lloyd says his horses sank to the fetlock into the soil as

if it were sponge. ‘With the onslaught of the sharp little hooves and teeth of herbivore sheep, goats, pigs and cattle driven in by the settlers, the ground covers were destroyed and the dews ceased.’[17](#) Once the soil hardened, rains

ran off the compacted surfaces, and rivers flooded higher than the Aboriginal

people had ever seen. This created a new management problem for the soils of this district and others.

The persistent frequency of such colonial reports inspired Gott to conduct her own experiment. [18](#) The Nodding Greenhood (*Pterostylis nutans*) was another significant tuberous food source for Aboriginal people, and the harvesting would have continually disturbed the soil as well as incorporating

ash and compost below the surface. Gott found that after harvesting the greenhoods, 75 per cent of the pre-harvest density was restored within fourteen months. Harvesting on a cyclical mosaic over two to three years would see no diminution of supply, but would instead fertilise and enhance the crop.

These management practices created anomalous vegetation distributions. As Bill Gammage explained in *The Biggest Estate on Earth*, European settlers were surprised to find that the best Australian soils were virtually devoid of trees.

Aboriginal farmers had used fire to clear areas of land, which they were careful to separate with belts of timber. Like our contemporary farmers, Aboriginals left the forest on poorer soils and cleared the best soils so they