

Duboisia Pituri: A Natural History*

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In the 1870s, an intense quest revealed to scientists that pituri, an important Aboriginal commodity, was sourced from the plant *Duboisia hopwoodii*—a shrub named after a well-known colonist. But it was Aboriginal people and white explorer-pastoralists from the Mulligan River region in far western Queensland who provided the samples and alerted scientists to the important chemical properties of pituri. Subsequently, there was a proposal to change the name of the plant to *Duboisia pituri*. Whom should the plant have been named after, the colonist or the Aborigine?

Brisbane 1879

On 4 September 1879, in a small room at the back of the newly built Queensland Museum on William Street in Brisbane, a tall man with a long grey beard delivered a scientific paper to the Queensland Philosophical Society. The paper was titled 'Pituri and Tobacco'. It was the fourth and final paper Dr Joseph Bancroft read to the society on the curious Aboriginal commodity and narcotic, 'pituri'. The paper was the culmination of 8 years' collecting of pituri from people in the far reaches of western Queensland. As Bancroft neared the end of his paper he arrived at a critical moment as he explained to the people in the room: '*Duboisia Hopwoodii* should be known by the aboriginal title; I propose, therefore, to name it *Duboisia Pituri*'.¹

D. pituri was a name change that would inscribe Aboriginal knowledge from far western Queensland into the 'System of Nature'. Bancroft's proposal caused outrage among scientists and was a serious challenge to the laws of botanical nomenclature. The scientific name of pituri is *Duboisia hopwoodii*. The plant was named after the colonist Henry Hopwood who had donated to the Burke and Wills expedition fund. Whereas *D. pituri*, the name proposed by Bancroft, takes its name from the Aboriginal people who produced pituri and alerted natural historians to its alkaloid properties. *D. pituri* never took root in the world of plant vernacular but it remains a critical moment in our natural histories that would have given the Aboriginal knowledge of the

things in the land due credit. Whose name should the plant carry, the colonist's or the Aborigine's?

Pituri (pronounced pitch-ery) is a shrub that grows on sandhills in the Simpson Desert, a journey west from the Mulligan River. The leaves and twigs of this shrub are dried and mixed with ash to create a psychoactive drug.² Although the shrub grows over much of the Central Australian arid zone, there is a small isolated population of these shrubs on the upper Mulligan River, a series of small groves that were the source of the plant to be made into a drug. The psychoactive components in pituri are nicotine and nor-nicotine, and it is four times as strong as common tobacco. Chemical analysis shows that *D. hopwoodii* from Central and Western Australia has a higher nor-nicotine content that makes it toxic,³ whereas Mulligan River pituri was unique, having a higher, less toxic nicotine content. It was this that was used as a narcotic and traded as a commodity. It was collected by the Wangka-Yutyurru, Wangkamadla, Wangkangurru and Yarluyandi people and had special significance in the extensive 'landscape of exchange' that operated in Central Australia.⁴ Leaves and small stems were harvested and cured in heated sand-pits and this drying process stopped the enzyme action that would normally degrade the nicotine level.⁵ The prepared product was then placed into semi-circular net bags and distributed throughout the Lake Eyre basin.

'Pituri', the word, was first textually recorded in the journals of explorers concerned with the Burke and Wills expeditions: Howitt, Wills and King.⁶ Once recorded, it became used throughout central Australia as a name for any

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variety of native tobacco.⁷ Explorers had also recorded the word ‘bedgery’ from the Yandruwandah people around Cooper Creek. It is presumed that, long before white explorers arrived, the word was passed down from the far north, derived from the word ‘bijirri’ used by the Wangka-Yutyurru. People located on the Mulligan River in the northern reaches of the pituri country who traded the word as they traded the raw leaves and stems of the pituri bush.⁸

Recent work by Mike Letnic has pointed out the significance of pituri in understanding the Channel Country in far western Queensland. Earlier work by Paul Foley has showed how important the discovery of pituri was in creating *Duboisia myoporoides* as a significant Australian medicinal drug. And recent work by Angela Ratsch, placing pituri in a medical science perspective, has again turned, after the earlier work of Pamela Watson, to aspects of pituri’s ethnobiology in a medical science perspective. But how did pituri enter our knowledge of environment?⁹

Aurumpo 1860

When Dr Hermann Beckler applied to be the medical officer on the Victorian Exploring Expedition (the ‘Burke and Wills’ expedition) in 1860, he hoped to make botanical collections.¹⁰ His letter of application concluded by naming botanist Ferdinand von Mueller (arguably the greatest Australian scientist of the nineteenth century) as a referee. His application was accepted and while travelling up the Darling River he made collections.

From the start Beckler was annoyed with Burke’s leadership. On 27 September the party made an unnecessarily difficult crossing from Cole’s waterhole to Aurumpo (Scott’s station). ‘It was the “shortest route”, the straight line, that once again led Mr Burke into temptation’, wrote Beckler in his journal.¹¹ While the party rested for 4 days at Aurumpo Beckler committed to his collecting. After a 4-mile walk, the hard clay soil around Aurumpo loosened into soft red sand; these changes in the land created an array of botanical collectibles for Beckler. There were acacia trees and *Pittosporum* shrubs, and some of the plants appeared ‘quite strange’ to him.¹² Beckler collected and tagged many of these botanical curiosities. In total, Beckler

collected 475 specimens (300 individual species) on the expedition. But there was often very little time for ‘doing anything in the scientific branch’ and he spent a large amount of time as practically a camel handler (although a bad one).¹³

William Oswald Hodgkinson, an opportunistic 25-year-old explorer, of a very different mould than Beckler, also travelled on the expedition. After Beckler resigned from the Burke and Wills expedition, he secured a spot travelling with William Wright, a man he trusted and respected. Hodgkinson also travelled with them. Beckler and Hodgkinson had very different ideas of exploration: one for science and the other for pioneering appropriation of the land; unsurprisingly, they had a personal disdain for each other. Beckler wrote an unpleasant description of Hodgkinson as they started new explorations with Wright: ‘We had an insolent, malicious lad with us, the worst legacy Burke had left us... He alone was the scorpion, the gnawing worm we carried with us... He was a talented young man, had been well brought up and had even enjoyed a classical education, and yet he was the most evil animal of a person that I have ever encountered.’¹⁴ Both these men were very important to the story of classifying pituri.

The tags that Hermann Beckler attached to his scientific specimens were written in pencil in a messy scrawl that Ferdinand von Mueller and his assistants struggled to comprehend.¹⁵ Upon conclusion of the exploring expeditions, back at the Melbourne botanical garden Mueller assessed Beckler’s collection. Although he did not publish widely from Beckler’s collection, one of the plants Mueller identified was one of those collected on 28 September 1860—the day at Aurumpo. It was a new Australian plant that he concluded was a member of the *Anthocercis* genus and gave it the species name ‘hopwoodii’.¹⁶ Hopwood operated the punt at Echuca and made a substantial contribution to the Victoria Expedition. Mueller honoured him with the name of a plant—some names of plants also carry colonial baggage (Figure 1).

In 1861, after Beckler had resigned, the members of the Burke and Wills exploring expedition continued their journey to the Gulf and in their final days at Cooper Creek were given the Aboriginal narcotic pituri by local Yandruwandah people.¹⁷ In the relief explorations searching for the missing explorers, the members

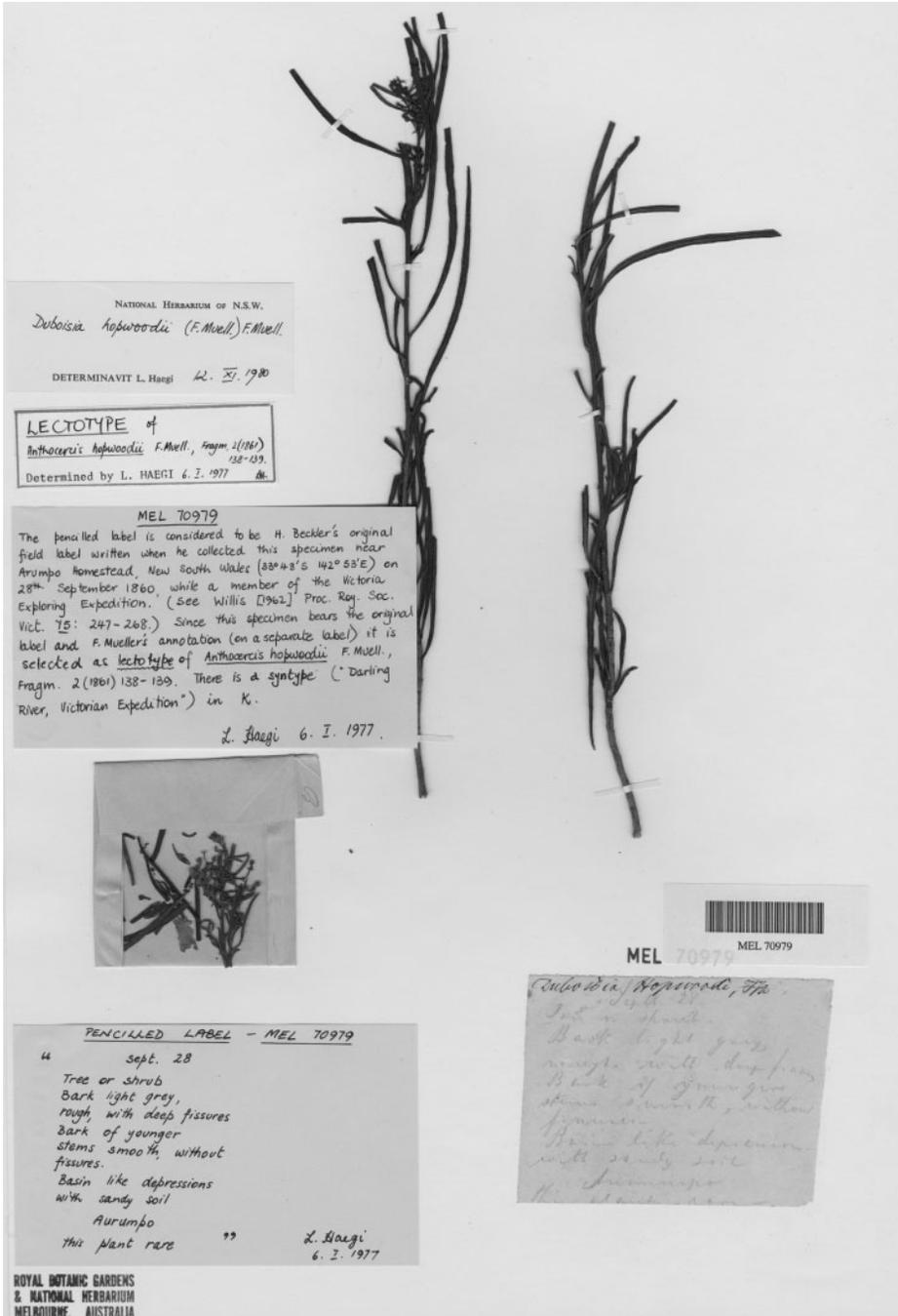


Figure 1. Isotype of *Duboisia hopwoodii* (formerly *Anthocercis hopwoodii*), collected by Hermann Becker at Arumpo, New South Wales, 28 September 1860 (MEL 70979). Reproduced with permission from the State Botanical Collection, National Herbarium of Victoria (MEL), Royal Botanic Gardens Melbourne, and with the assistance of staff at the National Herbarium of Victoria. Becker's original, hand-written collecting note appears at the bottom right, and a transcription of this at bottom left.

of Alfred Howitt's and John McKinlay's expeditions (among the latter was Hodgkinson) were also given pituri by Aboriginal people.¹⁸ The narratives of these expeditions were among the first descriptions of pituri as a traded Aboriginal commodity.

In 1861 the plant *Anthocercis Hopwoodii* appeared in volume two of Mueller's *Fragmenta Phytographiae Australiae*.¹⁹ Then, in 1869, the plant appeared in the fourth volume of George Bentham's *Flora Australiensis* as '*Anthocercis* (?) *hopwoodii*', and it carried a note explaining the question mark: 'until the fruit shall have been observed it is in some measure uncertain whether it should be referred to *Anthocercis* or to *Duboisia*'.²⁰ With this ambiguity, natural historians had to wait for further specimens to see where the plant that Beckler collected would fit into the system of nature.

Eyre Creek 1871

Seven men with twenty-four horses rode out of the Native Mounted Police barracks on the Bulloo River on 16 January 1871. In the lead was sub-inspector of police James Gilmour, next to him was Constable William Wright (a man who had hidden in the bush since being publicly shamed after the Burke and Wills disaster), and trailing behind were five native troopers. They rode west. There had been reports of a white man about Eyre Creek in far western Queensland. Gilmour and his men hoped to find remains from the Leichhardt expedition.

After crossing grassless stony plains, on 30 January they camped on a waterhole at Cooper Creek with a large group of Aborigines. An old Aboriginal man spoke both the language of the troopers and the languages further west. Gilmour provided the Aboriginal man with a horse and he travelled with them for the rest of the journey. They travelled across the Diamantina River. On Friday 10 February they passed John McKinlay's marked tree from 19 March 1862; at this place Gilmour also inscribed his initials on the landscape. After a few more days of riding they arrived upon good country at a waterhole called 'Tantiputtie' and Gilmour stopped to count 103 mud huts, all of which had recently been abandoned. A week since passing McKinlay's tree, on 17 February, after riding 407 miles and a month away from the barracks, they reached

a place known to Gilmour only as 'Wantata'. They slept near a waterhole and next day, after a long search, found the remains of at least three humans. They gathered the remains and commenced the return journey in the belief that these were from the Leichhardt expedition. On 27 February, when almost home, Gilmour let the old Aboriginal man from Cooper Creek go, with trousers, a shirt and a looking glass as gifts for his help.²¹

Gilmour's finds only created more curiosity in the capital cities across Australia and by 11 September 1871 he commenced a second journey to explore further west. Again he enlisted the help of the old Aboriginal man from Cooper Creek to act as his interpreter. Gilmour followed his old tracks and by 7 October arrived back at Wantata. Again he and his troopers searched the area. This time Gilmour rode further west and followed an Aboriginal trading track to Eyre Creek. By 19 October, Gilmour arrived at a place known to him as 'Kulloo' which he described as 8 miles beyond Eyre Creek.²² At Kulloo Gilmour saw many European artefacts and Aboriginal curios, and collected European clothes, a tomahawk, blankets and netted bags. The Aboriginal people with whom the party came into contact spoke a language that the old man from Cooper Creek could not understand; it was possibly a *Wangkamadla* dialect, part of the *Pitta Pitta* group of languages and not part of the *Diyaric* group of languages that the man from Cooper Creek spoke. Gilmour wrote of the area:

Close to Kulloo, where we found the clothing, &c., on the sand hills, the blacks gather the stalks of a small shrub—native name, pituri. This the blacks use as a stimulant, and it has the same effect upon them as spirituous liquors on the Europeans. The pituri is principally used by the old men.²³

He also noted the process of turning plant into commodity. The leaves of the pituri bush were dried and then mixed with the ash of an acacia tree; they were mixed together in the mouth to form a ball; the ball was placed behind the ear; and when pituri was wanted, it was placed in the mouth. An old man whom Gilmour met on the pituri track refused to say or do anything until he chewed some pituri; after doing this 'he rose and harangued in grand style, ordering the explorer to leave the place'.²⁴ In Gilmour's interpretation, using pituri was part of a shamanic practice

among the Aborigines of western Queensland. But more significantly for scientists who were to read Gilmour's reports, the pituri drug appeared to have important psychoactive properties.

Before leaving the waterhole at which he camped on Eyre Creek, Gilmour made an inscription on the landscape: he marked a tree broad arrow over SG over POLICE over PE × with a circle carved around the lettering.²⁵ On the return journey, Gilmour and his men travelled through sandhill and flooded country and stony plains and ridges. To Gilmour, 'the country is most wretched, and but a very small portion of it is suitable for pastoral purposes'.

Upon returning to the Bulloo barracks, Gilmour prepared the things he had collected to send to Brisbane. In this collection were European clothes, human skulls and tomahawks; but what captured Gilmour's curiosity was a small magical bag he had obtained from the Aboriginal people at Kulloo. The small oval-shaped bag was tightly woven from fibres from the far west flooded country. The bag contained prepared pituri. Gilmour gave the bag to an Aboriginal woman at the barracks to wash. As she wet the bag, woven into the fibres she noticed something and exclaimed: 'Here is white fellow's hair!'.²⁶ In December 1871 Gilmour packaged the bones, the clothes, and the bag and took them to Brisbane. This was the first pituri bag to be taken to Brisbane.²⁷ With this package he also took the prepared pituri from the inside of the bag and gave it to Dr Joseph Bancroft.

Of Gilmour's finds, the bones were Aboriginal, the hair in the basket was most likely from a native marsupial from the far west, and the clothes were possibly from the Burke and Wills expedition or an exchange item from the extensive trade network that operated in Central Australia. But the pituri was a curiosity.

Brisbane 1872

On 9 February 1872, Dr Joseph Bancroft received the pituri that James Gilmour had collected near Eyre Creek. By 22 February he was at work on the new product and had created a mixture of pituri and water and tested it on animals—'thanks to the beneficent rule of this colony, where no law prevents professional men from experimenting'.²⁸ In one minute, a half-grown cat suffocated; in one and a half minutes,

seven drops killed a puppy. He went on testing and killed a number of rats. Administering a smaller dose of the drug to rats, he noticed great excitement and convulsive fits, but when given to cats and dogs it induced vomiting, much like an overdose of nicotine in the human body. From Bancroft's scientific testing, pituri was legitimated as an indigenous commodity with significant psychoactive properties.

One sarcastic correspondent read Bancroft's account of pituri that appeared in *The Brisbane Courier* and suggested that a dose of the drug could be given to ministers of Queensland Parliament prone to 'longwinded orations'. The letter writer concluded that 'In case of accidents, and to prevent the possibility of the sacrifice of a valuable life, the remedy could first be tried on some of the occupants of the Ministerial back benches'.²⁹ Drugs capture the imagination of many people and with early knowledge of pituri in Brisbane, many people wanted to know more about the curious plant.

Bancroft concluded his 1872 paper on pituri to the Queensland Philosophical Society with the hope that 'before long seeds of the plant may be collected, and exact botanical knowledge of it, and the localities in which it grows may be forthcoming'.³⁰ To 'know' a plant and to place it in the system of nature cannot be done by merely looking at dried leaves mixed with acacia ash, like the pituri that Gilmour had brought to Bancroft in 1871. The Linnaean system of classification is based on the characteristics of sexual reproductive organs and for most plants, including pituri, these organs are found in the flower.³¹ To identify what plant pituri was, Bancroft needed to see raw pituri: the leaves, the seeds and especially the flower. From this he could possibly begin a process of pharmaceutical production.

There are two important points to be made here. Pituri was a commodity prepared and traded by Aboriginal people throughout central Australia; and, it is a plant that has significant alkaloids that late-nineteenth-century scientists hoped might have important pharmacological properties. So Gilmour had collected a bag of pituri from the Aboriginal people in western Queensland and then Bancroft tested it and found it to be an interesting drug. But a gap remained in scientific knowledge because the plant derivative of the drug remained unknown.

While Bancroft was testing the pituri plants, in Melbourne botanist Ferdinand von Mueller remained connected with many Australian explorations. By the time Ernest Giles had completed his central Australian expeditions, Mueller optimistically looked upon the Australian continent as 'fully mapped'.³²

On 18 September 1872, on a near-forty-degree day with sand flying about in all directions, Ernest Giles passed through a thick scrub of 'oaks and spinifex' somewhere on the western side of the MacDonnell Ranges in Central Australia.³³ Later on the same day he named a big mountain in the distance Mount Liebig. Here he collected botanical specimens for his good supporter Mueller. One of the plants collected near Mount Liebig was identified by Mueller as *Anthocercis Hopwoodii*.³⁴ In view of the question-mark that Bentham had placed against *A. hopwoodii* in 1869, before Mueller's tenth volume of *Fragmenta Phytographiae Australiae* was published in 1876 he re-examined the specimens provided by Giles. At this time he changed the genus and its name became *Duboisia hopwoodii*.³⁵

Just as Mueller was making this necessary change in botanical nomenclature, William Hodgkinson, the scorpion described by Hermann Beckler, was exploring the far west of Queensland.

Pecheringa 1876

Within 5 years of Gilmour's journey to Eyre Creek, the western Queensland pastoral frontier expanded and the Government became curious about rumours of another river further west than the Diamantina.³⁶ In 1876 William O. Hodgkinson led an expedition to that rumoured river in the hope of finding new pastoral country; this was the last Queensland government funded exploration of the colony.

After making the difficult journey south from Cloncurry, then briefly into South Australia for rations, Hodgkinson led his party west of the Diamantina and reached a river that proceeded in waterholes one after the other. Near a fire on the bank of that river in far western Queensland he chewed pituri 'in default of tobacco', a practice he had learnt sixteen years earlier as an optimistic 26-year-old when he had travelled on the Burke and Wills expedition.³⁷ This time

as leader, Hodgkinson would explore the far west of the colony and give the creeks and rivers names of his own choosing. With him were four men: surveyor E. A. Kayser, bushman William Carr-Boyd, native trooper Larry (these three had travelled from Cloncurry with him) and bushman and pastoralist Norman McLeod who joined them somewhere on the Diamantina. The river they camped upon Hodgkinson named the 'Mulligan' after James Venture Mulligan, the north Queensland explorer. The river came from the north but it did not flow; this was a river on the eastern fringes of the desert.

They explored north along the river. On Sunday 23 July they camped at a place the Aborigines called 'Dickerie' and spelled for the day.³⁸ Hodgkinson heard women constantly beating nardoo and watched men catching pigeons and making nets. There were swarms of children and all shared food evenly. He observed these people as a congenial and happy group. In his expedition journal he commenced compiling an Aboriginal word list. On that day, at the second waterhole that the North-West Expedition had seen, Hodgkinson sensed his isolation from European society and believed himself to be the first white man among these people. He marked a tree H over a broad arrow. What he did not know was that by this same waterhole, not fifty yards from his camp, was another tree marked in 1871 with the sign: broad arrow over SG over POLICE over PE×.³⁹

In the days following, the horizon of the land that the exploring party moved through was scattered with smoke signals of the Aboriginal people who told their neighbours of the arrival of the white men. The party continued north up the Mulligan. In the early days of the expedition Hodgkinson saw splendid pastoral country—there were plains of clover and at one camp the horses were full within the hour. On the morning of 26 July, as the party moved up the river, he engaged with some Yarluyandi men. He fed three of them. These men sparked Hodgkinson's curiosity because they promised to show him where they procured 'pecherie'. Hodgkinson believed this place was called 'Pecheringa'.

On the following day, the three Yarluyandi men accompanied the party into Wangkamadla country. In the afternoon they made camp at a place the Aborigines called 'Turkinya', that

Hodgkinson named Brandon Creek. With the sun descending over the sandhills, he watched the people: 'The features of many are by no means unattractive. The nose is not unpleasantly broad. The forehead is high and broader, and the mouth not so obtrusive as usual. Their manners are courteous.'⁴⁰ On the banks of the newly-named Mulligan River, these courteous Aborigines gave Hodgkinson a gift no white man had yet received in the history of the colonies. 'They brought a sample of pecherie, just taken out of a trench in the sand, where it undergoes a process of sweating before use'.⁴¹

On 27 July 1876, from the smoking oven, Hodgkinson was offered pituri. This is the most significant moment recorded in the contact history of pituri, in the contact between the Aboriginal people who procured pituri and the white people who were curious about it. For the first time, raw pituri was taken from the ground and offered to a white man. Unlike earlier explorers who were given the prepared commodity after it had been traded from group to group, Hodgkinson was offered the raw product. It was a remarkable gift from the Aboriginal people. Recording the event in his expedition journal, Hodgkinson was filled with regret at not having brought presents for the Aboriginal people. He offered them some dried meat, which they did not accept.

In the days following, however, the gift was not enough. Hodgkinson insisted on being taken to the pituri country. He continued to compile the vocabulary that he started when he first reached the Mulligan but realised that the words were changing. He was unfamiliar with the way language changed throughout the country; at this point in the expedition he was deep in Wangkamadla country, the main group that inhabited the Mulligan River area. On 6 August, after travelling north-west and being told the pituri lay still further in that direction, Hodgkinson decided he must have pituri. He went to his saddlebag and pulled out a stem of pituri given to him at 'Carlattuarie' (surely the Kaliduwarry waterhole) and tried to explain his desire for some of the raw plant. He showed one Aboriginal man the dried pituri and tied up the other man: '[O]ne must forthwith go and fetch some of the green plant, and the other remain as a hostage in camp'.⁴² The free man bolted and next morning the other Yarluyandi man did the same. At this moment

Hodgkinson feared that he would not find the pituri plant.

With no native guides, the search for pituri was overtaken by the search for water. The horses that the expedition members travelled on were exhausted from the sandy desert country and needed water and feed. The party continued north-west and followed the Mulligan for a week. In the hope of finding water, they made a long, fourteen-mile northwards journey between the sandhills. Somewhere near the 23rd parallel and the Toko Ranges, only a few miles east of Queensland's western border, Hodgkinson saw something. In waterless and 'miserable country' between red sandhills on a sandy spinifex flat, he recognised the branches attached to a trunk. It was the pituri that the Wangkamadla had offered him all those nights before. He collected some of the raw pituri plant to take back to Brisbane and tucked it in the packsaddles.⁴³

After finding the pituri plant, the party travelled north and Hodgkinson continued to give features in the landscape European names, such as the Cairn Range. The journey became more difficult. They desperately needed water and their intestines were blocked from the nutrient-deficient diet of meat and damper. On the morning of 26 August Hodgkinson watched his horse die. They passed into Wangka-yutyuru country and then into Pitta Pitta country. At the end of September, with the onset of scurvy showing in his body, they finally reached Lake Mary and the place where Landsborough had camped years before. The Mulligan had been traversed. Although a difficult journey, Hodgkinson was very optimistic. In the closing pages of his expedition narrative he described a pastoral country that 'cannot be surpassed', which was better watered and more extensive and thus 'superior' to the Diamantina.

The North-West Expedition, beyond its orders, performed the critical task of observing Aboriginal culture on the Mulligan River and used Aboriginal knowledge to collect a piece of their material culture. This was not a spear or a shield but the leaves and twigs of a plant. Reading it in this way shows the expedition narrative to be not just a story of a journey through the land, but also the storied landscape of a natural resource. Hodgkinson responded to the value placed on pituri by Aboriginal people and went on a quest to satisfy his curiosity. This particular response

to the Aboriginal people in their land is what marks the difference between Hodgkinson's collection of pituri and the botanical collections of *Duboisia Hopwoodii* by Hermann Beckler and Ernest Giles. Ironically, Hodgkinson's pituri still found its way to the microscope of Dr Joseph Bancroft, and it was Hodgkinson's collection of pituri that allowed botanists to classify the plant.

Melbourne 1877

Joseph Bancroft heard about Hodgkinson's journey to the far west and visited him. In Brisbane, the stems that Hodgkinson had collected on the Mulligan were transferred to Bancroft. As *The Brisbane Courier* reported: 'he [Hodgkinson] has given several specimens of pitcherie, plucked by himself from the living plant to scientific gentlemen in this city'.⁴⁴

Bancroft gave some of the pituri plant to the Queensland botanist F. M. Bailey, who forwarded some to Mueller in Melbourne. Bancroft prepared other packages and sent them to Europe, to the English physiologist Sidney Ringer, the Edinburgh professor Thomas Fraser and the Parisian chemist A. Petit. Petit found the alkaloid from pituri and titled it 'piture'.⁴⁵ And of course Bancroft kept a little for himself for continued scientific testing. Most important was the package sent to Mueller because with the leaves and flower he could determine the name of the plant used by the Mulligan River Aborigines. Was pituri a new native Australian plant?

Mueller announced that the Aboriginal drug pituri was *Duboisia hopwoodii*. The plant that Beckler collected near Aurumpo in western New South Wales, the plant that Ernest Giles collected in 1872 in the heat and sand near the MacDonnell Ranges, and the curious commodity Hodgkinson stumbled upon on the Mulligan River were all the same plant. And now that Hodgkinson had acquired the raw pituri growing, the intense search to unveil the plant that was the source of pituri seemed over. Mueller wrote to Bailey in February 1877: 'I am glad, dear Mr. Bailey, that at last the doubts concerning the origin of the Pituri poison seem solved'.⁴⁶ Solved?

Mueller went on in his letter to Bailey, 'Now an interesting field opens to Dr Bancroft for further research. Let the doctor try the foliage of *Duboisia myoporoides*, as he could easily, for a

little payment, get a blackfellow to administer small doses of that plant to.'⁴⁷ Bancroft tested the drug on his pet dog rather than an Aborigine, but Mueller's comments show that he saw the Aborigine as test subject and not as the person who first made the chemical knowledge of pituri available to men of science. The chemical discoveries that Bancroft made of *D. myoporoides* were exciting: the alkaloid duboisine relaxed the eye and after Bancroft's discovery it was instantly important in Australia and Europe for ophthalmic surgery. The historian of medical science Paul Foley has forcefully argued that *D. myoporoides* is one of the most important native Australian drugs yet found.⁴⁸ All this has its roots in the scientific testing of pituri.

Although Hodgkinson's raw pituri opened exciting new fields for Bancroft, there was still very little pituri available with which to conduct serious scientific experiments. Bancroft hoped to cultivate pituri and his attention shifted towards looking for seeds in the prepared pituri material. He enlisted the help of his seventeen-year-old son, Thomas Lane Bancroft, to find seeds. Some of these were sown into frames by the Queensland Acclimatisation Society but never produced results. Interestingly, with the discovery of the pituri plant and its unsuitability for cultivation, there was a dual demand for pituri by both Aboriginal people and white collectors.

There was also an early 'chain of collectors' in place.⁴⁹ The pituri plant has a small whitish corolla with five segments, each dominated by a descending red stripe and two lighter stripes either side of it; softly placed in the background is a small green calyx, and, on top of the calyx and between the segments of the corolla, are two long and two short stamens penetrating the air.⁵⁰ As Bancroft published an update of his findings in 1878, the pastoral frontier had spread to the Mulligan River in far western Queensland and pastoralists began to send him specimens. Although no-one had sent raw seeds, he received the first dried flower specimens. Bancroft obtained them from a Mr Gordon, who in turn had got them from John Ahern in Blackall, who had got them from a Mr McDonald; the last of whom was exploring for new land on the Mulligan. After crossing a branch of the Mulligan, McDonald turned back to his 'black boys' when he found 'the boys and gins breaking off the branches of a little tree'. McDonald

reprimanded both boys and ‘was going to give one of them a cut of his whip, when the gins cried out, “Pitchery, Pitchery.” Thus he found the tree.’⁵¹ Such incidents show that the Aborigines in the pituri country, who were so helpful to Hodgkinson, had become much more fearful of the white man. The colonists remained curious about pituri, but the gift/obligation practices that once surrounded the plant had now changed. For white men, pituri became just another commodity to know and exploit. As pastoral stations expanded further west, traditional Aboriginal practices were challenged even further.

Mulligan River 1878

Following the explorations of the Mulligan by Hodgkinson, in 1877 the pastoralist Sylvester Brown took up Wangkamadla country and set up Sandringham Station on the Mulligan River in the heart of the pituri country. Brown was aware of pituri in the area. He sent a small sample to Joseph Bancroft and even proposed a ‘pituri reserve’ in what he saw as the open spaces of the desert.⁵² In the following year Angus Fraser took up the Kaliduwarry run further south, which was wedged between Wangkamadla and Yarluyandi country.⁵³ William Carr-Boyd, one of Hodgkinson’s men from the expedition, used his experience to help other pastoralists settle the far west. Carr-Boyd was aware of the significance of the pituri area between Brown’s station and Fraser’s station when he wrote in *The Brisbane Courier*: ‘It is right on the boundary of the pitcherie, as I have seen pitcherie growing only five miles to the west. There are a devil of a lot of niggers about there, and I fear they will be playing up before long.’⁵⁴ Although he feared the Aboriginal presence, it can be observed that there were a large number of Aboriginal people living in the desert country as pastoralists began to take up the land.⁵⁵

When Carr-Boyd returned to the far west after he had travelled on the North-West Expedition with Hodgkinson he reinvented himself as ‘Potjostler’, a polemical correspondent for *The Queenslander* and *The Brisbane Courier*.⁵⁶ As early as December 1877, Potjostler had heard that much of western Queensland was taken up and stocked.⁵⁷ Through the eyes of a bushman

and traveller he told stories from the newly settled west of how difficult it was to come to terms with such a dry and variable environment.

In February 1878 Sam Greensmith, the manager on Sylvester Brown’s Sandringham Station, started out on a sixty-mile journey south-west towards the Herbert River. When Greensmith had not been heard from for ten weeks, Potjostler asked questions. ‘I didn’t slog into them [the Aborigines], as I don’t know whether they killed him or not . . . I think they have been up to something, because whenever they see a fellow they take a good mile of a gallop out of your horse before you can round them up.’⁵⁸ In June, Potjostler was still on Eyre Creek looking for Sam Greensmith. No clues appeared, and no remains were found. He wrote in the capital city newspapers: ‘The niggers have been playing up here, and war is declared.’⁵⁹

The call for ‘war’ by Potjostler was a divisive moment for pastoralists in the west. What heightened the conflict was that the summer of 1877–8 was a disastrous one for the ‘pioneers’. Early in the summer a number of stockmen had perished on the Lower Barcoo near a retreat station. Then there was the well-known case of the Prout brothers who died on a ride west from the Herbert toward the Mulligan.⁶⁰ Then three unidentified dead bodies were found outside Whitula after their horses bolted in the evening from where they had camped without water. Many other people had not been heard from. And then there was the most recent disappearance of Sam Greensmith. That summer was the first year since Hodgkinson had explored the far west and the expansion of pastoral properties had increased dramatically. With so many people perishing and an already confrontational process of colonization occurring, some popular attitudes, such as Potjostler’s, translated their unease with the harsh environment into more intense frontier violence.

The pastoralist Sylvester Brown from Sandringham Station began his correspondence on the disastrous losses over the summer by noticing the ‘very hot climate’.⁶¹ Brown thanked the ‘vigorous and war breathing’ correspondent ‘Potjostler’ for the concern he had shown over Greensmith’s death. He wrote: ‘I suspect the blacks but doubt being able to bring the crime home to them. Of course, if we do, “border law” will have to be enforced.’ What is border law?

In Brown's correspondence he accepted the conflict between Aborigines and pastoralists as part of the process of 'opening up' the west.

Potjostler went on another 'potjostling trip'. With two others, he left Amaroo Station, crossed the Mulligan and rode west. In the desert, they stopped on a very high sandhill and looked towards the horizon: just waterless sandhill country for at least thirty miles. On the sandhill, in the 'howling desert', they found pituri growing of which they collected a large amount and sent it to Ferdinand von Mueller.⁶² Even Potjostler was collecting for the colonial botanists.

Returning, they rode east to the Mulligan. On the way they stumbled upon a waterhole where a large group of Aborigines was gathered. Potjostler searched the group and interrogated the people. In the camp he found a rug that he believed had belonged to Sam Greensmith. Potjostler took possession of this and upon his return to Herbert Downs left it for the sub-inspector of native police, Ernest Eglinton, to gather on his monthly rounds of the district. He concluded the story of his potjostling trip by noting that the first lot of fat cattle had left the far west for market. Life and death; pituri and cattle.

How did Sam Greensmith die? It was later found that he had made it across the difficult 45-mile crossing of waterless country to the Herbert River, but as he and the two horses tried to cross the Herbert they got caught and all drowned. With such an extensive coverage of Greensmith's disappearance, instigated by Potjostler, news of the finding of his drowned body caused a large debate in *The Brisbane Courier*.⁶³ Through the Greensmith controversy there were a number of different views of race relations in the far west. What complicated matters further was that these relations were played out in a harsh and variable environment.

In the late 1870s, to ease the minds of many western pastoralists, a patrol conducted by the native police in the charge of sub-inspector Ernest Eglinton was sent regularly from the Burke River. The area that Eglinton had to patrol was enormous and extended from the Cloncurry River down to the southern boundary of Queensland. A lonely letter writer from the west wrote to *The Brisbane Courier*, arguing that a police barracks needed to be set up on the Mulligan River because it was the only place where the pituri

grew: '[I]t is well known that they [the Aborigines] are far more numerous than further inside. Also, inside blacks go out there in large numbers to trade with the natives of the soil for the much-prized plant, the effects of which are maddening on those not used to it.'⁶⁴ The Mulligan, because of the pituri areas to the west, seemed like a place to establish control over the native population by having a native police barracks close by. In just under a decade a lot had changed: the curious pituri plant that sub-inspector Gilmour found when he rode to Eyre Creek had become a way to gain control over the native population.⁶⁵ Eglinton would become the Police Magistrate at Boulia and later at Birdsville, but no barracks were set up on the Mulligan.

Potjostler's stories are important because they came from the Mulligan River and Eyre Creek, in the heart of the pituri country, just as a dramatic collision occurred between Aboriginal traditional practices and pastoral ownership. The story of Sam Greensmith's death is important to remember. Greensmith drowned crossing the river and while his body was taking its time washing down to the banks near Glengyle Station, most people thought the Aborigines had murdered him. Leading the campaign was Potjostler, whose key evidence was a rug he found in an Aboriginal camp after a day surveying the country and collecting pituri—pituri that was sent to the colonial botanists.

The Ivory Tower 1882

In 1879 Joseph Bancroft delivered his paper 'Pituri and Tobacco' to the Queensland Philosophical Society. The paper, with the scientific name of pituri proposed as *Duboisia pituri*, was printed by the government printer in Brisbane. In 1880 the small booklet with botanical drawings and sketches of the Aboriginal bags for carrying pituri were sent to station owners in the far west of the colony.⁶⁶ In the foreword, the colony's Surveyor-General, the famous explorer A. C. Gregory, introduced the paper to the public: 'It is hoped that you or your friends may be able to forward to this Society ripe seeds of some of these plants; also, small quantities of the dried herb—one ounce, more or less, by post'. By 1879 the natural history of pituri was known, and when the Queensland Philosophical Society sent out

copies of Bancroft's paper, the name *Duboisia pituri* began to take root.

In 1882, William Guilfoyle the curator of the Melbourne botanic garden, published 'Some Curious Plants' in *The Southern Science Record*. The paper made specific mention of *Duboisia pituri* (Bancroft).⁶⁷ Scandalous: not just the use of the name *D. pituri* but listing 'Bancroft' after the binomial designation as first describer of the plant! The well-known Queensland naturalist Benedetto Scortechini, who in 1882 had three plants named after him,⁶⁸ was outraged by this breach of the laws of botanical nomenclature and wrote to the journal:

Such appellation must by all means be deprecated . . . There was no warrant for this change, even if many new therapeutic qualities inherent to this plant had been discovered by the Doctor. . . . As the error now again creeps into a scientific journal, and, if perpetrated, might lead to confusion, it is well to raise the voice against arbitrary changing of scientific names, in the interest of Science, whose progress would by it be greatly impeded.⁶⁹

Scortechini was correct that confusion would be created in natural history if two names for the same plant were used. But he was wrong in his assumption that Bancroft proposed the name change out of self-interest.

In a letter dated 13 July 1882, Bancroft replied to *The Southern Science Record* by stating that his interest in pituri was sparked when Gilmour had brought to him the 'broken-up' pituri of the Queensland Aborigines. After this Bancroft had obtained the raw plant from Hodgkinson in 1876—who had found pituri only after the Aboriginal guides had alerted him to it—and this specimen was delivered to Mueller:

the Baron [Mueller] discovered that he had the same plant, gathered by Burke and Wills, named doubtfully *Anthocercis Hopwoodii* . . . It is now found, by specimens forwarded to me by residents in the west country, that *Duboisia* is the proper genus, and, such being the case, the title "*Duboisia Pituri*" meets the difficulty much better than *Anthocercis Hopwoodii* (F.Muell.) Our much respected botanists will admit this and waive their privileges, allowing the most interesting plant in Australia to have attached to it the name it must always carry.⁷⁰

Bancroft's claims were unfounded, because after Ernest Giles had also brought back with him

Anthocercis Viscosa from his Central Australian expeditions in 1876, Mueller moved *Anthocercis hopwoodii* to *Duboisia* when he saw that the floral structure of the plants were different.⁷¹ But to Bancroft, the correct genus (*Duboisia*) was only discovered after Bancroft's interest in pituri was sparked by the Aboriginal people using it as a narcotic in western Queensland, so that a change of genus would necessitate a complete name change. Bancroft understood that Aboriginal people had an ecological knowledge of the plants in their landscape and his insistence on *D. pituri* was acknowledgment of this. There is much upheaval when there is a challenge to the traditional way of doing things, particularly in the world of natural history and taxonomy.

The title *D. pituri* was a challenge to Mueller's authority as the first describer of the plant and, in a broader context, had the ability to challenge his authority within the community of Australian natural historians. It was most likely not an accident that William Guilfoyle resurrected this nomenclatural debate in early 1882 with his paper 'Some Curious Plants'. The two men had a history. After Mueller was dismissed from the Melbourne botanic garden in 1873, Guilfoyle was his replacement.⁷² Guilfoyle's vision for the gardens was in complete contrast to Mueller's scientific pursuits. Upon taking over he 'made the Garden into a place of wondrous beauty in the style of the great English country gardens', often composing these aesthetic designs using the vast range of plants that Mueller had acquired from around the world.⁷³ Not only were their landscapes different but also, due to the circumstances surrounding Mueller's dismissal, there was serious political tension between the two men and their supporters. Mueller wrote to Joseph Hooker about Guilfoyle on 24 July 1882: 'He seems to have a morbid vanity to pass as a scientific man; thus lately publishing an article on *Duboisia*, of which he knows nothing – copying what Dr Bancroft and myself rendered known of course under suppression of my name'.⁷⁴ In this way, it would appear Guilfoyle used the ambiguity in the name of pituri to gain political traction on Mueller. Guilfoyle's biographer interpreted the whole debate from the opposite perspective: 'One cannot help but feel that somewhere in this episode was a feeling of resentment again expressed by a disgruntled Mueller supporter'.⁷⁵ Such politicking explains

why the world of plant taxonomy does not allow ambiguity in its nomenclature. In the end, the petty politics of Mueller and Guilfoyle undermined Bancroft's cross-cultural attempt to see Aboriginal usage of pituri given serious recognition by science. As if to set the record straight, in brackets and small font below Bancroft's 1882 letter was a short discussion by the editor of *The Southern Science Record*:

Not only would it be against all rules of scientific nomenclature to discard a correctly established name, upsetting all recognised principles in this respect, but it would in this instance be particularly unjust to our late fellow-colonist, Mr. H. Hopwood, to deprive him of the honor of having his name identified with this plant, especially as it was discovered in the expedition, towards the fund of which he made so large a contribution.

Who should the plant be named after, the colonist or the Aborigine? The 1882 letter from Bancroft is possibly the last mention of *D. pituri* in the historical record and *D. hopwoodii* has certainly taken root as the recognised scientific name of the plant. Indeed, *D. hopwoodii* is the first scientific name mentioned by Alice Duncan-Kemp in her classic *Our Sandhill Country* (1934), a book that attempted to describe the fauna and flora of far western Queensland 'by purely local names'.⁷⁶ By 1883, with the scientific name *D. hopwoodii* firmly established, pituri began its life as an ethnological collectible in Queensland when the first pituri bags were sent to the Queensland Museum.⁷⁷

Animated Worlds

Within this story of *D. pituri* there is a clear entanglement of natural and cultural histories where the trickery of nature on culture and the mastery of culture over nature can be observed. Between the common word 'pituri' and the scientific name *Duboisia hopwoodii* is a substantial gulf between the cultural understanding of a plant (among these the Aboriginal name of a plant and the scientific system that a plant fits into) and the wide area of central Australia that a plant can grow over. By saying 'Duboisia hopwoodii' one refers to a plant that grows across most of arid Australia,⁷⁸ but by saying 'pituri' one is referring to a significant commodity of trade for Aboriginal people in central

Australia that was sourced from sites west of the Mulligan River.

Joseph Bancroft, a medical doctor and chemist, saw some of the gulf between how nature was classified and how the Aborigine was seen, inciting not only natural historians but also ethnologists of the day when he said to the group gathered in Brisbane on 4 September 1879: 'This discovery [pituri] of the Australian aboriginals should tell somewhat in their favour as clever men, against the oft-repeated assertion of ethnologists as to their low position among the human races'.⁷⁹ Natural historians drew on local knowledge as an intellectual resource to inform metropolitan demand for pituri, in the first instance to discover what it actually was and then to use it as a commercial resource. What has been shown throughout is that Bancroft's proposed name *D. pituri* was a radical choice influenced by the people in the landscape collecting it for him and engaging with Aboriginal people.

D. pituri is a lost fragment in the history of Australian science and it can only be recovered by looking ethnographically at natural histories and telling stories from an animated world and not a cabinet.⁸⁰ Such an ethnographic natural history demands inclusion of both the way the landscape was changing and the race relations upon that land, but it also requires specificity to show the way nature is classified and the people who provide those samples. The name *D. pituri* captures so much more than the name *D. hopwoodii*. And yet *D. pituri* remains only a name lost in the historical record—a natural history specimen that is often placed in a different cabinet.

References

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2. Pamela Watson, *This Precious Foliage: A Study of the Aboriginal Psycho-Active Drug Pituri* (Sydney, 1983), pp. 48–50.
3. *Ibid.*, p. 45.
4. Isabel McBryde, 'Goods From Another Country: Exchange Networks and the People of the Lake Eyre Basin', in *Australians to 1788*, eds. D. J. Mulvaney and J. Peter White (Broadway, NSW, 1987), pp. 252–273.
5. Process described in: W. O. Hodgkinson, 'North-West explorations by W.O. Hodgkinson, Esq',

- Queensland Votes and Proceedings*, Vol. 3 (Brisbane, 1877), pp. 203–227; Samuel Gason to A.W. Howitt, undated letter quoted in “Trade Expeditions,” MS 69, box 6, A.W. Howitt Papers, AIATSIS Library, Canberra; George Aiston, “The Aboriginal Narcotic Pituri,” *Oceania* 7 (1937), 372–377. As well as a stimulant, pituri is also an analgesic and can produce a ‘dreamy state’; see Joseph Bancroft, *Pituri and Tobacco*, p. 7.
6. As well as the commodity, Howitt also mentions pituri as a name given to some of the Aboriginal men he met along the road who belonged to the ‘pituri moora’; see ‘Burke’s Expedition: Howitt’s Journal’, *The Brisbane Courier*, 21 November 1861, and, on the pituri moora, Aiston, ‘The Aboriginal Narcotic Pituri’, p. 374.
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 9. Mike Letnic, ‘Pituri Country Stories’, in *Desert Channels: The Impulse to Conserve*, eds. Libby Robin, Mandy Martin and Chris Dickman (Canberra, 2010), pp. 61–70; Paul Foley, ‘*Duboisia Myoporoides*: The Medical Career of a Native Australian Plant’, *Historical Records of Australian Science*, 17 (2006), 31–69; Angela Ratsch, Kathryn J. Steadman and Fiona Bogossian, ‘The Pituri Story: A Review of the Historical Literature Surrounding Traditional Australian Aboriginal Use of Nicotine in Central Australia’, *Journal of Ethnobiology and Ethnomedicine*, 6(26) (2010), 1–13.
 10. Hermann Beckler, letter of application, 15 June 1860, “Burke and Wills: Terra Incognita,” State Library of Victoria, <http://victoria.slv.vic.gov.au/print/burkeandwills/archives/eagerexplorers/explorersapplications/beckler.html>.
 11. Hermann Beckler, *A Journey to Cooper’s Creek*, trans. Stephen Jeffries and Michael Kertesz (Carlton, 1993), p. 34. Beckler’s time in Australia has been discussed in a recent collection of his letters, however, there were few letters written in the five months he was travelling on the Victoria Expedition. The collection only includes extracts from Beckler’s expedition narrative which is covered in full in the English edition: Hermann Beckler, *Entdeckungen in Australien: Briefe und Aufzeichnungen eines Deutschen 1855–1862* (Stuttgart, 2000), pp. 302–305.
 12. Beckler, *A Journey to Cooper’s Creek*, p. 36.
 13. ‘Beckler’s letter of resignation to Burke’, 16 October 1860; in Beckler, *A Journey to Cooper’s Creek*, p. 199. See also Tim Bonyhady, *Burke and Wills: From Melbourne to Myth* (Balmain, 1991), p. 110.
 14. Beckler, *A Journey to Cooper’s Creek*, p. 91.
 15. J. H. Willis, ‘The Botany of the Victoria Exploring Expedition (September 1860–June 1861) and of Relief Contingents from Victoria (July 1861–November 1862)’, *Proceedings of the Royal Society of Victoria*, 72 (1962), 247–268, p. 253; Stephen Jeffries, introduction to *A Journey to Cooper’s Creek*, p. xxxvii.
 16. In 1962 J.H. Willis studied the botanical collections of the Victoria Exploring Expedition and in an updated nomenclature lists one of the plants collected on 28 September 1860 by Beckler as *Duboisia hopwoodii* (originally identified by Mueller as *Anthocercis hopwoodii*); see Willis, ‘The Botany of the Victoria Exploring Expedition’, p. 265. See also Joseph Bancroft, ‘Duboisia Pituri’, *The Southern Science Record*, 2 (1882), 221–222.
 17. Wills records pituri in his diary from 7 May 1861, William J. Wills, ‘The Diary of William John Wills, 23 April–28 June 1861’, National Library of Australia, <http://www.nla.gov.au/epubs/wills/pages/transcript26.html>; Joseph Bancroft, “‘Pituri’ of Sub-Inspector Gilmour”, *The Brisbane Courier*, 4 April 1872. The pituri collected by King is discussed in: *Proceedings of the Royal Society of Van Diemen’s Land*, April 1863, p. 1. Before these three, in 1847, Edmund Kennedy on Cooper Creek in Queensland noticed ‘A curious fact I here observed is that the men chew tobacco’. Kennedy records it to be strong and hot, which are both attributes of pituri, see Edgar Beale, *Kennedy, the Barcoo and Beyond 1847: The Journals of Edmund Besley Court Kennedy and Alfred Allatson Turner with New Information on Kennedy’s Life* (Hobart, 1983), p. 137.
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 19. Ferdinand von Mueller, *Fragmenta Phytographiae Australiæ*, vol. II (Melbourne, 1861), pp. 138–139. See also ‘A Valuable Therapeutic Agent’, *Western Australia Times*, 29 January 1878, and Mueller, ‘Letter to the Editor of the Australian

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 24. Bancroft, "'Pituri'" of Sub-Inspector Gilmour'.
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 35. Ferdinand von Mueller, *Fragmenta Phytographiae Australiae*, vol. X (Melbourne, 1876), p. 20. The genus 'Duboisia' was first described in 1810 by Robert Brown when he named *Duboisia Myoporoides* in his report on the botany of New Holland as part of Flinders' circumnavigation of the continent. It is named after either the French botanist François Noël Alexandre Dubois (1752–1824), or the treasurer of the East India Company Charles Du Bois (1656–1740). See Foley, 'Duboisia Myoporoides', pp. 33–34.
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 54. Potjostler, 'Eyre's Creek', *The Brisbane Courier*, 8 June 1878.

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67. William Guilfoyle, 'Some Curious Plants', *The Southern Science Record*, 2 (1882), 58–59. Joseph Bancroft inscribed a copy of *Pituri and Duboisia* to Guilfoyle that is still held at the Royal Botanic Gardens in Melbourne, see *Regardfully Yours: Selected Correspondence of Ferdinand Von Mueller*, eds. R. W. Home, A. M. Lucas, Sara Maroske, D. M. Sinkora, J. H. Voigt and Monika Wells, Vol. 3, (Bern, 1998), p. 278, fn. 16.
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75. R. T. M. Prescott, *W. R. Guilfoyle, 1840–1912: The Master of Landscaping* (Melbourne, 1974), p. 121. See also Paul Fox's discussion of Guilfoyle's landscape and particularly the appointment of Guilfoyle to the botanic gardens: *Clearings: Six Colonial Gardeners and Their Landscapes* (Carlton, 2004), pp. 99–142, especially pp. 122–3.
76. Although pituri is mentioned throughout the book, *D. hopwoodii* is mentioned on p. 53. The reference is taken from the foreword. Alice Duncan-Kemp, *Our Sandhill Country: Nature and Man in South West Queensland* (Sydney, 1934).
77. The first pituri raw material and bags held in the Queensland Museum's collection were acquired in 1882–3. Some of the first raw material was donated by sub-inspector Eglinton, the man for whom Potjostler left the rug that he presumed was Sam Greensmith's. Significantly, the first bag that was donated by policeman Frederick Murray is accompanied by the attached note 'Bag of Pituri, (*Duboisia hopwoodii*)'; Murray to Charles de Vis, 22 January and 13 August 1883, Inwards Correspondence, Queensland Museum Archives.
78. See the maps of *D. hopwoodii* distribution provided in Colin Barnard, 'The Duboisias of Australia', *Economic Botany*, 6 (1952), 3–17; L. A. Craven, B. J. Lepschi and L. A. R. Haegi, 'A New Australian Species of *Duboisia* R.Br. (Solanaceae)', *Journal of the Adelaide Botanic Gardens*, 16 (1995), 27–31. Interestingly, the second paper discusses the discovery of a new plant in the *Duboisia* genus: *Duboisia arenitensis*.

79. Bancroft, *Pituri and Tobacco*, p. 10.
80. On ethnographic natural history approaches, see: Hugh Raffles, *In Amazonia: A Natural History* (Princeton, NJ, 2002); Michael Taussig, *My Cocaine Museum* (Chicago, 2004); Stuart McLean, 'Ceide Fields: Natural Histories of a Buried Landscape', in *Landscape, Memory and History: Anthropological Perspectives*, eds. P. J. Stewart and A. Strathern (London, 2003), pp. 47–70. Raffles' book was the centrepiece of a 'natural history' review symposium, collected in the May 2005 issue of *Antipode* (vol. 37, no. 2, pp. 348–378); see in particular Hugh Raffles, 'Towards a critical natural history', on pp. 374–378, where he envisages such an approach coming from a 'naturalcultural' world that is not separated into dichotomous parts but 'animated by difference, power, and history, a world that will always exceed our languages and imaginings, a world without beginning, end, or outside' (p. 378).