CHAPTER 20

SYDNEY 1788

GEOFFREY BLAINEY

ABORIGINES CANOEING UP SYDNEY HARBOUR in the winter of 1788 did not see a sign of the new town until they had rounded Bennelong Point. The ships discharging stores were snugly anchored in Sydney Cove, and maybe only the tops of their masts were visible from further down the harbour, while the buildings—all of one storey—were hidden from view by the headlands. Because of the scatter of trees and the rocky outcrops, those who walked to Sydney from Botany Bay were almost inside the town before they saw it.

The makeshift township clung to the shores of Sydney Cove. Now the cove is almost oblong, but in the years before part of it was reclaimed from the sea, its shape was less geometrical. There was no neat and straight Circular Quay; instead, a wedge-shaped inlet protruded further inland. The tidal waters ran almost to the present Bridge Street where they met the Tank Stream rippling downhill. This little inlet at the mouth of the Tank Stream was flanked by muddy banks and indeed the Tank Stream ran over the mudflat to the harbour when the tide was low. Away from these mudflats were thin beaches of white sand. Much of the water in Sydney Cove was deep, and it was possible to tie an oceangoing ship by a strong rope to the stout trees on the shore. Sailors went ashore from several ships in the cove by the simple method of swinging hand-over-hand on the thick hawser tying the ship to the rocks. In February the Negro cook in the *Prince of Wales* decided to go ashore and worked his way along the rope. Two of the ship's boys, playing pranks, shook him off the rope, and he fell into the deep water. He could not swim. In the excitement 'many sailors jump'd overboard to save him but he sunk & did not come up again'.

The tents, huts and barracks were scattered wherever the ground was flat and free of rocks. Bennelong Point was sloping and rocky, so it attracted no habitation. The parallel headland, running to Dawes Point and the southern approach of the present harbour bridge, was also rocky and remained untouched during 1788, except for the new observatory which stood at the head of the promontory. The main settlement sat on the alluvial, flatter ground near the western and southern

Initials carved in rock overlooking Sydney Harbour.
J. PINFOLD

shores of Sydney Cove, with the large shingle-roofed hospital occupying what was thought to be a healthy site near the present overseas passenger terminal, and the temporary barracks standing on the west bank of the Tank Stream. In appearance Sydney Cove was more like a little gold rush camp of the 1850s than a British naval settlement of the 1780s.

To build that first rough camp was slow work, yet at first the task seemed easy. The ground was shaded by trees of a girth that English experience suggested would be felled with ease. Moreover, the scene was so sylvan that it was like preparing for a picnic. In that park-like setting during the first flurry of activity, tents and marquee were pitched, the troops were paraded, the sound of the axe was heard, a blacksmith's forge was erected, the smell of cooking came from open-air fires, and convicts straggled past carrying provisions or dragging stones. One captain with the leisure to observe thought the scene was picturesque and even amusing.

Soon the amusement ceased. The trees were not easily felled and the stumps seemed like iron. Sixteen convicts were said to have spent six days grubbing a stump. On the sandstone cliffs the largest tree, the smooth-barked apple or rusty gum (*Angophora costata*) was sometimes rotten inside and only the outer timber could be safely used. The hard wood quickly blunted the tools, prompting Phillip to write to England for more saws, axes, chisels and gimlets: they arrived two years later. The cabbage tree palm was softer and easier on saw and axe: it could be split neatly into roofing shingles, but they were green and they warped under the sun, and the shingle roof let in the heavy rain. Fortunately, the she-oak or casuarina soon proved more suitable as a timber for shingles. Meanwhile the reeds and rushes provided an alternative roof, and convicts were sent to a neighbouring bay to cut rushes. This source of roofing material is still known as Rushcutters Bay.

A typical house or hut in Sydney Cove was built of rough timber, and saplings were used more often than sawn and shaped timber. The walls usually consisted of a row of saplings or wooden stakes with branches and twigs interlaced among the saplings to plug most of the gaps. These walls were called wattles, from the Old English word, and the process of making them was known as 'to wattle'. As the native acacia was often used in the wall it acquired the name of 'the wattle tree' as early as 1798. Thus the national flower, the wattle blossom, took its name from those primitive walls in Sydney Cove. The wattle wall was coated with clay or mud which, when dry, served as additional protection against the draughts of air. That method of building was traditionally known as wattle and daub. The daub or mud was later painted with whiteclay or, less often, whitewashed with a lime mixture, so giving a Mediterranean appearance to some corners of Sydney. The typical dwelling had no glass for windows, simply a lattice work of twigs or a small gap in the wall which at night or in driving rain could be covered with a shutter or small sliding screen. The front door itself was wood, hanging on a hinge of leather. The fireplace was likely to be of stone, topped by a chimney made of timber and lavishly coated, inside and outside, with clay. The floor was earth or clay. A ceiling was unusual, and so the underside of the roof's shingles or reeds was visible.

Phillip had the finest house, though the era would come when rich ex-convicts would own even finer houses than the governor. At first Phillip set up a prefabricated house, made of timber and canvas by a contractor in London and valued at the large sum of £130. It was similar to houses exported to the English garrison towns in India and it was easily fitted together. The task of assembling the parts began on 29 January 1788 and was probably completed within a few days. It was the finest house in Sydney Cove but Phillip was soon complaining, at least in private. Perhaps the canvas had been damaged on the voyage out, perhaps it had been torn by the strong winds or had been essentially designed for the gentle

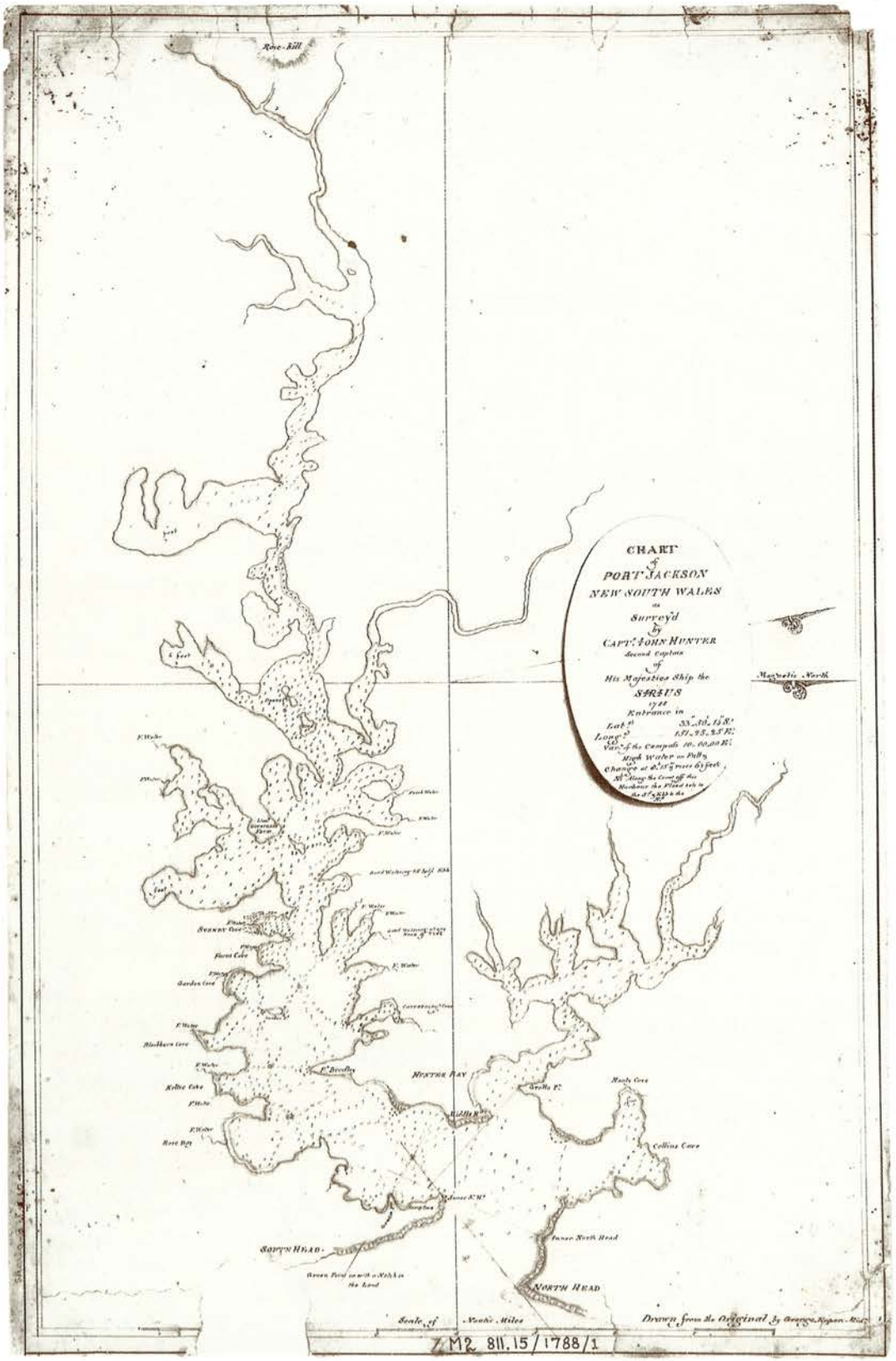
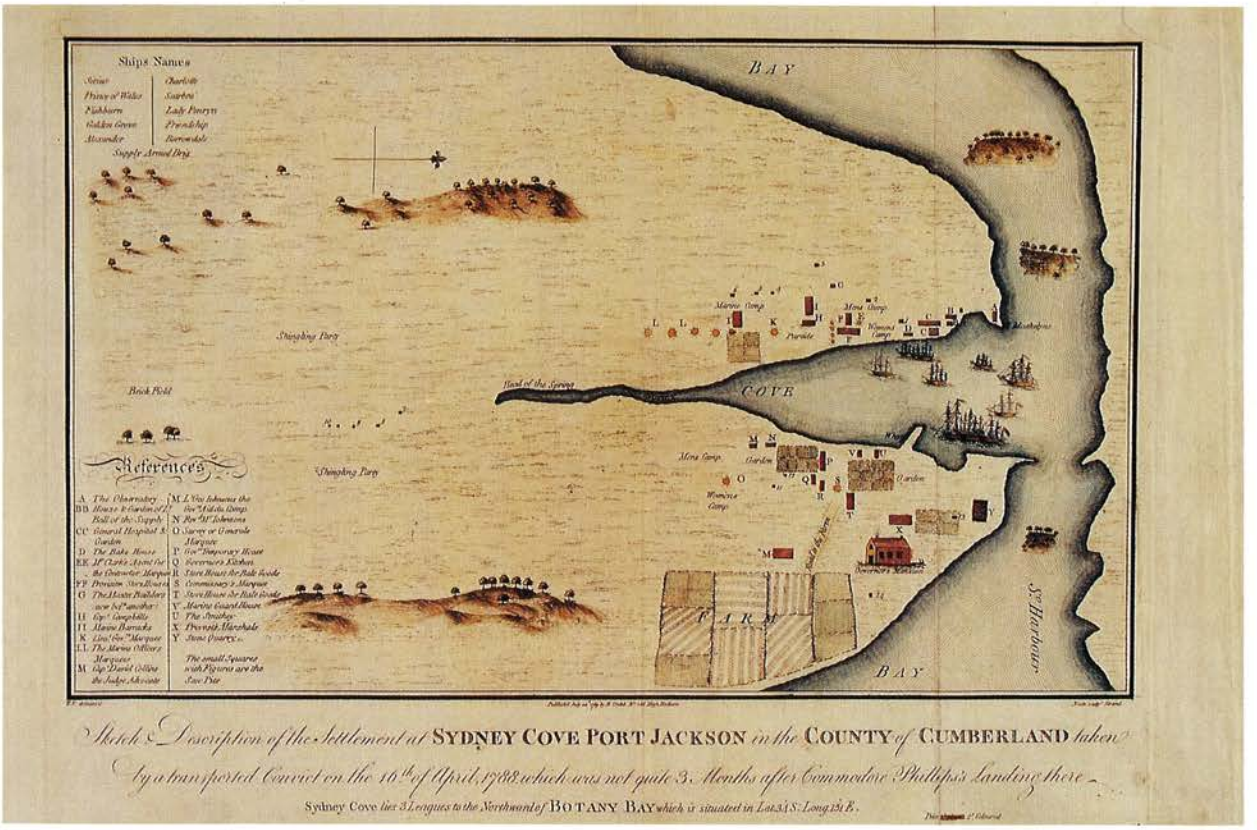
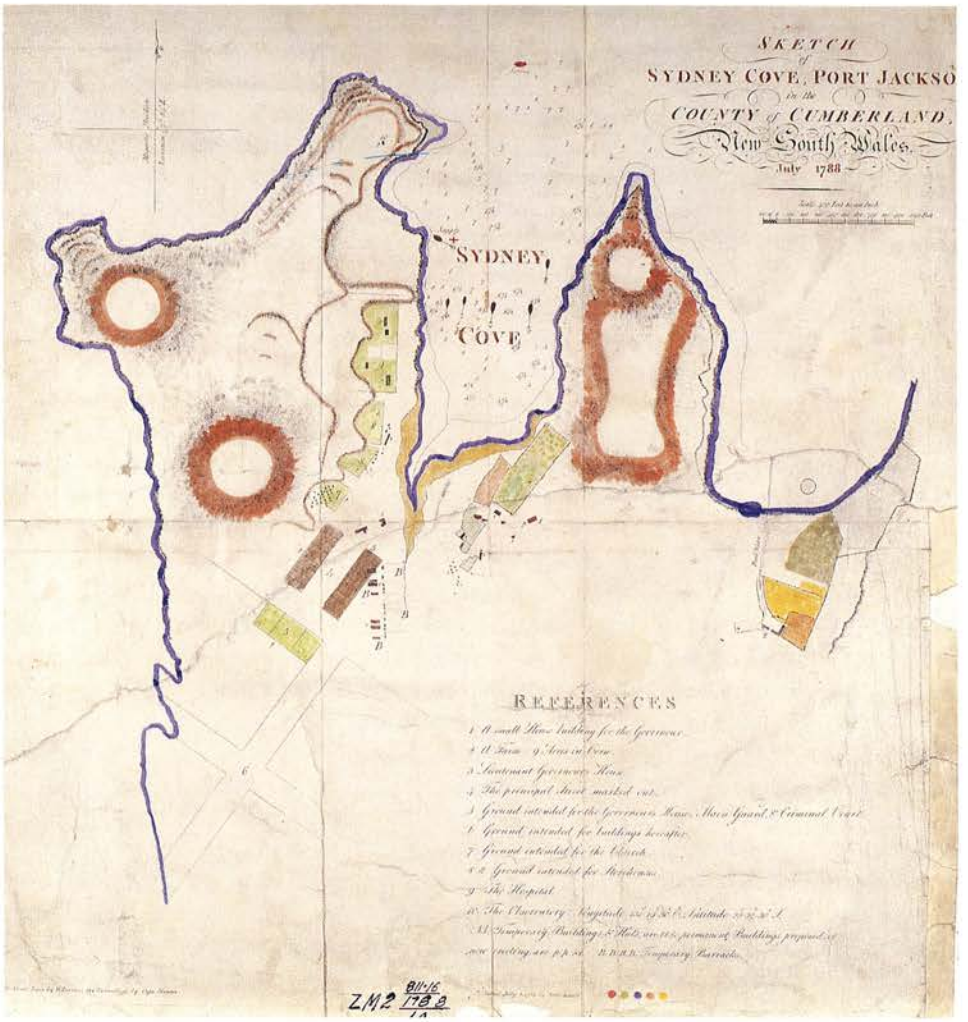


Chart of Port Jackson surveyed by Captain John Hunter on the Sirius *in 1788. A copperplate reproduction of this chart was published in Phillip's* The Voyage to Botany Bay. *Rose Hill (Parramatta) already featured as a named place.*
MITCHELL LIBRARY



Sketch & Description of the Settlement at SYDNEY COVE PORT JACKSON in the COUNTY of CUMBERLAND taken by a man imported Convict on the 16th of April, 1788 which was not quite 3 Months after Commodore Phillip's Landing there.

Sydney Cove lies 3 Leagues to the Northward of BOTANY BAY which is situated in Lat. 34 S. Long. 151 E.



Plan of Sydney by John Hunter and William Dawes, July 1788.

1. *A small House building for the Governor.*
2. *A Farm: 9 acres in Corn.*
3. *Lieutenant Governors House.*
4. *The principal Street marked out.*
5. *Ground intended for the Governor's House, Main Guard, & Criminal Court.*
6. *Ground intended for buildings hereafter.*
7. *Ground intended for the Church.*
8. *Ground intended for Storehouses.*
9. *The Hospital.*
10. *The Observatory. Longitude 151° 19' 30"E Latitude 33° 52' 30"S.*

MITCHELL LIBRARY

English rain rather than for the torrential rain that sometimes drenched Sydney. Whatever the defect, Phillip, completing his first letter to Lord Sydney on 15 May, apologised for writing in instalments and for his inability to sit down and rewrite the long letter afresh: 'my situation at present does not permit me to begin so long a letter again, the canvas house I am under being neither wind nor water proof'.

On the same day the foundation stone of a more permanent government house was laid, near the southwest corner of today's Phillip and Bridge streets. Phillip thought he was making history, and ordered a copper plate to be inscribed with his name, formal title, and particulars of his coming, and to be fastened to the foundation stones. This elegant house was built slowly of Sydney brick, its hipped roof was originally of local tiles, and it covered the large area of sixteen metres by six metres. It was two storeys high, and a staircase inside was to fascinate those first Aborigines who came to the house: the idea of someone walking above the head of another appealed to people whose buildings were so simple. The windows of the house made passers-by homesick, for they were made of glass. The roof, curiously, had only a tiny overhang. The idea of a verandah came to Sydney a little later and was probably as much an attempt to prevent tropical rain from scouring out the weak mortar in the walls as to provide shade in summer. The absence of limestone in the vicinity of Sydney had forced the governor's building gang to use

Opposite page:

Top.

Plan of Sydney, drawn by the convict Francis Fowles on 16 April 1788. This is the first map drawn of the infant settlement.

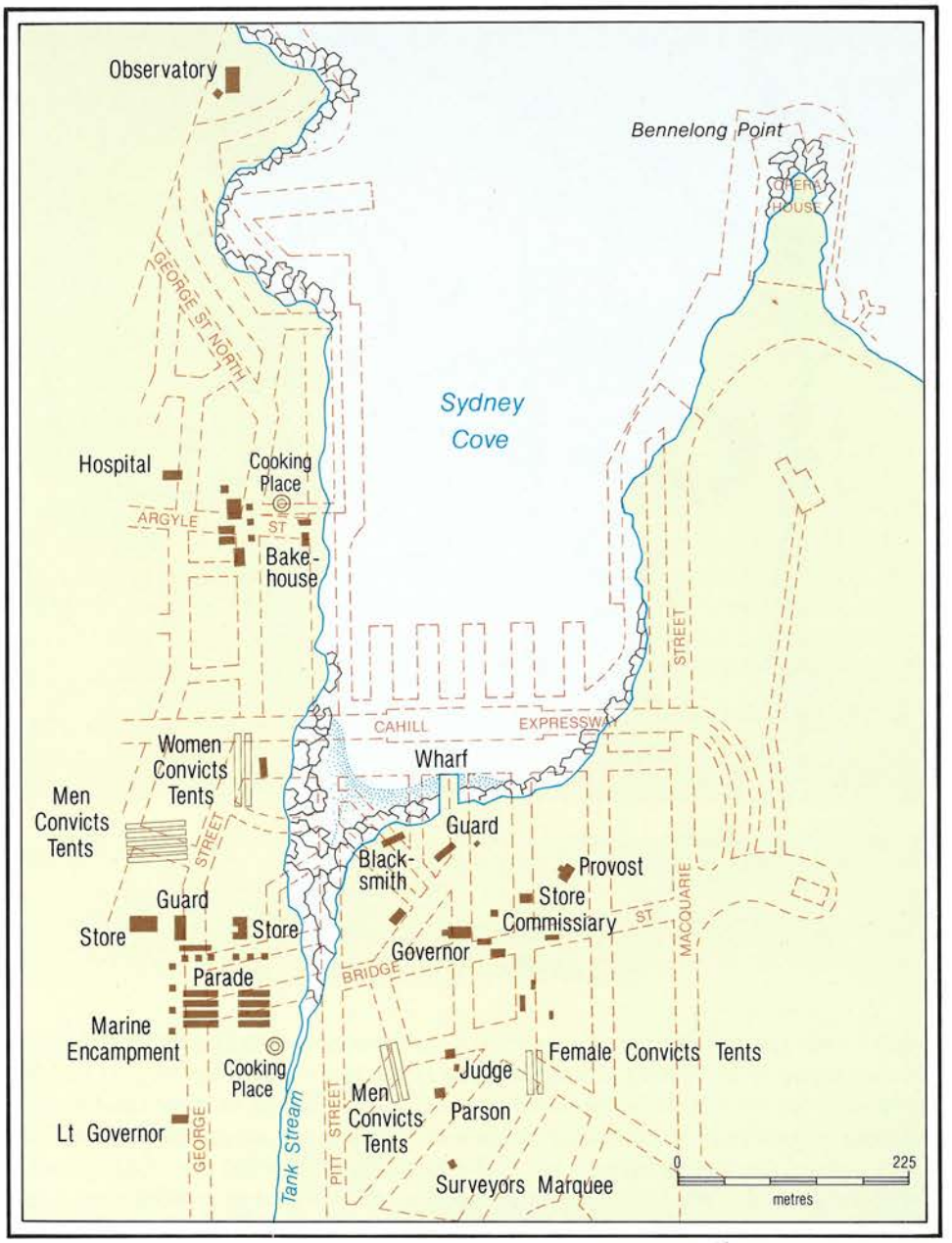
NATIONAL LIBRARY

Bottom.

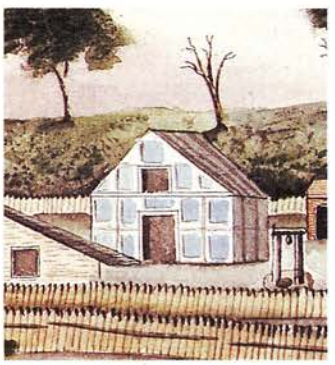
William Bradley, Sydney Cove, Port Jackson 1788. *The foundations of government house are shown on the extreme left. What appears to be a row of posts were possibly holding the clay mortar in place until it hardened.*

MITCHELL LIBRARY

Sydney Cove in 1788, with the modern road system superimposed.
J. GOODRUM



The original oilcloth building that Phillip described in 1788 as 'the canvas house I am under neither wind nor water proof'. Even so, it seems to have had glass windows, a rare luxury at Sydney then. This is a detail from the painting by an unknown artist that appears at the end of this chapter.
BRITISH MUSEUM NATURAL HISTORY



shellfish, and a shell-gathering expedition along the shore yielded only one-quarter of the shells needed by the lime-burners. Most of those shells probably came from Aboriginal middens, being the debris of long forgotten meals.

SYDNEY COVE

A military encampment, the settlement was ruled by the clock. As no large public clock had been imported and as few people possessed clocks, the time of day had to be announced; the drum was the gong and loudspeaker. Soon after sunrise the beating of the drum summoned the marines from their tents to the roll call. At noon each day the 'dinner drum' was struck loudly. On Sunday the drum announced the hour of divine service. Some time after dark another tattoo was

sounded, and all the lights in the tents had to be snuffed. During the night the ships' bells sounded the hour and the change of watch, but later in the year the thin chorus of bells was no longer audible across the still water because nearly all the ships, their cargoes unloaded, had sailed for distant ports.

Within the little settlement strict rules covered the movements of marines, of convicts, and of the seamen living aboard the ships anchored in Sydney Cove. After dark a curfew was imposed. The guards were entitled to fire on any convict seen outside the camp and the ships' captains were empowered to fire on anybody seen swimming towards the ship. Likewise, the seamen—and some had formed liaisons with convict women during the voyage—could not enter the convicts' camp without permission. In the first weeks a seaman found in the tent of convict women was arrested, his hands were tied behind him and he was marched out of camp with the drum and fife leading the way: the music played was 'The Rogue's March'. A few days later another three seamen caught in the women's tents were marched out of camp to the same tune. The youngest of the three, a boy, was forced to put on a petticoat before he was marched away. Soon the punishments became severe for marines and seamen found in the tents of convict women.

Phillip had a poor labour force but he also had advantages. The winter of New South Wales was so mild that normal outdoor work could continue; moreover, housing could be simpler than in a colder climate. Nor did Phillip have to concern himself with defence to the same extent as colonial administrators in North America. The American Indians, in numbers and organisation, were more formidable opponents than the Aborigines. In several of the North Atlantic colonies, the colonists could not even run cattle or plough fields far away from the forts for fear that Indians would burn their crops and kill their cattle. In contrast, Phillip did not fear that Aborigines would set alight his houses and crops.

Nor was Phillip afraid of the French in 1788, although the small exploring expeditions led by La Pérouse arrived in Botany Bay at almost the same time as his own fleet. He thus spent little effort in fortifying his settlement against external enemies. His constant elbower, Major Robert Ross, the commander of the marines, did urge him to provide a defensive retreat 'in case of an alarm or surprise', and on the east side of the cove a small fort was built, complete with a flagstaff and two iron guns. When the naval vessel *Sirius* sailed away on a long voyage in October, she left behind eight guns and their carriages to be mounted on the western side of the cove, but this was more to lighten the ship than to defend Sydney Cove.

While Phillip could sleep soundly at night with hardly a fear that French or Spanish warships would suddenly arrive, he had to provide extravagantly for internal defence. His main potential enemy, the convicts, lived inside the settlement. The price of providing internal defence—the expense of a large uniformed population producing no food—was to become increasingly high as the supply of food became precarious. Not even the most nervous leader of the most imperilled North American colony had to divert to defence such a large proportion of his manpower as did Phillip.

FOOD

Around the headland, past the present Opera House, small gangs of convicts were at work—or half at work—clearing away the trees and scrub in preparation for planting the first crop. The clearing was slow. They did not know the technique of ringbarking the trees, which in the long run would have saved the labour of digging out and chopping away the roots. For the first crop there was no alternative

to hard, systematic work. In cultivating the virgin ground they had no plough, only hoes. As no convict was experienced in farming, Phillip's own personal servant, Henry Dodd, was placed in charge of the little farm where the lower reaches of the Botanic Gardens now stand. He must have been a burly man because it was said that his very 'figure was calculated to make the idle and the worthless shrink if he came near them'. As he had once worked as a labourer on Phillip's own farm in Hampshire, not far from the bay along which the fleet sailed, he at least knew the elements of farming.

The elements of English farming were not necessarily those of farming in this new land where the seasons, temperatures, soil, pests and the quality of the labour were so different. In May the governor, inspecting the ground to be sown with wheat and barley, frowned when he saw the obstacles: 'the immense number of ants and field mice will render our crops very uncertain'. His seed wheat was not only affected by the voyage but was also a soft-grained English wheat, unsuited to the warm climate of the ripening season. The harvest of that first year, desperately needed, yielded not much more than a tonne of wheat. In November more fertile land was selected at what was called Rose Hill but is now Parramatta. It yielded six tonnes of wheat and barley in the following year—another disappointing harvest.

Crops were sown outside the government's farms. The captain and crew of the *Sirius* were allocated a small island, appropriately called Garden Island. The hospital planted its own garden in the hope of providing greens to patients suffering from scurvy, and officers also took up plots along the shore and planted trees and crops in the harsh soil. These private gardens were simply unsigned leases: no freeholds were granted in 1788. Here and there the officials busied themselves with a garden by their own cottage, and one of the few men with green fingers was the chaplain, Richard Johnson. Close to his cottage he felled trees and dug the soil. 'My little garden', he wrote home on 15 November, 'also begins to flourish', and every day he cooked fresh vegetables in his pot. If an English farmer could have seen most of the gardens at the end of 1788, he would have judged them pathetic. Even Johnson thought the produce in his garden was barely worth the effort.

The livestock were even less successful. At Cape Town, the last port of call for the fleet, animals and poultry had been penned onto corners of the decks of most of the ships; during the long voyage across the Southern Ocean the livestock had needed so much water and food that supplies ran low. One of the seamen's first tasks when the fleet was at anchor in Botany Bay was to go ashore and cut meadow hay—if they could find it—for the hungry livestock. In Sydney Cove the sheep were landed near the present site of the Opera House and under the eyes of a shepherd they almost ate bare that rocky headland. There were strict orders to kill no sheep or other livestock: they must be allowed to multiply. They did not. Early in May there were about one hundred pigs, horses, sheep, cows and goats, and about three hundred hens, ducks, geese and other poultry; but in the following months the numbers of most species declined. Sheep were killed by lightning or died of unexplained causes. Cattle escaped into the bush and in September the last cow, now 'wild and dangerous', was shot and eaten. Sergeant Scott noted in his diary that he had built a hen house for his sixteen chickens, but one night eleven were taken by a rat.

Some predators were human. A sheep being fattened for the officers celebrating the Prince of Wales's birthday on 12 August was captured, presumably by an experienced convict, and not seen again. The governor decided to offer freedom to any convict who would inform on the sheep stealer, but even that reward drew no applicants. As most of the residents of Sydney Cove had tasted only salted meat since leaving Cape Town, they longed for a meal of fresh meat. When a goat was

torn apart by a wild animal, presumably a dingo, passers-by seized the meat and next day proudly served some ten kilograms of it as goat pie at the wedding breakfast of a convict.

Virtually all the food eaten during the first year was imported. The main cargo of the fleet had consisted of barrels, big, medium and small. The salted meat and beef came in barrels; flour and some of the bread and even the butter was ladled from a barrel. There was only one shop in Sydney Cove, the government commissariat, and this large sentry-patrolled store was packed high with barrels, all presumably numbered, counted and recorded in neat ink in a heavy ledger by a clerk. Everyone, convict or free, was given a ration of food that had to last until the next ration day, a week later.

Every marine and male convict received a weekly ration of salted meat, seven pounds (3.2 kilograms) of beef or four pounds (1.8 kilograms) of pork. The Navy Board in England had fixed that amount but the practice at Sydney Cove was to give the soldiers and convicts receiving pork a generous seven pounds rather than the specified four pounds. Each man also received seven pounds of bread or seven pounds of flour: the bread was usually white and made of rough rather than fine flour. In addition each man received three pints (1.7 litres) of 'pease' weekly: presumably these were the dried Kentish peas often used in Britain for making bread in the eighteenth century. Each man received either a pound of flour (0.45 kilograms) or half a pound (0.2 kilograms) of rice and six ounces (170 grams) of butter. Women, whether convicts or the wives of marines, received two-thirds of this weekly ration. The forty or so children received only one third of the adult ration, but the governor sometimes intervened and raised the allowance for older ones, whether the children of officials, marines or convicts.

As the year went on, the food ration was sliced away by government decrees, though the drastic slicing was not to come until two years later. Early in 1788 a sergeant confided to his diary that the commissariat was quietly reducing the ration of meat allotted to each individual. Thus when the salted beef was cut into pieces for distribution in the weekly ration, a lump of 100 pounds of beef (45 kilograms) was treated as if it were 112 pounds (51 kilograms). Soldiers and convicts alike thus received only about nine-tenths of the meat to which they were entitled. At the end of September, the weekly pound (0.45 kilograms) of flour seems to have been removed from the ration. In November the governor ruled that those convicts who were too lazy or too weak to work should receive only two-thirds of their normal ration. The governor had no alternative but to be frugal with the rations. Nobody knew when the next supply ships would arrive from England, and in fact they did not arrive—accompanied by more convicts to eat the provisions—until 1790.

Throughout 1788 the ration for the typical marine probably provided adequate nutrition. He did not work hard physically, and moreover he received additional nourishment through his daily allowance of spirits or fortified wine. For the typical male convict who did not work hard and whose physique was light the weekly ration provided enough energy. But some convicts had a legitimate appetite for food which the ration could not satisfy. A few ate their weekly rations in the first few days—the convict Black Caesar gobbled his in a day—and then were alert for the opportunity to steal food from tents. A few stole the grain that they were supposed to be planting in the gardens, and at one farm a gardener was found stirring an iron pot in which were cooking the peas and beans he had been instructed to plant. Another convict took his week's allowance of flour, baked it into eighteen large cakes, and wolfed them down. He became 'speechless and senseless', and died in hospital a day later.

Officers dined more copiously. They probably received more of the fresh fish and occasionally they shot kangaroos; they had greater access to the vegetables grown in the government gardens and some grew their own and kept their own pigs and poultry. Many had brought their own supply of tea, an increasingly popular drink in England in the 1780s. Many officers had their own barrels of wine and they also had a daily allowance of wine from the official storehouse. On special occasions they dined in style with the governor. On 4 June 1788, the King's birthday, all the officers and higher civil officials gathered at the governor's prefabricated house and sat down to a dinner which was voted excellent, 'considering how far we are from Leadenhall Market', the great produce market in London. They ate duck, fowl, fish, mutton, pork and 'Kanguroo'; and they also ate salads, pies and preserved fruits. They drank old English porter, madeira, port, white wine from Lisbon and a Tenerife wine which resembled madeira. For such a special day even the convicts were given a large portion of alcohol: 'half a pint' (0.3 litres) of rum to every man and a quarter pint (0.15 litres) to every woman. There was not sufficient stock in the government's store to permit many such days of generosity.

The Sydney rock oyster (Saccostrea commercialis) *is less plentiful today than it was in 1788, but many can still be found in the upper reaches of Middle Harbour.* ADRIAAN VAN DER WEEL.

Phillip had originally hoped to catch enough fish to supplement the diet of barrelled food. Everyone thought the coast must teem with fish, for Captain Cook at Botany Bay had caught many fish, and indeed the bay was first named after a fish, being called Stingray's Harbour. As the Aboriginal and British populations at Sydney were small, such a vast expanse of salt water near the coast would surely yield more fish than could possibly be eaten. Slowly they learned the sad fact that the sea off eastern Australia supplied very few edible fish, compared to similar expanses of water in the English Channel and the North Sea. The sons of a nation of fishermen were thwarted in Sydney harbour. All day fishing parties were at work, the men of the *Sirius* used their large seine or net up and down the harbour, but on most days the catch was small. When the scarcity of food became severe, Captain Tench of the marines was sent with a fishing party 'from four o'clock in the afternoon, until eight o'clock next morning, hauling the seine in every part of the harbour'; and after hauling in the great net twenty or thirty times they seldom caught more than forty or fifty kilograms of fish in a whole night's fishing. Tench agreed with all fishermen of experience, 'that they never fished in a country where success was so precarious and uncertain'. Even today Australians probably eat as much imported fish, whether frozen, smoked or tinned, as the fish caught in their own waters.

There were compensations in the harbour which the fish seemed to shun. The settlers were quick to appreciate the Sydney rock oyster (*Saccostrea commercialis*) a species that underwent a sex change—being spawned as males but later turning into females—long before that change became possible for human beings. As soon as the officers went ashore at Botany Bay they noticed the oysters, one of which was 'exactly like what we in England call the Kentish Oysters'. In Sydney Harbour a few days later they were delighted to see the rocks near the water's edge covered with small oysters. Even the branches of the mangrove trees near the shore were dotted with them, and a gourmet merely had to tear off a branch and carry the oysters aboard the ship by the branch full. When opened, the oysters were small and delicately flavoured. They were so plentiful in those days that the shells were gathered dead or alive, and burned in kilns in order to provide a lime from which mortar could be made. Ironically, as Sydney lacked limestone, the oysters at times were seen more as a building material than a food.

Everyone's diet was deficient in vitamin C. As the meat was salted, as no fresh fruit or vegetables were available and as everything edible came from the barrel,

the settlers were vulnerable to scurvy. On the outward voyage they were fed fresh meat and vegetables at the ports of call but once they reached New South Wales little of such food could be found. As soon as everybody was ashore at Sydney Cove, scurvy and dysentery became visible. Tents erected as hospitals were filled with sick convicts and marines. 'More pitiable objects were perhaps never seen', wrote surgeon White.

The early sign of the scurvy, at least in the eyes of medical men of that era, was a pallor or yellow colour in the face. The knees weakened and the gums began to itch and swell, bleeding when rubbed a little. Dark bruises appeared on the thighs and legs and sometimes the arms and body. Somebody at Sydney probably possessed the first edition of the *Encyclopaedia Britannica*, then a mere three volumes, and there could read the warning that the scurvy attacked those who lived in cold northern countries or near the marshes, those who lived idle and sedentary lives and those who, like seamen, ate salted and soaked foods. It also preyed on those who were prone to 'melancholic, maniacal, hysteric, or hypochondriacal disorders' (which suggests that we would all be vulnerable to the scurvy if existing remedies were taken away). The symptoms of the disease were vividly described.

> It is known by spontaneous weariness, heaviness of the body, difficulty of breathing, especially after bodily motion: rottenness of the gums, a stinking breath, frequent bleading of the nose, difficulty of walking; sometimes a swelling, sometimes a falling away of the legs, in which there are always livid, plumbeous, yellow, or violet-coloured spots; the colour of the face is generally of a pale tawney.

The little settlement could not cope with the disease. The return of a ship from Lord Howe Island, way out in the Pacific Ocean, with eighteen large turtles caught ashore, enabled the surgeons to give at least a serve or two of turtle meat to those ill with scurvy. The ship was sent back to the island for more turtle but returned in May, to the dismay of the sick, without one turtle. Vegetable seeds planted near the hospital sprouted and then died, their death mourned by scores of people who had crouched to inspect them in their first greenness.

Perhaps most of the people in the settlement were affected by the scurvy. The energy of the labourers sagged. Men sentenced to floggings were too weakened by scurvy to receive the full count. Sailors going to sea were listless, and the captains of the departing, now empty convict ships had to be alert in handling the ship lest the enfeebled sailors high up the masts could not manage the heavy sails in wind and rain. Sailors died at sea and convicts died on land from scurvy. In his first despatch, Phillip had reported that the scurvy 'now rages in a most extraordinary manner'. He had been on many long voyages and had seen how scurvy could set in; he had observed that the scurvy at Spithead when the first fleet was assembling was sufficient to send one in every six marines in the *Alexander* to hospital; but even Phillip was not quite prepared for the spread and speed of the sickness in Sydney Cove.

The Aborigines who came to peep at the strangers in Sydney Cove showed no sign of the dreaded sickness. They had an ample supply of fresh foods and greens: they possessed the remedy for scurvy. Accordingly, many marines and convicts went out in search of edible berries, greens and other Aboriginal foodstuffs in the bush. Finding a small white berry which tasted like an unripened gooseberry, they showed it to Surgeon White who praised its capacity to fend off scurvy. Later investigation showed that these *Leptomeria* berries could not be found in sufficient quantity. A creeper resembling ivy was collected and doused in water to produce a pleasing drink with a liquorice flavour: it was probably *Smilax glycophylla* a native

Smilax glycophylla, *a native sarsaparilla, was probably the creeper used 'to produce a pleasing drink with a liquorice flavour'.*
MURRAY FAGG

sarsaparilla known as 'sweet tea'. Other greens were tasted and used, perhaps in increasing quantities, because the scurvy became less rampant in the last months of the year even though the gardens yielded as yet few vegetables.

The privations experienced by the first settlers in Sydney Cove were not unique in the history of new colonies planted on unfamiliar soil. In North America, Virginia experienced a year of suffering known as the 'starving time', and at Plymouth half the settlers died in the first winter from sickness and other hardships. Sydney's ability to survive was largely the result of the stores, both durable and perishable, supplied by Britain. As Sydney's population of a thousand permanent settlers made it very large for a new overseas European colony, the planning had to be elaborate. Indeed it may have been the most ambitious long-distance expedition ever planned in Europe in a time of peace. That its food supplies lasted so long was a sign that, by the standards of the time, the planning in England had been very careful.

PUNISHMENT

The early setbacks—the failure of the gardens and the fishing grounds, the decline of the sheep and cattle, and the onset of scurvy—placed strain on Captain Phillip. He carried the full weight of responsibility. Known formally as 'Governor in Chief and Captain General in and over the Territory of New South Wales', he was answerable to London for its safety, for the welfare of all who lived in it and for the expenses incurred. He controlled the convicts and their daily life, the hour at which they arose and the hour at which their candles were blown out. He laid out the town and decided what should be built and where. He controlled the harbour and the shipping, making the regulations that guided the coming and going of ships, though in this he was guided by the Royal Navy's rules and practices. He was the man who granted permission to marry, and he decided whether the children of a marriage should have smaller or larger rations. He was the protector of the Aborigines, the custodian of religion, the controller of commerce. He could proclaim martial law, he could conscript any inhabitant into the armed forces. He even held the power to pardon those whom the courts had sentenced to death. He was in effect the governor-general, the chief justice, the prime minister, and the lord mayor; but he was not quite the commander in chief of the armed forces, for the marines had their own commander who was the lieutenant-governor and Sydney's second most important leader.

Phillip possessed enormous power but on the evidence available, he was an exception to Lord Acton's precept that 'power tends to corrupt and absolute power corrupts absolutely'. Refusing to exercise absolute power, he occasionally had to accept the arrogance of his second-in-charge, Robert Ross, a Scot who had helped to capture Quebec from the French and had fought the American colonists at the battle of Bunker Hill during the war of independence. Ross's next important battle was at Sydney Cove where he fought the governor. He refused to allow his marine officers to act as supervisors of the convicts except when the convicts were the officers' servants. He insisted that the marines were in Sydney to carry out military duties, not to act as petty gaolers. He also argued that the officers of the marines, his officers, should not sit on the criminal court and judge the convicts for their latest crimes. Phillip was commendably tolerant, allowing Ross to froth at the mouth or to have his way on some issues. Acton perhaps had in mind the Rosses rather than the Phillips of the naval world when he framed his dictum.

It is often said that the convicts were slaves, but this is an overstatement. Convicts had their rights. The power of Phillip was not despotic, for he relied on the courts:

a criminal court, a civil court, and an admiralty court (presided over by Major Ross) for trying offences committed on the high seas. The busiest court, the court of criminal judicature, was presided over by the judge-advocate, David Collins, who was also secretary to the governor and one of his most loyal supporters. Its other members were selected officers of the navy and the marines, who heard evidence, cross-examined witnesses on oath and interpreted the laws of England. Sometimes the court acquitted those who were charged: guilt was not the inevitable verdict. The criminal court's flexibility, however, was severely restricted by an act of 1787 which specified that the court could impose only two punishments—flogging or death. In fact, it did introduce other punishments, as we shall see.

The governor did not sit on the bench, but rather served as a final court of appeal, occasionally pardoning those whom the criminal court had sentenced to death or reducing the number of lashes to be inflicted on a convict. At first Phillip even introduced an alternative penalty for those sentenced to death, for he resolved that when a ship was available they should be sent into exile, to live in dangerous isolation at 'South Cape'. Phillip did not make clear whether he had in mind the South Cape at the southern end of New Zealand or the one at the southern end of Tasmania: in any case, he could not find a ship to send them in. Two of the men who escaped that penalty of exile were Williams and Gordon. Both were Negroes and, whether by chance or intention, were treated with more leniency than the average English convict.

In the first year of the criminal court, five male convicts were hanged, and in March 1789 six marines would be hanged. The first gallows were makeshift. The condemned man appeared at the hanging place—a tree with a strong horizontal branch—and mounted a ladder and stood on the rung while the halter around his neck was fastened to the branch. Suddenly the ladder was pulled away. The grave was dug close to the tree.

The punishments decreed by the criminal court were designed to deter. On several days all the convicts were assembled to see the hanging or to witness the flogging, in the hope that a warning would be issued to all. The warning did not seem to sink in, at least in the view of the high officials, and the floggings became more severe. During the voyage, twenty-five or thirty lashes on the bare back had been the normal punishment for an offender, but ashore the punishment became more severe. Thus in November, John Thomas, who used 'force and arms' to steal valuable soap from a woman, was given 500 lashes—'four hundred on his bare back and one hundred on his bare backside'. Most convicts, however, were spared the lash. Towards the end of 1788 the criminal court tried to humiliate some of the convicted prisoners by sentencing them to wear clothes with their crime or their criminal characteristics emblazoned on the canvas One convict wore a jacket on which R was sewn: R stood for rogue. A woman convict who received stolen goods from him was forced to wear a canvas frock on which were painted the large letters RSG (Receiver of Stolen Goods). As an added punishment, her hair was cut off. Sympathy for the plight of the convicts is understandable, but sympathy should also be extended to those who tried to instil order and energy into such a ragged throng.

The women convicts were treated differently in many ways. Their ration of food was smaller and their work was lighter than that of the men. Presumably some did domestic chores for the officers, kept the tents and surroundings clean, and did the washing for the male convicts. It is not clear whether, after the initial period of mass cooking was over, they did the cooking for small batches or groups. Certainly one of their early tasks was to tramp along the shore and collect shells which were burned into lime. Another task was to make the small wooden pegs

which prevented the roof shingles from sliding down the roof. The reluctance of Captain Phillip to employ women in more strenuous tasks left about one quarter of his labour force underemployed.

Most officials aboard the ships had expected the women convicts to behave more quietly than the men. The officials were sometimes shocked. When several of the wilder women were flogged on deck, they gave so much abuse and their language was so foul that gags were placed in their mouths. When at Cape Town the women in the *Friendship* were transferred to other ships to make way for the sheep coming aboard, one diarist gave three cheers for the ewes: 'we will find them much more agreeable shipmates than the women'. Whether the female convicts were, overall, treated less harshly than the male convicts is a difficult question to answer: probably the women were favoured a little. Admittedly they were at the mercy of the officers and had little alternative but to become their mistresses; many were maltreated and many must have been hungry. And yet, being outnumbered, they were a scarce resource. They were also allowed to work at a more leisurely pace. Their treatment by the criminal court was certainly lenient, and in the first year the female prisoners on trial were twice as likely as the men to be freed. Moreover, few women were flogged in Sydney's first year, and their lashes were fewer. No female convict was hanged, though one old woman did try to commit suicide by hanging herself from the ridge pole of her tent. Interestingly, theft was the typical male crime, but verbal or physical violence—often while drunk—was the common female crime, and the violence was sometimes inflicted on officials with whom, presumably, the women lived or refused to live.

Of the 188 female convicts who landed at Sydney Cove, most probably had lovers of a sort in the course of that year. Some slept with sailors who later that year were to sail away to England or China, leaving several women pregnant and uncared for. Some slept with officers and probably kept house for them. Some married convicts. A few were prostitutes and received payment in food, clothes or spirits. On Christmas Eve, two corporals of the marines had sex with two women and the payment was one shirt each. A few of the women who landed at Sydney triumphed, and their lives were transformed by the good fortune of being transported. One was Esther Abraham, a young Jewish girl, pregnant at fifteen, giving birth to a baby in Newgate prison, having an affair with a young Scottish lieutenant of the marines, George Johnston, and bearing his children. Eventually, more than a quarter of a century after they had begun to live together, they were married. One of their daughters was to marry an English judge presiding in India, and she lived until 1904. So short is the British history of this land that a few people living in Sydney today can still remember this daughter of one of the luckier women convicts who came in disgrace in the fleet.

THE PRINCE OF LIARS

The first year at Sydney Cove was enlivened not only by what happened but by what people thought was happening. In a settlement of convicts, truth and untruth daily fought for living room. Never had so many liars been gathered together. Experienced tricksters competed with each other. Lies and wild rumours strutted side by side. The truth was a dwarf, almost trampled upon. The prizes for the successful liars were high: the avoiding of punishment, the paying back of old grievances, the gaining of favours, the purloining of others' property and pride at enhancing one's own reputation or lowering that of somebody else. 'We found', wrote Tench, 'the convicts particularly happy in fertility of invention, and

exaggerated descriptions.' They enthusiastically spread tales of what they had found just over the next hill. They boasted of seeing mighty rivers and rich mines and quarries of marble. 'At first we hearkened with avidity to such accounts; but perpetual disappointments taught us to listen with caution.'

James Daly was a prince of liars. He has gone down in history as the most notorious liar of the year—a year that he did not complete. We have no idea what he looked like, his age, his occupation and whether he was a long-time liar or a late recruit—the victim of a harsh way of life for which the ingenious lie offered a prospect of escape. He began, unknowingly, his voyage towards Australia in May 1784 when he stole a variety of clothes in London. In all he stole thirteen items including an expensive cloth greatcoat, a buckle, and a pair of 'jean breeches'—a pair of jeans. He was caught, tried at the Old Bailey and sentenced to seven years' transportation. He resumed his stealing in Sydney Cove. There, like almost everyone else, he was probably keeping bad company. There is evidence that the convict woman with whom he was living persuaded him to concoct his grandest lie in the hope that they would both receive a pardon and a safe return to England.

In August 1788, Daly announced that he had found gold, specimens of which he produced. He was at first secretive about where exactly this 'second Peru' could be located. Surely, he implied, nobody would expect him to divulge a place of such importance to Sydney's future without receiving firm assurances that he would be handsomely rewarded. At last agreeing to show the way, he went down the harbour towards South Head. Accompanied by an officer, a corporal and several private soldiers, he went into the bush and suddenly gave them the slip by telling them that he had some private business to do, 'some necessary occasion'. Quickly he disappeared. The soldiers searched and shouted, could not find him, and walked back, vexed and angry, to Sydney Cove where they learned he had arrived well before them, gathered possessions from his tent, and disappeared into the bush. Before long, however, Daly became hungry and reappeared at the settlement. For his trickery he was punished with fifty lashes. He persisted with his story, explaining that at South Head he had decided on the spur of the moment to tell nobody but the governor himself. Given a second chance, he was escorted again down the harbour towards the mysterious mine. His courage left him even earlier than before, and he confessed that he was a confidence man. The 'gold' he had shown proudly around had really come from the filing down of pieces of brass buckle—maybe even the edges of a gold guinea—and mixing them with sand and stone. (Daly seems to have been fascinated by buckles: a silver buckle was one of the stolen goods that had earned him transportation.)

For his second piece of trickery, Daly received 100 lashes. In the tents and huts of Sydney Cove the chatter of the convicts saw the punishment as unjustified. Public opinion was convinced that he had found something. Even in the land of liars there is still a loose respect for the truth: people would not lie, would not take short cuts to the truth, if they did not in some way see the truth as important. Daly was said to be tricking the government, to be withholding news of the scene of his discovery because he wanted a fair reward. So, in disgrace, his reputation was higher than ever.

No surface gold exists in the vicinity of Sydney but in 1788 how could people be sure what might exist? The convicts who thought that a gold mine lay hidden somewhere near the Sydney heads were no more gullible than all those Australians who, in the depression of the early 1930s, remained convinced that the prospector Lasseter had found a marvellous reef in the dry ranges of central Australia. The story of Lasseter—and his escape from his escorts—is almost a replay, nearly a century and a half later, of the story of James Daly.

In the spring of 1788 a change was seen in Daly's personality. He was, wrote the highest court official, 'observed from that time to neglect his labour, and to loiter about from hut to hut, while others were at work'. How he managed to evade work is not clear. In a colony crying out for the labour of all who were fit, it seems to be administrative incompetence that a tolerably fit man should not have been compelled to work each day. Perhaps he bribed the convicts who acted as overseers of the work gangs. Certainly he had the capacity to bribe, because he committed thefts and thus acquired the possessions with which to buy favours. Eventually he was caught stealing everything stealable from a convict's house. This time the value of the clothes he stole was a mere 8s 3d; barely one seventh of the value of the goods he had stolen on his luckless day in London. Nonetheless, he was sentenced to death on 2 December, and hanged on the following day.

There was one outlet for convicts who were in despair or were unnaturally hopeful: escape. The trees, rocks and long grass were so close to the camp at Sydney Cove that escape for the alert convict was not difficult. Many parties of convicts also went away from the guarded settlement to perform tasks—to fish, to gather shells and greens and rushes—and they could easily escape. The hope of several of those who escaped was to walk to China. The idea sounds absurd but the convicts knew that several of the ships that had carried them to Australia had set sail for Canton and therefore they concluded that China could not be far away. They also must have learned or guessed that China lay to the northwest of Sydney, so they set out in that direction. They were probably the first inland explorers: some must have walked further, their clothes threadbare from the ragged bush and their shoes of flimsy leather worn out, than any of the well-equipped official explorers of the first years. Some escaping convicts left no record of their journey except their bones, which eventually were found more than a hundred kilometres away. It is possible that a few of the escapers fell in with the Aborigines and lived with them, wandering from place to place, hoping maybe that across the next ridge they would suddenly hear the bell of a Chinese temple or smell a pot of Chinese tea. At the end of 1788, fourteen convicts were still missing.

PREACHER ON THE GRASS

The Reverend Richard Johnson, from an engraving by G. Terry, published in 1787.
MITCHELL LIBRARY

The church was part of the colony, but not always given a place in the front row. When at the new flagpole on the evening of Saturday 26 January the flag was raised, volleys were fired and toasts were drunk, King George III and members of the royal family had precedence over Jesus. The following day, the first Sunday ashore, the official chaplain, the Reverend Richard Johnson, was not invited to preach. He had to wait another week, when at last all the marines and convicts were assembled in his presence. That second Sunday was warm, but a breeze blew from the ocean and the trees gave shade. There was no pulpit and the chaplain preached from the grass. The ground must have been sloping—the site was probably shaped like an amphitheatre—and so the people standing below him could probably see him clearly and hear the words slowly spoken in his Yorkshire accent. Johnson chose as his text the twelfth verse of psalm 116: 'What shall I render unto the Lord for all his benefits towards me?' The previous verse would have been equally appropriate for that raggle-taggle congregation. For in the King James Bible from which he read, that verse ended with the words, 'All men are liars'.

That same day Mr Johnson was rowed out to the *Sirius*, where he conducted another service and baptised an infant, the son of a marine. Most of his listeners at those ceremonies probably did not know what he was talking about. One lieutenant of the marines, however, was thrilled when he was requested to allow

his large marquee and his dining table to be used by the chaplain one Sunday for the service of holy communion. 'I will keep this table also as long as I live', wrote the lieutenant, 'for it is the first table that ever the Lord's Supper was eat of in this country. Possibly he erred, because another service was almost certainly conducted by the French chaplain aboard one of the two ships of the French explorer, La Pérouse who was visiting Botany Bay from 26 January to 10 March 1788. Indeed, the French chaplain died at Botany Bay and was buried there.

Richard Johnson was a farmer and teacher before he went, in his early twenties, to study at Cambridge; he had been a clergyman for only a few months when he was nominated in October 1786 as chaplain to the proposed settlement at Botany Bay. He was evangelical, and in Sydney he was to be accused, falsely in fact but correctly in spirit, of being 'one of the people called Methodists'. He owed his appointment to the Eclectic Society, of which William Wilberforce and John Newton were prominent members. Newton, once the master of a slave ship in the Atlantic, was now rector of St Mary Woolnoth in the city of London, and the author of two hymns which were to become popular in Australia—'How Sweet the Name of Jesus Sounds!' and 'Amazing Grace'. Newton warned the young Johnson that a chaplain could easily endanger his health by clambering into the hold of a convict ship 'where the air must be always putrid from the breath of a crowd of passengers in chains'. Johnson, however, had a sense of duty even though he was not obsessively dutiful. In Sydney many convicts were softened by his personal kindnesses; many saw him on their deathbed and many heard him pray as they stood, frightened, in the sun, waiting for the gallows to break their necks.

Johnson was all alone in his work in 1788 and for years afterwards. When he was sick, as he was for weeks, no church service was held. When he was granted no building, he was prepared to pay the cost of erecting his own church. His goodwill extended to the Aborigines; he took the black girl Abaroo into his family and he christened his own first child Milbah, an Aboriginal name. Each Sunday in the first months of 1788, as he busily married a new batch of convicts, he perhaps thought he was slowly spreading the word; but he knew, as the months went on, that most of it fell on stony ground. By November he was confiding that most people at the cove would much rather see the erection of a tavern or a brothel than the long awaited church: 'yea, most of them, would sell their souls for a glass of grogg—so blind—so hardened—so foolish are they'. Signs of amazing grace were hard to find.

The Church of England held the monopoly of worship. The governor and the high officials in New South Wales were not only the servants of King George as 'lawful and rightful King of this Realm' but also servants of the king as the head of the spiritual realm. When Governor Phillip on 13 February took the oaths of loyalty, he also made the formal religious declaration that, unlike the Catholics, he did not believe that at the sacrament of the Lord's Supper the bread and wine actually became the body and blood of Christ. Phillip was not keen on theological questions; he was simply an officer doing his duty. To him religion was more a useful package of warnings and admonitions that supplemented the cell, chains, the lash, the gallows, or the rewards and remissions for good conduct. He knew, however, that most of the convicts were practically pagans. Probably half of them had not attended church service in the five years before they became a prisoner, for they came from those suburbs of London and other cities where the churches had little influence on the poor. Sydney Cove indeed was not much more godless than those social groups or those parts of the British Isles from which its inhabitants had been forcibly recruited. Nonetheless, in few if any European colonies of the eighteenth century was religion such a casual affair as in Sydney Cove.

William Bradley, View in Broken Bay, New South Wales, March1788. *Parties, sometimes led by the governor, explored regions near Port Jackson during the early weeks. They encountered Aborigines and enjoyed friendly relations with them.*
MITCHELL LIBRARY

EYE FOR BEAUTY

John Hunter. Oil by W.M. Bennett, c1812.
NATIONAL LIBRARY

For many, the first sight of the harbour and its wooded shores was unforgettable. Those few who wrote down their impressions used adjectives that ranged from 'wonderful' to 'dismal'. In the minds of most, the wonderful and the woeful stood side by side.

Sydney Harbour, then known as Port Jackson, was highly praised. The narrow cliff-guarded entrance made the harbour easy to defend. The deep water ran almost to the shore, thus dispensing with the need for wharves. As a potential naval base Port Jackson was unsurpassed; and Phillip could imagine a thousand warships moored safely inside without a hint of congestion and free from danger in the wildest storm. Phillip called it the finest harbour on the globe while White pronounced it 'the finest and most extensive harbour in the universe'. Neither man had seen more than a fraction of the world's harbours, and so there was a touch of hyperbole in their pronouncements. Arthur Bowes Smyth, the surgeon in the *Lady Penrhyn* noted in his journal that everyone voted it 'one of the finest Harbours in the World, not excepting that of Trincamale in the East Indies'. (Trincomalee, on barren coast in the northeast of Ceylon, was prized as superior to any harbour in India and was to be snatched from the Dutch by the English in 1795). Curiously, that experienced sailor Captain John Hunter, was one of the few who did not assign it a high place in the world's hierarchy of harbours:

> it had rather an unpromising appearance, on entering between the outer heads or capes that form its entrance, which are high, rugged, and perpendicular cliffs; but we had not gone far in, before we discovered a large branch extending to the southward; into this we went, and soon found ourselves perfectly land-locked, with a good depth of water.

The harbour, generally, was appreciated because it was useful rather than because it was beautiful. Likewise, the land around the harbour was praised infrequently because it was not useful: the ground was hard and often rocky and the creeks did

not always flow. The dominant attitude to seascape and landscape in 1788 was utilitarian, but occasionally a few officers saw beauty in land and sea. Watkin Tench, a captain of the marines, was possibly the most ardent in his praise of the scenery. He thought the two harbours were noble even though they merged, at the landward end, into uninviting shallows and swamps. The rivers were a little pathetic but the whole landscape was attractive:

> The general face of the country is certainly pleasing, being diversified with gentle ascents, and little winding vallies, covered for the most part with large spreading trees, which afford a succession of leaves in all seasons. In those places where trees are scarce, a variety of flowering shrubs abound, most of them entirely new to an European, and surpassing in beauty, fragrance, and number, all I ever saw in an uncultivated state.

He admired especially a kind of tea-tree, either *Leptospermum* or *Melaleuca* and the white flowers and rich scent reminded him of the English maybush.

That last sentence of Tench's is sometimes quoted as evidence of an enthusiastic attitude towards the strange landscape. Significantly, when about four years later he wrote his second book about New South Wales, the result of deeper knowledge of the country, he repeated his favourable observations of 1788 but was careful to shade his sunshine. He noted that a stranger would applaud the vegetation and the 'gently swelling hills' to the west of the harbour but would look in vain for the streams that brought fertility to 'more happy lands'. Happier lands! The comment is revealing. He went on to say that once the traveller pushed a few miles beyond the Hawkesbury he found only desert and wilderness.

Bowes Smyth, the surgeon, who was only briefly in Sydney before his ship sailed away, saw little magic in the landscape, but he loved the romantic appearance of the small islands in the harbour. His descriptions of Sydney paled beside his praise of uninhabited Lord Howe Island out in the Pacific, where the fowl, pigeons, parrots and other birds walked about, quite fearless of intruders from the ship. 'When I was in the Woods amongst the Birds', he wrote, 'I could not help picturing to myself the Golden Age as described by Ovid.' Every schoolboy who learned Latin knew Ovid's *Metamorphoses* and his description of that land of peace and harmony, where the spring was everlasting and the streams flowed with milk. Such a supreme sense of wonder was not felt about Nature in New South Wales itself in that first year.

Those who went inland did not find many scenes that ignited their sense of the picturesque. Governor Phillip, on the fifth day of an expedition towards the Blue Mountains—or the Carmarthen Hills, as the more northerly hills were then called—was arrested by the sight of level and undulating country of 'pleasing and picturesque appearance'. One hill he called 'beautiful'. On the other hand, most who wrote rarely added a word of praise to their descriptions of Nature, unless it was a particular bird or flower of beauty. Some of their descriptions are stark. Thus John White, as much a worshipper of Nature as anybody, described the landscape and vegetation in pragmatic sentences that would not have enticed a would-be farmer, land developer or tourist. Exploring not far from the harbour in April 1788, he came to a small tidal stream hemmed in by a steep valley, and at about four o'clock in the afternoon he made camp and prepared to cook his provisions and wash his clothes. It was, he wrote, 'the most desert, wild, and solitary seclusion that the imagination can form any idea of'. Major Robert Ross was willing to apply that sentiment to virtually all the landscape he had seen. It was 'so very barren and forbidding' that he thought that 'in the whole world there is not a worse country'. Ross's discontent encompassed his fellow men as well.

Such were the opinions of relatively educated men; it is unlikely that most of the ordinary soldiers, sailors and convicts had quite the same thoughts and tastes. John Easty, a private in the marines, did not see the shores of the harbour through a romantic haze. Noting that a criminal court had sentenced a prisoner to solitary confinement on an island in the harbour, Private Easty had one word for that island: it was 'desolate'. Similarly, Sergeant Scott of the marines offered no comment on the scenery on land or water after he landed in New South Wales. And yet he was not blind to beauty; sailing home to England in 1792, his ship fell in with icebergs near Cape Horn, and this silent half-literate sergeant took up his pen and slowly wrote: 'The Ice look[d] beutifull.' Back at Sydney Cove most of the convicts probably thought their surroundings were strange or forlorn. Those from rural England probably hankered, all their remaining years, for a sight of green fields and hedgerows and a skyline of English oaks and elms.

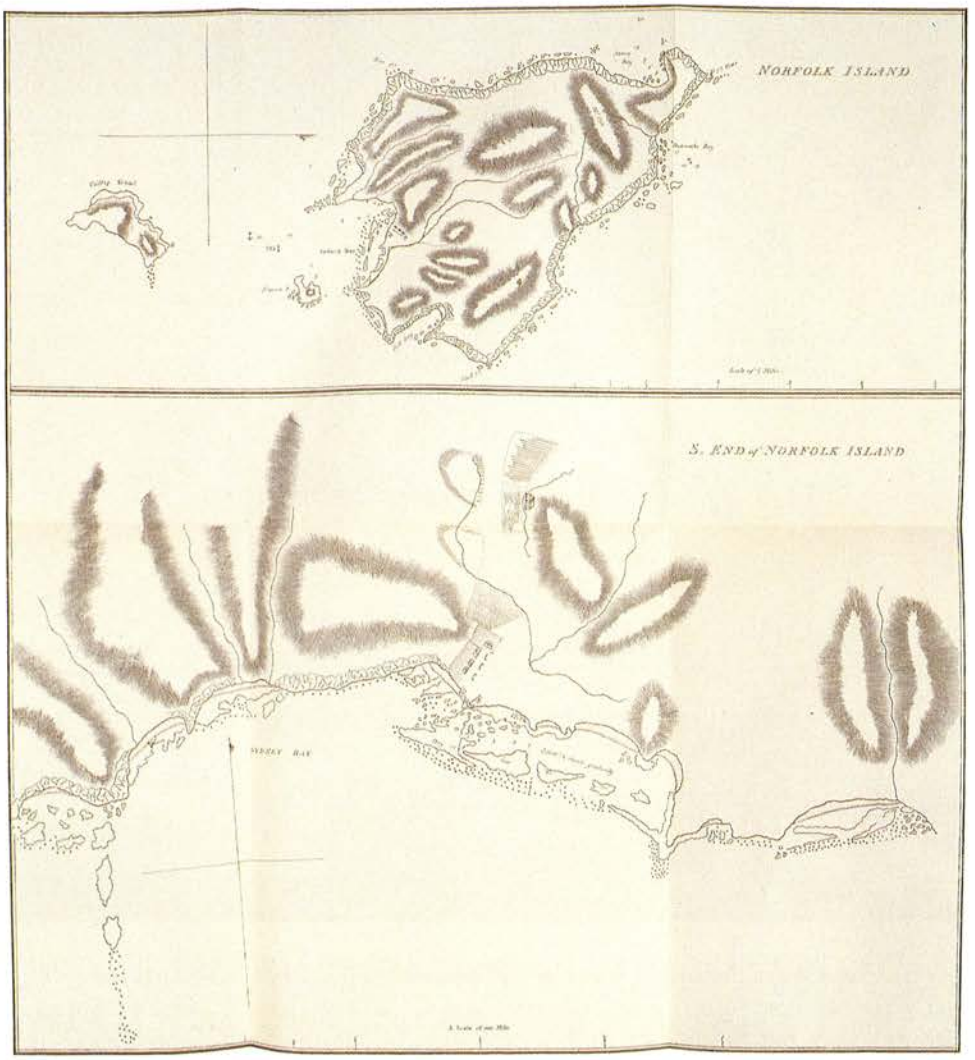
ON NORFOLK ISLAND

Another little segment of British Australia existed in 1788. Governed by Phillip and settled under secret instructions from London, it was even more isolated than Sydney. Norfolk Island lay out in the Pacific, nearly 1700 kilometres northeast of Sydney. It was further from Sydney than from Fiji; it was further from Sydney than from New Caledonia and New Zealand. Such was its isolation that most of the nine free men and fifteen convicts selected to go there might well have blinked when they were informed in Sydney that they were the chosen ones. A woman convict who remained in Sydney sensed what the six convict women selected must have felt. To send them 'to an uninhabited island was like a second transportation', she wrote. Amongst the male convicts selected was an old man of 72, and he was entitled to wonder whether he would ever see Sydney Heads again, let alone the English Channel.

The party of 24 sailed from Sydney Cove in the little ship *Supply* at seven o'clock on the morning of 15 February 1788, a favourable wind filling the sails. Within an hour they had left behind the moored fleet and the tent town and all that could be called home and were bobbing about in the rising swell outside the Heads with the sheep and pigs and ducks on deck probably no less frightened than they. Even the calm Lieutenant King, aged 29, and a seaman for most of his life, was perturbed by the weather as the land vanished from view: 'it came on to blow a perfect hurricane, with a most tremendous sea running, which often broke into the vessel'. All day the gale raged, and the sea ran high, and in the brilliant light of summer the higher waves must have been a terrifying sight. 'I often thought the vessel in a critical situation', wrote the lieutenant. Almost three weeks later they landed safely on Norfolk Island.

It was not an easy island to land on, for frequently the waves smashed against the cliffs, and the harbours were little more than breaks in the coastal wall. The island's discoverer, Captain Cook, had anchored his ship near the island in September 1774 from daybreak one morning to daybreak the next, and so he could not know the coast's fickleness. Like so many of the decisions made about Australia in the late 1780s, the decision to settle Norfolk Island necessarily rested on a flimsy raft of knowledge.

So there they were, alone for the following five months, marooned in their tents and huts within sound of the warm sea and within sight of the stately green foliage of the Norfolk Island pines and the web of python-like vines that guarded the forest. Clearing vines and felling trees, they planted a medley of seeds and settled into their planned days. On five days a week they began work at daylight and



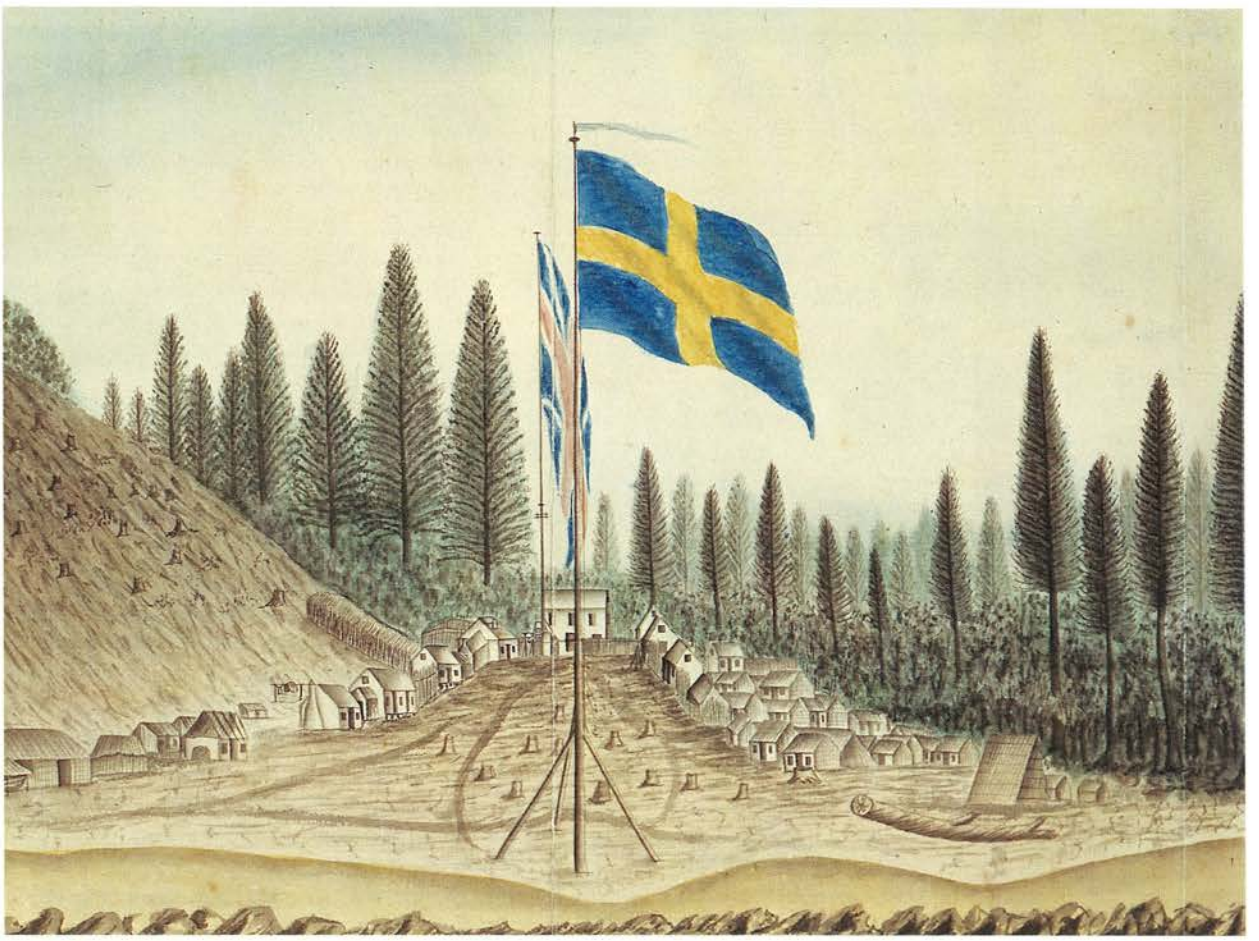
This Plan of Sydney, Norfolk Island 1789, *by William Bradley and E. Stockdale illustrates the difficulties faced by the settlement lacking a suitable harbour.*
MITCHELL LIBRARY

worked until 7.30, when they took an hour's break for breakfast. Working again for another three hours, they took a siesta for two and a half hours and then at 2 pm resumed work, continuing until the sun went down. Saturday was their free day, so long as they busied themselves in clearing ground for their own gardens. Here, as in Sydney, the women did not do hard manual labour. Their main task was to sweep the earth around the tents each morning and to cook for the men. They also gathered the dirty clothes and linen from the men on Friday and washed and mended them, returning them on Sunday morning so that all were then at their cleanest. Each Sunday at eleven sharp the 24 gathered in Lieutenant King's house—at first a tent—where he read the service of the Church of England. All had been summoned to the service by 'the noise of our church bell, which was the man beating on the head of an empty cask'. That sound must have been loud, because one Sunday two convicts who were lost in the thick forests nearby suddenly realised where they were and made their way in the direction of the sound. It was in that same Sunday service, on the third Sunday of 1789, at the new time of ten o'clock, that King himself baptised a baby. The first child born on the island, he was named Norfolk. Little Norfolk was the son of small, dark Ann Inett, the convict whom King had chosen to keep his house and share his blankets.

William Bradley, Part of the Reef and Landing Place Sydney Bay, *Sirius* and *Supply* endeavouring to work out of the Bay March 19, 1790. *On that day,* HMS Sirius *was wrecked.*
MITCHELL LIBRARY

The island was a disappointment. It had been settled in order to guard the forests that were believed to be capable of providing the British fleets in India with strong springy masts, but the island's timber proved risky. Some of the noblest mast-like trees, as high as a modern twenty-storey building, were rotten beneath the surface. To use the trunk as a mainmast was to imperil the safety of the ship, though for buildings and small boats the timber was fine. The island had also been occupied so that the New Zealand flax plant, growing wildly and luxuriantly, could be converted into a strong fibre from which were made rope and sailcloth and coarse linen clothes. The plant's broad brown leaves, however, were difficult to treat. The weaver who came to the island with the convicts could not efficiently produce fibre from a leaf that so differed from the Baltic flax plant grown in Europe. It was easy enough to turn the fibre into a fine strong fishing line—and many of the fish caught on the coast were caught with a line of local flax—but to produce fibre in sufficient quantity to justify each day's labour was beyond the skill of the first settlers. Perhaps a few Maoris from New Zealand would provide the skills. The Maoris were to arrive five years later, but not the skills.

Perhaps the English government expected too much from such untested raw materials as the large-leafed flax and the towering pine. The eighteenth century was an age when most of the great innovations were still believed to come ready made from nature, when Australia was understandably expected to provide new products as marvellous as the tobacco and maize and potato of the Americas, and when the industrial revolution was new and its consequences so unfathomable that it seemed premature to predict that the ingenuity of man would eventually



The Settlement on Norfolk Island, 16 May 1790, *a watercolour by George Raper. The view from the beach is towards Government House. The wreck of the* Sirius *resulted in quarter rations for the 418 inhabitants.*
MITCHELL LIBRARY

supplant the ingenuity of nature. It was not only the English government but also a private London syndicate that marvelled at the possibilities of Norfolk Island. In London on 24 May, a syndicate led by Sir George Young, a high naval officer, and John Call, who had been a military engineer in India and was now a wealthy capitalist and a member of the House of Commons, wrote formally to Lord Sydney requesting that he make them a free grant of Norfolk Island so that their syndicate could harvest pine and flax. Even these influential men did not know that the island was already occupied and that it was beyond the power of any high official to allocate.

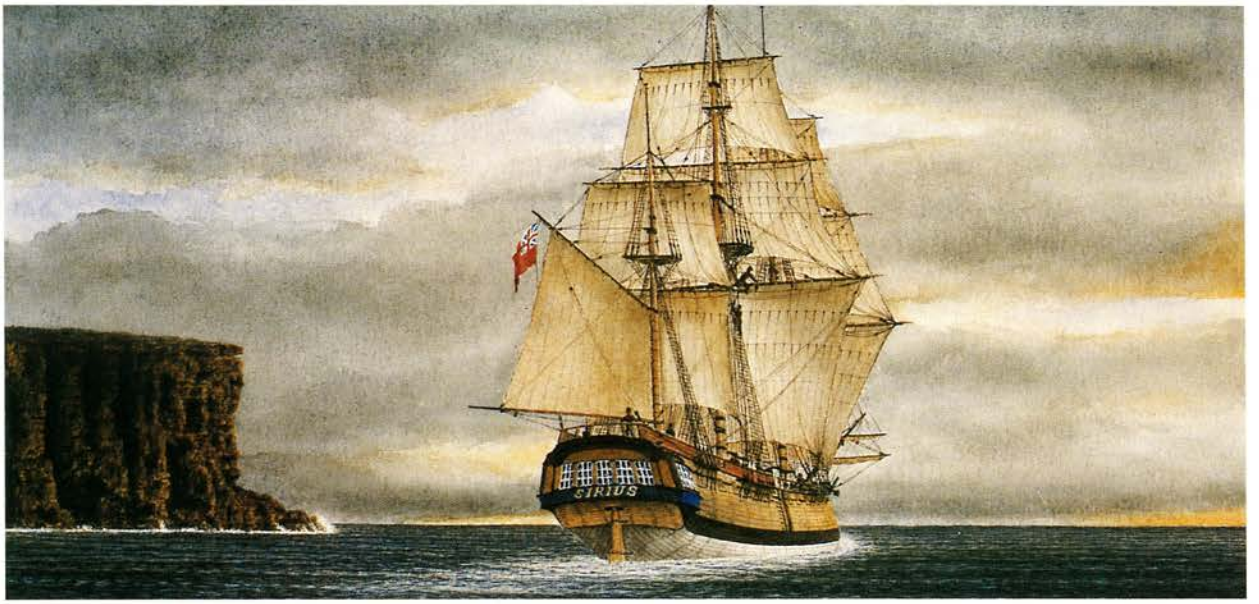
Beneath the tall trees was an asset more precious than timber and flax. Beneath the roots was soil, red or black, which in places was at least twelve metres deep. At the end of the first year this soil was feeding more than sixty people, four years later it was supporting just over 1100 people, and for a time the island was more populous than the immediate shores of Sydney harbour. King in his initial enthusiasm called it 'the richest and deepest soil in the world'. Of course he was exaggerating—he was not an expert on the soils of the world—but he believed his own exaggeration. How much this new epoch in the history of Australia owed to these unruffled optimists, Captain Phillip and Lieutenant King, has never been estimated. They were calm, almost unrealistically calm, when all around them the storm was brewing. If instead of Phillip and King the leaders at the two settlements had been liverish and dour, the reports and arguments delivered to London would soon have imperilled the British settlement in eastern Australia.

ISOLATION

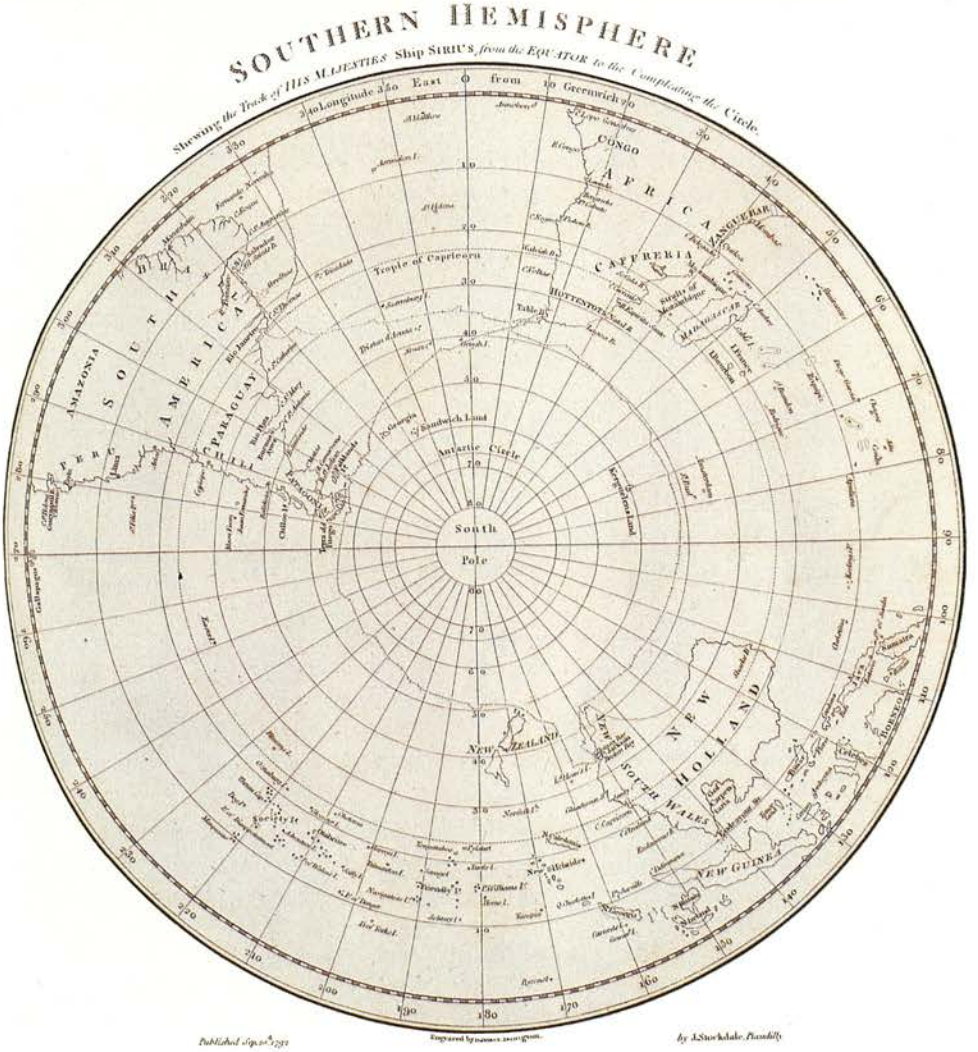
No news from London was to reach Sydney in 1788, nor did any news successfully travel in the other direction. As the year went on, the sense of isolation at the settlement became acute. No ships arrived from any foreign port. No letters, no gifts, no additional supplies, no new faces came. At least it was possible at first—for those who could write—to forward letters to England. One by one and two by two the ships of the fleet set sail for foreign lands, carrying messages and curios—strange creatures pickled in bottles of spirits, live parrots, skins of marsupial animals, pieces of local wood and rock, and pressed leaves from the native plants. Some ships sailed towards the tropics and so to the world's busiest tea port, Canton in China, whence they set out with the new season's teas for England. A few sailed from Sydney towards England, passing the Indonesian islands, the Cape of Good Hope and the Canary Islands. The last of the merchant ships to depart for England were the *Golden Grove* and *Fishburn*, and at two o'clock one November morning, while all was silent in the huts and barracks around Sydney Cove, they weighed anchor and sailed down the harbour with the light breeze, a dark empty ocean before them. Already the warship HMS *Sirius* had sailed to Cape Town to buy flour and other supplies, and she was riding the high seas of the south Pacific, the ice of Cape Horn still ahead of her. The only vessel still in Sydney Cove was the little *Supply*. All those convicts who loved to be the bearers of news and who manufactured news even when none was available must, day after day, have spread rumours of white sails being seen from the high capes. Some day one of the liars, by the law of averages, would chance to be correct, but not until 1790.

One of Sydney's imaginary sail spotters was not completely astray in August 1788. An unfamiliar English ship did come into sight of the eastern Australian coast—or at least the coast of Van Diemen's Land which was then understood to be part of the continent. Commanded by William Bligh, HMS *Bounty* was making the long voyage from England to Tahiti to collect a cargo of living breadfruit plants, another of those new wonders, which, like Norfolk Island's flax and pine, so allured the European merchants and strategists. For a fortnight the *Bounty* was anchored in Adventure Bay, not far from the present Hobart, while her crew went ashore to fetch fresh water and to chop firewood which they rafted to the ship in bundles. Bligh himself knew the bay, having visited it eleven years before with Captain Cook. Indeed he expected that the bay, in years to come, would be visited again and again by European ships on the long voyage to far-off Pacific ports. Hoping that later seamen might procure the fresh foods so vital in warding off scurvy, Bligh's crew planted at least fifteen fruits and vegetables ranging from oranges to onions. Then on Thursday 4 September 1788 the *Bounty* sailed away, passing close to the south of New Zealand and so towards the fabulous island of Tahiti and the most celebrated of all the high seas mutinies.

Those thousand new Australians of 1788 gained more from what was found on sea than on land. More exploring was undertaken on the wide oceans leading to Sydney than in the bushlands just beyond Sydney. In that year a vital discovery was increasingly confirmed: the discovery of the great west wind. Most discoveries, whether in science or minerals or navigation, are made not in one swoop, dramatically and once and for all, but in a series of steps and stumbles. In the discovery of the wild west wind of the Roaring Forties and Roaring Fifties, 1788 was the longest step forward. In the autumn of that year Lieutenant Bligh had tried for days to sail into the westerlies near Cape Horn and, at last had turned the ship around and sailed to the east, voyaging by way of the Cape of Good Hope, southern Tasmania and southern New Zealand, thus completing a journey to Tahiti



HMS Sirius *leaving Port Jackson, early morning 2 October 1788. This careful reconstruction is by Sydney maritime artist Frank Allen and was painted in 1983.* HMS Sirius *and* HMS Bounty *were similar ships and, in 1788, both ventured into high latitudes to harness the power of the winds.*
F. ALLEN



The route taken by Captain Hunter on HMS Sirius *in 1788, sailing eastwards to Cape Town via Cape Horn. Note that his chart has no Antarctic continent and that Tasmania is shown connected with the mainland. The map was published by Hunter in his* An historical journal of events at Sydney and at sea, *1794.*

which was far longer in distance but probably shorter in time. In October of that same year, Captain Hunter had set sail in the *Sirius* from Sydney to Cape Town, and had decided against Phillip's advice to sail east rather than west. His *Sirius* passed the South Cape of New Zealand less than a month after the *Bounty* had passed it, and then harnessed the might of the westerly winds to sail east, passing Cape Horn and eventually reaching Cape Town. After loading foodstuffs and other supplies Hunter returned with the same westerlies, sailing across the Indian Ocean, rounding Tasmania and sailing through Sydney Heads, pleased with his decision.

Increasingly the English ships reached Sydney by way of the Cape of Good Hope and sailed back to England by way of Cape Horn, seeing the west wind as a permanent ally rather than an enemy. Thus, in 1788 the southern capes route became Australia's lifeline, remaining so throughout the era of sail. Few discoveries in the following hundred years were of more importance to Australia than the discovery of the westerlies in 1788.

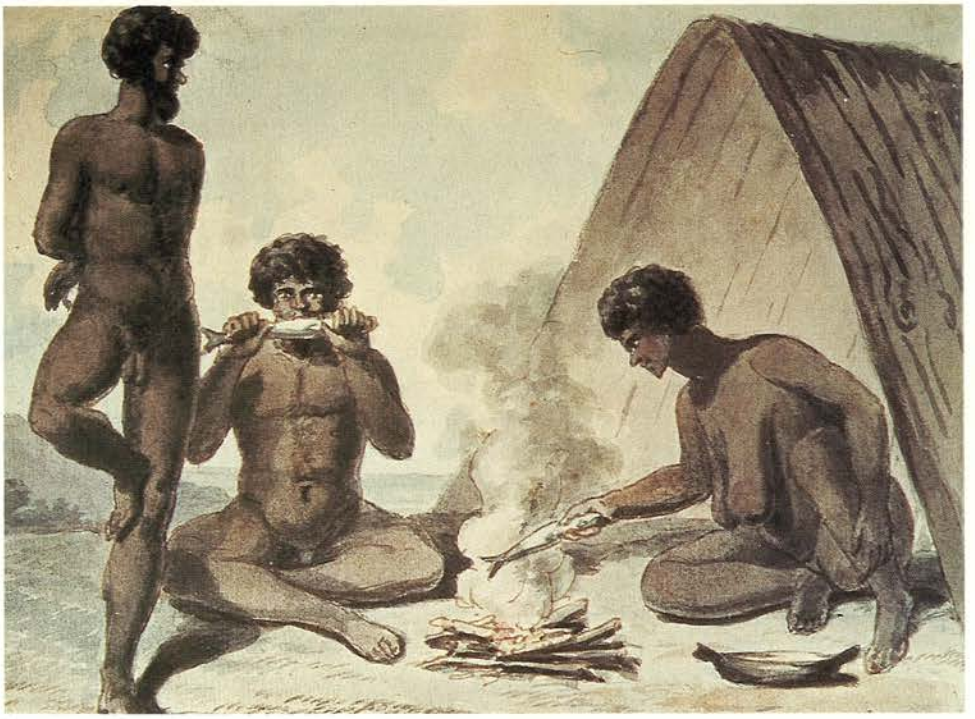
Native Dancing.

ABORIGINES

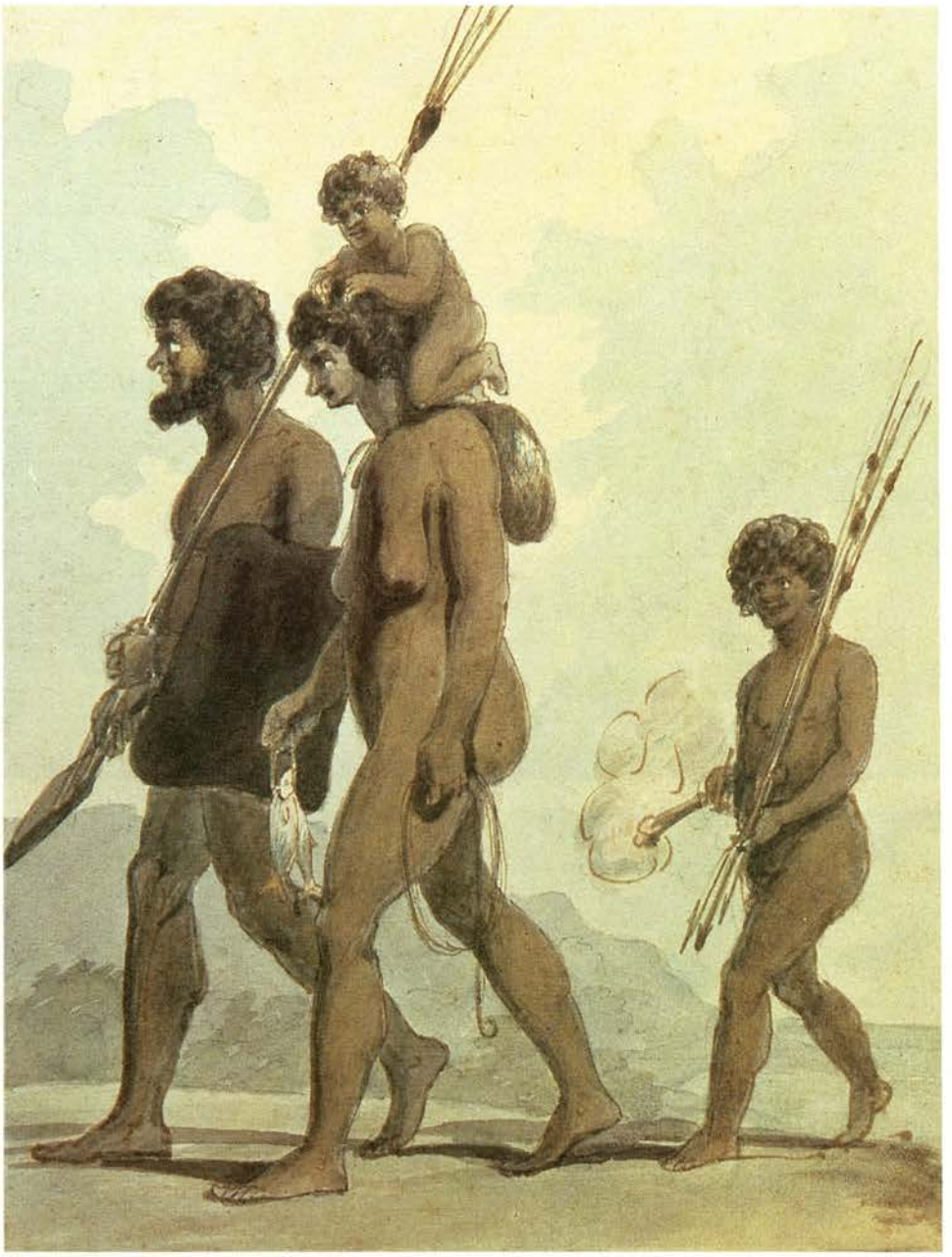
Aborigines watched many of these events—the departing of the tall-masted ships, the laying of the wide nets by British fishermen, the disturbing of places where for generations they had hunted or camped or foraged—and must have been puzzled and even dismayed. The new society was incomprehensible to them. They did not speak the same language, their rituals and manners were far apart and their political organisations were indecipherable. The British likewise could not conceive of a society without chieftains and without captains-general, but where was the Aboriginal captain-general? The British were slow to understand that there was a variety of Aboriginal peoples and territories. They could not understand that a nomadic society still depended as heavily on the land, still felt the need to possess it, as did a European society with its farms and herds, fences and shepherds. The

King, second lieutenant on the Sirius *and later governor, sketched these simple watercolours in 1788 or 1789. They are important for their round attempt to depict real people and artefacts rather than the abstract noble savages of classical proportion drawn by Cook's artists. They offer incidental visual confirmation of the current British theory of colonisation: that people who were nomadic hunters and fishers, who did not cultivate the soil, and whose material possessions were simple, had no claim to the ownership of the land.*

MITCHELL LIBRARY



Natives Cooking Fish.



A Native Family of New South Wales.

British and Aboriginal attitudes to private as well as collective possessions were different. It was almost impossible then for Phillip, even with high-minded aims and a knowledge of other lands, to come to terms with the Aborigines near the harbour. It must have been even more difficult for the Aborigines, knowing no other society than their own, to understand the invaders.

For a few weeks many Aborigines came to peer, from a safe distance, at the building activity and drum-tappings at Sydney Cove. Here and there, on the shores of the harbour, sailors and marines and convicts came into contact with small groups of Aborigines, looked at each other with wonder and fear, offered or withdrew presents, shook fists at each other and, on occasions, even threw spears and fired guns. Captain Phillip believed that the Aborigines were good, simple and

Fragments of roof tiles used on Government House from about 1788–89 to 1794. Made locally and attached to the roof by wooden pegs, they tended to collect water and become very heavy. They were replaced by wooden shingles.

NSW DEPARTMENT OF ENVIRONMENT AND PLANNING/J. GILLIS

The copper plate laid by Governor Phillip on 15 May 1788 and rediscovered under the Bridge Street footpath in 1899.

MITCHELL LIBRARY

Looking west along the back wall of the first government house. The sandstone wall footings have an external brick skin and a drain covered with sandstone slabs runs along the outside of this away from the viewer and down towards the Tank Stream. In the right foreground are the remains of the brick and rubble foundations of the staircase. The smaller stones and bricks covering the drain (mid-picture) date from the 1810s. The arrow points north; scale in 50 cm. The bricks were made at Brickfield Hill, about 1 km south of the settlement.

NSW DEPARTMENT OF ENVIRONMENT AND PLANNING/J. GILLIS

Sandstone footings of the first outbuildings, probably built in 1788. The footings consist of two rows of sandstone blocks with rubble between them. At the top of the picture, footings from the 1830s outbuildings run at right angles to those of 1788. The outbuildings contained the kitchen, workrooms, stores and servants quarters. Scale in 50 cm.

NSW DEPARTMENT OF ENVIRONMENT AND PLANNING/J. GILLIS

Lead type excavated from a drain in the outbuildings of the first government house. The single letters are at the top of each column of lead. Brought to Australia with the first fleet, the type was not used until 1795 because no printer could be found. From 1795 to 1803 it was used to print the governor's orders, and afterwards the official Sydney Gazette. *These pieces of type were probably thrown out by accident during washing.*

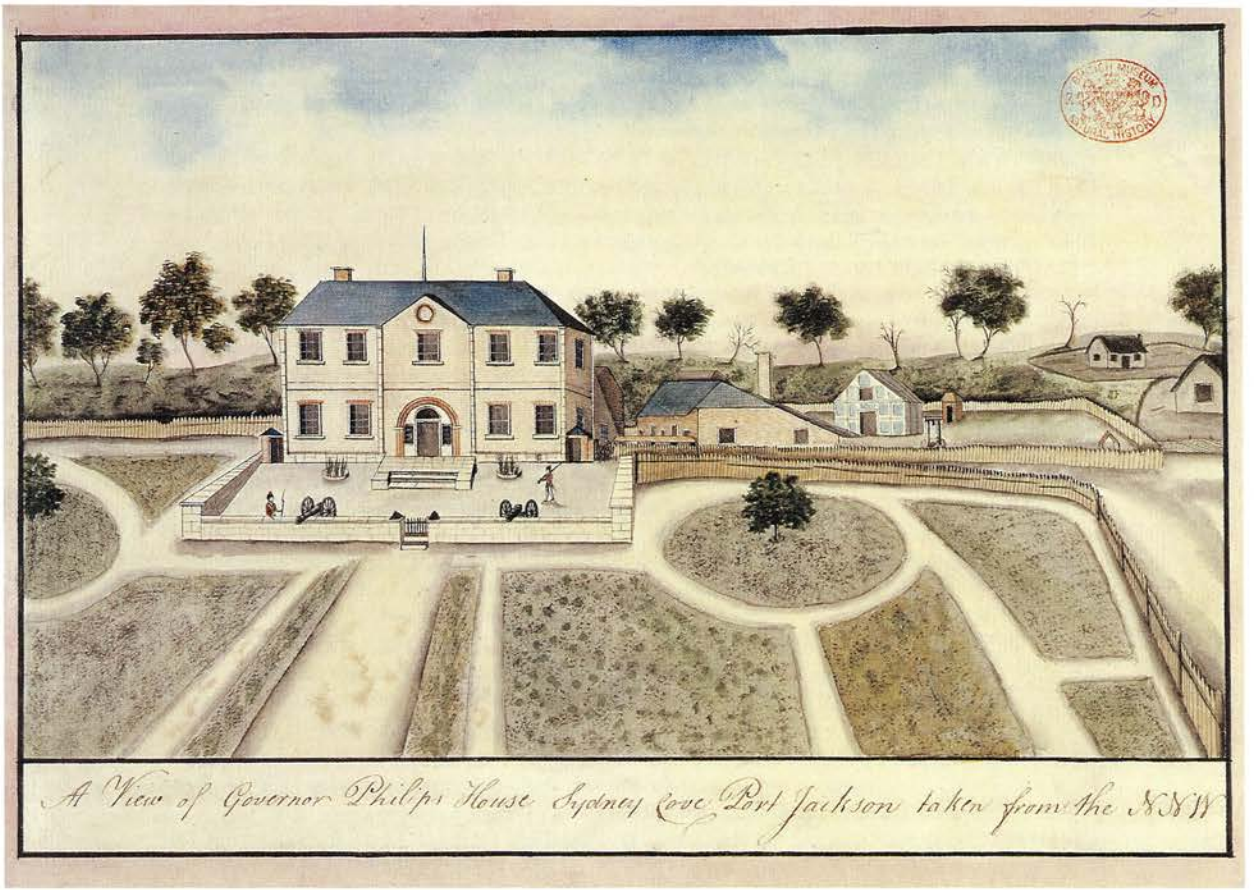
NSW DEPARTMENT OF ENVIRONMENT AND PLANNING/J. GILLIS

blameless people. Early in the year he named a beach 'Manly' because the Aborigines lining the shore seemed so dignified. He was himself careful in his contacts with them: 'it was my determination from my first landing that nothing less than the most absolute necessity should ever make me fire upon them'. For months Phillip was restrained, and possibly the Aborigines in their own way were restrained. And yet incidents took place—spearings, clubbings, the firing of a shot—and some were fatal.

Phillip believed that if only he could make contact with an Aborigine and befriend him he might spread the word to other Aborigines that those those who came across the seas were people of goodwill and honour. At the end of 1788 an Aborigine was captured and brought to Phillip. The strange experiment began. The man, at first named Manly but later known by his real name of Arabanoo, was initially placed in leg irons, like a convict, so that he would not run away. He soon realised that there were inducements to remain in Governor Phillip's new house. He enjoyed bread, he loved a pot of hot tea, and he dined formally at the table of the governor and in the cabin of Captain Hunter's ship. His time in exotic captivity was brief. On 18 May 1789 he died of smallpox, amongst the first of thousands of Aborigines to catch fatal infections to which they had low immunity.

A chasm divided the two cultures. The objects in the new settlement that vividly showed the cultural chasm were the deep-sea ships, the official storehouse, the garden fences and the sheep and cattle that had been brought ashore. The new society hoarded food and at harvest time it hoped to produce more than it needed so that the surplus could be stored for the next year or traded for other products. Whereas the Aborigines, men and women, tended to be all-rounders, the British were specialists. The governor, the marines, the carpenters, the seamen, the hangman—all were intended to be specialists. Even the convicts were specialists: their speciality—imposed on them—was to be prisoners. As thieves, many had paid the price for inefficiency in their specialist profession at home. The people of the new society realised that their own material progress came through specialisation, and in the north of England their factories and engineering shops were entering a new phase in the division of labour, and some thirty years later Australia was to open an intensely productive phase in specialisation by growing wool in massive quantities and shipping it to the mills in Yorkshire. Nothing would do more to shatter the Aborigines' way of life than the arrival of those large flocks of sheep over plains and uplands which were larger than western Europe.

If Phillip on the last day of the first year at Sydney Harbour had, for his private benefit, summed up the successes of his settlement, he would have surely seen that they were outnumbered by the failures. He had found a magnificent harbour, but no new ship had come to shelter in it. The soil around that harbour was ill-suited to the kind of agriculture the English knew, and the imported animals were not flourishing in a land that seemed designed for them. The labour force of convicts was far less efficient than Phillip had hoped, and the marines were refusing to supervise that force. The behaviour of some convicts was more depraved than he had expected; no longer did he eschew brutal floggings and the gallows. The supplies of food in the granary were far from adequate and he could not be certain when new supplies would come. Across the ocean at Norfolk Island the strategic raw materials—the tall mast-timber and the flax for the sails—were not fulfilling their promise, and the colony itself was still too precarious to be able to offer much help to India if a European war should come to the Orient. The relations with the Aborigines were deteriorating; perhaps Phillip was beginning to see that the imported way of life must by its very nature dislocate the different way of life being lived side by side.



A view of Governor Philips House Sydney Cove Port Jackson *by an unknown artist, in 1793. The house in this initial stage had a central gabled stair-hall, the exterior being decorated by a blind roundel above the window. The foundations of the rear of this building have been recovered, together with traces of the outbuildings. The building on the extreme right of the painting was probably the prefabricated structure brought as Phillip's house on the fleet.*

BRITISH MUSEUM (NATURAL HISTORY)

Two hesitant predictions were feasible in 1788. Firstly, the settlement would not be easily abandoned, because it held too many people. The colony itself lacked the ships, so a retreat could be organised from London only after long delay and with great expense. This fact, the immobility of the isolated settlement, was likely to outweigh the powerful arguments which, accumulating in the next few years, called for the abandoning of the settlement as a costly failure. A second prediction was also feasible. If the colony survived, it would eventually expand inland, though nobody could yet see that sheep would be the spearhead of that expansion. A few shrewd people at Sydney Cove must have already sensed that if the colony expanded into the interior, there was virtually no way in which the British and Aboriginal ways of life could co-exist on the same terrain except by utter segregation; but segregation was impossible.

The fragile settlement at Sydney Cove was itself a sign of a shrinking world from which no isolated peoples could escape. The energy, drive, ingenuity and acquisitiveness of western Europe were penetrating every harbour, strait and unmapped sea. The history of Aboriginal Australia, for thousands of years, had been a story of relative isolation: an isolation imposed not only by geography but also, it would seem, by the fact that Aborigines preferred a way of life which had its own distinctive goals, values and rhythms. Their resolve to continue this way of life had not been broken but their isolation was about to end, forever. The huts and tents and tall masts and axe-made clearings and fences and livestock were—unknown to the Aborigines—really the wrappings of a high explosive. The detonator was Europe.

NOTES ON ILLUSTRATIONS

These notes supplement the information contained in captions to illustrations and maps. They include, as necessary, the titles of works and details of their location, as well as other details of provenance as required by holding institutions.

CHAPTER 4. THE END OF THE BEGINNING FROM 5000 YEARS AGO TO 1788

Page 100 The Macassan port records are located at VOC 3332 (KA 3224), Bataviase inkomende papieren overgekomen in 1772, Vijf en twintigste boek, Vierde deel, Macassar, item 6, Algemeen Rijksarchief. (The editors thank Dr C. Macknight for his assistance with these records.)

CHAPTER 6. MOKARÉ'S DOMAIN

Page 125 Collie's maps are shown as insets (figures 1 and 2) on the large map at the back of J. Cross (ed), *Journals of several expeditions made in Western Australia* , London 1833. Page 129 Sykes, *A deserted Indian village in King George III Sound, New Holland,* handcoloured engraving by J. Landseer from a copy by W. Alexander, 1798, Art Gallery of W.A. Page 130 and Page 135 The location of Coolbun's family estate is noted in C. Barker, Journal of King George's Sound Jan 1830-Mar 1831, unpublished manuscript, Archives Authority of NSW; the information about the 'Oyster Harbour Mob' and the group of families around the lakes west of Lake Melville is in the journal of Major Lockyer, *Historical records of Australia* 3/6, 478, 492. Page 134 The passage of Eyre and Wylie through Mokaré's domain is in E. J. Eyre, *Journal of expeditions of discovery into central Australia and overland from Adelaide to King George's Sound in the years 1840-1,* 2, London 1845.

CHAPTER 14. MOTH HUNTERS OF THE SOUTHEASTERN HIGHLANDS

Page 279 Wedge, 'Native women gathering roots', in his *Fieldbook 1835,* La Trobe Collection, State Library of Victoria.

CHAPTER 15. SWAMP MANAGERS OF SOUTHWESTERN VICTORIA

Page 294 'Group of blackfellows', Fauchery Album, La Trobe Collection, State Library of Victoria. Page 304 Von Guérard, 1811-1901, *Australia: Mount William and part of the Grampians, western Victoria,* 1865, oil on card, 30.5 x 40.6cm, National Gallery of Victoria, Melbourne.

CHAPTER 17. A MUSICAL INTERLUDE

Page 336 Prout, *Carrobooree on the banks of the Murray,* hand-coloured engraving in E. C. Booth, *Australia illustrated,* London 1873, National Library.

CHAPTER 19. TOWARDS AUSTRALIA: THE COMING OF THE EUROPEANS 1400-1788

Page 399 Home Office to Treasury (draft), HO 35/7, Public Record Office, London.

ABBREVIATIONS

Periodical titles are followed, as appropriate, by volume or series number, issue number and year of publication.

add ms	additional manuscript
ADB	*Australian dictionary of biography* (followed by volume number)
AJCP	Australian Joint Copying Project
c	*circa*
ch(s)	chapter(s)
CO (followed by class and piece number)	Colonial Office records in the Public Record Office, London
comp	compiler/compiled by
ed(s)	editor(s)/edited by
esp	especially
fig	figure
HO (followed by class and piece number)	Home Office records in the Public Record Office, London
HRA	*Historical Records of Australia,* ed F. Watson, 33 vols, 1914–25
HRNSW	*Historical Records of New South Wales,* 7 vols, 1978–79 (1893–1901)
J	journal
km	kilometre(s)
ML	Mitchell Library
ms	manuscript
n	note
PRO	Public Record Office London
repr	reprint
sp	species
trans	translator/translated by
vol(s)	volume(s)

Conventions Adopted in Quotations

Throughout this series quotations have been transcribed literally from the original documents. The use of 'sic' to refer to errors has generally been avoided.

ACKNOWLEDGMENTS

Thanks are due to the many people who assisted in the production of this book. They include C. H. Berndt and R. M. Berndt, Graham E. Connah, Christine Hogarth at the Museum of Victoria, June Jeffrey, R. G. Kimber, Peter Latz, Darrell Lewis, Graeme Pretty at the South Australian Museum, A. G. L. Shaw, F. B. Smith and Robyn Wood and her staff at the University of Sydney. Peter White thanks Bill Ferguson and Janenne Eaton for their friendship and hospitality.

For the supply of materials and/or permissions for chapter 1, Peter White thanks Mike Barbetti, Lydia Bushell, John Clegg, Alan Davies and Mike Walsh (all University of Sydney); Luise Hercus, Betty-Jane Osborne, Andrée Rosenfeld and Wilfred Shawcross (all Australian National University); Ian Glover (University of London); Peter Murray (Museum of the Northern Territory); Janice Reid (Commonwealth Institute of Health) and Carmel Schrire (Rutgers University). Peter White also thanks Marjorie Fisher, Lorraine Howard and Robyn Wood (all University of Sydney) for typing and other assistance. J. M. Bowler (chapter 2) thanks J. A. Peterson for supplying slides of glacial landscapes. Sylvia J. Hallam thanks staff and students at the Department of Anthropology and Prehistory, University of Western Australia, and Cynthia Munday for typing assistance. D. J. Mulvaney (chapter 4) thanks Helen Nicol, Louise Johnston, Joan Goodrum, Darrell Lewis, Dick Kimber and Robert Dowhy for photographs, typing, drawing and other assistance. Barrie Reynolds (chapter 8) thanks Rhonda Leung for typing and Anne Duke for reading and commenting on the text. Howard Morphy and Frances Morphy dedicate chapter 9 to Narritjin Maymuru, on whom the character of Garawuy is based. Isabel McBryde thanks Luise Hercus, who recorded and translated the texts used in chapter 13, Ben Murray and Arthur Warren (both of Port Augusta), Mick McLean and Jimmy Russell, Jeremy Beckett at the University of Sydney, and Rosemary Buchan at the Aboriginal Heritage Unit, South Australia. Harry Lourandos (chapter 15) thanks D. J. Mulvaney and Richard Wright, and in southwestern Victoria: Mr and Mrs McKenry and Mr D. Miller of Toolondo, Mr and Mrs Meredith of Bridgewater Bay, and Mrs E. Learmonth of Tyrendarra. Sandra Bowdler (chapter 16) thanks Cynthia Munday for typing and Esther Williams for inspiration. Stephen A. Wild thanks Alice M. Moyle, many of whose ideas have been incorporated into chapter 17. The editors thank Alex George at the Bureau of Flora and Fauna for assistance with the gatefold.

ENDNOTES

1. CREATION AND DISCOVERY

J. Peter White and Ronald Lampert

3–4 For some examples of varying Aboriginal histories see J. Isaacs (comp and ed) *Australian Dreaming: 40,000 years of Aboriginal history*, Sydney 1980. For overviews of Australian prehistory from a scientific perspective see J.P. White with J.F. O'Connell, *A prehistory of Australia, New Guinea and Sahul*, Sydney 1982 and J.M. Flood, *Archaeology of the Dreamtime*, Sydney 1983.

WHERE DID THE FIRST AUSTRALIANS COME FROM?

7 For a general account of human evolution and world prehistory see B.M. Fagan, *People of the earth: an introduction to world prehistory*, Boston 1983 (1974), or other texts written since 1980. The rate of discovery and changes in interpretation are so rapid that books older than 1980 may be seriously flawed. On southeast Asia and the origin of Australians see various papers in R.L. Kirk and A.G. Thorne (eds), *The origin of the Australians*, Canberra 1976; papers by T. Jacob, Ju-kang Woo and G.J. Todaro in L. Königsson (ed), *Current argument on early man*, Oxford 1980; and papers by B. Hayden, K.L. Hutterer and J.P. White in J. Allen, J. Golson and R. Jones (eds), *Sunda and Sahul*, London 1977. On Zhoukoudian see R. Wu and S. Lin, 'Peking Man', *Scientific American* 248/6, 1983, 78–87.

8 On water craft and Australian voyaging see R.C. Holland, 'Distribution and method of construction of Aboriginal bark canoes', *Occasional papers in anthropology* 6, 1976, 69–83. Some interesting experiments and analyses are given by R. Jones, 'Tasmania: aquatic machines and off-shore islands', in G. de G. Sieveking, I.H. Longworth and K.E. Wilson (eds), *Problems in economic and social archaeology*, London 1976, 235–63.

WAS THERE MORE THAN ONE MIGRATION TO AUSTRALIA?

9 On population sizes of migrant groups see White with O'Connell, *Prehistory*, 46–53. On Tasmanians see R. Jones, 'Tasmanian tribes', in N.B. Tindale, *Aboriginal tribes of Australia*, Berkeley 1974, 317–88. For a summary of Tasmanian archaeology, S. Bowdler, 'Prehistoric archaeology in Tasmania', *Advances in world archaeology* 1, 1982, 1–49.

10 Birdsell's 'trihybrid' origin theory is documented in 'Preliminary data on the trihybrid origin of the Australian Aborigines', *Archaeology and physical anthropology in Oceania* 2, 1967, 100–55. For detailed objections see White with O'Connell, *Prehistory*, 76–7, and R.L. Kirk, *Aboriginal man adapting: the human biology of Australian Aborigines*,

11 Melbourne 1983, 89. The claim that there are two groups among Australian skulls is argued by A.G. Thorne in Kirk and Thorne, *Origins*, 95–112; in Allen *et al*, *Sunda and Sahul*, 187–204; and by A.G. Thorne and M. Wolpoff, 'Regional continuity in Australian Pleistocene hominid evolution', *American J of physical anthropology* 55, 1981, 337–41. A summary of objections to this view are given in White with O'Connell, *Prehistory*, 74–83; see also P. Brown, 'Artificial cranial deformation: a component in the variation in Pleistocene Australian Aboriginal crania', *Archaeology in Oceania* 16, 1981, 156–67.

On language and history see R.M.W. Dixon, *The languages of Australia*, Cambridge 1980, chs 1,8. Dixon argues that although there are two groups of Australian languages, called Pama-Nyungan and non-Pama-Nyungan, differentiated grammatically, all but two Australian languages are genetically related. The major proof he considers comes from verb correspondences. The two languages that cannot at present be shown to be genetically related to other Australian languages are Tiwi, spoken on Bathurst and Melville islands, and Djingili, spoken on the Barkly Tableland.

WHEN DID PEOPLE FIRST ARRIVE IN AUSTRALIA?

11–12 On the earliest sites in Australia see White with O'Connell, *Prehistory*, 33–42. More detailed reports are given in J.M. Bowler *et al*, 'Pleistocene human remains from Australia: a living site and human cremation from Lake Mungo, western New South Wales', *World archaeology* 2, 1970, 39–60; and by R.H. Pearce and M. Barbetti, 'A 38 000-year-old archaeological site at Upper Swan,

12–13 Western Australia', *Archaeology in Oceania* 16, 1981, 171–8. On ancient climates and sea levels see J. Chappell, 'Aspects of late Quaternary palaeogeography of the Australian–East Indonesian region', in Kirk and Thorne, *Origins*, 11–22; also J.M.A. Chappell and A. Grindrod (eds), *Proceedings of the first CLIMANZ conference, 1981*, 2 vols, Canberra 1983.

TO WHAT KIND OF COUNTRY DID PEOPLE COME?

15 Australia's flora is discussed in Canberra Bureau of Flora and Fauna, *Flora of Australia* 1, Canberra 1981; see also M.M.J. van Balgooey, 'Phytogeography', in K. Paijmans (ed), *New Guinea vegetation*, Canberra 1976, 1–22. For important comments on Australian food plants see J. Golson, 'Australian Aboriginal food plants; some ecological and culture historical implications', in D.J. Mulvaney and J. Golson (eds), *Aboriginal man and environment in Australia*, Canberra 1971, 196–238. Some of Australia's extinct animals are described and drawn in S. Quirk and M. Archer, *Prehistoric animals of Australia*, Sydney 1983.

THE OCCUPATION OF AUSTRALIA

15–16 See S. Bowdler, 'The coastal colonisation of Australia', in Allen *et al*, *Sunda and Sahul*, 205–46; and D. Horton, 'Water and woodland: the peopling of Australia', *Australian Institute of Aboriginal Studies newsletter* 16, 1981, 21–7.

THE IMPACT OF OCCUPATION

17 The reasons why some animals became extinct in Australia are controversial. A recent statement of various positions is given in papers by D. Horton, G. Hope, P. Murray and D. Merrilees in P. Martin and R. Klein (eds), *Quaternary extinctions*, Tucson 1984. Previous discussions are summarised in White with O'Connell, *Prehistory*, 88–95. On dwarfing see L.G. Marshall and R. Corruccini, 'Variability, evolutionary rates and allometry in dwarfing lineages', *Paleobiology* 4, 1978, 101–19.

17–18 Although the impact on the Australian vegetation of fires caused by humans is not doubted, measuring its extent has proved difficult. For various views see G. Singh, A.P. Kershaw and R. Clark, 'Quaternary vegetation and fire in Australia', in A.M. Gill, R.H. Groves and I.R. Noble (eds), *Fire and the Australian biota*, Canberra 1981, 23–54; and R.L. Clark, 'The prehistory of bushfires' in P. Stanbury (ed), *Bushfires: their effect on Australian life and landscape*, Sydney 1981, 61–73.

EARLY AUSTRALIAN TOOLS

18–20 On Australian pre-European tools see D.J. Mulvaney, *The prehistory of Australia*, Ringwood 1975; F.D. McCarthy, *Australian Aboriginal stone implements*, Sydney 1967; and White with O'Connell, *Prehistory*, 64–71, 105–33.

PHYSICAL APPEARANCE OF EARLY PEOPLE

20–1 See the discussion by A.G. Thorne in Allen *et al*, *Sunda and Sahul*, 187–204; in Kirk and Thorne, *Origins*, 95–112; and in A.G. Thorne, 'Kow Swamp and Lake Mungo', PhD thesis 1975, University of Sydney.

THE RITES OF DEATH

21 The Mungo burials are described in Bowler *et al*, 'Pleistocene human remains', 56–7; and by J.M. Bowler and A.G. Thorne, 'Human remains from Lake Mungo: discovery and excavation of Lake Mungo III', in Kirk and Thorne, *Origins*, 127–38. For Kow Swamp, see A.G. Thorne, 'Kow Swamp and Lake Mungo'.

THE BEGINNING OF ABORIGINAL ART

22 Rock art is surveyed by L. Maynard, 'The archaeology of Australian Aboriginal art', in S.M. Mead (ed), *Exploring the visual art of Oceania*, Honolulu 1979, 83–110. For the Early Man shelter see A. Rosenfeld, D. Horton and J. Winter, 'Early man in north Queensland', *Terra Australis* 6, 1981; for Koonalda, R.V.S. Wright, *Archaeology of the Gallus site, Koonalda Cave*, Canberra 1971.

2. WATER AND SAND: CLIMATE IN ANCIENT AUSTRALIA

J.M. Bowler

25 For more detailed coverage of radiocarbon chronologies, the nature of climatic changes involved and some discussion of causes covering approximately the last 40 000 years, see J.M. Bowler, G.S. Hope, J.N. Jennings, G. Singh and D. Walker, 'Late Quaternary climates of Australia and New Guinea', *Quaternary research* 6, 1976, 359–94. A later paper describes more fully the effects on lakes and dunes of the arid zone, J.M. Bowler and R.J. Wasson, 'Glacial age environments of inland Australia', in J.C. Vogel (ed), *Late Cainozoic palaeoclimates of the southern hemisphere*, Rotterdam 1985.

The CLIMANZ conference of 1980 brought together detailed evidence from the Australasian region with a series of maps showing the nature of changes across the region from Papua New Guinea to New Zealand for specific time intervals beginning at 32 000 years ago. See J. Chappell and A. Grinrod (eds), *Proceedings of the first CLIMANZ conference, 1981*, 2 vols, Canberra 1983.

Early estimates of the size and influence of ice cap glaciation in the southeast described by W.R. Brown were disputed by later workers. Thus Brown's estimate of the extent of the ice cap in the Mt Kosciusko area was reduced by R.W. Galloway, in 'Glaciation in the Snowy Mountains: a re-appraisal', *Proceedings of the Linnean Society of New South Wales* 88, 1963, 180–98 to a mere 50 square kilometres. Reviewing evidence from Victoria, J.A. Peterson in 'The equivocal extent of glaciation in the southeastern uplands of Australia', *Proceedings of the Royal Society of Victoria* 84, 1971, 207–12 came to a similar conclusion in that the actual ice cap extent was very small on the mainland but that periglacial effects were much more widespread. See also J.A. Peterson, 'Cirque morphology and Pleistocene ice formation conditions in southeastern Australia', *Australian geographical studies* 6, 1968, 67–73. A more recent review by E.A. Colhoun provides an up-to-date review of the number and age of glaciations identified in Tasmania where the evidence is best preserved: see 'The glaciations of the West Coast Range, Tasmania', *Quaternary research* 23, 1985.

26 For a more detailed discussion of glaciation in the Snowy Mountains and Tasmania see Bowler *et al*, 'Late Quaternary climates'. In terms of the climates that caused glaciers to form on mainland Australia, R.W. Galloway has estimated the amount of lowering of the snowline necessary in 'Late Quaternary climates in Australia', *J of geology* 73, 1965, 603–18. The snowline is that level in the atmosphere where annual temperatures remain cold enough to preserve ice or snow all the year round. Under present-day conditions, that level across the southeastern tablelands of Australia lies just below 3000 metres. However, during the maximum development of cold glacial conditions, cirque basins were cut by glaciers below 2000 metres. This with other evidence implies a lowering of the snowline of about 1000 metres which, in turn, is equivalent to a drop in mean temperatures at altitudes such as at Canberra of nearly 10 degrees Celsius.

Periglacial processes that operate around the margins of ice-affected areas, include freeze-thaw cycles that can

shatter hard rock, mobilise the uppermost soil layer and result in the downslope movement of soil-mantle materials. This often results in accumulation of angular and poorly sorted sediments on lower slopes where the climate is still too cold to allow stabilisation by the return of trees. Such processes operate in a small way today only on the summit levels of Mt Kosciusko where downslope soil movement forms small terraces on alpine slopes. By contrast, widespread presence of new 'fossil' mantles of angular slope debris of periglacial origin indicate that such cold climate processes extended down from summit peaks to elevations such as that of Canberra during the last glaciation.

26–7 Using evidence from shoreline beaches, the water level history of Lake George has been reconstructed by R.J. Coventry in 'Abandoned shorelines and the Late Quaternary history of Lake George, NSW', *J of the Geological Society of Australia* 23, 1976, 249–73. While these provide sensitive indicators of high lake levels, shoreline features built when the lake was low tend to be destroyed during the next high phase. Thus the record determined in this way remains rather incomplete for oscillations when lake levels are low.

The joint study by G. Singh, N.D. Opdyke and J.M. Bowler on vegetation history, palaeomagnetic chronology and sedimentary deposits respectively, 'Late Cainozoic stratigraphy, palaeomagnetic chronology and vegetational history from Lake George, NSW', *J of the Geological Society of Australia* 28, 1981, 435–52 provides a comprehensive account of the water level fluctuations and climatic variations at Lake George. More detailed interpretation of the pollen sequence is available in G. Singh and E.A. Geissier 'Late Cainozoic history of vegetation, fire, lake levels and climate at Lake George, New South Wales, Australia', *Philosophical transactions of the Royal Society of London* 84/B, 1985, 1–69.

28–9 The history of sea level change in response to ice accumulation on land provides an independent measure of the age and magnitude of global glaciation. Some of the most reliable curves of sea level fluctuations have been obtained from the Australasian region, such as the Huon Peninsula in northern Papua New Guinea. This is described in detail by J.M.A. Chappell, 'Geology of coral terraces, Huon Peninsula, New Guinea: a study of Quaternary tectonic movements and sea-level changes', *Bulletin of the Geological Society of America* 85, 1974, 553–70. This paper and a review by A.L. Bloom and others provide an account of the last 400 000 years. See A.L. Bloom, W.S. Broecker, J. Chappell, R.K. Mathews and K.J. Mesolella, 'Quaternary sea level changes on a tectonic coast: new 230Th/234u dates from the Huon Peninsula, New Guinea', *Quaternary research* 4, 1974, 184–205. For sea level changes over the past 120 000 years Chappell's curve, 'A revised sea-level record for the last 200 000 years from Papua New Guinea', *Search* 14, 1983, 99–101, remains the best in the world.

For the influence of sea level changes on the Australian coastline see R.C. Sprigg, 'Stranded and submerged sea-beach systems of southeast South Australia and the aeolian desert cycle', *Sedimentary geology* 22, 1979, 53–96; and B.G. Thom and A.P. Roy, 'Review of NSW evidence', in D. Hopley (ed), *Australian sea levels in the last 15 000 years: a review*, Townsville 1983, 64–84.

29 A description of the terrace sequence, chronology and environmental history of the Maribyrnong River is provided in J.M. Bowler 'Alluvial terraces in the Maribyrnong Valley near Keilor, Victoria', *Memoirs of the National Museum of Victoria* 30, 1970, 15–58.

30 The vegetation history as recorded in the lakes of western Victoria is described in papers by J.R. Dodson 'Vegetation and climatic history near Lake Keilambete, western Victoria, *Australian J of botany* 22, 1974, 709–17, 'Late Pleistocene vegetation and environment near Lake Bullenmerri, western Victoria', *Australian J of ecology* 4, 1979, 419–27. At Lake Keilambete a series of papers provide an excellent record of both chronology and environmental history over the last 10 000 years, which provides the best controlled sequence for this time range anywhere in Australia. See J.M. Bowler, 'Australian salt lakes: a palaeohydrologic approach', *Hydrobiologia* 82, 1981, 431–44; C.E. Barton, and H.A. Polach, '14-C ages and magnetic stratigraphy in three Australian maars', *Radiocarbon* 22, 1980, 728–39; A. Chivas, P. de Deckker and J.M.G. Shelley, 'Strontium content of ostracods indicates palaeosalinity', *Nature*, 1985.

Although accurate dating was not available, identification of important changes in the fluvial landscapes followed early work on the Murrumbidgee River by T. Langford-Smith, 'The dead river systems of the Murrumbidgee', *Geographical review* 50, 1960, 368–89, and on the ancient streams of the riverine plain by B.E. Butler, 'A theory of prior streams as a causal factor of soil occurrence in the Riverine Plain of southeastern Australia'. *Australian J of agricultural research* 1, 1950, 231–52; 'Depositional systems of the Riverine Plain of southeastern Australia in relation to soils', *CSIRO Australian soil publication* 10, 1958.

30–2 A paper by S. Pels, 'The present and ancestral Murray River system', *Australian geographical studies* 2, 1964, 111–19, identified the presence of ancestral river courses significantly different from those of modern times in the Murray–Murrumbidgee system. This was followed by detailed description by S.A. Schumm of processes and landforms associated with the Murrumbidgee system, 'River adjustment to altered hydrologic regimen—Murrumbidgee River and paleochannels, Australia', in *United States geological survey, professional paper* 598, 1968. Dating of the major river changes, enabling their patterns to be fitted with those of the lakes and dunes, later became available with the work of J.M. Bowler on the Goulburn–Murray sequence, 'Quaternary climate and tectonics in the evolution of the Riverine Plain', in J.L. Davies and M.A.J. Williams (eds), *Landform evolution in Australasia*, Canberra 1978, 70–112.

32 The first account of the environmental significance of the Willandra Lakes appeared in 1971 in J.M. Bowler, 'Pleistocene salinities and climatic change: evidence from lakes and lunettes in southeastern Australia', in D.J. Mulvaney and J. Golson (eds), *Aboriginal man and environment in Australia*, Canberra 1971, 47–65. Subsequent discoveries from that region have been reported in many

papers: see the review by F.W. Shawcross and M. Kaye, 'Australian archaeology. Implications of current interdisciplinary research', *Interdisciplinary science reviews* 5, 1980, 112–28.

35 The age of longitudinal dunes in central Australia long remained a matter of conjecture. C.T. Madigan's early expeditions provide splendid accounts of the dune fields but he and later workers were unable to estimate their ages of formation, 'The Australian sand-ridge deserts', *Geographical review* 26, 1936, 205–7; *Central Australia*, London 1936; 'The Simpson Desert expedition, 1939. Scientific reports, no 6, geology—the sand formations' in *Transactions of the Royal Society of South Australia* 70, 1946, 45–63.

38–9 In 'Stranded and submerged sea-beach systems' Sprigg discussed the relationship between desert dunes and changing sea levels. The first direct age estimates have emerged with the work of R.J. Wasson studying the Simpson and Strzelecki deserts, 'The Cainozoic history of the Strzelecki and Simpson dunefields (Australia), and the origin of the desert dunes', *Zeitschrift für geomorphologie NF, Suppl Bd* 45, 1983, 85–115. Dates there seem to be very similar to those from the more humid margins, implying that the deserts expanded over large regions more or less at the same time but especially between about 25 000 and 15 000 years ago. Although the age of the last major dune-building phase is clarified, we still do not know when the dune fields first appeared.

39–42 A detailed account of evolution of the Flinders Ranges landscape is provided by G.E. Williams, 'Late Quaternary piedmont sedimentation, soil formation and paleoclimate in arid South Australia', *Zeitschrift für geomorphologie, NF* 17, 1973, 102–25. This includes a series of radiocarbon dated soil-sedimentary changes which are placed in a palaeoclimatic context.

From both Lake Frome and Lake Eyre, recent research is only now beginning to establish the age and nature of the large hydrologic changes recorded there. Dating is difficult, but the studies of stratigraphy and sediment records now being made will throw new light on our understanding of these regions, representative of the larger arid zones of central Australia.

42 For northern Australia see discussions in Chappell and Grindrod (eds), 'CLIMANZ', which attempt to put the sequence and reliability of evidence from that region into perspective with respect to the data available from the south.

The Fitzroy River estuary, where longitudinal dunes pass below sea level, provided one of the first clues to the realisation that dune formation was not necessarily a function of warmer periods, but had actually occurred during the period when sea levels were lower than today, a phenomenon controlled by expanded glacial ice and implying generally colder climates than those of today. J.N. Jennings, 'Desert dunes and estuarine fill in the Fitzroy estuary, northwestern Australia', *Catena* 2, 1975, 215–62 gives a comprehensive assessment of the dune–sea level relationships in the Fitzroy estuary.

42–3 Detailed accounts of climatic history of the Atherton Tableland region are available from the vegetation history studies of A.P. Kershaw, 'A Late Pleistocene and Holocene pollen diagram from Lynchs Crater, northeastern Queensland, Australia', *New phytologist* 77, 1976, 469–98; 'Local pollen deposition in aquatic sediments on the Atherton tableland, northeastern Australia', *Australian J of ecology* 4, 1979, 253–63. The pollen records available from this region constitute some of the best of their kind anywhere in the world. They record the shifts in the rainforest–sclerophyll boundary in such detail that the local climatic changes can be reconstructed with an unusual degree of precision.

3. CHANGING LANDSCAPES AND SOCIETIES: 15 000–6000 YEARS AGO

Sylvia J. Hallam

47–8 For general perspectives on the broad changes discussed see B. Trigger, *Time and tradition: essays in archaeological interpretation*, Edinburgh 1978, esp. 54–74, 134–52; and B. Bender, 'Gatherer–hunter to farmer: a social perspective', *World archaeology* 10, 1978, 204–22. For particular applications to Australia: D.J. Mulvaney, 'Blood from stones and bones: Aboriginal Australians and Australian prehistory', *Search* 10, 1979, 214–8; N. Thomas, 'Social theory, ecology and epistemology: theoretical issues in Australian prehistory', *Mankind* 13, 1981, 165–77.

ENVIRONMENTAL ALTERATIONS

48 For early documentation of Aboriginal conceptions of their own past including the initial quotation of this chapter see G.F. Moore, *Diary of ten years' eventful life of an early settler in Western Australia and also a descriptive vocabulary of the language of the Aborigines*, Nedlands 1978 (London 1884).

49 For changes in relative land and sea levels on the west coast see D.M. Churchill, 'Quaternary changes in the vegetation of Rottnest Island', *WA naturalist* 7, 1960, 160–6.

For a more general account see J. Chappell and B.G. Thom, 'Sea levels and coasts' in J. Allen, J. Golson and R. Jones (eds), *Sunda and Sahul: prehistoric studies in Southeast Asia, Melanesia and Australia*, London 1977, 275–91. The biogeographical consequences of strandline movements are discussed by J. Chappell, 'Sea levels and sediments: some features of the context of coastal archaeological sites in the tropics', *Archaeology in Oceania* 17, 1982, 69–78; also M. Callaghan, 'Some previously unconsidered environmental factors of relevance to south coast prehistory', *Australian archaeology* 11, 1980, 43–9.

50 Fluctuations of past climates are discussed for general readers by J.M. Bowler and R. Jones in 'Australia was a land of lakes', *Geographical magazine* 51, 1979, 679–85. For a fuller account see J. Chappell and A. Grindrod (eds), *Proceedings of the first CLIMANZ conference, 1981*, 2 vols, Canberra 1983; J.M. Bowler, 'Aridity in Australia: age, origins and expression in Aeolian landforms and sediments', *Earth-science reviews* 12, 1976, 279–310. The evidence from fluctuations in lake levels in southeast Australia is given in J.M. Bowler and T. Hamada, 'Late Quaternary stratigraphy and radiocarbon chronology of water level fluctuation in Lake Keilambete', *Nature* 232, 1971, 330–2; R.J. Coventry, 'Abandoned shore lines and the late Quaternary history of Lake George, New South

Wales, *J of the Geological Society of Australia* 23, 1976, 249–73.

50–1 Vegetation zonation and its changes in northern Australia are modelled by H.A. Nix and J.D. Kalma in 'Climate as a dominant control in the biogeography of northern Australia and New Guinea', in D. Walker (ed), *Bridge and barrier*, Canberra 1972, 61–91; G. Hope, 'Tropical mountain forest in retrospect and prospect', in J.N. Jennings and G.J.R. Linge (eds), *Of time and place*, Canberra 1980, 153–69. The Queensland pollen record is discussed by Kershaw in G. Singh, A.P. Kershaw and R. Clark, 'Quaternary vegetation and fire history in Australia', in A.M. Gill, R.H. Groves and I.R. Noble (eds), *Fire and the Australian biota*, Canberra 1981, 23–54. The work of David Churchill on Western Australian vegetation changes is detailed in 'The distribution and prehistory of *Eucalyptus diversicolor* ... *E. marginata* ... and *E. calophylla* ... in relation to rainfall', *Australian J of botany* 16, 1968, 125–51.

51 For Tasmanian landscape changes see M.K. McPhail and E.A. Colhoun, 'Late glacial vegetation, climates and fire activity in southwest Tasmania', *Search* 16, 1985, 43–7.

52 For general discussions of the effects of burning, and past evidence, see R.L. Clark, 'Pollen and charcoal evidence for the effects of Aboriginal burning on the vegetation of Australia', *Archaeology in Oceania* 18, 1983, 32–7; S.J. Hallam, *Fire and hearth: a study of Aboriginal usage and European usurpation in south-western Australia*, Canberra 1975.

Regional examples of burning and its effect on dune mobility, hill slope mobility and valley fill include A. Bermingham, D.R. Packer and R.E. Vines, 'The age of the petrified forest near Denmark, Western Australia', *Search* 2, 1971, 434–5; J.L. Davies, 'Tasmanian landforms and Quaternary climates' in J.N. Jennings and J.A. Mabbutt (eds), *Landform studies from Australia and New Guinea*, Canberra 1967, 1–25; M.A.J. Williams, 'Late Holocene hillslope mantles and stream aggradation in the Southern Tablelands, New South Wales', *Search* 9, 1978, 96–7; M.K. McPhail, 'Holocene climatic change and Aboriginal food economy in Tasmania', *Search* 10, 1979, 11–12; P.J. Hughes and M.E. Sullivan, 'Aboriginal burning and Late Holocene geomorphic events in eastern New South Wales', *Search* 12, 1981, 277-8. For the Helena valley, Western Australia see M. Schwede, 'Supertrench—phase two: a report of excavation results' in M. Smith (ed), *Archaeology at ANZAAS*, Perth 1983, 53–62. Penetration of the upland jarrah forest of Western Australia, implying firing to make movement possible, was under way more than 6000 years ago: see R.H. Pearce, 'Archaeological sites in jarrah forest, southwest Australia', *Australian archaeology* 14, 1982, 18–24; J. Anderson, 'Between plateau and plain', *Occasional papers in prehistory* 4, Canberra 1984.

52–3 The effects of fire on cycads has been discussed for Cape York in D. Harris, 'Subsistence strategies across Torres Strait', in Allen *et al* (eds), *Sunda and Sahul*, 421–63.

The classic paper on gradual depletion of fauna is D. Merrilees, 'Man the destroyer: late Quaternary changes in Australian marsupial fauna', *J of the Royal Society of WA* 51, 1968, 1–24.

53 Thylacines in Devil's Lair and Madura Cave and thylacines in rock art are detailed in A. Baynes, D. Merrilees and J.K. Porter, 'Mammal remains from the upper levels of a late Pleistocene deposit in Devil's Lair, Western Australia', *J of the Royal Society of WA* 58, 1975, 97–126; J. Balme, D. Merrilees and J.K. Porter, 'Late Quaternary mammal remains, spanning about 30 000 years, from excavations in Devil's Lair, Western Australia', *J of the Royal Society of WA* 61, 1978, 33–65; P. Milham and P. Thompson, 'Relative antiquity of human occupation and extinct fauna at Madura Cave, southwestern Western Australia', *Mankind* 10, 1976, 175–84; B. Wright, 'Rock engravings of striped mammals: the Pilbara region, Western Australia', *Archaeology and physical anthropology in Oceania* 7, 1972, 15–23; E. Brandl, 'Thylacine designs in Arnhem Land rock paintings', *Archaeology and physical anthropology in Oceania* 7, 1972, 24–30.

HUMAN POPULATIONS

53–4 Accounts of the history, geomorphology and morphology of some of the robust skeletal material are given by N.W.G. Macintosh, 'The physical aspect of man in Australia', in R.M. and C.H. Berndt (eds), *Aboriginal man in Australia*, Sydney 1965, 29–70. The Cossack cranium is described and assessed by L. Freedman and M. Lofgren, 'Human skeletal remains from Cossack, Western Australia', *J of human evolution* 8, 1979, 283–99. The Kow Swamp skeletal finds and their geomorphological and archaeological context are described and discussed in A.G. Thorne and P. Macumber, 'Discoveries of late Pleistocene man at Kow Swamp, Australia, *Nature* 238, 1972, 317–19, also A.G. Thorne, 'Morphological contrasts in Pleistocene Australians' in R.L. Kirk and A.G. Thorne (eds), *The origin of the Australians*, Canberra 1976, 95–112; P. Brown, 'Artificial cranial deformation: a component in the variation in Pleistocene Aboriginal crania', *Archaeology in Oceania* 16, 1981, 156–67; A.G. Thorne and M.H. Wolpoff, 'Regional continuity in Australian Pleistocene hominid evolution', *American J of physical anthropology* 55, 1981, 337–41.

Investigations in the Maribyrnong valley (Keilor and Green Gully) are discussed in J.M. Bowler, D.J. Mulvaney, D.A. Casey and T.A. Daragh, 'The Green Gully burial', *Nature* 213, 1967, 152–4; see also *Memoirs of the National Museum of Victoria* 30, 1970, containing papers by D.J. Mulvaney, J.M. Bowler and R.V.S. Wright.

54 For Roonka Flat see G.L. Pretty, 'The cultural chronology of Roonka Flat: a preliminary consideration' in R.V.S. Wright (ed), *Stone tools as cultural markers*, Canberra 1977, 288–331.

PATTERNS OF ADAPTATION

54–5 Kimberley Pleistocene evidence is reviewed by C.E. Dortch, 'Early and late stone industrial phases in Western Australia' in Wright (ed), *Stone tools*, 104–32; G.W. Kendrick, 'Molluscs from archaeological excavations at Miriwun rock shelter', *WA naturalist* 12, 1973, 111–13. For the Arnhem Land sites see C. Schrire, 'The Alligator Rivers: prehistory and ecology in western Arnhem Land', *Terra Australis* 7, 1982. For Cape York see A. Rosenfeld, D. Horton and J. Winter, 'Early man in North Queensland', *Terra Australis* 6, 1981. D. Harris described recent patterns of subsistence in 'Subsistence strategies across Torres Strait', in Allen *et al*, *Sunda and Sahul*, 421–63.

58 General patterns of grass seed subsistence are discussed by N.B. Tindale, *Aboriginal tribes of Australia*, Canberra 1974, ch 7, 'Tribes and food'; also 'Adaptive significance of the Panara or grass seed culture of Australia' in Wright (ed), *Stone tools*, 345–9. There has been no detailed study of types of grinding apparatus and their relative dates. Early pitted anvils, probably for cracking hard seeds and working quartz, appear in association with 'Kartan' assemblages in SA and WA. The earliest dated plant-processing material is from the Swan valley almost 40 000 years ago, but may be for pounding and pulverising root tubers, rather than grinding seeds. Grinding material occurs on the Willandra Lakes sites from perhaps 15 000 years ago: see H. Allen 'The Bagundji of the Darling Basin: cereal gatherers in an uncertain environment', *World archaeology* 5, 1974, 309–22; and at Quininup Brook between 18 000 and 11 000 years ago see W.C. Ferguson, 'Archaeological investigations at Quininup Brook site complex, Western Australia', *Records of the WA museum* 8, 1981, 609–37. The Mt Newman shelter and the Pilbara grinding areas are described by L. Maynard, 'A Pleistocene date for an occupation deposit in the Pilbara region, Western Australia', *Australian archaeology* 10, 1980, 3–8.

The Queensland highlands are discussed in M.J. Morwood, 'Archaeology of the central Queensland highlands: the stone component', *Archaeology in Oceania* 16, 1981, 1–52.

Grassland economies in the Darling–Lachlan region are described in Allen, 'The Bagundji'. The semiarid environment, fauna and human occupation along the Darling anabranch are described by J.H. Hope, A. Dare-Edwards, M.I. McIntyre, 'Middens and megafauna: stratigraphy and dating of Lake Tandou lunette, western New South Wales', *Archaeology in Oceania* 18, 1983, 45–52.

58–9 The Kangaroo Island material was investigated by R. Lampert who reports in 'The great Kartan mystery', *Terra Australis* 5, 1981.

59 The New England sites were investigated by I. McBryde and described in her *Aboriginal prehistory in New England: an archaeological survey of northeastern New South Wales*, Sydney 1974; also 'Subsistence patterns in New England prehistory', *University of Queensland, occasional papers in anthropology* 6, 1976, 48–68.

For the Blue Mountains investigations see E.D. Stockton and W. Holland, 'Cultural sites and their environment in the Blue Mountains', *Archaeology and physical anthropology in Oceania* 9, 1974, 36–65. J. Flood describes her work in the southern uplands in *The moth hunters: Aboriginal prehistory of the Australian Alps*, Canberra 1980, 207–19, 279–80. The Tasmanian evidence from the southwest uplands, including Kutikina Cave, is discussed in R. Jones and D. Ranson, 'New evidence from Fraser Cave for glacial age man in southwest Tasmania', *Nature* 301, 1983, 28–32; H. Lourandos, '10,000 years in the Tasmanian highlands', *Australian archaeology* 16, 1981, 39–47. S. Bowdler reviews montane adaptations in general in 'Hunters in the highlands: Aboriginal adaptations in the eastern Australian uplands', *Archaeology in Oceania* 16, 1981, 99–111.

59–60 Coastal and coastal plain investigations in NSW are described in R.J. Lampert, 'Burrill Lake and Currarong: coastal sites in New South Wales', *Terra Australis* 1, 1971. Sites are discussed in terms of land-use and populations in P.J. Hughes and R.J. Lampert, 'Prehistoric population change in southern coastal New South Wales', in S. Bowdler (ed), *Coastal archaeology in Eastern Australia*, Canberra 1982, 16–28; V. Attenbrow, 'The archaeology of the upper Mangrove Creek catchment', *ibid*, 67–78. Compare Hallam, *Fire and hearth*, 98–111. For offshore islands see R. Jones, 'A note on the discovery of stone tools and a stratified prehistoric site on King Island, Bass Strait', *Australian archaeology* 9, 1978, 87–94; D.W. Orchiston and R.C. Glenie, 'Residual populations in Bassiana', *Australian archaeology* 8, 1978, 127–41.

60–1 S. Bowdler summarises Tasmanian coastal evidence, particularly her own work and that of R. Jones in northwest Tasmania, in 'Prehistoric archaeology in Tasmania', *Advances in world archaeology* 1, 1982, 1–49. R. Jones describes the South Cave 'time capsule' in 'Different strokes for different folks: sites, scale and strategy', in I. Johnson (ed), *Holier than thou: proceedings of the 1978 Kioloa conference on Australian prehistory*, Canberra 1980, 151–71.

The investigation of Devil's Lair has been a large and long project. See C. Dortch, *Devil's Lair: A study in prehistory*, Perth 1984; Baynes *et al*, 'Mammal remains'.

61–2 The sources for stone tool materials are described and discussed in J.E. Glover and A.E. Cockbain, 'Transported Aboriginal artefact material, Perth basin, Western Australia', *Nature* 234, 1971, 545–6; P.G. Quilty, 'The source of chert for Aboriginal artefacts in southwestern Australia', *Nature* 275, 1978, 539–41; J.E. Glover and R. Lee, 'Geochemistry and provenance of chert artifacts, southwestern Australia', *Archaeology in Oceania* 19, 1984, 16–20. For the archaeology of the western coastal plain see S.J. Hallam, 'The first Western Australians', in C.T. Stannage (ed), *A new history of Western Australia*, Nedlands 1981, 35–71. The Walyunga site was excavated by R.H. Pearce and described in his 'Changes in artifact assemblages during the last 8000 years at Walyunga, Western Australia', *J of the Royal Society of WA* 61, 1978, 1–10. On the relative lack of Aboriginal shellfish deposits along the lower west and south coast of Western Australia see C. Dortch, G. Kendrick and K. Morse, 'Aboriginal mollusc exploitation in southwestern Australia', *Archaeology in Oceania* 19, 1984, 81–104.

64–5 On the excavations in Puntutjarpa rock shelter which provide our fullest picture of life in the arid zone see R.A. Gould, 'Puntutjarpa rockshelter and the Australian desert culture', *Anthropological papers of the American museum of natural history* 54/1, 1977; *Living archaeology*, Cambridge 1980; P.J. Hughes and R.J. Lampert, 'Pleistocene occupation of the arid zone in southeast Australia: research prospects for the Cooper Creek–Strezelecki desert region', *Australian archaeology* 10, 1980, 52–67.

65 The Koonalda investigations are detailed in R.V.S. Wright (ed), *Archaeology of the Gallus site, Koonalda Cave*, Canberra 1971.

TOOL TECHNOLOGY

66 On characteristics of stone tools used for woodworking see B. Hayden, 'Sticks and stones and ground edge axes', in Allen *et al*, *Sunda and Sahul*, 73–109; also S.J. Hallam, 'The relevance of old world archaeology to the first entry of

man into new worlds: colonisation seen from the Antipodes', *Quaternary research* 8, 1976, 128–48. The wooden implements from Wyrie Swamp are described in R.A. Luebbers, 'Ancient boomerangs discovered in South Australia', *Nature* 253, 1975, 39. For bone tools see C. Beeck and C. Bird, 'Bone points and spatulae', *Archaeology and physical anthropology in Oceania* 15, 1980, 168–71.

66–8 For the stone tool assemblages referred to see Lampert, 'Burrill Lake and Currarong'; W.C. Ferguson, 'Edge angle classification of the Quininup Brook implements: testing the ethnographic analogy', *Archaeology and physical anthropology in Oceania* 15, 1980, 56–72; Lampert, 'The great Kartan mystery'; Schrire, 'The Alligator Rivers'; R.V.S. Wright, 'Stone artifacts from Kow Swamp', *Archaeology and physical anthropology in Oceania* 10, 1975, 161–80. For ground stone hatchets see Schrire, 'The Alligator Rivers'.

SOCIETY, CEREMONY AND CONTROL

68 Demographic distributions and trends in Aboriginal society have been discussed by a number of authors, and have become more popular as a mode of explanation over the last few years. See H. Lourandos, 'Change or stability? Hydraulics, hunter–gatherers and population in temperate Australia', *World archaeology* 11, 1980, 245–64.

69 For Koonalda see Wright (ed), *Koonalda Cave*; for Orchestra Shell Cave references, Hallam, 'The first Western Australians', 35–71; for Devil's Lair, C. Dortch, 'Australia's oldest known ornaments', *Antiquity* 53, 1979, 39–43; 'A possible pendant of marl from Devil's Lair, Western Australia', *Records of the WA Museum* 8, 1980, 401–3; 'Two engraved stone plaques of Late Pleistocene age from Devil's Lair, Western Australia', *Archaeology and*

70 *physical anthropology in Oceania* 11, 1976, 32–44. Cheetup cave was excavated by M. Smith, see her 'Late Pleistocene zamia exploitation in southern Western Australia', *Archaeology in Oceania* 17, 1982; for Quininup see W.C. Ferguson, 'Archaeological investigations at the Quininup Brook site complex, Western Australia', *Records of the WA Museum* 8, 1981, 609–37.

70–1 The art of Cape York is described in Rosenfeld *et al*, 'Early man in north Queensland'; Pilbara art by B. Wright in R.M. Berndt and E.S. Phillips (eds), *The Australian Aboriginal heritage: an introduction through the arts*, Sydney 1973; F.L. Virili, 'Aboriginal sites and rock art of the Dampier Archipelago, Western Australia: a preliminary report' in P. Ucko (ed), *Form in indigenous art*, Canberra 1977, and papers by Dix and Wright in the same volume.

71 The chronology of Arnhem Land art proposed by G. Chaloupka is set out in 'Kakadu rock art: its cultural, historic and prehistoric significance', in D. Gillespie (ed), 'The rock art sites of Kakadu National Park—some preliminary research findings for their conservation and management', *Australian National Parks and Wildlife Service* 10, 1982. Thylacines in rock art are discussed in Brandl, 'Thylacine designs in Arnhem Land'.

The Lake Nitchie burial and the Roonka cemetery are described in N.W.G. Macintosh *et al*, 'Lake Nitchie skeleton—unique Aboriginal burial', *Archaeology and physical anthropology in Oceania* 5, 1970, 85–101; and Pretty, 'Roonka Flat'. Disease and demography are treated by M. Prokopec, 'Demographical and morphological aspects of the Roonka population', *Archaeology and physical anthropology in Oceania* 14, 1979, 11–26.

73 For mechanisms of social and demographic control see G. Cowlishaw, 'Infanticide in Aboriginal Australia', *Oceania* 48, 1978, 262–83; 'The determinants of fertility among Australian Aborigines', *Mankind* 13, 1981, 37–51.

There have been several recent evaluations of the quality of Aboriginal life and values as assessed in part on archaeological evidence. See three papers by D.J. Mulvaney: 'The chain of connection: the material evidence' in N. Peterson (ed), *Tribes and boundaries in Australia*, Canberra 1976, 72–94; 'Australia before the Europeans', *University of London Institute of Archaeology bulletin* 15, 1978, 35–47; 'Blood from stones and bones: Aboriginal Australians and Australian prehistory', *Search* 10, 1979, 214–18.

4. THE END OF THE BEGINNING: FROM 6000 YEARS AGO TO 1788

D.J. Mulvaney

75 Three general surveys provide interpretations and greater detail about this phase of prehistory: J.P. White with J.F. O'Connell, *A prehistory of Australia, New Guinea and Sahul*, Sydney 1982; J.M. Flood, *Archaeology of the Dreamtime*, Sydney 1983; D.J. Mulvaney, *The prehistory of Australia*, Ringwood 1975. R.A. Gould, *Living archaeology*, Cambridge 1980, includes some interesting integration of archaeology and ethnology.

COASTAL ENVIRONMENTS

75–7 Changes in some areas following sea level rise are outlined by J. Chappell, 'Sea levels and sediments: some features of the context of coastal archaeological sites', *Archaeology in Oceania* 17, 1982, 69–78. The effects on human populations in Arnhem Land are discussed by C. Schrire, 'The Alligator Rivers: prehistory and ecology in western Arnhem Land', *Terra Australis* 7, 1982, and for part of the southwest Victorian coast by L. Head, 'Environment as artefact', *Archaeology in Oceania* 18, 1983, 73–80. For data on one economy partly dependent on shellfish see B. Meehan, *Shell bed to shell midden*, Canberra 1982. A review of the age of middens is presented by M.J. Rowland, 'Aborigines and environment in Holocene Australia: changing paradigms', *Australian Aboriginal studies* 2, 1983, 62–77.

HUMAN ECOLOGY

77–9 For examples of Aboriginal uses of plants see R.A. Hynes and A.K. Chase, 'Plants, sites and domiculture', *Archaeology in Oceania* 17, 1982, 38–50; B. Gott, 'Ecology of root use by Aborigines of southern Australia', *Archaeology in Oceania* 17, 1982, 59–67; D.J. and S.G.M. Carr, *People and plants in Australia*, Sydney 1981, 3–44.

PEOPLE AND LANDSCAPE

80 A challenging discussion of the role of fire is presented by D. Horton, 'The burning question: Aborigines, fire and Australian ecosystems', *Mankind* 13, 1982, 237–51. For environments generally see J.M.A. Chappell and A. Grindrod (eds), *Proceedings of the first CLIMANZ conference, 1981*, 2 vols, Canberra 1983. The evidence for the Murray River flood is contained in D.J. Mulvaney *et al*,

'Archaeological excavation at rock shelter 6, Fromm's Landing', *Proceedings of the Royal Society of Victoria* 77, 1964, 486–7, where a 3000-year-old dingo is also described. The recent reappraisal of dingo origins is by L.K. Corbett, 'Morphological comparisons of Australian and Thai dingoes', *Proceedings of the Ecological Society of Australia* 13, 1984.

INVENTIONS AND INNOVATIONS

81–2 For a general overview of stone technology see White with O'Connell, *Prehistory*, 105–132 and Mulvaney

83–4 *Prehistory*, 172–97, 210–37. On backed blades see the papers by D.J. Mulvaney and I. McBryde, in V.N. Misra and P.S. Bellwood (eds), *Recent advances in Indo-pacific prehistory*, Delhi 1985. The important discovery that the heat treatment of stone was a factor in Australian technology is described by J.J. Flenniken and J.P. White, 'Heat treatment

84 of siliceous rocks', *Australian Aboriginal studies* 1, 1983, 43–7. The importance of *Triodia* resin was demonstrated by G. Sheridan, whose research is unpublished.

MANIPULATING FOOD RESOURCES

87 A.P. Elkin's comment occurs in his *The Australian Aborigines*, Sydney 1943 (1938), 14. The most far-reaching revisions of our view of Australian economies have been made by H. Lourandos, 'Intensification: a late Pleistocene-Holocene archaeological sequence from southwestern Victoria', *Archaeology in Oceania* 18, 1983, 31–97. A different view is given by J.M. Beaton, 'Does intensification account for changes in the Australian Holocene archaeological record?', *Archaeology in Oceania* 18, 1983, 94–7, and there is a reply from Lourandos in *Archaeology in Oceania* 19, 1984, 29–38. A strong argument for large-scale population growth during the last 4000 years is made by P.J. Hughes and R.J. Lampert, 'Prehistoric population change in southern coastal New South Wales', in S. Bowdler (ed), *Coastal archaeology in eastern Australia*, Canberra 1982, 16–28. See also chs 14 and 15 of this book.

88–9 For particular plants see B. Gott, 'Murnong—*Microseris scapigera*: A study of a staple food of Victorian Aborigines', *Australian Aboriginal studies* 2, 1983, 2–18; J.M. Beaton, 'Fire and water: aspects of Australian Aboriginal management of cycads', *Archaeology in Oceania* 17, 1982, 51–8; M. Smith, 'Late Pleistocene zamia exploitation in southern Western Australia', *Archaeology in Oceania* 17, 1982, 117–21.

89 Fish traps have been described in many parts of Australia. For the Lake Condah traps see P.J.F. Coutts *et al*, 'Aboriginal engineers of the Western District', *Records of the Victorian archaeological survey* 7, 1978; for those on Hinchinbrook Island, Queensland, see J.B. Campbell, 'Automatic seafood retrieval systems', in Bowdler *Coastal Archaeology*, 96–107; Kimberley examples are described by M. Smith, 'Joules from pools: social and techno-economic aspects of Bardi stone fish traps', in M. Smith (ed), *Archaeology at ANZAAS 1982*, Perth 1983, 29–45.

90 For examples of seasonal economies see R. Lawrence, *Aboriginal habitat and economy*, Canberra 1968. H.R. Allen, 'The Bagundji of the Darling Basin: cereal gatherers in an uncertain environment', *World archaeology* 5, 1974, 309–22 surveys the evidence for grass-seed gathering.

EXCHANGING PRODUCTS, TRADITIONS AND PEOPLE

92–3 A basic overview of exchange is given by D.J. Mulvaney, 'The chain of connection', in N. Peterson (ed), *Tribes and boundaries in Australia*, Canberra 1976, 72–94. Other important sources are: N.B. Tindale, *Aboriginal tribes of Australia*, Canberra 1974, 75–88; I. McBryde, 'Artefacts, language and social interaction: a case study from south-eastern Australia', in B.F. Leach and J. Davidson (eds), 'Archaeological studies of Pacific stone resources', *British archaeological reports, international series, S104* 1981, 183–208.

94 See also ch 13. The evidence for baler shell stencils is discussed by J.M. Beaton and G.L. Walsh, 'Che-ka-ra', *Mankind* 11, 1977, 46–9.

An account of *mudlunga* is given by L.A. Hercus, '"How we danced the *Mudlunga*": memories of 1901 and 1902', *Aboriginal history* 4, 1980, 5–32. On *pituri* see P.L. Watson, 'This precious foliage', *Oceania monographs* 26, Sydney 1983.

INTERACTION WITH THE OUTSIDE WORLD

94–5 A review of the evidence relating to foreign contacts with Australia, real or presumed, is provided in Mulvaney, *Prehistory*, 19–51. A rational explanation for the presence of guns in the Kimberleys is given by J. Green, 'The Carronade Island guns and Australia's early visitors', *The great circle* 4, 1982, 73–83.

95–8 The story of Siveri and Nyungu is adapted from U. McConnel, *Myths of the Munkan*, Melbourne 1957, 23–6, by courtesy of Melbourne University Press. Some alteration has been made to the spelling of names.

98 For contacts across Torres Strait see D.R. Moore, 'Cape York Aborigines and Islanders of the western Torres Strait', in D. Walker (ed), *Bridge and barrier: the natural and cultural history of Torres Strait*, Canberra 1972, 327–44; also D. Thomson, 'The hero cult, initiation and totemism on Cape York', *J of the Royal Anthropological Institute* 63, 1933, 453–537 and 64, 1934, 217–35; McConnel, *Myths*, 20–27.

The Aranda anthropologist was T.G.H. Strehlow. See his *Aranda traditions*, Melbourne 1947, 6.

98-101 Macassan contacts are described by C.C. Macknight, *Voyage to Marege*, Melbourne 1976 and in 'Macassans and Aborigines', *Oceania* 42, 1972, 283–321. See also J. Urry and M. Walsh, 'The lost "Macassar language" of northern Australia', *Aboriginal history* 5, 1981, 91–108. C. Shrire, 'Ethnoarchaeological models and subsistence behaviour in Arnhem Land', in D.L. Clarke (ed), *Models in archaeology*, London 1972, 664–6 has excavated fishhooks made of shell, which may be copies of metal hooks, in a deposit up to 1000 years old on the shores of Blue Mud Bay, eastern Arnhem Land.

THE CLIMAX OF ABORIGINAL SOCIETY

Concerning regional variations see the discussion by N. Peterson, 'The natural and cultural areas of Aboriginal Australia', in Peterson, *Tribes and boundaries*, 50–71; also Mulvaney, *Prehistory*, 72–94. On initiation rites, see Mulvaney, *Prehistory*, 87–8; also H. Campbell and M. Prokopec, 'Antiquity of tooth avulsion in Australia', *Artefact* 8, 1984, 3–10.

DEATH

102–3 The discoveries at Roonka are described by G. Pretty, 'The cultural chronology of the Roonka Flat', in R.V.S. Wright (ed), *Stone tools as cultural markers*, Canberra 1977, 288–331. The Graman and Seelands pendants are described by I.

McBryde, *Aboriginal prehistory in New England*, Sydney
104 1974, 194–5, 320–2. The comments of E.J. Eyre are from his *Journals of expeditions into Central Australia* 2, London 1845, 350. G.F. Angas, *Savage life and scenes in Australia and New Zealand* 2, London 1847, 68, 94–6, describes skulls as containers and implies comparable attitudes to the dead after burial.

ART AND IMAGINATION

104–7 The best introduction to the richness of Aboriginal art, other than rock art, is the catalogue produced by the Australian Gallery Directors Council, *Aboriginal Australia*, Sydney 1981. See especially the discussion by C. Cooper on the art of the southeast. See also P.J. Ucko (ed), *Form in*
107–8 *indigenous art*, Canberra 1977. Kimberley art is described by I.M. Crawford, *The art of the Wandjina*, Melbourne 1968,
111–12 35, 81–6. The chief interpreter of Arnhem Land art is George Chaloupka. A summary of his evidence is provided in D. Gillespie (ed), *The rock art sites of Kakadu National Park*, Canberra 1983. R. Edwards, *Australian Aboriginal art. The art of the Alligator Rivers region*, Canberra 1979, is also essential.

5. HOW MANY PEOPLE?

J. Peter White and D.J. Mulvaney

115 Governor Phillip made his estimate of the Botany Bay to Broken Bay zone in his despatch of 15 May 1788, *HRA* 1/1, 29.

The figure of 150 000 appears in the *Australian Handbook* for 1881 and was repeated in later years. It is included as 'a guess' in the *Australian Encyclopaedia* 1, Sydney 1927, 19. For a broad survey of Aboriginal demography consult L.R. Smith, *The Aboriginal population of Australia*, Canberra 1980. Spencer's population estimate was made in his 'Preliminary report on the Aboriginals of the Northern Territory', *Bulletin of the Northern Territory* 7, 1913, 14.

116 A.R. Radcliffe-Brown was professor of anthropology at the University of Sydney. His estimates are in 'Former numbers and distribution of the Australian Aborigines', *Official year book* 23, 1930, 688–96. The classic study of tribal distribution is N.B. Tindale, *Aboriginal tribes of Australia*, Canberra 1974, in which he lists about 600 'tribes'. For the linguistic pattern, see R.M.W. Dixon, *The languages of Australia*, Cambridge 1980, 18.

The Tasmanian re-evaluation was by R. Jones, in Tindale, *Aboriginal tribes*, 317–54. Western district research is spearheaded by H. Lourandos, 'Aboriginal spatial organization and population: south western Victoria reconsidered', *Archaeology and physical anthropology in Oceania* 12, 1977, 202–25; 'Change or stability?: hydraulics, hunter–gatherers and population in temperate Australia', *World archaeology* 11, 1980, 245–64. A preliminary statement of the Murray River skeletal evidence is provided by S. Webb, *Aboriginal history* 8, 1984, 154–72.

117 The demographic modelling and disease hypotheses are the result of research by N.G. Butlin, *Our original aggression: Aboriginal populations of southeastern Australia 1788–1850*, Sydney 1983. Note that more conservative population estimates appear in *Australians: Historical Statistics.*

6. MOKARÉ'S DOMAIN

W.C. Ferguson

121 This chapter is adapted largely from material presented in the author's 1985 PhD thesis, 'A Mid-Holocene depopulation of the Australian southwest', Australian National University. An overview of the history of King George Sound up to 1831 can be found in D.A.P. West, *The settlement on the Sound*, Perth 1976. For details on its discovery see G. Vancouver, *A voyage of discovery to the North Pacific and round the world* 1, London 1801, 138–51. Flinders' visit is recorded in his book *A voyage to Terra Australis* 1, London 1814, 53–72, and the marines' 'corroboree' is the subject of an article by I.M. White, 'The birth and death of a ceremony', *Aboriginal history* 4, 1980, 33–42. Two French ships were there shortly after Flinders and had some contact with the Aborigines: see *The journal of Post Captain Nicolas Baudin*, trans C. Cornell, Adelaide 1974, 486–501, and F. Péron and L. de Freycinet, *Voyage de découvertes aux Terres Australes* 4, Paris 1807, 133–59.

121–2 King's various visits are described in P.P. King, *Narrative of a survey of the intertropical and western coasts of Australia* 1, London 1827, 11–19, 2, 119–57. Ferguson, 'A Mid-Holocene depopulation', ch 6, discusses King's understanding of the hatchets. Mokaré's meeting with the French is described in D. D'Urville, *Voyage de la corvette l'Astrolabe*, Paris 1833, and Battye Library, Research Note 104: Notes on the visit to King George Sound of *l'Astrolabe*, 1826.

122–3 The main sources on Mokaré (or Mawcurrie or Mokkare) after establishment of the settlement are: the journals and letters from the garrison included in *HRA* 3/6, 460–544; I.S. Nind, 'Description of the natives of King George's Sound (Swan River Colony) and adjoining country', *J of the Royal Geographical Society* 1, 1831, 21–51; C. Barker, Journal at King George's Sound Jan 1830–Mar 1831, unpublished manuscript, AONSW; T.B. Wilson, *Narrative of a voyage round the world*, London 1835, 236–83; extract of a letter received from Dr T.B. Wilson, King George's Sound, 15 December 1829, in J. Cross (ed), *Journals of several expeditions made in Western Australia*, London 1833, 14–26; A. Collie, 'Anecdotes and remarks relative to the Aborigines at King George's Sound', published anonymously in *Perth Gazette*, 5, 12, 26 July, 2, 9, 16 Aug 1834; and 'Account of an excursion to the north of King George's Sound, between the 26th of April and 4th May 1831, by Al. Collie Surgeon', in Cross (ed), *Journals*, 132–54.

123 Captain C. Barker's journal, comprising over 200 pages written in his minuscule and often indecipherable scrawl, has only recently come to the attention of scholars. Some short passages have been transcribed: see N. Green, 'King George Sound: the friendly frontier', in M. Smith (ed), *Archaeology at ANZAAS 1983*, Perth, 68–75; and S. Le Souef's BA hons thesis 1980, 'Social organisation and territoriality among the Aborigines of King George Sound', University of WA. I have followed the practice of these authors in citing by date, not page.

124 The quotation is from W.E.H. Stanner, 'Aboriginal territorial organisation: estate, range, domain and regime', *Oceania* 36, 1965, 2.

124–5 The social aspects of the Nyungar people are discussed by R.M. Berndt, 'Aborigines of the south-west', in R.M. and C.H. Berndt (eds), *Aborigines of the West*, Perth 1979, 81–9; and 'Nyungar languages', by W.H. Douglas, *The Aboriginal languages of the south-west of Australia*, Canberra 1976, and S.A. Wurm, *Languages of Australia and Tasmania*, The Hague 1972. I have placed the northern boundary of the dialect group on the wide and barren divide between the Moore and Hill rivers, south of that used by Berndt and Douglas, on the basis of nineteenth century sources: G.F. Moore, 'A descriptive vocabulary of the language of the Aborigines', an addendum to *Diary of ten years' eventful life of an early settler in Western Australia*, London 1884, vii; E.J. Storman (ed and trans), *The Salvado memoirs*, Perth 1977, 255. I acknowledge the assistance of Frances Morphy, Department of Linguistics, Faculty of Arts, Australian National University. The circumcision-subincision line and the 'tribal' boundaries are taken from N.B. Tindale, *Aboriginal tribes of Australia*, Berkeley 1974. For the southwest botanical province see C.A. Gardner, 'The vegetation of Western Australia with special reference to climate and soils', *J of the Royal Society of WA* 28, 1942, 11–87; J.S. Beard, 'Phytogeographic regions', in J. Gentilli (ed), *Western landscapes*, Perth 1979, 107–21, and N.G. Marchant, 'Species diversity in the southwestern flora', *J of the Royal Society of WA* 56, 1973, 23–30. The southwest coast drainage division is discussed in the *Atlas of Australian resources*, Canberra 1967.

125 Most early writers note that the Nyungar had no boats, could not swim, and did not eat shellfish: Nind, 'Description' 1831, 32; Flinders, *Voyage*, 66; and King, *Narrative*, 137–8. The 'plenty fish, plenty cold' incident is recorded in Barker's journal for 20 Jan 1830.

The Nyungar's avoidance of the forest is discussed in S.J. Hallam, *Fire and hearth*, Canberra 1975. Archaeological evidence presented in Ferguson, 'A Mid-Holocene depopulation', ch 3, supports this contention, although Hallam might have somewhat overstated the extent of this cultural trait.

125–7 All definitions of Nyungar words used here are taken from Moore, *Diary*. The routes of the tracks in the map are based on an overview in J.E. Hammond, *Winjan's people*, Perth 1933, 17–20; with additions from explorer's journals cited in Ferguson, 'A Mid-Holocene depopulation', ch 2. Collie's maps of the Kalgan track are included as insets on the large map in the back of Cross (ed), *Journals*. Fairly complete inventories of Nyungar material culture are available for several widely scattered locations in the region and are in substantial agreement. For New Norcia see Stormon (ed), *Salvado memoirs*; for Perth, Moore, *Diary*; for Pinjarra, Hammond, *Winjan*; for Bunbury, W.E. Roth, 'Notes of savage life in the early days of West Australian settlement', *Proceedings of the Royal Society of Queensland* 17, 1903; for York, P. Chauncy, 'Notes and anecdotes on the Aborigines of West Australia', in R.B. Smyth, *The Aborigines of Victoria* 2, Melbourne 1876, 222–84; for Albany, Nind, 'Description', and J. Browne, 'The Aborigines of Australia', *Canadian J of industry, science and art* 1, 1856, 251–71; and for Jarramungup, E. Hassell, *My dusky friends*, Perth 1975.

127 A pioneering article on Mokaré's family by R. Stephens, 'Three black brothers', *J of the Western Australian Historical Society* 5, 1961, discusses the published sources. Stephens did not have access to Barker's journal which provides the only information on Mokaré's father, 4 Mar 1830; Tarapan, 12 Mar 1830; Mollian (Yallopli) 26 Jan 1830; and
128 Mullet, 8 Apr 1830. The original reference to Mokaré's engaged status is in Barker's journal 26 January 1830. The description of Nakina is in Nind, 'Description', 1831, 41.

Aspects of the ownership of estates in the southwest are discussed in S.J. Meagher and W.D.L. Ride, 'Use of natural resources by the Aborigines of south-western Australia', in Berndt (eds), *Aborigines of the West*, 66–80, and Le Souef,
129 'Social organisation'. Nakina's reception of the Europeans is in Nind, 'Description', 1831, 41. For estate boundary markers at King George Sound see J. Backhouse, *A narrative of a visit to the Australian colonies*, London 1843, 542; and G. Grey, *Journals of the two expeditions of discovery in north-west and Western Australia* 2, London 1841, 232.

129–31 The references to the location of Mokaré's estate are Wilson, *Narrative*, 283; Barker's journal, 14 May 1830; and Collie, *Perth Gazette*, 335. For 'considerable extent of land' see Nind, 'Description', 1831, 28; and for 'one continuous stretch', see Stanner, 'Territorial organisation', 2. The vegetation of this area is described in J.S. Beard, *Vegetation survey of Western Australia: the vegetation of the Albany and Mt Barker areas*, WA map and explanatory memoir, Perth 1979. Sixty men fishing comes from the journal of Major Lockyer, *HRA* 3/6, 485.

131 Hallam, *Fire*, provides an overview of the use of fire in the Australian southwest. For the timing of fires see Nind, 'Description', 28, and Collie, *Perth Gazette*, 335. Restrictions on firing and wallaby hunting are discussed by Nind, 'Description', 28; Collie, *Perth Gazette*, 335; Barker's Journal 21 Jan, 18 Mar and 1 Dec 1830. A wallaby drive is described in J.L. Stokes, *Discoveries in Australia* 2, London 1846, 228; see also Collie, *Perth Gazette*, 335. See Barker's journal, for usage rights on birds' nests, 7 Dec 1830, and for cycads, 23 June 1830. Le Souef, 'Social organisation', 53, expands upon this subject. Grubs, roots and other acceptable items are listed in Nind, 'Description', 28.

The incident of Mokaré burning on Coolbun's ground is described in Barker's Journal, 21 Jan 1831; the stolen axes in Captain Wakefield to colonial secretary A. Macleay, *HRA* 3/6, 507–8; and the potatoes in Collie, *Perth Gazette*, 336. Aboriginal 'ownership' of European resources on their land is an interesting issue. If other Aborigines wanted steel tomahawks or ship's biscuits, they could get them from the Europeans, but they had to go first through the landlords Mokaré and Nakina; Nakina admitted to Collie that knowing the Europeans had been good for his prestige. See Collie's letter to Governor Stirling, 24 Jan 1832, in *Swan River papers* vol 9, 110–21, Acc 588, Battye Library.

134 A complete discussion of Nyungar mobility is provided by Ferguson, 'A Mid-Holocene depopulation', chs 2–4, and an inventory of their food resources is in S.J. Meagher, 'The food resources of the Aborigines of the south-west of Western Australia', *Records of the WA Museum* 3, 1974, 14–55. Non-seasonality has been discussed by both Le Souef, 'Social organisation', 50 and Ferguson 'A Mid-Holocene depopulation', ch 3. Le Soeuf provides an

extensive list of sightings of Aboriginal groups on the coast all year round, but admits this may have been affected by the presence of the settlement. Inland sightings are not subject to this reservation.

The 'Will' (sometimes *weal* or *waal*) are the subject of much discussion in writings on King George Sound, but both the early explorers and subsequent scholars are confused over just who they were and where they lived. The answer is simple. The Nyungar used this term loosely to denote anyone who lived north of them, and depending on the context it could mean people on the adjoining estate, people far away about whom they had only heard, or anyone in between. See the definition of *welo* in Moore, *Diary*, 76. (Note that the final vowel is dropped: Moore, *Diary*, vii.) A somewhat different version of the extent of the family's wanderings can be found in Le Souef, 'Social organisation', fig 5. See Ferguson, 'A Mid-Holocene depopulation', ch 3 for comments and documentation on all locations noted as frequented. Nakina, with Dale, is in 'Mr Dales journal of an expedition from King George's Sound to the Korkyennenuft Range of mountains', in Cross (ed), *Journals*, 161–5. For Mokaré with Wilson see Wilson, *Narrative*, 237–61; and Wilson, in Cross (ed),

135 *Journals*, 14–26. The rainfall and vegetation are discussed in Beard, *Vegetation survey*.

140 The population of 250 is calculated from Le Souef, 'Social organisation', 78–81. It is a rough guess, undoubtedly an underestimate, but the best available.

140–1 The initiation and training of boys is taken in the main from Hassell, *Dusky friends*, 71–4, with additions from Nind, 'Description', 38, and Barker's journal, as noted in Le Souef, 'Social organisation', 23.

141 Details of numerous retribution killings are to be found in Barker's journal and Collie, *Perth Gazette*, and are mentioned by most other authors. Fear over the trail is discussed in Hassell, *Dusky friends*, 93–4, Nind,

141–2 'Description', 44, and Collie, *Perth Gazette*, 335. Meeting behaviour is discussed in detail by S.J. Hallam, 'A view from the other side: or "I met a man who wasn't there"', in *Aboriginal history* 7, 1983. See also Nind, 'Description', 44, and Wilson, *Narrative*, 237. The account of Mokaré's death and burial is in Collie, *Perth Gazette*, 327–8. Collie's burial is in Stephens, 'Three black brothers', 73.

7. WORDS OF JULUJI'S WORLD

Bob Dixon

147–65 This chapter is based on knowledge I have gained during 21 years of steady field work (1963–84) with speakers of Jirrbal, Girramay, Mamu, Ngajan, Warrgamay and other languages from north Queensland and from reading old materials such as W.E. Roth's *North Queensland ethnography bulletins*, 1901–10. The events of Juluji's day are reconstructed, but all are closely based on what I was told did happen in tribal times. The shooting of Warrgamaygan people by early European settlers on the Herbert River does not refer to any single historically attested incident, but I have been told by Aboriginal people from this area that a number of such incidents did take place.

I owe a special debt of gratitude to those Aboriginal friends who have so willingly and patiently taught me about their language and culture, especially the late Chloe Grant, the late Mick Murray, and George Watson, Ida and Spider Henry, Bessie Jerry, Fred Williams, Andy and Daisy Denham, Jack Muriata, Mollie Raymond, John Tooth and Lambert Cocky.

Ernest Grant, Geoff Monteith, Frances Morphy, Bob Murray, Henry Reynolds and Annette Schmidt read a draft of this chapter and made useful comments and corrections or approved of what I had put in it. George Watson, Ida Henry, Paddy Bute and Tommy Murray provided specific information about details of the traditional lifestyle described here.

Further information on the Dyirbal-speaking tribes may be found in R.M.W. Dixon, *Searching for Aboriginal languages: memoirs of a field worker*, St Lucia 1983. A thorough description of the language is in Dixon, *The Dyirbal language of north Queensland*, Cambridge 1972.

8. CHALLENGE AND RESPONSE IN THE RAINFOREST

Barrie Reynolds

167–73 Most of our knowledge of the rainforest people comes from late nineteenth and early twentieth century observers. Explorers and settlers recorded their impressions and collected artefacts; three scientists have left detailed notes, photographic records and documented collections.

The earliest, Carl Sofus Lumholtz, Norwegian anthropologist and natural historian, spent fourteen months in 1882–3 in the southern part of the region. His account is *Among cannibals*, London 1889, the title referring to the consumption of human flesh that occurred throughout Cape York and the southwest Pacific.

Walter Edmund Roth, the first northern protector of Aborigines in Queensland, summarised certain of the cultures in a series of eighteen papers, based on fieldwork between 1898 and 1905. The first eight of his *North Queensland ethnography bulletins*, were published by the Queensland Government Printer, Brisbane, between 1901 and 1908. The remaining ten were published in *Records of the Australian Museum* 6, 1907, 365–403; 7, 1908 1–17, 74–107; 7, 1909, 166–87, 189–211; 8, 1910, 1–106.

Erik Mjöberg a Swedish anthropologist, came to the forest region in 1912 and spent many months there. Both his reports were published in Swedish: *Bland vilda djur och folk i Australien*, Stockholm 1915 and *Bland stenåldersmänniskor i Queenslands vildmarker*, Stockholm 1918. An unpublished partial translation of the latter by D. Clark is in the library of the Australian Institute of Aboriginal Studies, Canberra.

We cannot now reconstruct fully the material culture of the rainforest at the time of first European contact. Studies of two artefact types have recently been made by students at James Cook University of North Queensland, Townsville. These are L.M. Abernethy, 'Rainforest Aboriginal shields', diploma of material culture, thesis 1984, and R.F. Cosgrove, 'Stylistic and use-wear study of the *ooyurka*', MA thesis 1985. Cosgrove notes that '*ooyurka*' is not a word of the rainforest tribes and that its derivation is unknown.

9. WAITING FOR THE DJIRRAPUYNGU

Howard Morphy and Frances Morphy

177 This chapter attempts to reconstruct a day in the life of the Yolngu people of northeast Arnhem Land, Northern Territory. The events are set towards the end of the nineteenth century. At this time the Macassan *praus* from south Sulawesi still visited the coasts of Arnhem Land in search of *trepang* and pearls, as they had for the previous two hundred years. For details see C.C. Macknight, *The voyage to Marege*, Melbourne 1976. Intensive European contact in northeast Arnhem Land did not begin until well after the Macassan voyages ceased in 1907. Milingimbi, the first mission station in the Yolngu area, was established in 1922, followed by Yirrkala in 1934 and Elcho Island (Galiwinku) in 1944.

The Yolngu people are divided into patrilineal clans, each of which speaks a dialect of one of the Yolngu group of languages. F. Morphy describes one of these languages in 'Djapu, a Yolngu dialect', in R.M.W. Dixon and B.J. Blake (eds), *Handbook of Australian languages* 3, Canberra 1983. Each clan belongs to one of two named moieties. These moieties are also patrilineal, so that a person belongs to the same moiety as his or her father and the opposite moiety from his or her mother.

In this account the people, clans and places are fictional, as it would be misleading to project names from the present on to a reconstructed past. The real names of the two moieties, Dhuwa and Yirritja, are retained. The account is based in particular on the life of the eastern Yolngu clans whose lands are in the area from Caledon Bay to Cape Shield. In order to remain close to a Yolngu worldview, we have derived images from Yolngu songs, painting and texts. A detailed analysis of Yolngu mortuary ceremonies is provided in H. Morphy, *Journey to the crocodile's nest*, Canberra 1984. Excellent films of Yolngu mortuary ceremonies are I. Dunlop, *Madarrpa funeral at Gurka'wuy*, Film Australia, and K. McKenzie, *Waiting for Harry*, Australian Institute of Aboriginal Studies.

178 The events described here are set in the second half of the dry season towards the end of September. Arnhem Land has a distinct seasonal cycle. In the wet season (December to April) the country is inundated by monsoon rains and travel becomes difficult; people live in isolated groups in places rich in wet season food resources. It is the most difficult time for hunting and gathering. When the dry arrives people have more choices. Major ceremonial gatherings tend to occur in the middle to late dry season when movement is easy, but before the country dries out completely and resources become scarce again. Descriptions of the seasonal factor in Yolngu life are provided by D. Thomson, *Economic structure and the ceremonial exchange cycle in Arnhem Land*, Melbourne 1949, and L. Warner, *A black civilization*, Chicago 1937. More detailed studies of subsistence economies of the Arnhem Land region are B. Meehan, *Shell bed to shell midden*, Canberra 1982, and J. Altman, 'Hunter–gatherers and the state', PhD thesis 1982, Australian National University. The first discusses a coastal, the second an inland group.

181–3 H. Morphy, 'Rights in women and rights in paintings', *Mankind* 11, 1978, 208–19, provides a discussion of the various kinds of kin-based relationships between clans and the rights and responsibilities that are entailed in these relationships. See also W. Shapiro, *Miwuyt marriage*, Chicago 1981. Morphy, *Journey to the crocodile's nest*, shows how clan organisation relates to the form and organisation of mortuary ceremonies. Warner, *Black civilization*, R.M. Berndt, *Kunapipi*, Melbourne 1951, R.M. Berndt, *Djanggawul*, London 1952, and I. Keen, 'One ceremony, one song', PhD thesis 1978, Australian National University, all provide valuable accounts of Yolngu religion and their ceremonial system.

184 The song of the White Cockatoo (see ch 17) is a translation of a Dhalwangu clan song. It is one of the songs sung in Dunlop's film *Madarrpa funeral.*

185 Yolngu mortuary rituals are complex and may be spread
186 over a long period of time. The hollow log ceremony described here is the final major ceremony held for a dead person. The first ceremony consists of a simple interment soon after death. The second consists of excavating and cleaning the bones some months later. The bones are then placed in a bark cylinder and kept for several years before they are finally broken up and placed in a painted hollow log. N. Peterson, 'Mortuary customs of north-east Arnhem Land: an account compiled from Donald Thomson's field notes', *Memoirs of the National Museum of Victoria* 37, 1976, 97–108, provides an excellent account of Yolngu mortuary practices.

A major theme of all Yolngu mortuary rituals is the fate of the dead person's spirit. Ceremonies are intended to ensure its safe return to the clan lands of its origin. Morphy, *Journey to the crocodile's nest*, shows how one particular ceremony was constructed towards this end.

187 *Waku*, or female clan member's children, play a major role in ceremonies of their mothers' clans. (This is not the clan to which a person belongs, since everyone belongs to the father's clan.) Senior *waku* are responsible for seeing that the designs are painted correctly and for initiating much of the work. The paintings, songs and dances performed in a burial ceremony belong to the dead person's clan or to some other clan of the same moiety such as the deceased's mother's clan. The pigments used in painting are themselves of ritual value and may be traded over considerable distances. Red and yellow ochre in particular are thought to be manifestations of ancestral beings, frequently transformations of their blood. As a consequence, the act of painting is itself a sacramental act.

192 The theme of the snakes signalling to one another across great distances is a major one in Yolngu mythology. The reference is to the Yirritja moiety snakes of the Blue Mud Bay area. See Morphy, *Journey to the crocodile's nest*, 92.

193–4 The theme of footprints being washed away by the tide is also derived from Yirritja moiety mythology and is represented in the Yingapungapu paintings of the Manggalili clan. See H. Morphy, 'Yingapungapu—ground sculpture as bark painting', in P.J. Ucko (ed), *Form in indigenous art*, Canberra 1977, 205–9.

10. MARDUJARRA KINSHIP

R. Tonkinson

197–215 The major source for this reconstruction of Mardujarra kinship and social relationships is the author's field research, most of which has been conducted at the settlement of Jigalong in Western Australia among Aborigines whose home territories lie to the east around Lake Disappointment. Some aspects of the traditional culture of these Aborigines are outlined in R. Tonkinson, *The Jigalong mob: Aboriginal victors of the desert crusade*, Menlo Park 1974. A second ethnography, devoted to a reconstruction of the traditional culture, provided much of the material in this article; it is R. Tonkinson, *The Mardudjara Aborigines: living the dream in Australia's desert*, New York 1978. Of the few European explorers who ventured in Mardujarra territory and survived, only one provides useful descriptions of the Aborigines and aspects of their culture; D.W. Carnegie, *Spinifex and sand*, London 1898 (repr 1973). Encounters between Aborigines and Europeans engaged in the construction of the Canning stock route, which connected the Kimberleys to the railhead at Wiluna and passed through Mardujarra territory, are described in E. Smith, *The beckoning west: the story of H.S. Trotman and the Canning stock route*, Perth 1966. A comprehensive general account of Aboriginal culture that includes many references to the western desert people is R.M. and C.H. Berndt, *The world of the first Australians*, Sydney 1977 (1964).

216 A 'game' or 'play' theory of Aboriginal social organisation is advanced in W. Shapiro, *Social organization in Aboriginal Australia*, New York 1979, 69, 81–2. Burridge, *Encountering Aborigines*, New York 1973, 134, is quoted.

11. AN ARANDA CEREMONY

R.G. Kimber and M.A. Smith

221 Most of the stories recorded in this chapter were told to Richard Kimber by Walter Smith, who is known to the Aranda people as Walter Smith Purula and to the Aluritja as Yuritja. He was born at Arltunga in 1893, of Arabana descent (Peake area, Lake Eyre) on his mother's side and his father was Welsh. He is fluent in Aranda and knows Arabana. He conformed with ritual requirements of all Aranda degrees, being instructed by the senior men of the Eastern Aranda area. His sisters, Mrs Jean Shaw and the late Mrs Ada Wade (1909–84), also gave valuable advice. Other Aborigines consulted included Brian Turner and Albert Ward in Alice Springs, Norman Doolan, an Aranda elder at Finke, Benjamin Lowe of Mt Dare station and Kevin Macumba of the Oodnadatta–Macumba area.

The first Europeans to publish Aranda traditions in some detail were W. Baldwin Spencer and F.J. Gillen, *The native tribes of central Australia*, London 1899. The other basic sources are T.G.H. Strehlow, *Songs of central Australia*, Sydney 1971 and *Aranda Traditions*, Melbourne 1947. This chapter also draws upon the authors' personal experiences of the region.

223–4 Detailed discussion of the role of fire in Aboriginal economy and land management in the Aranda region is provided by P.K. Latz and G.F. Griffin, in B.S. Hetzel and H.F. Frith (eds), *The nutrition of Aborigines in relation to the ecosystem of central Australia*, Melbourne 1978; and R. Kimber, 'Black lightning: Aborigines and fire in central Australia and the western desert', *Archaeology in Oceania* 18, 1982, 38–44.

224–5 On messengers and signals see Spencer and Gillen, *Native tribes*, 16, 141–2, 159; and Strehlow, 'Geography and the totemic landscape in central Australia: a functional study', in R.M. Berndt (ed), *Australian Aboriginal anthropology*, Perth 1970.

227 The data on plant foods are drawn from the field research of P.K. Latz and M. Smith. The basic source is P.K. Latz, 'Bushfire and bushtucker: Aborigines and plants in central Australia', MA thesis 1982, University of New England. The table is compiled from table 4 of this thesis and table 1 of Latz and Griffin, *Nutrition*.

12. GATHERED FROM KAYTEJ WOMEN

Diane Bell

Between August 1976 and January 1978 I lived with my children and worked with the Kaytej women of Warrabri, a government settlement 350 km north of Alice Springs. Warlpiri (Walbiri), a central Australian language spoken today by 2500 people, is a second language for most Kaytej speakers, but it was the one in which I was instructed and in which there is much published material for the reader to consult. There is little published material in Kaytej, although there is extensive publication on Aranda, of which Kaytej is a dialect. More detailed accounts are available in D. Bell, *Daughters of the Dreaming*, Melbourne
239 1983, and M.J. Meggitt, *Desert people*, Sydney 1962. There is a wealth of information concerning herbal medicine in J. Reid (ed), *Body, land and spirit*, Sydney 1982.

The notion of the Dreaming and the activities of the ancestral heroes (often called Dreamings) who pioneered the land, is comprehensive but none the less adaptive. W.E.H. Stanner captured something of the poetry of Aboriginal belief and practice in his *On Aboriginal religion*, Sydney 1966. In *Daughters of the Dreaming*, I discuss specific dreamings and ceremonies of the Kaytej country and examine changes over the past century of colonisation.

240 The Coniston massacre, a tragic episode within living memory of many central Australia Aborigines, claimed the lives of many important and knowledgable people. Police punitive expeditions sought those responsible for the death of a lone prospector and in the process killed many Aborigines. The official toll was 31, but the unofficial toll was much greater.

240–4 How the relationships of land and people work at the level of individual experience is described in Bell, *Daughters of the Dreaming*, ch 3. W.E.H. Stanner's article 'Aboriginal territorial organisation: estate, range, domain and regime', *Oceania* 36, 1965, offers an explanation of Aboriginal relationships with the land.

245 The various uses of plants in the Solanaceae family by Aborigines are a fascinating study. N. Peterson's 'The Aboriginal uses of Australia Solanaceae', in J.G. Hawkes, R.N. Lester and A.D. Skelding (eds), *The biology and taxonomy of the Solanaceae*, London 1979, contains useful

references. P.L. Watson, *This precious foliage*, Sydney 1983, focuses on the use of *pituri* (*Duboisia hopwoodii*), but has comparative material on the nicotine content of *Nicotania gossei*. In the article on Solanaceae, N. Peterson discusses the use of fire in controlling spinifex growth and in promoting *Solanum* regrowth.

246 A 'halfway' camp is similar to the coastal Arnhem Land 'dinnertime' camp described by B. Meehan, *Shell bed to shell midden*, Canberra 1982, 26. Established during a day's hunting, it provides a resting spot between the base camp and the furthest point in the search for food.

248 For a comprehensive listing and discussion of central Australian plant-use see P. Latz, 'Bushfires and bushtucker: Aborigines and plants in central Australia', MA thesis 1982, University of New England.

13. GOODS FROM ANOTHER COUNTRY: EXCHANGE NETWORKS AND THE PEOPLE OF THE LAKE EYRE BASIN

Isabel McBryde

Geologist J. Dulhunty of Sydney University has made a special study of the history of Lake Eyre as revealed by the sediments of its margins and floor. For a brief summary see his chapter in L. Litchfield, *Marree and the tracks beyond in black and white*, private publication 1983. Modern Lake Eyre, however, even in full flood, is small compared with the extent of its Pleistocene predecessor. This huge lake, called by geographers Lake Dieri, held water from 50 000 to 20 000 years ago.

254 The intimate knowledge of the landscape's features and their association with mythology was passed on to me in a journey with Luise Hercus through the area in 1982, guided by Arthur Warren and Ben Murray.

The vegetation of the region is dominated by low shrub and grass varieties. It is only along the flood channels and creeks that associations of larger trees are found, such as coolibah (*E. microtheca*), northern river gum (*E. camaldulensis* var. *obtusa*), river box are acacias such as *A. linophylla* (sandhill mulga) and *A. aneura* (mulga), *A. cambagei* (gidgee) and *A. salicina* (Broughton Willows, called *wirra* by the Aboriginal people of the area). Also found in the area are the whitewood (*Atalya hemiglauca*), the desert kurrajong (*Brachychiton gregorii*) and northern cypress pine (*Callitris columellaris*).

The tall shrubs of the area include hop bushes (*Dodonaea angustissima*), cassia and emu bushes (*Eremophila longifolia*). The lower chenopod shrubs are characteristic of the region, especially bluebush (*Maireana* spp) and saltbush (*Atriplex vesicaria*, *A. nummularia*, *A. lindleyi*). The hummock grasslands of the area are characterised by *Triodia* spp (spinifex), while sandhill cane grass (*Zyglochloa paradoxa*) is found in the dunes, and reeds (*Phragmites australis*) in abundance around swamps and waterholes as well as the tall canegrass (*Eragrostis australasica*). Other grasses in the area are Mitchell grass (*Astrebla*), speargrass (*Stipa nitida*) as well as *Aristida*, *Sporobolus* and *Agrostis*. The grasses especially *Panicum* species, *Sporobolus* and *Agrostis*, provided seeds for grinding into flour to make a bread, an important staple in the Aboriginal diet. Also important were the seeds of a bush known as *munyeroo* that grew on the sandhills, seeds of acacias, box tree, and mulga, and of the fern called *nardoo* (*Marsilea drummondii*). This plant grows abundantly in the claypans when they hold water, and its seeds were a major staple for the people of the area. On *nardoo* see G. Horne and G. Aiston, *Savage life in central Australia*, London 1924, 52–7.

257 Aiston's observation is in a letter to W.H. Gill, 30 Mar 1937, Gill Collection, ML. For the locations of these groups see map. The languages in this area have been studied by P. Austin, *The Diharyi*, Cambridge 1980, by G. Breen and by L. Hercus. The map is based on their work.

For general information on the Aboriginal societies of the areas see Howitt's contribution to R. Brough Smyth, *The Aborigines of Victoria* 2, Melbourne 1878: 'Notes on the Aborigines of Cooper's Creek', 300–9. This was based on his experiences while leading the Burke and Wills relief expedition in 1862. Other important references are: S. Gason in J.D. Woods, *The native tribes of South Australia*, Adelaide 1879, 257–307; the papers left by the missionaries of the stations at Killalpannina and Kopperamarra, especially the record of Diyari life and language from Father Reuther. More recent anthropological studies have been made by W.E. Roth, R.M. Berndt and A.P. Elkin, while Fay Gale has reconstructed the movement of people in the area during the last century. A classic study is Horne and Aiston, *Savage life*. Horne was a Melbourne doctor with an interest in anthropology, Aiston a mounted constable and later storekeeper who lived in the Lake Eyre region for over thirty years and acquired a deep knowledge of the life and culture of its peoples.

257–8 The four local groups of the Diyari were discussed by A.W. Howitt in 'The Dieri and other kindred tribes of central Australia', *J of the Anthropological Institute* 20, 1890, 35, and *The native tribes of southeast Australia*, London 1904. In the first he distinguishes 'five great local divisions'.

259 The quotation comes from Gason, 'The Dieyerie tribe' in Woods, *Native tribes*, 259.

259–60 Information on the journeys to Pukardu summarised here comes from the memories of the time of red ochre expeditions of Jimmy Russell Wangamirra, a Wonkangurru man and from Mick McLean Irinjili. Both shared their knowledge with Luise Hercus who translated the texts. I am grateful to her and to Jimmy Russell and Mick McLean for these insights into the getting of ochre. The term *yarnparnu* is reserved for the ochre from the Pukardu quarry near Parachilna. The ochre from small local deposits near Lake Eyre is called *arkapa*. The song Jimmy Russell sang for Luise Hercus in 1976 matches that recorded by Gason in the 1870s as sung by the men

261 returning from Pukardu: see Gason in Woods, *Native tribes*, 282. The term *malhiri* refers to large cakes made from grass seed flour prepared for the men on special ceremonial occasions.

261–2 Information on the Wonkumara comes from George Dutton, who shared his memories and traditional knowledge with both Jeremy Beckett, an anthropologist at Sydney University, and with linguist Luise Hercus. I am grateful to these three for this evidence on Wonkumara ochre-getting. For information on Dutton's life see J.

Beckett, 'George Dutton's country', *Aboriginal history* 2, 1976, 2–31.

263–4 Pearl shell (*Pinctada maxima*—silver lip/gold lip or *Pinctada marganitifera*—black lip) is found in most coastal waters from the northwest to the northeast, though the 'black lip' pearl seems to dominate in the Cape York–Torres Strait area and the 'silver lip/gold lip' in the northwestern coasts. The baler shell (*Melo* sp) has a far wider natural distribution, being found on all Australian coasts except those of the extreme southeast. However, it seems that the pearl shells used in Aboriginal technologies for tools or decoration, or for ceremonial objects derive mainly from the northwest, and the baler shells from the northeast.

For the significance of these shell objects in the Lake Eyre region see Horne and Aiston, *Savage life*, 47. They are also discussed by C.P. Mountford and A. Harvey, 'A survey of Aboriginal pearl and baler shell ornaments', *Records of the South Australian Museum* 6, 1938, 115–36; by W.E. Roth, *Ethnological studies*, Brisbane 1897, 112, 135–6; by F.D. McCarthy in his article on '"Trade" in Aboriginal Australia', *Oceania* 10, 1939, 92–8; and by D.J. Mulvaney, 'The chain of connection', in N. Peterson (ed), *Tribes and boundaries in Australia*, Canberra 1976, 80, 82–4.

264 The Diyari text comes from R.M. Berndt, 'A day in the life of a Dierei man before alien contact', *Anthropos* 48, 1953, 171–201. The passage quoted is on 190. The text was compiled from material supplied by Dibana, a Diyari man and T. Vogelsang, who spoke fluent Diyari.

Most trees of the Lake Eyre Basin are hardwoods. Softwood species (*Bauhinia* and *Erythrina* [bean tree]) though occasionally found are not abundant. Aiston commented that there were no good stands of the bean tree within 500 miles (800 km) of his station (Horne and Aiston, *Savage life*, 80–1).

265 Outcrops of hard rock suitable for hatchet heads lie far to the southeast, the west or the north: see H. Basedow, *The Australian Aborigines*, Adelaide 1925, 362. R. Bruce, *Reminiscences of an old squatter*, Adelaide 1902, 84, and Aiston to Gill, 27 Feb 1921, all write of sources to the southeast. However Aiston, in Horne and Aiston, *Savage life*, 34, 104, and Aiston to Gill, 27 Feb 1921, also emphasises the importance of the Cloncurry quarries to the north. Tindale stresses these sources of axe stone in *Aboriginal tribes of Australia* 1, Canberra 1974, 81, as does McCarthy in '"Trade"' *Oceania* 9, 405–38; *Oceania* 10, 80–104, 171–95. Ben Murray made a personal comment that Aboriginal traditions stress the Queensland origins of the dark green hatchet heads found in campsites in the area. The quotation comes from Aiston to Gill, 25 Mar 1927. At present I am engaged in a study of the quarrying and distribution of stone for hatchet heads and grinding slabs throughout east–central Australia. Exact analyses of the stone material allow the distribution of artefacts quarried from particular outcrops to be determined.

265–6 The explorer Wills was offered 'nasty dirty looking balls of chewed grass' by the Cooper Creek Aborigines which had 'much the same effect as might be produced by two pretty stiff nobblers of brandy': quoted by A. Moorehead, *Cooper's Creek*, London 1963, 118.

267 The quotation comes from G. Aiston, 'The Aboriginal narcotic *pitcheri*', *Oceania* 7, 1936–7, 373–4. For information on the distribution of *pituri* see W.E. Roth, *North Queensland ethnography*, 1897, 132–3, and Gason's letter to Howitt, 1882, Howitt papers, La Trobe Library, Melbourne and the Department of Anthropology, Museum of Victoria, as well as his paper on 'The Dieyerie' in Woods, *Native tribes*. Also relevant is Aiston, 'The Aboriginal narcotic *pitcheri*', 372–7. Recently, a valuable study of *pituri* was made by P.L. Watson, published as *This precious foliage*, Sydney 1983. Evidence on distribution is also given in A. McConnel, 'Aboriginal trade in the Lake Eyre region', MA qualifying thesis 1976, Australian National University. For estimates of the area over which the *pituri* was exchanged see Watson, *This precious foliage*, 37. For the 'market' centres see Aiston, 'The Aboriginal narcotic *pitcheri*' and Gason's 1882 letter to Howitt.

P.L. Watson, a pharmaceutical chemist, confirms Aiston's claims that much of the value of the Mulligan *pituri* could derive from the skilled drying processes developed, which produced a strong and consistent drug. She also stresses the importance of the alkali ash added, and carried out analyses of *Acacia salicina* ash. See *This precious foliage*, 22–3.

The quotation comes from Aiston, 'The desert Aborigines', *Mankind* 1/12, 1935, 5. The second part of the quotation comes from his article 'The Aboriginal narcotic *pitcheri*', 374. Similar comments are made on the significance of Kopperamarra in Horne and Aiston, *Savage life*, 20, 34.

268 The phrase 'web of connection' recalls a comment on the chain of connection between Aboriginal societies by the explorer Eyre. It was used most appropriately by D.J. Mulvaney as the title of a paper on exchange between Aboriginal societies published in Peterson (ed), *Tribes and boundaries*, 72–94. The original quotation from Eyre comes from his *Journals of expeditions into central Australia* 2, London 1845, 152.

The quotation comes from A.P. Elkin, 'Cult totemism and mythology in northern South Australia', *Oceania* 5/2, 1934, 184.

14. MOTH HUNTERS OF THE SOUTHEASTERN HIGHLANDS

J.M. Flood

275–6 A full description of the physiography, climate and vegetation of the southeastern highlands appears in J.M. Flood, *The moth hunters: Aboriginal prehistory of the Australian Alps*, Canberra 1980, 6–22. A.W. Howitt's description of the mountain tribes is in his *Native tribes of south-east Australia*, London 1904. For their social organisation *ibid*, 58, 101–3, 106, 196–7. The languages of the tribes of southeast Australia have been analysed by Professor R.M.W. Dixon of the Australian National University and a general account is given in his book, *The languages of Australia*, Cambridge 1980.

276–7, 278 The economy of the highlanders is described in Flood, *Moth hunters*, 83–106. A detailed description of the yam daisy is given by B. Gott in 'Murnong–*Microseris scapigera*: a study of a staple food of Victorian Aborigines', *Australian Aboriginal studies* 2, 1983, 2–18.

281–4 Moth hunting is described in detail in Flood, *Moth hunters*, 61–82. The ecology of the Bogong moth is discussed by I.F.B. Common, 'A study of the ecology of the adult Bogong moth, *Agrotis infusa*', *Australian J of zoology* 2, 1954, 223–63. Accounts of or references to moth hunting are given by R. Helms, 'Report on a collecting trip to Mt Kosciusko', *Records of the Australian Museum* 1/1, 1890, 11–6; R. Helms, 'Anthropological notes', *Proceedings of the Linnean Society of New South Wales* 2, 1895, 387–407; G. Bennett, *Wanderings in New South Wales*, 2 vols, London 1834 (esp vol 1, 265–6); R. Vyner in A.W. Scott, 'On the *Agrotis vastator*, a species of moth, now infesting the seaboard of NSW', *Transactions of the Entomological Society of New South Wales* 2, 1869, 40–8; W. Jardine, 'Customs of the Currak-da-bidgee tribe, NSW', *Science of man* 4/3, 1901, 53–4; R.F. Payten, 'The festival of the Bogong moth' letter to A.S. le Soeuf, 15 June 1849, ms Aa 44/3, ML; G.H. Dawson, 'Memoirs 1834–90', nd, ms A1805, ML; E.J. Eyre, 'Autobiographical narrative of residence and exploration in Australia (1832–39)', ms A1806, ML; G.A. Robinson in G. Mackaness (ed), 'George Augustus Robinson's "Journey into south-eastern Australia, 1844"', *J of the Royal Australian Historical Society* 27, 1941, 318–49; Von Lendenfeld in Victoria Department of Mines, *Reports of the mining registrars on the goldfields of Victoria 1884–9*, Melbourne 1886, 72; E. Bell, 1853 letter in T.F. Bride (ed), *Letters from Victorian pioneers*, Melbourne 1969, 168–80; T. Wilkinson, 'A record of olden days', *Wagga Wagga Historical Society J* 3, 1970, 3–13; J. McDonald in J. Gale, *Canberra, history and legends*, Queanbeyan 1927, 57–8; A. Andrews, *The first settlement of*
284 *the Upper Murray 1835 to 1845*, Sydney 1920, 40. Crows are mentioned in Helms, 'Report', 14; dogs in Eyre, 'Autobiographical narrative', 55.

284–5 Helms describes his source of information in 'Report', 14, and moth hunting in 'Anthropological notes', 394–5. Preservation of moths is mentioned by Bennett, *Wanderings* vol 1, 272 and Wilkinson, 'A record', 9. The participation of women in both the collecting and cooking of moths is described in Gale, *Canberra*, 57–8. The abundance of moths is remarked by Jardine, Helms, Robinson, Vyner, von Lendenfeld and Bennett. The quantities of moths eaten are estimated by Jardine, 'Customs', 54 and Vyner in Scott, 'On the *Agrotis*', 46.

285 The nutritional value of Bogong moths was obtained by analysis of a sample of 100 grams of moths, roasted in the traditional manner. The analysis was done by Dr J. Brand of the Human Nutrition Unit, Commonwealth Institute of Health, University of Sydney, in June 1983. Methods of analysis and some of the data in the table are in J.C. Brand *et al*, 'The nutritional composition of Australian Aboriginal bushfoods I', *Food technology in Australia* 35, 1983, 293–8.

286 Messengers and message-sticks of the Ngarigo are described by Howitt, *Native tribes*, 686–7, 693. Corroborees are described by Dawson 'Memoirs', 13; fighting by Bennett, *Wanderings* vol 1, 273; Payten, 'The festival', 2–4; Howitt, *Native tribes*, 302; Helms, 'Anthropological notes', 389. Descriptions of habitations in the highlands have been collected together in Flood, *Moth hunters*, 56–8, 292. References to trade are also *ibid*, 114–5. Howitt refers to trade in *Native tribes*, 718–20, to the exchange of songs on 414–5 and 423–4, and to camping rules on 773–6. The ceremony on the summit is described only by Payten, 'The festival', 2–4.

287–8 The archaeological evidence is assembled in Flood, *Moth hunters*, 156–253.

288 Initiation ceremonies in the Bogong Mountains are described by Wilkinson, 'A record', 7–9, and those of the Walgalu tribe and food taboos by Howitt, *Native tribes*, 563–5, and in his unpublished papers 7-1-3, State Library of Victoria. Tribal elders and medicine-men are described by Howitt, *Native tribes*, 302, 382 and Helms, 'Anthropological notes', 398–9.

289–90 The Ngarigo beliefs quoted concerning Daramulan and the after-life are recounted by Howitt, *Native tribes*, 495, 533; the Theddora and other tribes' beliefs are on 405, 437, 493, 563, 565; the sky country and spirit are described on 433, 440; burial practices are on 460–2.

290 The *wahu* ceremony is recorded by R. Helms, 'Anthropological notes', 390–1, and is summarised in Howitt, *Native tribes*, 566.

15. SWAMP MANAGERS OF SOUTHWESTERN VICTORIA

Harry Lourandos

Much of the material in this chapter is based on the author's research. Details are given in H. Lourandos, 'Aboriginal settlement and land use in south western Victoria: a report on current fieldwork', *Artefact* 1/4, 1976, 174–93; 'Aboriginal spatial organization and population: south western Victoria reconsidered', *Archaeology and physical anthropology in Oceania* 12/3, 1977, 202–25; 'Change or stability?: hydraulics, hunter–gatherers and population in temperate Australia', *World archaeology* 11/3, 1980, 245–64; 'Forces of change: Aboriginal technology and population in southwestern Victoria', PhD thesis 1980, University of Sydney; 'Intensification: a Late Pleistocene-Holocene archaeological sequence from southwestern Victoria', *Archaeology in Oceania* 18/2, 1983, 81–94; 'Intensification and Australian prehistory', in T.D. Price and J. Brown (eds), *Prehistoric hunter–gatherers: the emergence of social and cultural complexity*, New York 1985, 385–423.

293 Evidence on traditional Aboriginal societies in this area has been obtained from a time when they were being destroyed. Apart from scattered letters, diaries and other documents, the writings of Robinson and Dawson are the main sources of information. Robinson's voluminous diaries are still largely unpublished (G.A. Robinson, 1839–49, Port Phillip Protectorate, manuscripts and papers, ML). J. Dawson's published account is *The Australian Aborigine*, Melbourne 1881. Other information may be gleaned from T.F. Bride, *Letters from Victorian pioneers*, Melbourne 1898; A.W. Howitt, *The native tribes of south-east Australia*, London 1904; T.L. Mitchell, *Three expeditions into eastern Australia*, London 1838; T. Morgan, *The life and adventures of William Buckley*, Hobart 1852; R.B. Smyth, *The Aborigines of Victoria*, Melbourne 1878.

294 A discussion of Aboriginal social organisation of Victoria can be found in Howitt, *Native tribes*.

Robinson's description is in ms 1841, 3 Aug, ML.

296 Further information on conflict, territoriality and competitive games can be found in Lourandos, 'Aboriginal spatial organization'. For information on weaponry see Smyth, *Aborigines.*

Further information on population estimates can be found in Lourandos, 'Aboriginal spatial organization', and 'Forces of change'. See also N.G. Butlin, *Our original aggression: Aboriginal populations of southeastern Australia 1788–1850*, Sydney 1983.

298–9 For archaeological information about huts with stone walls see P.J.F. Coutts, R.K. Frank and P.J. Hughes, 'Aboriginal engineers of the western district of Victoria', *Records of the Victorian Archaeological Survey* 7, 1978. The first quotation is from Robinson, ms 1841, 24 July, and the second from Dawson, *Australian Aborigine*, 19–20. For Aboriginal use of plants see also Lourandos, 'Change or stability?' and 'Forces of change'; also B. Gott, 'Ecology of root use by the Aborigines of southern Australia', *Archaeology in Oceania* 17/1, 1982, 59–67; 'Murnong—*Microseris scapigera*: a study of a staple food of Victorian Aborigines', *Australian Aboriginal studies* 2, 1983, 2–18.

300 For eels see also Lourandos, 'Aboriginal social organization', 'Change or stability?' and 'Forces of change'.

300–1 The quotations are from Robinson, ms 1841, 29 Jan and 24 Apr.

301 The data in this box are based on L. Bertin, *Eels: a biological study*, London 1956; V.R.P. Sinha and J.W. Jones, *The European freshwater eel*, Liverpool 1975; F.W. Tesch, *The eel: biology and management of Anguillid eels*, London 1977.

302 The quotation is from Robinson, reported in A.S. Kenyon, 'The Aboriginal Protectorate of Port Phillip', *Victorian historical magazine* 12, 1928, 146. For Dawson's account see *Australian Aborigine*, 94–5.

302–4 For more on Aboriginal water controls see Lourandos, 'Change or stability?', and 'Forces of change'. The

304–7 quotation is from Robinson, ms 1841, 9 July. The Toolondo site, the development of the drains, and southwestern Victorian prehistory are discussed in these publications.

Archaeological evidence suggests that these changes in Aboriginal society, economy and settlement pattern took place during the last 3000–4000 years along with broader cultural changes that appear to have occurred in Australian prehistory.

16. SOUTHEAST TASMANIA: THE NUENONNE IN 1788

Sandra Bowdler and Lyndall Ryan

312 William Bligh describes his visit to Adventure Bay in 1788 in his *A voyage to the South Sea*, London 1792. Much of the other information in this chapter draws on L. Ryan, *The Aboriginal Tasmanians*, St Lucia 1981; R. Jones, 'Tasmanian tribes', in N.B. Tindale, *The Aboriginal tribes of Australia*, Canberra 1974; and N.J.B. Plomley, *Friendly mission*, Hobart 1966.

Cook visited Adventure Bay in Feb 1777 on his last voyage. Tobias Furneaux had visited Adventure Bay in March 1773, when his ship *Adventure* was temporarily separated from *Resolution* during Cook's second voyage. Furneaux did not see any Aborigines, but he heard them moving in the bush. See J.C. Beaglehole (ed), *The journals of Captain James Cook on his voyages of discovery. II. The voyage of the* Resolution *and* Adventure *1772–1775*, Cambridge 1969.

313–18 The quotations are from Bligh, *Voyage to the South Sea*, 32, 49, 50, 51–2.

318–19 Information about animals is from E.R. Guiler, 'Animals', in J.L. Davies (ed), *Atlas of Tasmania*, Hobart 1965. The

319–21 descriptions of seasonal movements are in Robinson's Bruny Island journal recounted in Plomley, *Friendly mission*; Jones, 'Tasmanian Tribes'; and B. Hiatt, 'The food quest and the economy of the Tasmanian Aborigines', *Oceania* 38, 1968, 99–133 and 190–219. The southeast

321–7 people are described as maritime by Jones, *Tribes*, 337. Most of the information about Tasmanians in 1788 is in Plomley, *Friendly mission*, Ryan, *Aboriginal Tasmanians*, Jones, 'Tasmanian Tribes', and Hiatt, 'The food quest'.

327 For a more detailed account of archaeological research in Tasmania see S. Bowdler 'Prehistoric archaeology in Tasmania', *Advances in world archaeology* 1, 1982, 1–51.

17. A MUSICAL INTERLUDE

Stephen A. Wild

331 For further information on Aboriginal performing arts see J. Isaacs (ed), *Australian Aboriginal music*, Sydney 1979; C. Ellis, *Aboriginal music: education for living*, Brisbane 1985; R.M. Moyle, *Songs of the Pintupi: musical life in a central Australian society*, Canberra 1979; T.G.H. Strehlow, *Songs of central Australia*, Sydney 1971.

The Australian Institute of Aboriginal Studies, Canberra, has produced many records and films of Aboriginal performances. Among the records are *Songs from the Northern Territory* (A. Moyle, recorder and editor); *Traditional music of Torres Strait* (J. Beckett and L. West, recorders, J. Beckett, editor); *Aboriginal sound instruments* (A. Moyle, recorder and editor); *Djambidj* (B. Butler and S.A. Wild, editors). Among the films are *Dances at Aurukun* (I. Dunlop, director); *Lockhart dance festival* (C. Levy, director); *Mourning for Mangatopi* (C. Levy, director); *Goodbye old man* (D. MacDougall, director); *The house opening* (J. MacDougall, director); *Waiting for Harry* (K. McKenzie, director); and *A Walbiri fire ceremony: Ngatjakula* (R. Sandall, director).

335 'Verses from central Australia' were collected, transcribed

340–1 and translated by the author; 'White cockatoo' is published by M. Clunies Ross and S.A. Wild, *Djambidj: an Aboriginal song series from northern Australia*, Canberra 1982.

18. HUNTERS AND FISHERS IN THE SYDNEY REGION

J.L. Kohen and Ronald Lampert

343 Cook on the happiness of the Aborigines is quoted in J.C. Beaglehole (ed), *The journals of Captain James Cook on his voyages of discovery* 1, London 1955, 23 Aug 1770, 399.

Contemporary accounts of smallpox are in D. Collins, *An*

account of the English colony in New South Wales 1, Sydney 1975 (London 1798), 496–7 and J. Hunter, *Historical journal of the transactions at Port Jackson and at Norfolk Island*, Sydney 1968 (London 1793), 340–1. For the *Bidjigals* see *ibid.*

344–5 For references to tribes and languages see A. Capell, 'Aboriginal languages in the central south coast, New South Wales: fresh discoveries', *Oceania* 41, 1970, 20–47; R. Hill, *Notes on the Aborigines of New South Wales*, Sydney 1892, 1; J. Fraser, *The Aborigines of New South Wales*, Sydney 1892; J. Stockdale (ed), *The voyage of Governor Phillip to Botany Bay*, London 1970 (1789); and A.W. Howitt, *The*
346 *native tribes of south-east Australia*, London 1904. Collins'
347 quotation on tribal variations is from his *Account* vol 1, 488. For distinguishing names see *ibid*, 453.

For independence of tribes see Hunter, *Historical journal*, 308. For tribal residences see *ibid*, 43.

348 For houses and villages see G.B. Worgan, *Journal of a First Fleet surgeon*, London 1978 (1788), 15. Tench's description of the villages is quoted in L.F. Fitzhardinge (ed), *Sydney's first four years*, Sydney 1961, (1789), 52. Banks's comments are from J.C. Beaglehole (ed), *The Endeavour journal of Joseph Banks* 2, Sydney 1963, 54, 57.

349–50 For the numbers of Aborigines see Tench, quoted in Fitzhardinge (ed), *First four years*, 35, 56. For family authority see Collins, *Account* vol 1, 452. The spear throwing is reported *ibid*, 488; the Cammeray tribe, *ibid*, 453.

350 Collins claim that the Aborigines had no religion is *ibid*, 454. Stanner is quoted from W.E.H. Stanner, 'Religion, totemism and symbolism', in R.M. and C.H. Berndt (eds), *Aboriginal man in Australia*, Sydney 1965, 210.

351 Collins on burial practices is from his *Account* vol 1, 499. The canoe burial is *ibid*, 500. Bennelong is *ibid*, 502–3. The avoidance of naming the dead is *ibid*, 502.

The list of bands in the Sydney area is based on many references. In some instances there is good correlation between a number of sources: the Cadigal at Sydney Cove are mentioned by several writers. But it is sometimes necessary to integrate different kinds of information from several sources. To locate the Muru-ora-dial, a 'tribe' first mentioned by William Dawes (in his 'Grammatical forms of the language of New South Wales, in the neighbourhood of Sydney by Dawes', 1790, ms, School of Oriental and African Studies Library, University of London), the name was first translated using Dawes' and Mathews' vocabularies as 'pathway–place–belonging–to'. It was then recognised that Collins talks about an Aborigine named Merooberra, a title which denoted not only a personal name but also a locality and band name. R. Hill and G. Thornton ('Notes on the Aborigines of New South Wales', Sydney 1892) state the town Maroubra was named after the 'tribe' who lived in that area. The location of the Muru-ora-dial becomes apparent when it is recognised that the pathway which ran between Port Jackson and Botany Bay ran along the coast through Maroubra. See also Howitt, *Native tribes*, 302–3. Gomerigal and Bidjigal are probably derived from the words *gommera* (headman on the NSW south coast), and *bidja bidja* (headman among the Wiradjuri). The inland Dharug bands were renowned as *koradji*, or 'doctors'.

352–4 For the fishing spears see J. White, *Journal of a voyage to New South Wales*, London 1962 (1790), 151–2; for the hooks see Stockdale (ed), *The voyage of Phillip*, 43. Fish hooks made from *Turbo torquata* have been found in many archaeological excavations in the Sydney district. The technology appears to be about 2000 years old. See J.V.S. Megaw (ed), *The recent archaeology of the Sydney district.*
354 *Excavations 1964–67*, Canberra 1974. The lobster nets are from Stockdale (ed), *The voyage of Phillip*, 76.

355 The meals reported by Worgan are from his *Journal*, 16. The shell tools are from Stockdale (ed), *The voyage of Phillip*, 42. The practice of burning is from Hunter, *Historical journal*, 312.

356 Caley is cited in Sydney Prehistory Group, *In search of the Cobrakall*, Sydney 1983, 28–9.

For the comment by Tench on inland subsistence see Fitzhardinge (ed), *First four years*, 40, 230. The tree climber
357 description is from Hunter, *Historical journal*, 104, 345. Collins' observation on diet is from *Account* vol 1, 462. Tench on cooking is from Fitzhardinge (ed), *First four years*,
358 48. Hunter comments on the yams in his *Historical journal*, 104. The eel logs are from Collins, *Account* vol 1, 462–3; platypus hunting is *ibid* vol 2, 232–3; and worm eating is *ibid* vol 1, 462. Barrallier reported kangaroo hunting in his journal, 1802, *HRNSW* vol 5, 751. Grub-hunting was reported by Barrallier, *ibid*, 755.

A spear with stone barbs was used to kill a gamekeeper named M'Intyre in 1791. They are commonly referred to as 'death spears'.

360–1 Hunter described the huts in his *Historical journal*, 42; and the making of lines, *ibid*, 103. The description of possum hunting is *ibid*, 43; and scarification is *ibid*, 40.

361–2 J.L. Kohen, 'Prehistoric Aboriginal occupation of the Blacktown area', *Newsletter of the Royal Australian Historical Society* 188, 1980, 2–3, discusses the archaeology of the region, as does F.D. McCarthy, 'The Lapstone Creek excavation', *Records of the Australian Museum* 22, 1948, 1–34.

One flat cleared circular area was reported by Barrallier southwest of the Nepean River in 1802, but he failed to recognise that it was of Aboriginal origin, instead ascribing it to the wild cattle found nearby: 'I observed with interest near the ditches, a kind of esplanade, of about 150 feet in circumference, entirely denuded of herbage and perfectly beaten down and levelled.' (Barrallier's journal, 751–3).

363 For the fish engravings see Stockdale (ed), *The voyage of Phillip*, 58.

On the engravings see L. Maynard, 'An archaeological approach to the study of Australian rock art', MA thesis 1976, University of Sydney. A more detailed description of rock art in the Sydney region is to be found in L. McMah, 'A quantitative analysis of the Aboriginal rock carvings in the district of Sydney', BA hons thesis 1965, University of Sydney.

364 For the Gu-ru-ngaty see R.H. Mathews, 'Aboriginal tribes of New South Wales and Victoria', *J of the Royal Society of NSW* 38, 1904, 30. For the story of Murmuga see *ibid*, 34–5.

19. TOWARDS AUSTRALIA: THE COMING OF THE EUROPEANS 1400–1788

Alan Frost

The early sections of this chapter rely on the work of those who have studied the primary materials in the various fields. Dates have been arrived at from a comparison of the standard authorities, who sometimes differ. The later sections are based principally on primary records in British, North American and Australian archives, and on contemporary published material.

THE PORTUGUESE EXPANSION

369 G.V. Scammell, *The world encompassed: the first European maritime empires c800–1650*, London 1981, and J.H. Parry, *The establishment of the European hegemony, 1415–1715*, London 1966 (1949) offer general descriptions of the expansion of the European nations in early modern times. E. Axelson, *Congo to Cape*, New York 1973, describes the Portuguese progress down the western coast of Africa, around the Cape of Good Hope. B. Diffie and G. Winius, *Foundations of the Portuguese empire, 1415–1580*, Minneapolis 1977, describe the Portuguese expansion generally. The quotation is from A. Raynal, *A philosophical and political history of the settlements and trade of the Europeans in the East and West Indies* 1, London 1777, 1.

371 The lines of Portuguese poetry are Luis de Camões, *Os Lusiadas*, Lisbon 1572, canto 7, stanza 14.

371–4 For the question of whether the Portuguese discovered Australia see O.H.K. Spate's summary of the various points of view in 'Terra Australis—cognita?', *Historical studies* 8, 1957; and O.H.K. Spate, 'Jave la grand: the great whodunnit', *The great circle* 6, 1984, 132–4.

TERRA AUSTRALIS

375 Many histories of the European discovery of Australia offer details of conceptions of *Terra Australis*—see A. Rainaud, *Le continent Austral*, Paris 1893, and T.M. Perry, *The discovery of Australia*, Melbourne 1982.

For Dee on Beach see his *The great volume of famous and rich discoveries*, 1576, printed in E.G.R. Taylor, *Tudor geography*

375–6 *1485–1583*, London 1930, 279. For Barlow's comment to Henry VIII see R. Barlow, *A brief summer of geography*, ed E.G.R. Taylor, London 1932, 180–1.

376 C. Jack-Hinton, *The search for the Islands of Solomon 1567–1838*, Oxford 1969, focuses on a particular aspect of the European exploration of the Pacific Ocean. He quotes the Spanish official's complaint, 80.

O.H.K. Spate, *The Pacific since Magellan, 1: The Spanish lake; 2: Monopolists and freebooters*, Canberra 1979, 1983, and J.C. Beaglehole, *The exploration of the Pacific*, Stanford 1966, describe this exploration more generally.

377 H.N. Stevens prints a translation of Don Diego de Prado y Tovar's account of Torres's voyage in *New light on the discovery of Australia*, London 1930.

Wytfliet is quoted in G. Schilder, *Australia unveiled*, Amsterdam 1976, 18.

R.H. Major prints memorials concerning the southern continent and the attempts to discover it in *Early voyages to Terra Australis*, London 1859. The memorialist quoted was Juan Luis Arias, 'A memorial addressed to his Catholic Majesty Philip the Third, King of Spain' in Major, *Early voyages*, 16.

THE DUTCH DISCOVERIES

377–80 A. Sharp, *The discovery of Australia*, Oxford 1963, and *The voyages of Abel Janszoon Tasman*, Oxford 1968, prints extracts of contemporary accounts of the voyages of the Dutch navigators. G. Schilder, *Australia unveiled*, reproduces charts and maps showing their discoveries, and quotes the instruction to the *Duyfken*, 43.

TWO SOUTHERN CONTINENTS

380–4 The speculation about *Terra Australis* was carried forward in the eighteenth century principally by J. Harris, *Navigantium atque itinerantium bibliotheca: or, a compleat collection of voyages and travels* rev J. Campbell, 2 vols, London 1744–48 (1705); C. de Brosses, *Histoire des navigations aux Terres Australes*, 2 vols, Paris 1756; J. Callander, *Terra Australis cognita: or, voyages to Terra Australis*, 3 vols, Edinburgh 1766–68; and A. Dalrymple, *An account of the discoveries made in the South Pacifick Ocean, previous to 1764*, London 1767, 1769, and *An historical collection of the several voyages and discoveries in the South Pacific Ocean*, 2 vols, London 1770–71.

385 The geographer quoted is Campbell, *Navigantium atque* vol 1, 331. Campbell's urgings are *ibid*, 330–5.

385–6 Dalrymple's vision is from his *An historical collection*, xxiv–xxix.

THE BRITISH THRUST INTO THE PACIFIC OCEAN

386 E.G.R. Taylor, *Tudor geography, 1485–1583*, London 1930, and *Late Tudor and early Stuart geography 1583–1650*, London 1934, give the Tudor and Stuart background to the mid-eighteenth century British explorations. See also G. Williams, '"The inexhaustible fountain of gold": English projects and ventures in the south seas 1670–1750', in J.E. Flint and G. Williams (eds), *Perspectives of empire*, London 1973; G. Williams, R. Walter and B. Robins (eds), *A voyage round the world by George Anson*, London 1974, and the companion *Documents relating to Anson's voyage round the world, 1740–1744*, London 1967.

Beaglehole, *Exploration of the Pacific*, Spate, *Pacific since Magellan*, and G. Williams, *The expansion of Europe in the eighteenth century*, London 1966, offer extended accounts of the British voyages. The journals of the voyages have been published as follows: R.E. Gallagher (ed), *Byron's journal of his circumnavigation*, London 1964; H. Carrington (ed), *The discovery of Tahiti: a journal of the second voyage of* H.M.S. Dolphin *round the world by George Robertson, 1766–1768*, London 1948; H. Wallis (ed), *Carteret's voyage round the world, 1766–1769* 2, London 1965; J.C. Beaglehole (ed), *The journals of Captain James Cook on his voyages of discovery*, London 1955–74; J.C. Beaglehole (ed) *The Endeavour journal of Joseph Banks* 2, Sydney 1963. J. Hawkesworth's compilation of these journals, *An account of the voyages undertaken by the order of his present majesty for making discoveries in the Southern Hemisphere* 3, London 1773, often differs from them but it provides an understanding of late-eighteenth-century expectations of Australia. G.

Forster (trans), *A voyage round the world*, London 1772, is an English version of Bougainville's narrative. See also R. Joppien and B.W. Smith, *The art of Captain Cook's voyages*, Melbourne 1985.

Elizabeth's approval is sought in R. Grenville *et al*, 'A discovery of lands beyond the equinoctial' (1574), in R. Collison (ed), *The three voyages of Martin Frobisher*, London 1867, 4–8. For Drake's 'unknown shores' see E.G.R. Taylor, 'The missing draft project of Drake's voyage of 1577–80', *Geographical J* 75, 1930, 46–7.

The secret instructions to Byron are from 'Lord Commissioners of the Admiralty, secret instructions of 17 June 1764' in Gallagher (ed), *Byron's journal*, 3. Byron's proposed course is *ibid*, 89.

387 The injunctions to Wallis are from 'Lord Commissioners of the Admiralty, secret instructions to Wallis, 16 August 1766' in Wallis (ed), *Carteret's voyage*, 302–6.

Wallis's comments are reported in Carrington (ed), *Discovery of Tahiti*, 233.

388 The instructions to Cook are from 'Lord Commissioners of the Admiralty, additional [secret] instructions to Cook, 30 July 1768' in Beaglehole (ed), *The journals of Captain James Cook|on his voyages of discovery*, vol 1, cclxxxii.

388–9 Cook's course to Cape Horn is *ibid*, 500, and his claiming of NSW is *ibid*, 387.

WAR, 1776–83

389 J.H. Parry, *Trade and dominion: the European overseas empires in the eighteenth century*, London 1971, and H.W. Richmond, *The Navy in India 1763–1783*, London 1931, give details of sailing routes to, and conditions of naval warfare in, the East.

The best accounts of the factors giving rise to scurvy are J. Watt, 'Medical aspects and consequences of Cook's voyages', in R. Fisher and H. Johnston, *Captain James Cook and his times*, Vancouver 1979, 129–57, and J. Watt *et al* (eds), *Starving sailors: the influence of nutrition upon naval and maritime history*, London 1981.

389–90 For the fate of the British possessions in India see Hughes to North, 1 Sept 1783, ms 205:255, Naval Historical
391 Library. For Hughes in Bombay see Hughes to East India Company's Council, Bombay, 27 Jan 1784, H/178:917, India Office Records.

The scheme to attack the Spanish is in Germain to Dalling, 4 Jan 1780, *Stepford-Sackville* mss, II, 282, Historical Manuscripts Commission, London.

392 For the 'surprizing people' see J. Pinkerton, *Modern geography* 2, London 1802, 471.

Eden's view is quoted in J.J. Auchmuty (ed), *The voyage of Governor Phillip to Botany Bay*, Sydney 1970, 340. The report of the Beauchamp committee is from House of Commons *Journals* 40, 1785, 1164.

EUROPEAN POLITICS IN THE 1780s

393 V.T. Harlow, *The founding of the second British empire, 1763–1793* 2, London 1952, 1964, describes in detail the international context of Britain's 'swing to the East', and many aspects of that swing. A. Frost, *Convicts and empire: a naval question 1776–1811*, Melbourne 1980, describes the combination of circumstances which led to the decision to colonise NSW.

394 Thompson suggested Das Voltas Bay in his journal entry for 31 July 1783, add ms 46120:7, British Library. Pitt on the second settlement is Pitt to Grenville, 2 Oct 1785, *Fortescue* vol 1, 254, Historical Manuscripts Commission. Nepean's comment is Nepean to Steele, 10 June 1786, T1/632:40, PRO.

Pitt's 'determination' is *ibid*. Blankett commented to Howe, 16 Aug 1786, HOW 3, National Maritime Museum, London.

THE DECISION TO COLONISE NEW SOUTH WALES

E. O'Brien, *The foundation of Australia*, Sydney 1950, C.M.H. Clark, *A history of Australia* 1, Melbourne 1963, and A.G.L. Shaw, *Convicts and the colonies*, London 1966, offer the traditional explanation for the colonisation of NSW. G. Blainey's suggestion, in *The tyranny of distance*, Melbourne 1966, 16–37, that Norfolk Island pines and New Zealand flax were reasons gave rise to a lively debate. The principal essays to 1978 are collected in G. Martin (ed), *The founding of Australia*, Sydney 1978. Frost, *Convicts and empire*, and D. Mackay, *A place of exile. The European settlement of New South Wales*, Melbourne 1985, continue the discussion.

394–5 The following descriptions are amalgamations of those given by Cook in Beaglehole (ed), *Journals of Cook* vol 1, 304–11, 397–9; by Banks in Beaglehole (ed), *Journal of Banks* vol 2, 56–9 and from Banks's and Matra's testimonies to the Beauchamp committee, HO 7/1, PRO.

Williams has examined British perceptions of the Aborigines in the second half of the eighteenth century; Frost, the basis of the British claim to NSW; and B. Gammage, the extent of that claim, in, respectively, '"Far more happier than we Europeans": reactions to the Australian Aborigines on Cook's voyage', 'New South Wales as *terra nullius*: the British denial of Aboriginal land rights', and 'Early boundaries of New South Wales', *Historical studies* 19, 1981, 499–512, 513–23, 524–31.

Matra's description of NSW is from a paragraph added to the copy of his proposal to Fox, 7 Aug 1784, add ms 47568:245, British Library.

396 The proximity of Savu and the Moluccas is from Matra, 'A proposal for establishing a settlement in New South Wales', 23 Aug 1783, CO 201/1:57–61, PRO. For Young's proposal see A. Frost (ed), *Dreams of a Pacific empire: Sir George Young's proposal for a colonization of New South Wales (1784–85)*, Sydney 1980. For the location 'in the Indian seas' see *Birmingham Gazette*, 18 Sept 1786.

For La Pérouse on Norfolk Island see White to Skill, 17
396–7 April 1790, *HRNSW* 1/2, 333. Cook's use of the Norfolk Island trees is from Beaglehole (ed), *Journals of Cook* vol 2, 565–6, 868.

397 The official on timber and flax was Nepean to Sackville Hamilton, 24 Oct 1786 (draft), HO 100/18:371–2, PRO. Matra's comment to the Beauchamp committee is from his testimony, 9 May 1785, HO 7/1, PRO.

Campbell's estimate is from Campbell to Nepean, 22 Jan 1786, with answers to Nepean's questions, HO 42/8:8, HO 42/10:425–7, PRO.

THE MOUNTING OF THE FIRST FLEET

397–8 The description of, and comments about, the mounting of the fleet are based on analysis of relevant documents in British archives.

Lord Sydney's well-known letter to the Treasury of 18 Aug 1786 was in fact written on 21 Aug and then backdated, see Frost, *Convicts and empire*, 126–32.

398 The HO announcement on provisions is Nepean to Steele, 4 Sept 1786, HO 36/5:175–6, PRO.

Smyth's comment is quoted in P.G. Fidlon and R.J. Ryan (eds), *The journal of Arthur Bowes Smyth*, Sydney 1979, 47.

400 The territorial claim of the Pitt administration is in Phillip's Commission, 2 Apr 1787, *HRNSW* 1/2, 62. Phillip's Instructions 25 Apr 1787, are at CO 202/5:34–5, PRO.

Phillip's expectations are in Phillip to Nepean, 28 Oct 1786, HO 42/9:83, PRO, and Phillip to Shelburne, 3 July 1788, S 161/11, Shelburne papers, Bowood, Wiltshire (quoted by permission of Lord Shelburne).

C.M.H. Clark, 'The origins of the convicts transported to eastern Australia, 1787–1852,' *Historical studies* 7, 1956, 121–35, 314–27; L.L. Robson, *The convict settlers of Australia*, Melbourne 1965; and J. Cobley, *The crimes of the First Fleet convicts*, Sydney 1970, give details of the convicts.

For the assemblage at Portsmouth see *Whitehall Evening Post*, 1 Mar 1787. 'True patriots all' is from what is known as Barrington's Prelude to the opening of the first play at Robert Sidaway's theatre in Sydney, 16 Jan 1796.

401 The poem was printed in *Whitehall Evening Post*, 15 Jan 1787.

THE VOYAGE

This description is based on unpublished records in the ML and Dixson Library, Sydney; the Alexander Turnbull Library, Wellington; the William L. Clements Library, Ann Arbor, Michigan; the British Library, the British Museum (Natural History), and the PRO, London; and on the following published narratives. [An officer,] *An authentic and interesting narrative of the late expedition to Botany Bay*, Sydney 1978 (1789); J.J. Auchmuty (ed), *The voyage of Governor Phillip to Botany Bay*, Sydney 1970 (1789), which is an anonymous account based on Phillip's despatches; P.G. Fidlon and R.J. Ryan (eds), *The journal and letters of Lt Ralph Clark, 1787–1792*, Sydney 1981; D. Collins, *An account of the English colony in New South Wales*, ed B.H. Fletcher, 2, Sydney 1975 (1798); J. Hunter, *An historical journal 1787–1792*, ed J. Bach, Sydney 1968 (1793) Fidlon and Ryan (eds), *The journal of Philip Gidley King*, Sydney 1980; Fidlon and Ryan, *Smyth*; W. Tench, *Sydney's first four years*, ed L.F. Fitzhardinge, Sydney 1961 (1789) J. White, *Journal of a voyage to New South Wales*, ed A.H. Chisholm, Sydney 1962 (1790); G. Worgan, *Journal of a First Fleet surgeon*, Sydney 1978 (1788); and *HRNSW* 1/2.

402 Nepean's estimate is his memorandum re the sailing of the First Fleet, undated (early Jan 1787), add ms 522, Dixson Library.

The eleven ships of the first fleet were: HMS *Sirius*, HMS *Supply*, *Alexander*, *Friendship*, *Scarborough*, *Charlotte*, *Lady Penrhyn*, *Prince of Wales*, *Fishburn*, *Golden Grove*, *Borrowdale*.

Smyth reported the weather on sailing, Fidlon and Ryan, *Smyth*, 16. The health of the convicts is reported in Phillip to Sydney, 5 June 1787, *HRNSW* 1/2, 106 and David Blackburn to his sister, 5 June 1787, M970, Australian Joint Copying Project.

The behaviour of the convicts is in Phillip to Nepean, 5 June 1787, *HRNSW* 1/2, 108. Phillip's gathering details of occupations is reported in Collins, *Account*, lvii.

403 For the officers at Santa Cruz see comments by White in his *Journal*, 54 and by Tench in *Sydney's first four years*, 17.

404 For the officers at Rio see White's comments in his *Journal*, 87.

405 The health of the convicts at the Cape is noted by King, quoted in Fidlon and Ryan (eds), *Journal of King*, 21. Southwell was the officer who commented on the Cape to Butler, 11 Nov 1787, add ms 16381:25, British Library.

406 White commented on the environs at Cape Town in his *Journal*, 81. Collins reports the incident of the Malay in his *Account*, lxxx–lxxxi.

W. Bradley, *A voyage to New South Wales, the journal of Lieutenant William Bradley RN of* H.M.S. Sirius, *1786–1792*, Sydney 1969, 46, reports the inscriptions, and Smyth the wheel, quoted in Fidlon and Ryan (ed), *Smyth*, 40.

Cook commented on his departure from 'the world' in Cook to Walker 20 Nov 1772, ms P C00, Turnbull Library. Phillip, similarly, in Phillip to Nepean, 28 Oct 1786, HO 42/9:83, PRO; and the officer Southwell to his mother, 11 Nov 1787, add ms 16381:23, British Library.

406–7 Collins' doubts and uncertainties are from his *Account*,

407 lxxxvi. White mentions the *Kent* in his *Journal*, 101. Tench's farewell comment is in *Sydney's first four years*, 28.

The condition of Phillip's cabin was noted by Masson to Banks, 13 Nov 1787, Banks papers, Sutro Library, San Francisco University.

408 Tench's report of the sightings of NSW is in *Sydney's first four years*, 31. Collins' summation of the voyage is from his *Account*, 1. Phillip reported on Port Jackson in Phillip to Sydney, 15 May 1788, *HRNSW* 1/2, 122.

EXPECTATIONS

A. Frost, '"As it were another America": English ideas of the first settlement in New South Wales at the end of the eighteenth century', *Eighteenth century studies* 7, 1974, 255–73 discusses this aspect more extensively.

409 For the 'greatest consequence' see Phillip to Nepean, 28 Oct 1786, HO 42/9:83, PRO. For the would-be historian see Anonymous, *The history of New Holland*, 1787, printed in Auchmuty (ed), *Phillip*, 288. Young is quoted in Frost, *Dreams of a Pacific empire*, 34. For Banks's 'matter of advantageous return' see House of Commons *Journals* 37, 1779, 311. The Beauchamp committee's second report contained the argument on 'reclaiming the objects': House of Commons *Journals* 40, 1785, 1161; and on 'temptations', *ibid*, 1162. Forster's statement is in L. Bodi, 'Georg Forster: the "Pacific expert" of eighteenth-century Germany', *Historical studies* 8/32, 1959, 359.

Matra's 'moral subjects' is from the supplement to his

410 NSW proposal, 6 Apr 1784, CO 201/1:65, PRO. For Butler see Butler to Southwell, 25 May 1789, add ms 16381:42, British Library.

Call's argument is from his proposal of c Sept 1784, HO 42/7:49–50, PRO. For Butler see Butler to Southwell, 25 May 1789. For the editor's comment see Auchmuty (ed), *Phillip*, 3.

For NSW as the 'virgin mould' see *St James's Chronicle*, 16–18 Jan 1787. For Eden's comment see Eden to Banks, 29 Dec 1790, ms 155/21, Turnbull Library. For Banks's comment on 'future prospects', see Banks to Hunter, 30 Mar 1797, *HRNSW* 3, 202.

410–11 For the white clay see Phillip to Banks, 16 Nov 1788, ms C213:40, ML. For the description of 'Etruria 1789' see Auchmuty (ed), *Phillip*, xxi; and for Phillip's comment on the medallion see Phillip to Banks, 26 July 1790, ms C213:53, ML. Darwin's poem is quoted in Auchmuty (ed), *Phillip*, xxiii.

20. SYDNEY 1788

Geoffrey Blainey

413 For Sydney Cove at low tide see 'Sketch of Sydney Cove' by W. Dawes and Captain Hunter in J.J. Auchmuty (ed), *The voyage of Governor Phillip to Botany Bay*, Sydney 1970, 70. The cook's drowning is in P.G. Fidlon and R.J. Ryan (eds), *The journals of Arthur Bowes Smyth: surgeon*, Lady
413–14 Penrhyn *1787–1789*, Sydney 1979, 73. For buildings near the cove see J. White, *Journal of a voyage to New South Wales*, Sydney 1962, 119, 250; and Dawes and Hunter, 'Sketch of
414 Sydney Cove', in Auchmuty (ed), *Voyage of Governor Phillip*, 70. The captain who observed was W. Tench, *Sydney's first four years*, Sydney 1961 (1789), 38.

For trees and timber see White, *Journal*, 250; and for wattle, J.M. Freeland, *Architecture in Australia: a history*, Ringwood 1972, 13, and *Shorter Oxford English dictionary* vol 2. Phillip's
414–15 prefabricated house is mentioned in P. Cox, 'The growth and decay of an Australian vernacular architecture', in G. Seddon and M. Davis (eds), *Man and landscape in Australia*, Canberra 1976, 217.

419 White, *Journal*, 119, 250; and *HRA* 1/1, 32, 719. The new government house is in Freeland, *Architecture*, 15; and J. Cobley, *Sydney Cove 1788*, Sydney 1980, 248, 256. On the verandah's functions see Freeland, *Architecture*, 47–8; and G.
419–20 Blainey, *A land half won*, Melbourne 1980, 143–4. Shellfish are mentioned as a source of lime in White, *Journal*, 119.

SYDNEY COVE

420–1 Tench remarks on the ships' bells at night in *Sydney's first four years*, 73. For sailors drummed out of camp see Cobley, *Sydney Cove*, 64, 67.

FOOD

422 Farmer Dodd appears in *HRA* 1/1, 734; his biography is in *ADB*. Early gardens are described in *HRA* 1/1, 22. For livestock and meat see Cobley, *Sydney Cove*, 157, 219, 235; and J. Scott, *Remarks on a passage to Botany Bay 1787–1792*,
423 Sydney 1963, 44. Food rations are mentioned in *HRA* 1/1, 44, 86; and L. Davey, M. Macpherson and F.W. Clements, 'The hungry years: 1788–1792', *Historical studies* 3/11, 1947, 188. J.R. McCulloch refers to field peas for meal and bread in his *Dictionary, practical theoretical and historical of commerce and commercial navigation*, London 1854, 977. On the inadequacy of the ration see Cobley, *Sydney Cove*, 103,
424 171, 218, 234, 258; and on officers' food, *ibid*, 158–9, and 'Wine' in McCulloch, *Dictionary*, 1407–19.

The naming of Stingray's Harbour is in J.C. Beaglehole, *The life of Captain James Cook*, London 1974, 230. Tench comments on the scarcity of fish in *Sydney's first four years*, 272. Sydney rock oysters are mentioned in *The journals of Arthur Bowes Smyth*, 62; and White, *Journal*, 119. Davey,
425 Macpherson and Clements comment on the deficiency of vitamin C in 'The hungry years', 188; see also White, *Journal*, 113. The symptoms of scurvy are identified in *Encyclopaedia Britannica* 3, Edinburgh 1771, 106. I thank Harold Attwood, Professor of Pathology at the University of Melbourne, for discussing this issue with me. White refers to turtles as food in his *Journal*, 133–4. Phillip reports on scurvy in *HRA* 1/1, 20; see also K. McNab (ed), *Historical records of New Zealand* 1, Wellington 1908, 72. For the search for fresh plants see Davey, Macpherson and Clements, 'The hungry years', 194; and Cobley, *Sydney*
426 *Cove*, 249. For the decline of scurvy see White, *Journal*, 155. An account of hunger in Virginia is in D.C. North and R.P. Thomas, *The growth of the American economy to 1860*, New York 1968, 33–4.

PUNISHMENT

Phillip's powers are specified in his Instructions, *HRA* 1/1, 9–16. Ross's biography is in *ADB*; James Scott, in his *Remarks*, 45, alleges that Ross made his nine year old son a
426–7 second lieutenant in the marines. On the courts and justice see Tench, *Sydney's first four years*, 43–5; A.C.V. Melbourne, *Early constitutional development in Australia*, St Lucia 1963, 10–12; and Cobley, *Sydney Cove*, 91–3, 155. Punishments are referred to *ibid*, 218, 247, 259–60, 267.

427–8 The tasks of female convicts are mentioned in Tench, *Sydney's first four years*, 71; and White, *Journal*, 250, n29. For women punished in convict ships see C. Bateson, *The convict ships 1787–1868*, Glasgow 1959, 87–9, 96. My conclusion that women were treated more leniently is based on a survey by Anna Blainey of the cases reported in Cobley, *Convict ships*, for 1788. A shirt for sex is mentioned *ibid*, 262. Esther Abraham's story is in J.S. Levi and G.F.J. Bergman, *Australian genesis: Jewish convicts & settlers 1788–1850*, Adelaide 1974, 19–21.

THE PRINCE OF LIARS

428–9 Tench comments on liars in *Sydney's first four years*, 137. James Daly's tale is based on J. Hunter, *An historical journal of events at Sydney and at sea 1787–1792*, ed J. Bach, Sydney 1968 (London 1793), 57–9; W. Bradley, *A voyage to New South Wales*, Sydney 1969, 122–3; Cobley, *The crimes of the first fleet convicts*, Sydney 1982, 66–7; Tench, *Sydney's first four years*, 303; and D. Collins, *An account of the English colony in New South Wales*, ed B.H. Fletcher, 1, Sydney 1975 (London 1798), 32–3, 39, 542n. For the Lasseter replay see
429–30 G. Blainey, *The rush that never ended*, Melbourne 1978 (1963), 318–20. Collins mentions the idea of walking to China in his *Account*, vol 2, 54, 57. For the fourteen missing convicts see Cobley, *Sydney Cove*, 264.

PREACHER ON THE GRASS

430 For the first church services see *ibid*, 54; and for the first Lord's Supper, *ibid*, 78, and E. Symonds, *The story of the*
431 *Australian church*, London 1898, 16–17. Information about the French at Botany Bay is from E. Scott, *Lapérouse*, Sydney 1912, 75–7; and J. Dunmore, *French explorers in the Pacific* 1, Oxford 1965, 281–2.

Johnson's biography is in *ADB*; see also entry on J. Newton in *Dictionary of national biography* 14; and Cobley, *Sydney Cove*, 67, 252, for Johnson's increasing disappointment. For Jews see Levi and Bergman, *Australian genesis*, 14. Johnson's hostility to Catholics is revealed in a private comment on a Catholic religious procession at Tenerife on the outward voyage, in C.M.H. Clark, *A history of Australia* 1, Melbourne 1962, 83.

EYE FOR BEAUTY

432 Phillip's praise of Sydney harbour is in *HRA* 1/1, 18. The other comments are from White, *Journal*, 112; Fidlon and Ryan (eds), *Journals of Arthur Bowes Smyth*, 62; and Hunter,
433 *Historical journal*, 29. For Tench's attitude to scenery see *Sydney's first four years*, 64–5, 114n, 260. It should be added that Tench's note on 'more happy lands' is a reference to their genial landscape and not to the unhappiness of a penal settlement. To officials—as distinct perhaps from most convicts—New South Wales as a settlement was not necessarily an unhappy land.

In quoting Bowes Smyth I have altered the spelling of one word that he abbreviated: see Fidlon and Ryan (eds), *Journals*, 64, 84. On inland scenery see Phillip in *HRA* 1/1, 30; and White, *Journal*, 124. Easty's comment is in his
434 *Memorandum of the transactions of a voyage from England to Botany Bay 1787–1793*, Sydney 1965, 97. Scott is quoted from his *Remarks*, 73.

ON NORFOLK ISLAND

The convict aged 72 is mentioned in 'King's journal' in Bach (ed), *Historical journal by Captain John Hunter*, 206.
434–5 King describes the gale *ibid*, 201. For daily life on the island see *ibid*, 207–10; and J. and J. King, *Philip Gidley King: a biography of the third governor of New South Wales*, Sydney 1981, 36–44. The birth of the baby Norfolk is recorded in
435 M. Bassett, *The governor's lady: Mrs Philip Gidley King*, London 1956, 113.
436–7 On pine and flax see G. Blainey, *The tyranny of distance: how distance shaped Australia's history*, Melbourne 1966, 30–2, 34–7. The Young and Call proposal is in A. Frost, *Convicts and empire: a naval question 1776–1811*, Melbourne 1980, 22–3; and McNab (ed), *Historical records of New Zealand* vol
437 1, 72. The deep soil is mentioned *ibid*, 119.

ISOLATION

438–40 For Sydney's isolation see Blainey, *Tyranny of distance*, ch 3. The visit of the *Bounty* to Van Diemen's Land is recorded in W. Bligh, *A voyage to the South Sea*, London 1792, 45–54. On the discovery of the great west wind see *ibid*, 27–34; and Blainey, *Tyranny of distance*, 42–4. While the Dutch, sailing from the Cape of Good Hope to the Indonesian archipelago in the early seventeenth century, used the west winds, they normally sailed through the zone of the milder west winds in the latitudes of the thirties. The decisions of Hunter and Bligh in 1788 to sail east rather than west involved a remarkable increase in the distance they had to sail. The winds therefore had to be exceptionally strong and reliable to justify the additional distance sailed.

ABORIGINES

444 For Phillip's determination not to fire on the Aborigines see *HRA* 1/1, 24. The account of the captivity of Arabanoo is based largely on Tench, *Sydney's first four years*, 140, 143, 145, 150; Hunter, *Historical journal*, 133; and Bradley, *Voyage*, 168.

INDEX

Illustrations and caption material appear in italics.

Abaroo, 433
Aboriginal history (Canb), 273
Abraham, Esther, 426
Acton, Lord, 424
Adnyamdhanka people, 257
Adventure Bay (Tas), 312, *312-13*, 314, *315-17*, 319, 436
Africa, 7-8, 47-8, 82, 369-70
Aiston, George, 256-7, 267, 269, 271
Albany (WA), 122, 128, 130, 142
alcohol, 115, 422
Alexander (ship), 423
Allambi Springs (NT), 224
Alligator Rivers (NT), 79
Alyawara people, 229, *246*
Amsterdam (ship), 380
Andaman and Nicobar Islands, 393-4
animals: Aborigines and, 80; climatic change and, 42, 51-2; domesticated, 80; dwarfing of, 17; early Australians and, 17, 42, 53; extinct, 15, 17, *18-19*, 42, 53, 59, 71, 80, 319; *see also* under specific animals
Anna Creek (SA), 257, 262
Anson, George, 386, 389
Antarctic ice cap, 26
Arabana people, 253, 257, 259
Arabanoo, 442
Arafura Sea, 15
Aranda, 221, 223-4, *226* , 227, 229, *230*, 256
archaeology, *16*; antiquity of man in Australia, 3-17; archaeological sites, *48*, 144, 304-7, *305*, 356
arid regions: Aborigines and, 86, 234, 239-41, 251; climatic changes and, 25, 29, 39, 42-5, 50-2; early Australians and, 65
Arnhem Land (NT), *179*, *381*; art galleries, 111-12; birds, 79; burials, 103; climate, 54, 78; food supplies, 15, 55, 76-7, 90; musical instruments, 173; outside contacts with, 81, 99, 101-2; population, 296; ritual places, 101; rock engraving, 22, 80; rock painting, 22, 71, 80, 94, 107, 111-12; songs, 332, 338; Tasmanian tigers in, 53, 80; tools, 58, 68, 84, 86
Arnhem (ship), 377
art, 102, *112-14*; art galleries, 362-3; bark paintings, 23, *23*, 101, 104, 173, 327, *330*; Bradshaw figures, 107, 111-12; carved trees, 105, 173; Dreaming and, 22; dynamic (or mimi) style, 112; limestone plaque, 69-70; motifs, 22, 53, 70-1, 80, 94, 105, 107, 111-12, 173, 327, 361-3; origins, speculations on, 94-5; overpainting, 22, 111; Quinkan style, *109*, 111; regional diversity, 69, 105; rock art, *2*, 7, 15, 22, *46*, 53, 55, 58, 64-5, 69-71, 80, 101, 104-5, *105-7*, 107, 111, *172*, 173, *196*, 229, *288-9*, 327, *328-9*, *335*, *342*, 361-3; *361*; sculpture, 22; stone clusters, 70, 101, *287*, 288, 290; Wandjina figures, 107, *108*, 112; X-ray style, 112, *113*
artefacts, 29, 52, 55, 59, 62, 65; *see also* implements
Aruabara people, 224-5
Atherton Tableland (Qld), 18, 42, 45, 51
Austrialia del Espiritu Santo, 377, 388
Australian Alps: Aborigines and, 275-81, 284-90; description, 275-6
australites, 70
authority, 295; ceremonies and law, 69, 71, 73, 204, 224, 231, 233, 235, 244, 294, 307; fighting and, 286; initiations, 288, 290, 362-3; kinship system, 212-13; land ownership and, 122, 128-30, 294
Azores, 370

Bald Head (WA), 130
Banda Islands, 371
bandicoots, 53, 55, 59, 226, 319
Banks, Joseph, 115, 348, 388, 394-7, 408-11
bark paintings, *see* art
Barker, Collet, 130-1, 142
Barkly Tableland (NT-Qld), 16
Barlow, Roger, 375-6, 386
Barmah (NSW), 32
Barrallier, Francis, 358
Bass Point (NSW), 59
Bass Strait, 10, 45, 49, 61, 92, 327, 389
Batavia, 390-1, 395-6
Batavia (ship), 380, *382-3*
Bateman's Bay (NSW), 59
Baudin, Nicholas, expedition, 314
Bay of Bengal, 390-1, 393
Beauchamp committee, 392, 394-5, 397
Beckett, Jeremy, 273
Bediagal band, 351
Bedourie (Qld), 265, 267
beliefs, *see* religion
Bennelong, 351
Bennelong Point (NSW), 413
Berndt, C.H., 207
Berndt, Ronald M., 207, 264
bettongs, *see* kangaroos
Bidjigal people, 343, 351, 357
Big River people, 323
Biladaba people, 257
Birches Point (Tas), 319
birds, 15, 58, 78-9, 90, 277, 296, 298, 319, 358; *see also* under specific birds
Birdsell, Joseph, 10
Birdsville (Qld), 258, 267
Birdsville Track (SA), 80
Birrabirragal band, 351
Black Caesar, 421
Blankett, John, 394
Bligh Point (Tas), 319
Bligh, William, 312-15, 318, 326-7, 436
Blowering (NSW), 281
Blue Lake (NSW), 26, *291*
Blue Mountains (NSW), 16, 59, 345-6, 348, 356, 360
Blue Mud Bay (NT), 99
Bobadeen (NSW), 59
Bogan River (NSW), 105
Bogong high plains (Vic), 282
Bogong moth: as food, 90, 281, 284-8, 290; habits, 281-2, *282*, 284, *284*, 287, 290
Bogong Mountains (Vic), 276, 282, 284, 288
Bolac people, 302
Bombay, 390
Bong Bong (NSW), 351
Bool-bain-ora band, 351, 357
Boonea River (Vic), 302
Boorooberongal people, 351, 357
bora rings, *see* initiation
Borogegal-yuruey band, 348, 351
Botany Bay (NSW), 98, 345-9, 351, 363, 389, 394-7, 408, *411*, 422, 429
Botany Bay people, 344
Botany Bay venture, 394-8, *399*, 431; *see also* New South Wales
Bougainville , Louis Antoine de, 388
Boulia (Qld), 267
Bounty (ship), 312, 314, 323, 438, 440; mutiny on the, 438
Bowes River (WA), 64
Bradley's Point (NSW), 348, 351
Brazil, 371, 392, 404-5
Brewarrina (NSW), 89
Brindabella range (NSW), 282, 288
Britain, *see* England

Broken Bay (NSW), 345, 348-9, 354, *432*
Broken Bay people, 344
brolgas, 55, 277
Brosses, Charles de, 385, 389
Brown, William, 313-15, 318, 323
Bruny Island (Tas), 309, 312, 314, 318-19, 321, 323, 327
Buckley, William, 302
Budgeongutte Swamp (Vic), 304-5
Budijarra people, 197, 204
buffaloes, 81
Bull Bay (Tas), 319
Bull Cave (NSW), 362, *365*
buluba, *see* corroborees
Bunerong people, 300-1
burial, 21-2, *54*, *104*, *182*, *185-7*; antiquity, 7, 11, 21-2, 30, 54, 58, 69; casual attitudes, 103-4, 173; cremation, 70, 103, 173, 327, 351, *352*; dancing and singing, 327, 335, 338; European influence, 344, 350; grave posts, *106*; Melanesian influence, 101, 173; practices, 21-2, 71, 80, 101-2, 104, 173, 215, 289, 327, 351; similarity and diversity, 102-3, 351; smallpox epidemic and, 343
burning off, 14, *222-5*; as land management tool, 17-18, 51-3, 68, 77-8, 80, 88, 125, 131, 221, 223-4, 233, 245, 251, 309, 314, 323; effects of, 51-3, 58, 77-8, 80, 88-9, 299, 360; elders and, 223; European influence, 344; *see also* environment and landscape
Burramattagal band, 351
Burrill Lake (NSW), 59, 66
Burrup Peninsula (WA), 64
bushfires, 14; *see also* burning off
Butler, Weeden, 410
Butlin, Noel, 117
buya, *see* corroborees
Byron, John, 386-7

Cabral, P., 370-1
Cabramatta (NSW), 351
Cabrogal people, 351, 357, 358
Cadigal band, 343, 351
Caffre Coast, 394
Cah-bro-gal people, 358
Calcutta, 390
Caley, George, 356
Call, John, 394, 410, 439
Callabonna Creek (SA), 261
Callander, John, 385
Camden (NSW), 351
Cammeraigal band, 351
Cam-mer-ray people, 346-7, 350-1, 363
Campbell, Duncan, 397
Campbell, John, 385
Camperdown (Vic), 29
campsites 11, *16*, 87-8; *see also* under specific places
Canary Islands, 370, 401-3, 436
Cannalgal band, 351
Cannemegal people, 351, 357, 360
cannons, *95*, 419
canoe trees, 277, *277*
Canton, 396, 428, 436
Cape Blanco, 370
Cape Bojador, 370
Cape Cross, *370*
Cape Frederick Henry (Tas), 315
Cape Horn, 388, 432, 436, 438
Cape Leveque (WA), 99
Cape Liptrap (Vic), 61
Cape Londonderry (WA), 99
Cape Martin (SA), 61
Cape of Good Hope, 370, 377, 390-2, 396, 405-7, 440, 442
Cape Otway (Vic), 293, 297
Cape Queen Elizabeth (Tas), 314
Cape St Vincent, 370, *370*
Cape Town, 390, 405-6, 420, 426, 436, 438
Cape Verde Islands, 370, 401, 404
Cape York Peninsula (Qld), 55, 58, 76-8, 80, 86, 95, 98-9, 107, 111, 334, 377, *380*
Carigal band, 351
Carmarthen (NSW), 431
Carnac Island (WA), 48
Carstensz, Jan, 377
Carteret, Philip, 387-8
Castle Hill (NSW), 351
Castlereagh (NSW), 358
Cattai people, 351, 357
cattle, 80-1
Cave Bay Cave (Tas), 60, 66
caves and pits, *53*, 69-70; *see also* under places
Celebes, 391
ceremonies, *see* rites and ceremonies
Ceuta, 369-70
Ceylon, 371
Charlie Swamp, 262, *262*
Cheetup Cave (WA), 70
cheniers, 78
children: birth, 239; burials, 70-1; ceremonies and, 231-3, 235; education and work, 136-7, 203, *203*, 226, 241, 244-5, 247, 251, 287, 310, 318, 323, 358; infants, 101, 127, 249
China, 29, 94-5, 99, 371, 396, 400, 428, 436
Clayton River (SA), 257
Clear Swamp (Vic), 304-5
Cleland Hills (NT), 22
climate: Aborigines and, 75-81; early Australians and, 25, 29-30, 32, 38-9, 42, 44-5, 48-51; landforms and, 15, 25-6, 30; phases and evolution, 15-17, 25-52, 55, 59, 75-81; *see also* weather
Clogg's Cave (Vic), 59, 68
clothing and ornaments, 111; belts, 125; European, 122; men's kilts, 286; ornaments, range of, *64*, 70-1, 80, 93-5, 101, 103, *103-4*, 127, 173, 231-2, 264, 286, 326; sewing implements, 20, 61, 66, 71; skin and fur, 7, 20, 61, 66, 71, 104-5, 122, 125, 276, *277-8*, 286, 297, 326; , 357; tea-tree blankets, 167
coastal environment, *see* environment and landscape
Cobourg Peninsula (NT), 81, 98
Collie, Alexander, 130, 137, 142, 145
Collins, David, 346-7, 349-50, 355, 357-8, 406, 425
Colster, Mr, 377
Concord (NSW), 351
Congo, 370
Coniston Massacres, 240
convicts, *see* England; first fleet; New South Wales; Sydney settlement
Coobool Crossing (Vic), 21
Cook, James: and Botany Bay, 394-5; claims NSW for the King, 389, 396; his discoveries, 369, 388-9, 391, 396-7, 408-9, 411, 434, 438; noble savage notion, and 343, 350; Norfolk Island, 396-7; Tasmania, 312, 314, 318, 326
Coolbun, 121, 131, 142
Cooper Creek (Qld–SA), 44, 65, 80, 90, 253, 259, 262, 264-5
Coorong (SA), 76, 79, 103, 296
corroborees, 167, 257, 286, 331, *333*, *335-7*; *see also* dances; songs
Cossack (WA), 71
Cotter River valley (ACT), *280*, 290
Courteen, Sir William, 386
Cradle Mountain (Tas), 59
Cranbourne (Vic), 29
cranes, 299
Crooked-Foot Peter, 269, 271
Crowley, Terry, 10
Crozet, J.M., 314
culture, Aboriginal communal labour, 88, 90, 277, 280, 293-6, 299-302, 304-7, 360; division of labour, 55, 102, 127; economic management, 87, 92, 101-2, 254, 268, 293, 343; emergence, 101-2, 112; environmental change, 327; European opinions, 86-7, 101, 112, 115-16, 293, 307, 321, 343, 395-6, 410; intensification phase, 75, 87; interdependence, 16, 92, 101, 204-7, 265; nomadism, 47, 87, 115, 276, 395; regionalism, 75, 92, 101-2, 173; semisedentary life, 116-17, 127, *128-9*, 167; social changes, 81, 343; social values and strategies, 48, 73, 75, 87, 92, 101-2, 112, 199, 216-17, 265, 268, 293, 295-6, 307
Cumberland Plain (NSW), 345, 348, 356

Dale, Richard, 130, 134, 144; *see also* gatefold
Dalrymple, Alexander, 385-6, 389
Dalrymple, Sir John, 391
Daly, James, 427-8
Dampier Island, *see* Burrup Peninsula
Dampier, William, 89, 386-7
dances, *231-2*, *332*, *334*, *336*, *338-9*, *438*; art and, 111; body movements, 331, 335; ceremonial, 94, 232, 235, 327; Dreaming, 22; gatherings and, 261, 286; performances, 335, 338; songs and, 331, 334-5, 338; *see also* corroborees
Daramulan, 362
Darkinjung, 363
Darling River (NSW), 30, 32, 44, 51, 58, 89, 267
Darling River lakes (NSW), 32, 38
Darwin, Erasmus, 411
Das Voltas Bay, 394, 397
Davis Land, 387
Dawes Point (NSW), 413
Dawson, James, 286, 293, 297-8, 300-2
De Witt Island (Tas), 321
Dedel, Mr, 380
Dee, John, 375, 386
Deep Creek (NSW), 60
D'Entrecasteaux Channel (Tas), 313, 319, 321, 323
Derwent River (Tas), 321
deserts, 15, 42, 44; *see also* under names of specific deserts
Devil's Lair (WA), 17, 20, 51, *63*, 68-9, 71, 82, 101
Devil's Marbles (NT), *238*, 239 *242-3*, 246, 251
Devon Downs (SA), 58
Dharawal people, 345, 347, 363-4
Dharug speakers, 345-9, 362-4
Dhirari people, 258
Diamantina River (Qld), 44, 253, 258, 267
Dias, Bartolomeu, 370
Dibana, Andreas, 264
Diego Garcia, 394
dingoes: absent in Tasmania, 15, 319; arrival, 15, 80-1; hunting, used for, 226
diprotodons, 15, 42, 53
Discovery Bay (Vic), 77
diseases, 61, 142; arthritis, 61; chest ailments, 117; death from, 115, 117, 343, 349, 425, 444; diarrhoea, 239; dysentery, 425; gastro-intestinal disorders, 239; immunity, lack of, 117;

introduced, 100, 115, 117, 295-6, 343, 349; measles, 117; overcrowding and, 116; respiratory tract illnesses, 239; scurvy, 387, 389, 402, 408, 422, 425-6, 438; smallpox, 100, 117, 343, 363, 365, 444; sore eyes, 239; tuberculosis, 71; venereal diseases, 117; yaws, 71
Diyari (Dieri) people, 94, 257, 259, 261-2, 264-6, 269
Dodd, Henry, 420
Dolphin (ship), 386-7
Dordrecht (ship), 380
Drake, Sir Francis, 386
Dreaming, 3-7, 93-4, 107, 112, 200, 216-17, 221, 224-5, 229, 231, 233, 235, 239-40, 246, 251, 253, 268, 327
droughts, 39, 44, 199, 202, 298, 304
ducks, 59, 277, 296
dugongs, 78, 86, 167
Dulgubarra people, 148, 157, 162
dune fields, *15*; formation, 16, 25-6, 28, 30, 35, 38-9, 42, *43*, 44-5, 54; lunettes, 31, *33*, 35, 38-9
Dunkeld (Vic), 297
Dutch East India Company, 99, 377
Dutton, George, 265, 273
Duyfken (ship), 377

early Australians: arrival, 11-17, 22; migration theories, 9-13, 15-17, 21
Early Man shelter (Qld), 22, 55, 70
earth ovens, 168, 173, *190*
East Alligator River (NT), 55, *56-7*
East India Company (English), 385, 391, 393-4, 398
East India Company (French), 393
Eastern Creek (NSW), 360
Easty, John, 432
echidna, 15, 245, 319
Echuca (Vic), 32
Eden, William, 392, 410
Edward River (NSW), 32
eels, *300*; as food, 59, 168, 279, 281, 296, 298, 300, 319, 356; drainage systems and, 300, 302, *303*, 304-7, *305*; fishing methods, 90, 167, 300-2, *306*, 358; habits, 279, 300-2, 305; intergroup festivities, 300-2, 307
Eendracht (ship), 377
Egypt, 75, 94, 393
Elizabeth I, Queen, 386
Elkin, A.P., 87, 258, 268, 270
Emily Gap (NT), *220*
Emu Bore, 247
emus and emu eggs, 11, 20, 58-9, 203, 226, 277, 296, 299-300
Endeavour (ship), 348
Endeavour River (Qld), 389
England, 75, 101; American colonies and, 389, 393; Baltic and, 393; crime and criminals, 392, 394, 400, 409, 427; expansion, 386-90; France and, 389, 391, 393, 396; Holland and 389, 391-3, 396; Ireland and, 393; naval stores, 389-91, 393, 396-7, 400, 409, 436-8, 444; Prussia and, 393; ship maintenance and repairs, 389-94, 409; Spain and, 386-7, 391-3; trade and foreign policy, 386, 391-4, 397; United States and, 393
environment and landscape: Aborigines and, 75-81, 86; burning off impact, 51-2; climatic changes and, 26, 30, 48-52, 78; coastal environment, 75-81; early Australians, response to, 47-55, 58-73; ecological balance and, 80-1, 86, 88; impact of occupation, 17-18; water resources and, 25, 254; women, 239-41, 251
Eora people, 345, 348
erosion, 18, 31, 51-2
Etruria 1789 , 410-11, *411*
excavations, *11*; *see also* under places
exchange networks, 101-2; ceremonial gifts, 75, 83, 92-4, 204, 215, 227, 229, 231, 281, 294, 356; distance and areas covered, 75, 84, 93-4, 259, 261-2, 265-8; elders, role of, 73, 286; invisible commodities, 94; social value, 92-3, 262, 268; trade and trade goods, 66, 92-4, *93-4*, 258-9, 261-2, 264-8, 295, 297; trade centres, 69, 267-8, 297, *297*
exploration by land, 428, 431, 436
exploration by sea: discoveries, 369-71, 374-7, 380, 384-9; longitude/latitude problems, 370, 377; naval stores, 389-91, 393, 396-7, 400, 409, 434-6, 442; ship maintenance and repairs, 389-94, 409; support bases, 389-91, 393, *395*; westerly winds, 436-8; *see also* place names and countries
extinct animals, *see* animals
Eyre, Edward John, 104

Falkland Islands, 386-7
family: foster-family, 136-7; Nyungar people, 121-2, 124, 127-8, 131, 134-5, 136-7, 142
Farm Cove (NSW), 363
Fernandez, Juan, 376
fig tree, *166*
Fig Tree Point (NSW), 351
fighting, *188-9*, 226; by and about women, 101, 137, 170; elders role, 73, 286; feuds, 137, 212, 286; and kinship, 212-13; Macassans and, 98, 101; peace negotiations, 137; property violation, 131, 137, 296, 302; vengeance killing, 71, 73, 137
Fiji, 380
Finke River (NT), 44, 267
fire, *192*; carried, 314; domestic usage, 7, 167-8, 170; fire-making, 170, *174-5*; whale luring, 299; *see also* burning off
first fleet, *402-3*; numbers on board, 398, 400, 407-8; preparations and journey, 98, 397-8, 400-8, 421-2, 423-6; women, 398, 402, 419, 426
Fishburn (ship), 436
fishes, *see* food; eels
fishing, 127, *180*, 293; implements, 8, 66, 86, 89-90, *90*, 99, 117, 124, 131, 144, 167, 173; methods, 11, 86, 89-90, 98-9, 167-8, 279-80, 299-302, 304-7, 352, 354-5, *354-5*, 358
Fitzroy River (WA), 42, 49
flax, Baltic, 434
flax, New Zealand, 396-7, *397*, 400, 409, 434-6, 442
Flinders, Matthew, 102, 121
Flinders Island (Tas), 61
Flinders Ranges (SA), 39, 65, 94, 261-2, 266, *266*
flogging, 423, 425-7, 442
floods, 32, 35, 49, *80*, 253, 293, 298
Florentine River (Tas), 51
flying squirrels, 167
food, *52*, *60*; animal, 7, 11, 20, 47, 55, 58-60, 64-5, 68, 79, 90, 168, 235, 245-6, 248, 281, 285, 313, 320, 326, 355-6, 358; 'communion', 88-9; dietary factors, 11, 21, 71, 87; eggs, 11, 20, 55, 58-9, 79, 90, 131, 168, 298, 309, 314, 319-20; famine and, 44; fish, 8-9, 11, 16, 20, 38, 47, 55, 59-60, 64, 76, 89-90, 124, 130, 144, 173, 278-81, 298-9, 309, 319, 354-5; insects, 90, 168, *248*; plants, 7, 11, *14*, 15-16, 20, 47-90 *passim*, *88-9*, *91*, 117, 131, *151*, 159, 168, 200, *205*, 227, 233-4, 239, 244-9, *244-5*, *248-9*, 251, 277-8, *279*, 285, 287, 296, 298-9, 320, 323, 326, 355-8, 365, 423; poisonous, 357; preparation, 38, 55, 58, 65, 68, 127, 168, *209*, 224, 234-5, 245-6, *247*, 248-9, 251, 259, 278, 285, 354, 357; preservation, 55, 65, 77, 88-90, 245-6, 249, 251, 287, 299; scarcity of, 38, 61, 202, 298; shellfish, 8-9, 11, 16, 20, 47, 55, 58-61, 64, 76-9, 77, 280-1, 299, 309, 314, 319-20, 323, 326, 354-5, 358; *see also* specific animals; eels; Bogong moth; hunting–gathering
forests and woodlands, *15*, 125, *125*, *134*, 254, 293, 318-19; climatic changes and, 26, 30-1, 42, 44-5, 50-4, 76; gallery forest, 54; monsoon, *15*; *see also* rainforests
Forster, George, 409
fossils: Aboriginal, 11, 20-1, 29, 53-4, *53-4*, 103-4, 116, 173; animal, 20, 51, 71, 80; antiquity, 7 grouping, 11; *see also* Mungo I and Mungo III; specific places
France, 387, 389-91, 393, 396
Franklin River (Tas), 26, 51
Frenchman's Bay (WA), 130
Frenchmans Cap (Tas), *27*, 59
Freycinet Peninsula (Tas), *308*
Friendship (ship), 426
Frome Creek (SA), 257
Fromm's Landing rock shelter (SA), *80*
Fullarton, William, 391
Furneaux, Tobias, 314

Galaup, Jean-Francois de, 393
Gambia, 395
Gangan *176*
Garanguru people, 258
Garden Island (NSW), 422
Garden Island (WA), 48
gardening, 48, 50, 55
Gardujarra people, 197, 205, 208
Gason, Mr, 259
Gawarawarga people, 258
Geary's Gap (NSW), 28
Geelong (Vic), 297
geese, 55, *79*, 90
Genyornis, 15
George III, King, 313, 388, 430-1
George's River (NSW), 345, 347, 351, 357, 361
Georgina River (NT–Qld), 262, 266
ghosts, 137
gibber plains, 221, 229, 253
Gibson Desert (WA), 197, *198-9*, 199-202, *201-2*, 204-5, 207, 253
Gippsland (Vic), 79, 94
Girramaygan people, 148, 156-7
Giyajarra people, 197, 204
Glenelg River (Vic), 301
Glennies (Vic), 78
Gluepot (Tas), 319
Goa, 389-90
goannas, 167, 226, 245-6, *246*
Golden Grove (ship), 436
Gomerigal people, 357
Gomerigal-tongara band, 351
Goodwood, 297
Goorungurragal band, 351
Gordon, Mr, 425
Gordon River (Tas), 51
Gorualgal band, 351
Gothenburg, 393
Goulburn River (NSW–Vic), 30, 32, 296
Goyder's Lagoon (SA), 258, 267
Graman (NSW), 58, 103

Grampians (Vic), 293, 302
grasslands, 254, 293; climatic change and, 26, 44, 52, 54
Great Australian Bight, 49, 78
Great Barrier Reef (Qld), 42, 76
Great Dividing Range (NSW–Qld), 58, 304-5
Great Sandy Desert (WA), *24*
Green Gully (Vic), 54
Grenville, Richard, 386
Grey, George, 107
groups; and specific group names 45, *276*; bands, 203, 212, 294-6, 320-1, 323, 343-4, 347; basic unit, 294-5, 323, 347; clans, 294-6, 347; disruption, 343-4, 349; elders, 294, 349-50; estate groups, 204-5; European terminology, 344-5, 347; group mobility, 75, 90, 94, 173, 299, 349; hearth group, 323; linguistic units, 204-6, 216, 295; local variations, 69; numbers and strength of, 116, 148, 197, 203, 229, 294, 321, 323, 344-7, 349
Gudgenby valley (ACT), 290
Gugada (or Kokatha) people, 257
Guinea, 370
Gulf of Carpentaria (NT), 10, 49, 76, 98, 264
Gunai people, 92
Gunditjmara network, 295
Gundungurra people, 346, 363-4
Gurajarra people, 197
Guyani (or Kuyani) people, 257, 259
Gweagal people, 346-7, 351

hanging, 424-6, 428-9, 442
Harris, John, 385
Hartog, Dirck, 377
Hatfield (Vic), 38
Hawkesbury River (NSW), 87, 345, 356-7, 361, 363-5
hearths, 29, 65, 99
Heffernan, Mrs, 10
Helena Valley (WA), 52
Helms, Richard, 284-5
Henry VIII, King, 375
Henry of Portugal ('the Navigator'), 369-70
Herbert River (Qld), 157, 267
Hercus, Luise, 4, 271-3
Heylyn, Peter, 386
Hillegom, Claeszoon van, 377
Hinchinbrook Island (Qld), *74*, 89, 167
histories, 327; art and, 112; Dead woman's story, 256; Djankawu story, 23; Dreaming, 3-7, 112, 232, 235, 256, 268; Duwan story, 364; Emu stories, 270-1; Frog history, 4-7, *4-6*; Grinding dishes story, 271-3; Gurungaty story, 364; Kwoiam, 95; Lake Eyre story, 258; local variations, 69; Mumuga story, 364; Ngayunangalgu myth, 200; Nullarbor serpent tales, 69; Red ochre myth, 269-71; sacred stories, 22; Siveri and Nyunggu story, 95-8; Two snakes story, 256; Wonkangurru myth, 253; *see also* religion; rites and ceremonies
Hobart (Tas), 321
Holland, 377, 380, 389-93, 396
Homo erectus, 7-8
Homo sapiens, 7, 21
honey possums, *see* possums
Hookey's waterhole (SA), 4
Hopkins River (Vic), 297, 302
Horsham (Vic), 29
housing, *181*, *193-5*, *213*, 355; bark shelters, 309; huts, 116, 127, *180*, 259, 276-7, 286-7, 298, 323, *325*, 326, 348-9, 360; permanent villages, 117, 298, 323, 348-9; semipermanent camps, 116, 167, 293, 302; temporary villages, 302; wet-weather shelters, 225
Houtman, Frederik de, 380
Houtman Abrolhos (WA), 380, *382*
Howe, Earl, 393-4
Hughes, Edward, 391
Hunter, John, 331, 347, 355, 357-8, 360-1, 407, 430, *430*, 438, 442
Hunter Island (Tas), 60, 78
hunting–gathering: elders, 294; gathering, 18, 20, 55, 127, 130-1, 167, 227, 229, 233-4, 244-5, 248-9, 251, 298; hunting, 17, *18*, 20, 55, 59-60, *111*, 127, 130-1, 167, 203, *204*, 226-7, *227*, 229, 241, 245-6, 277, 299, 307, 321, 323, 356-8, *359*, 360-1; public hunts, 293-4, 296, 300, 360
Huon River (Tas), 319, 321
Hyena (ship), 40

Ilbora (NT), 221
Illawarra band, 351
implements, 7, *18-20*, *62*, *66*, *82*, *84-6*, *94*, *125-6*, *149*, *168-72*, *191*, *227*, *240*, *259*, *262-5*, *277*, *285*, *292*, *346*, *353*, *356*, *360*; adzes, 64, 68, 86, 226, 356; *apwas*, 233; awls, 7, 20, 66, 71; axes, 241, 276, 286, 288; baskets/bags, 18, 127, 168, 173, 226, 241, 264, 286, 326; boomerangs, 66, 71, 92, 94, 101, 168, 226, 229, 231, 241, 261, 264, 276, 286; chisels, 168, 264, 360; clubs, 170, 226, 276, 286, 296; digging-sticks, 7, 11, 18, 66, 127, 168, 226, 241, 244, 246, 276, 286, 326; drill sticks, 170; *elouera*, 84, 86; flake and core tools, 8, 18, 59, 61, 66, 68, 84, 168, 305, 360; foreign objects, 101, 244; grindstones and pounders, 7, 38, 55, 58, 101, 127, 168, 226, 234-5, 261-2, 266, 288, 326; hatchets, 19-20, 58, 84, 86, 92-3, 121, 125, 168, 226, 265, 356, 358; hearth sticks, 170; javelins, 66; Juan knives, 86; knives, 7, 61, 66, 68, 125, 168, 226, 231; *kodj*, 86, 125, 144; *kultjera*, 228-9; local variations, 19, 66, 68-9, 83-4, 86, 125; 173, 229; nets/ropes, 261, 326; nut stones, 168; *ooyurkas* (T-shaped stone), 168; pins, needles, spatulas, 7, 20, 61, 66, 71, 173; points, 86, 92, 94; possum (wallaby) tooth engraver, 86; scrapers and choppers, 7-8, 18, 59, 61, 64, 66, 68, 83, 168, 264, 356; shields, 92, 170, 173, 226, 235, 264, 286, 296; shovels, 226; spears, 66, 71, 82-3, 86, 92, 94-5, 127, 168, 170, 226, 229, 235, 241, 261, 264, 276, 286, 296, 326, 352, 356, 358, 360; spearthrowers, 92, 95, 168, 226, 235, 286, 356, 360; split pebbles, 59; swords, 170; *taap* (knife), 82, 125; throwing sticks, 125, 168, 241, 356; toas, *267*; trade in, 66, 68-9; *tula* (chisel), 84, 86, 264; waddy, 326; waisted blades, 20; backed blades, 82-4, 92; *see also* technology; raw materials; outside influence and contacts
India, 8, 82, 94, 370
Indonesia, 7-8, 12-13, 15, 21, 94
Inett, Ann, 433
Ingaladdi (NT), 55
initiation, *102*, 276, 281, *362*; bora rings, 288; circumcision, 102, 124, 202, 215; elders, 288, 290, 362-3; European influence, 344; nose piercing, 124, 136-7; regional variations, 102, 288, 290; singing and dancing, 335, 338; subincision, 102, 124; tooth evulsion, 69, 102-3, 288, 350, 363
Innamincka (SA), 257-8, 262
Innisfail (Qld), 168
insects, *see* food; Bogong moth
Ireland, 393
Irian Jaya, 95
Irinjili, Mick McLean, 271-2
Israel, 94

Jaadwa people, 307
Jacobszoon, Mr, 380
Jaimathang people, 276
James I, King, 386
Japan, 8, 94, 301, 371
Jarrajarra range, 240
Java la Grande, 371, 374-5
Jervis Bay (NSW), 345
Jervois (NT), *250*
Jigalong (WA), 207
Jindabyne (NSW), 281, 288
Jirrbalngan people, 147-8, 156
Jiyer Cave (Qld), 173
Johnson, Milbah, 429
Johnson, Richard, 420, 428-9, *428*
Jurien Bay (WA), 52

Kalamurra Lake (SA), 258
Kalgan River (WA), 144
Kallakoopah Creek (SA), *262*
Kameygal band, 351
Kangaroo Island (SA), 20, 49, 61, 68
kangaroos, 8, 15, 17, 55, 58-60, 167-8, 203, 226, 245, 299-300, 319, 358, 360; bettongs, 55, 59; euros, 226, 235; kangaroo rats, 51; wallaroos, 55
Karlukarlu, *see* Devil's Marbles
Kayimai band, 351
Kaytej country, 239-41, *240*, 244-9, 251
Keilor (Vic), 29, 54
Kelly's Point (Tas), 319
Kenniff Cave (Qld), *11*, 58, 86
Kent (ship), 406-7
Kiandra (NSW), 276
Kickerterpollar, 314
Kimberley (WA), 54-5, 58, 94, 99, 101-2, 107, 112, 334
King, Philip Gidley, 432-5
King, Phillip Parker, 121
King George Sound (WA), 78, 121-45, *132-3*, *142-3*
King Island (Tas), 61
Kinghorne Point (Tas), 319
King's Table (NSW), 59
kinship: blood brothers, 136-7; classificatory system, 207, 210, 216; Dreaming and, 213, 215; elders, 212-13; European influence, 344; groups, 215-16, 251; marriage and, 73, 136, 199, 210, 215, 229, 295; role and mechanism, 64, 93, 153, 197, 199, 202-3, 205-13, 215-17, 240-1, 245-7; sections/subsections, 214-15, 241
koalas, 8, 15
Kojaneerup (WA), 135
Koonalda Cave (SA), 22, 65, 69
Kopparamarra (SA), 267
Kotupna system, 30
Kow Swamp (Vic): campsites, 30; description, 51, 54; skeletons, 20-1, 53-4; tools, 68
Kulin network, 295
kurdungurlu, *see* kinship
Kuring-gai people, 345, 348-9, 363-4
Kurnai network, 295
Kurnell (NSW), 347-8, 351
Kurrajong band, 351
Kutikina Cave (Tas), 20, 66, *327*
Kwoiam, 95

la Pérouse, Comte de, 393, 396, 419, 429
Lachlan River (NSW), 30, 32, 38, 58
Lady Penrhyn (ship), 398, 430
lagoons, 76, 78-9, 277
Lake Albacutya (Vic), 38-9
Lake Arumpo (NSW), 38-9
Lake Bolac (Vic), 301-2, 307
Lake Bullenmerri (Vic), 29
Lake Callabonna (SA), 42
Lake Condah (Vic), 89
Lake Disappointment (WA), 197, *198*, 199-200
Lake Dove (Tas), *26*
Lake Eyre–Cooper Creek basin (SA–Qld), *254-5* ; area, 253, 257-9, 261; early Australians, 16; natural resources, scarcity of, 253-4, 256, 258, 262, 268; Aborigines, 102, 253-4, 256-9, 261-2, 264-8; climatic changes , 44; description, 39, 42, 253-4, 258
Lake Frome (SA), 39, 42, 44, 80
Lake Garnpung (NSW), 39
Lake George (NSW), *13*, 26, 28-9, *28*, 44, 50, 80, 277
Lake Gnotuk (Vic), 29
Lake Grace (WA), *33*
Lake Gregory (WA), 42, 44
Lake Howitt (SA), 257
Lake Keilambete (Vic), 29-30, *29*, 45, 50, 80
Lake Menindee (NSW), 30, 38
Lake Mungo (NSW), *36-7* ; campsites, 16, 30; early Australians, 20-1, 38, 103; implements, 19; skeletons, 20-1, 103
Lake Nitchie (NSW), 71, 80, 103
Lake Peri Gundi (SA), 257
Lake Prungle (NSW), 38
Lake Tandou (NSW), 17, 58
Lake Tyrrell (Vic), 31-2, 38, *39*
Lake Victoria (NSW), 30, 32
Lake Woods (NT), 42, 44
lakes, 15; campsites, 11; climatic change and evolution, 25, 28-9, 31-45, *34*, *39-41*, 50, *50*, 80
Lancefield (Vic), 17
land: affiliation, 204, 239-41, 247; dispossession, 112, 115-16, 365; no man's land theory, 395-6, 410; ownership, 121-4, 127-31, 134-5, 140-2, 203, 229, 294, 323, 347, 365, 438; use or entry permission, 128-9, 131, 134, 142, 229, 240, 246
landforms: climatic changes and, 15, 25-6, 30; evolution, 31-2, *31*
landscape, *see* environment and landscape
Lane Cove River (NSW), 345, 348
languages and dialects, 102, *257* ; Arabana, 4; Dharawal, 345, 351; Dharug, 345, 351, 356, 363; Eora, 345, 351; Girramay, 148, 151, 158; grammar, 147-65, 345; Guwal style, 152-5, 159-60; Gweagal, 345; Jalnguy style, 152-5, 159-61; Jirrbal, 147-65; Kuring-gai, 345, 351; linguistic variety and resemblance, 11, 45, 92, 256, 295; Mamu, 148, 157-8; Miriam, 95; Ngajan, 148, 158; numbers of, 92, 116, 323, 327; Nyungen, 123-4, *124* ; pidgin, 123, 137; Tasmanian, 10; Wongkangurru, 4; Warrgamy, 148, 158-9, 162; Yidiny, 148
Lasseter story, 429
l'Astrolabe (ship), 122
Leewin (ship), 380
Little Peppermint Bay (Tas), 319
Little Twynham (NSW), 288
Liverpool Plains (NSW), 53
lizards, 51, 55, 59, 65, 200, 226
Lord Howe Island, 423, 431
Lumholtz, Carl, 159
Lyluequonny people, 319-21, 323
Lynch's Crater Lake (Qld), 45
Lyre Bird Dell (NSW), 59

Maatsuyker Islands (Tas), 78, 321
Macassar, 98-9, 101
Macau, 390
MacDonnell Ranges (NT), 65, 224
Macquarie River (NSW), 105
Macropus titan, 17
Macumba River (SA), 228
Madagascar, 394
Madeira, 370
Madras, 390, 396
Madura Cave (WA), 66
Magellan, Ferdinand, 375
magpie geese, *see* geese
Malacca, 371, 390
Malangangerr (NT), 55
mallee areas, 16, 30-1, 80, 87
mammals, *9*; *see also* under specific mammals
Mangrove Creek (NSW), 87
mangroves, *15*
Manjilyjarra people, 197
Manly (NSW), 351, 355, 442
Manly, *see* Arabanoo
Manmeet network, 295
Maoris, 434
maps, early: *Bonaparte map*, 385; Asian–Australian hemisphere, *374-5*, *384-5*; Dieppe maps, 371, 374; Portuguese discoveries, *371-2*; world, *373*, *376*, *378-9*
Mara network, 295
Mardujarra people, 197, 200-17
Maree, 258
Maribyrnong River valley (Vic), 29, 52
Marika, Wandjuk, 23
marine resources, *see* food
Maroubra (NSW), 351
marriage: age, 73, 128, 136; arrangements, 73, 92, 94, 206, 281, 286, 323; betrothals, 128, 136, 202, 294-5; competition for wives, 61; dissension between husband and wife, 212; European influence, 344; forbidden, 210, 215; intergroup, 10, 54, 277, 294-5; and kinship, 73, 136, 199, 210, 215, 229, 295; local variations, 69; marriage pattern control, 54; *see also* polygyny
marsupials, 15, 296; *see also* under specific names
Mathews, R.H., 364
Mathoura (NSW), 32
Matra, James, 394-6, 409
Mauritius, 390
Mauritius (ship), 380
Mawalan, 23
Mayflower (ship), 410
McLean, Arthur, 4
McLean, Mick, 4
M'Douall, Robert, 392
medicine: herbal medicine, 173, 239; practical treatment, 326-7; spiritual treatment, 326-7
medicine men, 70, 121, 136-7
Medows, William, 392
Melanesia, 173
Mellukerdee people, 321
Mendana, Alvaro de, 376-7
Mendona, Cristovao de, 376
Mercators, 375, 387
message sticks, 224, 261, 284
Middleton, Sir Charles, 398
Mindanao, 387, 391
mining, 22, 69
Miriwun rock shelter (WA), 54, 68
Mitchell, Thomas, 35, 115
Mocambique, 389
Mokaré, *120*, 121-2, 125, 128, 130-1, 134-5, 136-7, 142, 144-5
Mollian (Yallopi), 128
Moluccas, 371, 396
Monaro tableland (NSW), 275
Monte Video, 392
Moorabbin (Vic), 29
Moore, George Fletcher, 123
Mootwingee (NSW), 22, *268*
moral ideas, 350
Morley, Roger, 400
Mouheneenner people, 321
Mount Brockman *112*
Mount Buffalo (Vic), 288
Mount Buffalo National Park (Vic), *283*
Mount Buller (Vic), 288
Mount Cameron West (Tas), *110*
Mount Jagungal (NSW), 290
Mount Kosciusko (NSW), 26, 275, 280, 282, 284, 288, 290
Mount Liebig (NT), 233, *234*
Mount Lindsay (WA), 135
Mount Manypeaks (WA), 135
Mount Newman (WA), 16, 58
Mount Termination (SA), 271
Mount Twynam (NSW), *283*
Mount Wellington (Tas), 26
Mount William (Vic), 93, 302, *303-5*, 305-7
Mragula, 286
Mudlunga, 94
mulgarradocks, *see* medicine men
Mulgoa people, 351, 357
Mullet, 128
Mulligan River (Qld), 258, 262, 265-6
Mundy, Mrs, 10
Mungeranie Gap, 259
Mungo I, 20-1
Mungo III, 20-1
Murchison River (WA), 58, 64
murder, 116, 343; *see also* Coniston Massacres
Muringong band, 351, 357
Murray, Jack, *see* Yibai-Malian
Murray, Jimmie, 156
Murray, Mary Ann, 156
Murray River (NSW–SA), 30, 32, 38, 49, 103, 280
Murray–Darling basin, 279; antiquity, 15; campsites, 16, 32; climatic conditions and, 30, 35, 45; early Australians, 30, 39, 44
Murrumbidgee River (NSW), 30, 32, 38, 277, 279-81
Murtee, Johnnie, 271
Muru-ora-dial band, 351
music, 286; mythological themes, 22, 331; performances, 335, 338 rhythm, 173, 331, 334; *see also* songs
musical instruments: clapsticks, 94, 173, *332*, 334; didjeridu, 173, *332*, 334; drums, 95, 173, 286, 334; notched rasp, 334; outside influence, 334; percussion, 334; possum skin pads, 286, 334-5, 338; seed-pod rattles, 334
Mussel shelter (NSW), 60
muttonbirds, 60, 313, 319-20, 323, 326
myths–legends, *see* histories

Nagara people, 257
Nakamarra, 239
Nakina, 121, 123, 128-9, 131, 134, 137, 142, 145
Nampijinpa, 245, 247

Napanangka, 244, 248
Napurrula, 244-5, *244*, 247-9, 251
Naracoorte (SA), 29
narcotic plants: exchange, 94, 231, 258; *Nicotiana gossei*, 206; origin, 247-8, 258; *pituri*, 94, 231, 258, 262, 265-7, *265*, 267, 273; preparation, 248, 267, 273; tobacco, 247-8
Native Cat centre, 224, 227, 229, 231, 233-5
native hens, 59
native rodents, 55, 319; flying squirrels, 167; mice, 51, 53, 245
Native Well shelter (Qld), 58
Nawamoyn (NT), 55
Negapatam, 390
Nelson, David, 313-14
Nepean, Evan, 394, 397-8, 400, 402
Nepean River (NSW), 343, 346, 356-8, 360
Netherlands, *see* Holland
New Britain, 385, 387
New Caledonia, 389, 396-7
New England tableland (NSW), 58
New Guinea, *11*; exploration, 380, 388; horticulture, 47, 50-1, 58, 307; human settlement, 17; interaction with Australia, 94-6, 98; linked with Australia, 15, 49, 75; material culture, 19-20, 172; population, 58; separated from Australia, 75
New Hebrides, 377
New Holland, 380, 385, 388, 396, 409
New South Wales, *388*; colonisation of, 391, 393-8; European discovery and naming, 389; European expectations, 408-11, 436; Great Seal, first, 411; no man's land theory, 395-6, 410
New Zealand, 16, 29, 380, 389, 396-7, 436, 438
Ngajanji people, 148
Ngamini people, 258
Ngandong, 7
Ngarigo people, 275, 288-9
Ngarradj, 55
Nicobar Island, *see* Andaman and Nicobar Islands
Nind, Scott, 128-30, 136-7
Noola (NSW), 59
Noorat (Vic), 297
Norfolk Island, 389, 396-7, 432-4, *433-5*, 442
Norongerragal people, 347, 351
North , Lord, 391-2
North Bay (Tas), 314
North Bruny Island (Tas), 309
North West Bay (Tas), 319, 321
northwest passage, 386
Nothofagus, 26
Nourlangie (NT), 55
Nowra (NSW), 345
Nuenonne people: carried fire, 314; daily life, 309-13, 319; Dreaming, 327; explorers and, 309-12, 314-15, 318; food, 309, 313-14; housing, 309, 323; seafarers, 312-13, 319, 321, 323; strength, 309, 319; territory, 319-21, *320*
Nullarbor Plain (SA-WA), 16, 65, 69
Nungarrayi, 239-41, 244-6, *244*
Nuyts, Pieter, 380
Nyungen people, *124-30*, *135*, *144*; customs, 124, 128-9, 140-2; daily life, 127, 131, 144; environment, 124-5, 130-1, 134-5, 136, 144; Europeans and, 121-5, 128-31, 134, 136-7, 142, 145; land ownership, 121-4, 127-31, 134-5, 136-7, 142; language, 123-4, *124*; material culture, 122, 124-5, 127, *128-9*; women and children, 125, 127-8, 131, 136-7, 142

Oceania (Syd), 270
Oenpelli (NT), 82
Omeo (Vic), 276
Omeo people, 286
Oolarinna waterhole (NT), 225
Ooldea (SA), 207
Ooroowillanie, 259
Orchestra Shell Cave (WA), 69, *69-70*
Ord valley (WA), 70
ornaments, *see* clothing and ornaments
Ortelius, 375, 387
Ory-ang-ora band, 351
Otway Ranges (Vic), 293
outside influence and contacts, *95*; background, 94-5; European period, early, 123, 295-6, 343, 365; explorers, 309-15, 318; Maccasans, 81, 98-101, 117; Melanesians, 173; Papuans, 81, 94-6, 98, 101, 334; Torres Strait Islanders, 95-6, 98, 173, 334
Oyster Bay people, 321, 323

Pacific Islands, 8
pademelons, *see* wallabies
paint, black manganese, 229, 261
Palawan, 8
Panaramitee (SA), 22
Parachilna (SA), 261, 269, 271
Parramatta (NSW), *see* Rose Hill
Peace of Paris, 392-3
Peek Whuurong (Vic), 296
pelicans, 55, 309, 313
Pellew Islands, 98
Pelsaert, François, 380
penguins, 309, 326
Penrith (NSW), 351
Pera (ship), 377
Perisher Gap (NSW), 288
Perth campsite (WA), 11
Perth Gazette and Western Australian Advertiser (Perth), 145
Phascolarctos, *see* koalas
Philip III, King of Spain, 377
Phillip, Arthur, *368*, *416*; on Aborigines, 349, 352, 354, 356, 363, 439, 442; background, 392, 394, 402, 404, 409-10, 420, 429-31, 435, 438; and first fleet, 98, 398, 401-8; government house copper plate, 415, *440*; governor of NSW, 398, 410-11, 414, 415, 419-26; instructions, 400, 432
Phoenicia, 94
physical characteristics, *9*; adaptation to environment, 11; beards/moustaches, 229, 326; body, 10, 326; bones, 21; genetic drift, 11, 94-5; hair, 95, 229, 251, 326; head, 10; similarity and diversity, 10-11, 20-2, 53-4, 69, 101; skin, 326; skulls, 20; teeth, 71; *see also* fossils
Pilbara (WA), 58, 70, 80, 111
Pillenorup (WA), 134
Pine Plain (Vic), 39
pines, Norfolk Island, 396-7, 409, 434, 436-8, 442
Pitcairn Island, 387
pits, *see* caves and pits
Pitt, William, 393-4, 396-7
Pitt administration, 394, 397, 400, 411
pituri, *see* narcotic plants
plants, *see* food
platypus, 281, 319, 358
Point Hicks (Vic), 389
poisons, 167
Polo, Marco, 370, 375
polygyny, 73, 128, 136, 202, 294
population: antiquity, 16, 21, 55, 59-60, 62, 68; control of, 73; Cumberland Plain, 345; depopulation, 295-6, 349; estimates, 75, 87, 92, 115-17, 296; increase, 354; King George Sound, 136; Murray River region, 116; New South Wales, 117; Northern Territory, 116; official census, first, 115; Perth region, 117; Sydney region, 343, 345, 364-5; Tasmania, 116-17; tropics, 117; Victoria, 117, 293, 295-6, 299
Port Bradshaw (NT), 23
Port Davey (Tas), 327
Port Egmont, 386
Port Fairy (Vic), 296
Port Jackson (NSW), *see* Sydney Harbour
Port Phillip Bay (Vic), 94
Portsmouth, 400
Portuguese expansion and discoveries, 369-71, 375-6, 389-90, 398, 405
possums, 8, 55, 58-9, 144, 167, 245, 277, 309, 320, 358, 360-1; brush-tailed, 60, 319; honey possums, 51; pygmy, 319; ring-tailed, 60, 319
potoroos, *see* kangaroos
Pound's Creek, 288
Prince of Wales (ship), 413
Princess Charlotte Bay (Qld), 78
Princess Royal Harbour (WA), 129-30
Prospect (NSW), 351
Prussia, 393
Ptolemy, 375
Pukardu Hill (Bookatoo/Bookartoo, SA), 259, 261-2, 269
punishment, 131, 229, 350, *350*
Puntutjarpa (WA), *64*, 82
Purula, Walter Smith, 221, 223, 225, 228-9

quail, 358
quarries: basalt, diabase, diorite, 86; greenstone, 92-3, *92*, 265, 297; ochre, 93, 105, *106*, 144, 246, 259, *259*, 261-2, 269; stone, 231, *261*, 262
Quininup Brook (WA), 67-8, *67*, 70
Quiros, Pedro de, 377, 387-8
quokkas, 51

rabbits, 80
Radcliffe-Brown, Alfred R., 116-17
radiocarbon dating, 13; charcoal and shell, 11, 32, 287; description of, 12, 101; geology, 26, 42; hearths, 99; rock art, 22, 105; tools, 83
Rainbow Snake, 112
rainforests, *146*; Aborigines in, 167-73, *170-2*; climatic changes and, 15, 18, 25-6, 42, 45, 51, 76; Queensland, 51, 76; Tasmania, 18, 26, 45, 80, 318-19, 323; Victoria, 293
rat-kangaroos, *see* kangaroos
raw materials, *260*; adhesives, 66, 68, 70, 73, 82, 84, *85*, 86, 168, 226, 264, 297, 358, 360; australites, 70; bark, grasses, 8, 20, 55, 168, 172, 226, 276-7, 312, 319, 326, 360; basalt, 86, 168, 356, 358; chalcedonies, 82, 265; cherts, 61-2, 64, 66-9, 82, 265, 360; clay, 297, 410-11; diabase, 86; diorite, 86; dolerite, 265; greenstone, 92-3, 265, 297; hair, feather, 226, 264; lime and limestone, 415, 418, 422, 425; obsidian, 297; ochre, 21-2, 55, 58, 65, 70-1, 92, 94, 107, 229, 266, 286, 326; plant fibres, 326, 360; porphyry, 64; quartz, 7, 61, 64, 68, 82, 262, 265; saltpetre, 390; shell, bone, teeth, 20, 66,

68, 86, 93-4, 168, 262, *263*, 264, 297, 327, 356; silcretes, 82, 265; skins, hides, sinews, 8, 18, 20, 55, 61, 66, 105, 125, 226, 264, 286, 297, 326; stone, 7-8, 11, 18-20, 38, 52-93 *passim*, 125, 144, 168, 226, 262, 265, 296-7, 326-7, 356, 358; wood, 7-8, 11, 18, 55, 64, 66, 73, 83, 101, 127, 168, 170, 264, 297, 326
Raynal, Abbe, 369
Recherche Archipelago (WA), 78
Recherche Bay (Tas), 319-21
Red Cliff, 58
religion, 48, 75; art and, 22, 107; beliefs, 103, 199, 216-17, 276, 289, 350-1, 364; Dreaming, 21-2; European prejudice, 344, 350; music and dance , importance of, 338; regional diversity, 124; *see also* histories; rites and ceremonies; spirits
Resolution (ship), 396-7
retaliation, *see* punishment
Reunion, 390
Richmond (NSW), 351
Rio de Janeiro, 389, 402-5, *405*
Riratjingu clan, 23
rites and ceremonies: actors and their equipment, 58, 235; Aranda ceremony, 221-35; art motifs, 70-1, 111, 173; body decoration, 65, 70-1, 98, 101, 104, 144, 173, 229, 233, 235, 261, 326, 346, 410; Bogong moth feast, 90, 281, 284-8, 290; *brun* meeting, 170; children excluded from, 233; conflict management and, 338; Dreaming, 93, 204, 224-5, 229, 231-3, 235; elders, 71, 73, 204, 224, 231, 233, 235, 244, 294; food resources, 90, 233-4, 281; gift exchange, 75, 83-4, 92-4, *93*, 101-2, 227, 229, 231, 246, 258-9, 268; greeting and farewell conventions, 137, 142, 268; initiation ceremonies, 203, 215, 256; love-magic ceremonies, 335, 338; Macassan influence, 101; maintenance ceremonies, 235; *mindari* ceremonies, 256, 259; Papuan influence, 95-6, 98; participants, numbers of, 90; progress and events, 90, 204, 215, 217, 224-5, 229, 231-5, 286-7; regional diversity, 69, 124; ritual paraphernalia, 64, 70, 95, 98, 101, 104, 226, 235, 264; ritual scars, 104, *106*, 112, 124, 136-7, 173; seasonal festivals, 203-4, 296, 300-2, 307; secret and sacred sites/objects, 59, 69, 204, 288, 347; social controls, 90; Torres Strait Islanders and, 98; women and, 224, 229, 233-5, 240-1, 244, 246-7, *251*, 338; *see also* dances; songs; specific names
Riverina Plains (NSW), 30, 35
rivers: channels and anabranch systems, 30, 32, 44-5, 253; climatic changes and evolution, 25, 29-30, 32; *see also* under specific rivers
Roberts Point (Tas), 319
Robinson, George Augustus, 293-4, 296, 298, 300-2, 304-5, 314, 321
rock paintings, *see* art
rock-wallabies, *see* wallabies
Rocky Cape South (Tas), *61*, 66, 68
Rome, 94
Rome district (NSW), 410
Roonka Flat (SA), 53-4, 58, 66, 71, 73, 102-3
Rose, George, 398
Rose Hill (NSW), 343, 345, 351, 356, 358, 360, 420
Ross, Robert, 407, 419, 424-5, 431
Rottnest Island (WA), 48, 78
Royal National Park (NSW), 351
Royal Society (London), 388
Rufus River (NSW), 32
Rushcutters Bay (NSW), 414
Russell River (Qld), 173
Ryde (NSW), 351

Sabah, 8
Sackville (NSW), 364
Sagres, 370, *370*
St Helena, 390
salinity, *see* water resources
Salt Creek (Vic), 302
Sandover River (NT), *250*
Sandridge Desert, *256*
Santa Cruz, 387, 403, *404*
Sao Filipe de Benguela, 389
Sao Paulo de Luanda, 389
savannah, 15, 54, 58, 293
Scarborough (ship), 402
Scott, James, 420, 432
Scott River Swamp (WA), 51
sea levels: lowering of, 10, 13, 15, 28-9, 42; rise of, 30, 45, 47-50, 55, 59-61, 75-7; stabilisation, 78, 87
Seal Point (Vic), *299*
seals, 60, 124, 130, 299, 314, 320-1, 323
Seaspray (Vic), 29
sedgelands, 52
Seelands (NSW), 59, 103
Sentry Box Hill (ACT), *283*, 290
Seton Cave (Kangaroo Island), 58, 68, 82
Seven Years' War, 386
sex, 94, 290
Shaw's Creek (NSW), 59
sheep, 88, 444-5
Shelburne, Lord, 393
shelly ridges, *see cheniers*
Siebert, D. Otto, 258
Sierra Leone, 370
Simmonds Point (Tas), 319
Simon's Bay, 390
Simpson Desert (NT–SA), 4, 94, 221, *228*, 233, 253, 258, 266
Singh, Gurdip, 14
Sirius (ship), 419-20, 422, 428, 436, *437*, 438
Sleisbeck (NT), 55
Smith, Fanny Cochrane, 10
smoke signals, 224, 228, 231, 239, 286
Smyth, Arthur Bowes, 398, 430-1
snakes, 55, 59, 167, 245; carpet, 226; pythons, 167-8, 226
Snowy Mountains (NSW–Vic), 26, 275, 284, 290
Snowy River (NSW–Vic), 275, 277, 279, 281, *281*
Snug Point (Tas), 319
Solander, Daniel, 411
Solomon Islands, 376, 386-8
songs, *184*, 217; ceremonial, 94, 228-9, 232-3, 235, 327; Convict's farewell to old England, 400-1; dances and, 331, 334-5, 338; diversity, 332-3, 338; Honey ant men's love magic songs, 335; lyrics, 207, 286, 331-5; Macassan influence, 101; melody, 207, 331-4; Men's and women's yam songs, 335; mythological themes, 228-9, 261, 286, 332-5, 338; secret, 338; song-chants, 231, 235; White cockatoo song, 340-1; Women's emu songs, 335; work-songs, 234, 244, 246
sorcery, 137, 335
South Creek (NSW), 351, 360
South Sea Company, 386
southwest botanical province (WA), 124
southwest region (WA), 115-45, *122*, *134-9*
Spain, 376-7, 386-7, 389, 391-3, 398
Spencer, Baldwin, 116
spirits, 21-2, 94, 141, 249, 289, 337, 350, 362; *see also* religion
sport, 226, 228-9, 296
Sri Lanka, 82
Stanner, William E.H., 124, 350
Steele, Thomas, 398
Stephens, Philip, 398
Stingray's Harbour (NSW), *see* Botany Bay
Stirling Mountains (WA), 134
Storm Bay Passage (Tas), 321
Strait of Magellan, 375, 386
Strzelecki Creek (SA), 65
Strzelecki Desert (SA), 42, 253, 262
Sturt, Charles, 115
Sturt's Meadows (NSW), *72*
Sulawesi, 8, 82, 98, 391
Sunda Strait, 377
Supply (ship), 407, 432, 436
Swallow (ship), 387
swamps, 78-9, 89, *182*, 293, 298; antiquity, 15; drainage system, 304-7; *see also* under specific swamps
Swan River (WA), *49*, 78
swans, 90, 277, 309, 313, 319-20
swimming, 125
Sydney, Lord, 394, 415, 435
Sydney Harbour (NSW), 84, 345, 349, 351, 354, 364-5, 406, *410*, *412-13*, 422, 430-1, 435, 442
Sydney region Aborigines, 343-64, *344*, *347-9*, *356*, *363*, 411, 413, 415, 419, 423, 429, 438-9, *438-9*, 441-2
Sydney settlement, *417*; Aborigines, attacks on and by, 439, 441; Aborigines, curious, 411, 413, 415, 419, 423, 429, 438-9; Aborigines' versus imported way of life, 395, 419, 438-9, 442-3; alcohol, 422; bribery, 428; children, 421, 429, 433; commissariat, 421; convicts, 414, 415, 418-22, 424-9, 432-4, 436, 439, 442; criminal court, 424-6, 432; defence, 419; description, 413-14, 415, 418, 430-2; division of labour, 442; drowning, 413; drunkenness, 426; escaping convicts, 428; farming, 419-24, 442; fishing, 422-4, 428, 434, 438; flogging, 423, 425-7, 442; food, 420-5, 435-6, 442; Government House, 414, 415, 418, *418*, *440-1*, *443*; hanging, 424-6, 428-9, 442; hospitals, 414, 420, 423; housing, 413-14, 415, 419; livestock, 420, 422, 424, 442; marriages, 421, 429; plan *416-7*; population, 424, 426, 435-6; prostitution, 419, 426; religious life, 428-9, 433; rules and discipline, 418-9, 424; seamen, 413, 419-20, 422-3, 426, 432, 439; soldiers, 418-9, 421-2, 424, 426, 428, 432, 439, 442; suicide, 426; theft, 420-1, 425-28; violence, 426; women, 419, 421-2, 425-7, 429, 432-3

Table Bay , *407*
Tagary band, 351
Tahiti, 387-8, 436
Tamar (ship), 386
Tank Stream (NSW), 413-14
Tappoc Condeet people, 294
Tarapan, 128
Tartanga (SA), 58
Tasman, Abel, 314, 380
Tasman Peninsula (Tas), 321
Tasmania, *321*, 408; description, 318-19; exploration, 309-16, 323, 326-7, 380, 438; glaciation, 26; mainland connec-

tion, 10, 15, 29, 49, 75; separation from mainland, 10, 45, 92, 103, 323, 327
Tasmanian devil, 17, 53, 71, 80, *81*, 103, 319
Tasmanian tiger, *52*, 53, 71, 80, *81*, 319
Tasmanians, 17, 88, *310-11*; art, 111, 327, *328-9*; criticism of, 87; east–west coast contrast, 323, 326; languages, 10, 315, 323, 327; material culture, 9-10, 66, 309, 323, *325*, 326; numbers of, 116-17; physical characteristics, 326; seafaring, 78, 312-13, 319, 321, 323; shot by Europeans, 314, 327; social life and customs, 103, 320-1, 323, 327; women and children, 310, 312, 315, 318, 323
Taylor Crossing (NT), 247-9
technology: bipolar technique, 68; bow drill, 68; composite tools, 66-8, 82; diffusionist model, 81; European influence, 344; geometric microliths, 82-3, *83*, 86, 92, 94; grinding, 19; hatchet-hafting, 19-20, 58, 67, 82, 84, 86, 92, 168, 226, 360; heating, 82; independent invention concept, 81; innovations, 73, 75, 81-7; lawyer-cane, 168, 173; pirri, 82, *83*, 86; points technique, 82-3, *82-3*; pressure flaking, 82; similarity and diversity, 18-20, 66, 68, 73, 75, 82-4, 86, 92, 94, 101, 168; small tool tradition, 66, 68, 82-4, 86, 92, 94, 101; *see also* implements; raw materials
Tench, Watkin, 348-9, 356-7, 407, 424, 428-9, 433
Tenerife, 402-4
Tennant Creek (NT), *238*
Terang (Vic), 297
Terminalia, 15
Terra Australis, 409; Dutch search for, 377, 380; English search for, 375-7, 385-9; origin and early history, 373-6, 380, 384; Portuguese search for, 376; Spanish search for, 376-7
Terramerragal band, 351
theft, 101, 131, 343
Thomas, John, 427
Thompson, Edward, 394
Threawal band, 351
Thredbo (NSW), *274*
Thylacoleo, 15
Tibooburra area (NSW), 261
tiger cat, *103*
Timor, 13, 95, 390
Tirari Desert people, 253-4, 259
Tiwi people, 338
Tiwi wooden grave posts, *106*
Tjapwurong people, 307
tobacco, *see* narcotic plants
Tom Groggin (NSW), 284
Tonga, 380
Toogagal people, 351, 357
Toolondo (Vic), 304-7, *305*, *307* tools, *see* implements
Toongabbie (NSW), 351
Torres, Luis V. de, 377, 386
Torres Strait, 15, 50, 75-6, 78, 172, 377, 389
Torres Strait Islanders, 95, 98
totems and totemic sites, 4, 23, 101, 105, 204, 228-9, 232-3, 224-6, 228-9, 232-3, 240
Tower Hill (Vic), 29, 293
trade, *see* exchange networks
transportation: Africa considered, 394, 397; Botany Bay selected, 394, 397; cost of, 397; purpose and expectations, 392, 409-10; to America, 392
tree climbing, *170*
trees, *see* vegetation; canoe tree
trepang trade, 81, 98-101, *99-100*, 102
tribes *see* groups; and specific group names
Trincomalee, 390, 432
Triodia pungens, *85-6*; *see also* technology
Truganini, 321 *322*
Truganini's family, 319
Tuggerah Lake (NSW), 345
Tully River (Qld), 147
Tumut river valleys (NSW), 275-6, 284, 288
turkeys, 167, 299
Turramurra (NSW), 351
turtles, 53, 78, 167-8, *178*
Tuureen, 302
Tyrrell Creek (Vic), 32

Ubabuga, *see* Hookey's waterhole
United States, 389, 392-3
Urandangie (Qld), 267
Uruburra people, 257

van Diemen, Anthonie, 380
Van Diemen's Land, *see* Tasmania
Vancouver, George, 121-2
Vancouver Peninsula (WA), 130
Vanuatu, 377
Vasconcelos e Sousa, Luis de, 404
vegetation, 15, *17*, *51*, 84, 234, 254, 314, 318; burning off and, 17-18, 77; climatic change and, 18, 26, 28, 30, 42, 49, 51; impact of occupation, 17; renewal, 18, 88, *88*
Venus, transit of, 388
Victoria: Aborigines, southwestern, 293-302, *294-6*, 304-7; glaciation, 28-9; linguistic and social networks, 293, 295, *295*, 307
Victorian Alps, 275-6
violence, *see* fighting
volcanic activity, 29-30

Waake, 251
Wahgi Valley, 50-1
Waiter, 128
Wakulpu, 251
Walbiri men, *105*
Wales, William, 396
Walgalu people, 275-6, 286, 289
wallabies, 51, 55, 58-60, *87*, 131, 167, 235, 245, 277, 299, 309, 319-20, 323, 358; brush , 59; hare, 59, 226; pademelons, 60; rock, 53, 55, 59; *see also* kangaroos
wallaroos, *see* kangaroos
Wallis, Samuel, 387-8
Wall's Cave (NSW), 59
Wallumattagal band, 351
Walyunga (WA), 70
Wandeandegal band, 351
Wandjina figures, 94
Wangal band, 351
Wangianna, 259
Warburton Range (WA), 64
Warnabul Condeet people, 294
Warrgamaygan people, 148, 157, 159, 162, *163-5*
Warrnambool (Vic), 60, 294
Warungu people, 162
water fowls, 59, 76, 117, 293
water resources, *211*; Aborigines and, 76; climatic changes and, 25, 28-30, 38; early Australians and, 25, 65, 68; landscape and, 25; salinity, 30-1, 35, 38-9, 42, 44-5, 50; *see also* environment and landscape
watercraft, 78; canoes, 8, *8*, 95, 98, 101, 172-3, 277, 279, 312, 349, 351, 354, 360; catamarans, 312, 319, 321, 326; paddles, 172; rafts, 8, *8*, 172, 312; sails, 100
Waterhouse, Mr, 269
Wathaurung people, 307
weapons, *see* implements
weather: cold, ice, snow, fog, 25-6, 28, 44, 125, 275; rainfall, 15, 18, 25-6, 28, 30, 39, 44-5, 50, 55, 76, 80, 124-5, 135, 200, 254, 275, 293, 304, 318-19; temperature, 15, 18, 25, 28, 44, 48, 50, 77, 254; winds, 16, 25-6, 28-9, 31, 35, 38, 42, 45, 50, 76-8, 275, 293, 318, 323; *see also* climate
Wedgwood, Josiah, 410-11
Weipa (Qld), 77-8
Wentworthville (NSW), 351
Werribee River (Vic), 29
West Indies, 398
West Point (Tas), 103
whales, 296, 299, 355, *357*
White, John, 352, 423, 430-1
Wilberforce, William, 429
Wild, S.A., 335
wild cats, 245
wildfowls, *see* water fowls
Willandra Creek (NSW), 38
Willandra Lakes (NSW), 32, 35, 38-9, 44, 50
Williams, Mr, 425
Williams Bay (WA), 52
Wilson's Inlet (WA), 134-5
Wilson's Promontary (Vic), 61, 78
Wimmera River (Vic), 39
Windsor (NSW), 351
Wollongong (NSW), 351
wombats, 15, 17, 60, 319
women, 115, *241*, *247*, *296*; collectors and hunters, 55, 127, 131, 168, 203, 226-7, 233-4, *279*, 287, 298, *298*, 326, 352, 354, 358; ceremonies, 224, 229, 231-5, *232*, 240-1, 244, 246-7, *251*, 287; fights, 170; food preparation, 65, *89*, 127, 168, 224, 234-5, 245-6, 248-9, 251, 259; Macassans and, 99, 101; marriage and, 73, 128, 202-3; retrospective view, 239-41, 244-9, 251; senior, 229, 235, 244; status, 212; Tasmanian, 310, 312, 315, 318, 323, 326
Wonkangurru people, 257-9; also Wongkonguru, 228-9
Wonkumara people, 261-2
Woodcutter Point (Tas), 319
woodlands, *see* forests and woodlands
World Heritage List, 35
Worraddy, 314, 321, *322*
Wyrie Swamp (SA), 66, 92, 101
Wytfleet, Mr, 377

Yalangbara, *see* Port Bradshaw
Yandama Creek (SA), 261
Yarlijandi people, 258
Yass River (NSW), 28
Yaurorka people, 257
Yibai-Malian, *276*
Yidinyji people, 148
Yircla Meening people, 69
Young, Sir George, 394, 396, 409, 435

Zeewolf (ship), 377
Zhoukoudian, 7