Chapter 2
The Swan River Colony: Settlement of the Southwest

Western Australia is Australia's largest state and the second largest subnational entity in the world. With an area of 2,525,500 km^2 (five times the size of Texas), it occupies the western third of the Australian continent with climate ranging from tropical monsoonal in the far north, Mediterranean in the southwest and semi-arid to desert in the rest. Its capital city of Perth is the most isolated capital city in the world with the nearest large city being Adelaide in South Australia. Perth itself is closer to East Timor and Indonesia than to Sydney and Melbourne, with the distance between Perth and Sydney being akin to that between London and Moscow.

It is a vast and wonderful land with a mining industry that underwrites much of the Australian economy. Yet it sits far from the seat of national federal power and the bulk of the Australian population, 77% of the population reside in the eastern seaboard trio of New South Wales, Queensland and Victoria (Australian Bureau of Statistics 2007). The concentration of the Australian population in one main area leads to a cultural mind stance of "them and us" summed up nicely by Josh Thomas's televised quip "Perth, Adelaide, I knew it was one of those places no-one cares about" (Thomas 2009). The long history of being overlooked or held to be not very important by Federal politicians and other Australians has left Western Australians with a feeling akin to inferiority crystallised in the nickname of "Cinderella State".

It is well known that colonial Australia was founded as a penal colony on a Sydney beach in 1788, yet the Western Australian Swan River Colony was founded only 41 years later in 1829 (Fig. 1.1). It was the first free settlement colony in Australia with only the penal colonies of New South Wales, Moreton Bay (Queensland) and Van Diemen's Land (Tasmania) established before it.

Yet the Cinderella State does not glory in its historical heritage, Western Australians generally do not believe that it has any worth bothering with. The small time difference and the long history of being ignored may have led to this perception of lack of heritage worth, with Western Australians themselves generally perceiving the heritage of the eastern seaboard to be older and more valid. This perception is reflected in the lack of appreciation of the existence and worth of archaeological heritage in Western Australia, even by heritage professionals and political leaders. It is sincerely hoped that this manuscript will help change that perception.

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Western Australia is vast, and the environmental conditions faced by colonists were so different that in the northwest a second, separate wave of colonisation was created that was different from the Swan River Colony, although ruled through the latter colony. As environmental conditions are one of the forces which can shape and constrain settlement, some understanding of the physical conditions within settlement areas clarifies the history of settlement and exploration decisions during and after first colonisation.

The first of the colonisation events was the 1829 settlement of the Swan River Colony in the southwest of the state. The vegetation survey of Western Australia (Beard 1981) provides most of the pertinent information on the environmental conditions within the southwest.

Climate

The southwest can be divided into four major Mediterranean climatic types differentiated by the number of dry months in the year. These vary from Moderate Mediterranean with 3–4 dry months in the extreme southwest to Semi-desert Mediterranean in the goldfields with 9–11 dry months.

The region's weather is controlled by high and low-pressure systems which move one after another, eastwards across the state. In summer, the systems move across the Perth region, bringing a succession of hot dry days followed by shorter cool changes. Summers are essentially long, hot and dry with some local rain along the coast and isolated thunderstorms in the interior. Perth temperatures reach around 40°C for short periods during the summer with lower maxima recorded for the extreme southwest.

In winter, the weather systems are further south and have weaker anticyclones which allow the development of cold fronts. In Perth, temperatures rarely fall below 10°C, but the lower southwest and inland can receive light frosts. Most precipitation occurs during winter. There are two rainfall gradients within the area, the west coast and the south coast. The systems overlap along the south coast from Denmark to Cape Leeuwin, and this area receives the highest annual rainfall for the region (1,400-mm). Generally, rainfall decreases from around 1,000 mm per annum near the coast to 250-mm inland in the Goldfields.

Geology

The southwest can be divided into three general regions: the coastal lowlands, the plateau and the plateau margins. The greater part (the plateau and plateau margins) belongs to the Western Shield, an area of old deeply weathered Precambrian rock forming a mix of clay, clay loam, lighter earths and sands, all of which are relatively

infertile. The plateau margin forms a low cliff called the Darling Scarp, and its soils are ironstone gravels.

Between the Darling Scarp and the sea are located the coastal lowlands of the Perth Basin, an area of former beaches which occur as sandy soils arranged as a series of narrow belts running parallel to the coast and the scarp. Closest to the coast are white sandy soils, with a strip of infertile coastal limestone behind containing freshwater lakes. Behind the limestone are older grey sands which contain peaty swamps between the ridges formed by former beach dunes. The most fertile soils are confined to the river valleys and a belt of alluvial soil lying between the grey soils and the scarp. The belt of infertile coastal limestone stretches along the entire western coast of the southwest region to a point just to the north of Bunbury where it peters out allowing the more fertile soils to approach closer to the coast between Bunbury and Busselton.

The area contains several rivers draining west and south from the plateau to the coast. The largest of these rivers is the Swan River, which also has a large tributary called the Canning River. None of the rivers are navigable for any length by sea-going vessels. Flooded estuaries are common features, but bars blocked those on the Swan and Murray. The estuary of the Preston and Collie rivers forms a sheltered harbour as does that of the Blackwood, but the best natural harbour in the southwest is King George Sound at Albany.

Vegetation

While the soils of the southwest are, for the most part, relatively infertile, they supported tall forests and woodlands which to European eyes suggested fertility. In the extreme southwest are tall wet sclerophyll forests of karri, jarrah and marri. Dry sclerophyll forests of jarrah and marri occur on the ironstone soils of the plateau, while woodlands of marri and wandoo are found on the plateau's loamy soils. Tuart and jarrah woodlands form open stands on the coastal limestone from Bunbury northwards with banksia woodlands on the sandy coastal soils. At the time of European settlement, most of the woodlands were open and park like due to regular firing by Aboriginal people.

Further north past Lancelin and inland on the plateau, widespread sand plains are covered with Acacia–Casuarina–Melaleuca thickets. The southern part of the plateau and the coastal region east of Albany carries extensive mallee, mallee scrub and mallee heath. Dryandra–acacia heath occurs inland and along drier coasts with wind-pruned heath being very common all along the coastline. Sedgelands and succulent steppe are found around swamps (sedgelands) and saline lakes (steppe).

Area History

The following outline of southwest history has been gathered from several sources such as general Western Australian histories (Battye 1924; Crowley 1969; Stannage 1981),

local histories (Erickson 1978; Fall 1972; Garden 1977, 1979; Richards 1978; Sanders 1975; Shann 1926; Staples 1979) and works on historical geography (Cameron 1975, 1981; Pitt Morison 1982).

Permanent settlement of Western Australia began in 1829 with the founding of the Swan River Colony. Accidental and purposeful surveying by Dutch, English and French navigators had largely filled in the outline of the coast, but the overall impression was of a barren and waterless land. French interest in the better-watered southwest coast prompted the military settlement of King George Sound (Albany) by the New South Wales colony in 1827. King George Sound was the best natural harbour known on the west coast and already acted as a distress stop for ships on the Great Circle route to Sydney.

Vlamingh noted the presence of the Swan River in 1696. Baudin explored it in 1801, and it was explored again by Captain James Stirling in 1827. Although Stirling explored both the Swan and Canning rivers, exploration was confined to the river valleys with their richer alluvial soils. Stirling's expedition led directly to the founding of the Swan River Colony with Stirling as its governor.

Exploration before settlement had discovered the potential harbours at King George Sound, at the mouths of the Blackwood and Preston rivers, and at Cockburn Sound located to the south of the Swan River. Early exploration after settlement was confined largely to the Swan River area with smaller investigations centred on the harbour at King George Sound and the mouths of the Murray, Preston and Blackwood rivers. One overland trek was also made to connect the settlement at King George Sound to that on the Swan.

The next round of explorations investigated the extent of the Avon valley on the plateau, (the upper stretch of the Swan River was misnamed the Avon, as it was initially thought to be a different river) and searched for land routes along the coast between the harbours. It also explored Cape Leeuwin between Augusta and Busselton and investigated the hinterland of Albany more thoroughly. Exploration after this expanded out from Perth and generally connected up the harbours by land. The more fertile soils in the Bunbury and Busselton hinterlands were fairly intensely explored out to the overland track between Albany and Perth.

Settlement of the region began in the Swan River valley with the choosing of the sites of Fremantle and Perth. Stirling had been instructed to choose a site of the future seat of government by weighing:

> the advantages which may arise from placing it on so secure a situation as may be afforded on various points of the Swan River against those which may follow from establishing it on so fine a port for the reception of shipping as Cockburn Sound is reputed to be. (Sir G Murray HRA. Series 3 vol 6:600 cited Pitt Morrison 1982)

Stirling had to defend his choice of site for Perth to the Under Secretary for the Colonies who wanted to know why it had not been placed on the point of land where the Canning and Swan Rivers met. Stirling listed several reasons for his choice. They were not necessarily listed in order of importance. The reasons were as follows:

1. The site had building materials.
2. The site was at place where the rocky soil of the coast gives place to rich alluvial.
3. If the bar at the river mouth was removed, an excellent harbour would exist from the town to the sea.
4. Because of the river bar, two towns were needed, one at the river mouth and one high enough up the river to have easy communications with the agricultural lands.
5. Although not mentioned by Stirling, the site also possessed freshwater sources without which settlement would have had been impossible.

Building materials could also be found at the site between the two rivers enquired about by those in London, but it lay within the infertile limestone belt. Stirling clearly recognised that the colonists living in Perth would need to grow food to survive, and this factored strongly in his site choice as did transport considerations. The site of Perth is in fact at the head of a drowned estuary, wedged on that part of the river which is past the infertile coastal limestone but before the first serious natural obstacle to lighter traffic on the river, the Herrisson Island mudflats. It is also situated on the same side of the river as the majority of the agricultural land found in Stirling's 1827 survey.

The port of Fremantle was situated in a bay immediately south of the Swan River mouth where a short land isthmus divided it from the waters of the Swan. The bay was partly protected by a limestone cliff from north and north-westerly winds, but was open to southerlies. The land to the north of the river mouth did not offer any bays, being a long sloping curve to Rous Head. To the south of the port lay the waters of Cockburn Sound sheltered by Carnac and Garden islands but with difficult and uncharted approaches.

Fremantle's position puts it on the opposite side of the river to Perth. Transport and communication routes went from the riverside of the isthmus up the river to Perth or crossed the river just east of the isthmus and followed the riverbank to Perth.

When Stirling arrived in Western Australia, the first task he set to his surveyors was to chart the approaches into Cockburn Sound. However, the early arrival of immigrant ships meant that this work was abandoned and the two town sites were chosen and surveyed. By early September, there were 135 settlers and their families. Grants to 21 of these exhausted the previously explored fertile land on the Swan. Land was allocated in thin strips running perpendicular to the river giving each grantee a small section of river frontage, some fertile alluvial soil and a lot of the less fertile soils further from the river (Cameron 1975:19). A secondary pattern was also established based around the freshwater lakes.

Explored land on the Canning River which had already been promised in a large grant to one settler was re-allocated in November and a further 11 families settled. People applying after this were told to settle further south at Port Leschenault (Bunbury). The existence of the sheltered inlet there was already known, and Stirling sent men to explore its three rivers and their surrounds during 1829 after they had explored the Murray River.

Port Leschenault was declared in 1830 and was the first satellite of the main settlement, being declared even before Guildford, the major early settlement on the Upper Swan. Plantagenet County at Albany was thrown open for settlement soon after followed by Guildford, Augusta, York, Northam and Beverly in the Avon valley. An overland route between Perth and King George Sound was explored in early 1831, and the town of Albany was proclaimed. The towns of Kelmscott on the upper Canning and Kingston on Rottnest Island were also proclaimed in 1831.

Land in the Murray district had been granted to Thomas Peel, the settler whose large Canning grant had been re-allocated. He was granted 25 miles of the right bank of the Murray plus the coastline to Point Peron. Peel temporarily settled his people outside his grant in the Cockburn region (Clarence), which was closer to Fremantle (Burke 2007). He also sent some of his people to Point Peron (Rockingham) and to the mouth of the Murray River (Mandurah) to prepare the area for permanent settlement.

The resistance of the southwest Nyungar peoples to this colonisation of their homeland was mainly scattered and sporadic. While relations between the indigenous peoples of the southwest and the new arrivals were initially cordial, the newcomers did not understand indigenous protocols or the idea of reciprocated hospitality, which led to misunderstandings and reprisals including spearing or stealing provisions (HCWA 2007). Indigenous people must have also started to realise that the newcomers were staying this time and they were settling on areas of good water and fertile soil, which were also the areas which supported the indigenous populations. Between 1829 and 1834, farms on the Upper Swan came increasingly under reprisal-type attacks stemming from mistreatment or misunderstandings. These prompted retaliations by settlers including the use of armed force against Fremantle Nyungars, designed to impress fear of the newcomers' superiority of arms on Nyungars (HCWA 2007).

Only in one area did indigenous resistance halt colonisation for any appreciable length of time. This was on the Murray River where resistance successfully confined settlement to a small area around Mandurah for 4 years until the battle of Pinjarra in 1835. The Murray region was fairly densely occupied (for hunter-gatherer densities) by the Bindjareb Nyungar peoples, three indigenous family groups totaling approximately 85–100 people. The men of the Binjareb Nyungar made a name for themselves almost from first settlement as people fiercely resistant to giving up control of their lands (HCWA 2007), and they were thought responsible for the first death of a settler at indigenous hands. This was followed by attacks on Peel's groups of settlers at Clarence and Rockingham in 1830, attacks during which several indigenous men may have died, thus setting up further payback actions.

It did not, however, stop Peel, supported by a small garrison of soldiers, from moving people to Mandurah. The soldiers immediately mounted a serious, if probably unintended, attack on the economic and spiritual life of the Binjareb Nyungar by breaking the stone fish traps which blocked the Murray and Serpentine Rivers. These traps formed the economic basis to support large social gatherings for ceremony and trade which were at the centre of economic and cultural life for the Binjareb Nyungar.

This action led to indigenous attacks on the soldiers barracks, the retaliatory forming of local colonial militia and a worsening of violence. In 1832, a soldier was killed and another severely wounded in separate attacks; a later attack on the barracks by a strong force of warriors was only halted by the arrival of more soldiers from Perth. Peel and his settlers were also threatened, and in 1834 the Binjareb Nyungar were blamed for raiding a mill in South Perth. After this, some of their leaders were captured and publicly flogged, with one being held in prison for 2 months to ensure good behaviour before being flogged again and released in June 1834.

Shortly afterwards in July 1834, Edward Barron, a retired major, who had killed a Nyungar man in a earlier conflict in the Perth area arrived in Mandurah to buy a mare from Peel, only to find that the mare had disappeared into the bush. Binjareb Nyungar men tried to lure both Barron and Peel out into the bush to look for the lost mare but succeeded in only luring Barron and a servant of his, a young man called Hugh Nesbitt. Both were attacked and Nesbitt was killed, becoming the first settler known to be on friendly terms with indigenous peoples to be killed. This prompted a great deal of fear and anger throughout the colony in mid 1834.

Governor Stirling arrived back in August from a trip to England to a fearful colony calling for punitive action. Therefore, in October, Stirling set out to Mandurah with a party of 24 that included twelve soldiers and six mounted police. The party aimed to find a large party of the Binjareb Nyungar that Stirling's sources had told him was camped at the river, at a place which soon afterwards became the town of Pinjarra. Stirling's party camped at Ravenswood just short of Pinjarra and the next morning Stirling sent Captain Ellis, Norbett and three mounted police to scout out the Nyungar camp on the western side of the river. Meanwhile, he positioned the rest of his men at the two fords and along the eastern bank of the river. Ellis's group startled the Nyungar people and pushed them towards the river where they were caught against the steep river banks in a classic military pincer movement.

What happened next is variously known as the Battle of Pinjarra or the Massacre of Pinjarra depending on whether the viewpoint is settler or indigenous. Colonial accounts of numbers killed vary from 15 men to 25–30 men, women and children (HCWA 2007). They also describe the party as a large band of warriors with women and children. The oral histories of the Nyungar suggest that the higher number range is more correct and also that the warriors were elsewhere and the group attacked was the family camp of old men and women. But whatever the true number, sex and age of those killed, what is certain is that the event was catastrophic enough for a small population of only 85–100 to completely disrupt the social fabric of the Murray River tribes and seriously impair their ability to resist the colonisation of their lands. With the Governor having personally removed the obstacle to settlement, the first colonial settlers moved to Pinjarra only months later early in 1835.

The declaration of towns and the number of acres granted in each area of the southwest suggest widespread and dispersed settlement by 1837. However, the actual pattern of land alienated was very clustered, and the importance of the rivers is noticeable, for not only was land alienation centred on the rivers but also all the towns were also on them.

The rivers were important as transport corridors for both water and land routes. This is shown in the shape and placement of grants which were predominantly rectangular, with one short side lying along the river so that the maximum amount of grantees had river access. Rivers were also important as sources of freshwater and fertile soils.

Not all the alluvial land on the rivers was taken up, especially that on the southern rivers. Alienation at Bunbury centred on the navigable parts of the rivers, as at Augusta and around Albany. Alienation on the Murray started at Pinjarra which was the limit of navigation but which also marked the start of fertile lands. At Bunbury and Busselton, fertile lands reached close to the coast, so this limiting factor was not at work there. Alienation at Busselton was constrained by the lack of a river corridor rather then fertile land and was concentrated close to the coast. The bulk of alienated land across the southwest was on soils more fertile than the coastal limestone; however, in Perthshire some of this land was alienated too.

The expansion of alienation within Perthshire appears to have been constrained more by carting costs and the spatial distribution of fertile river soils than by lack of river navigation. However, Guildford, the inland agricultural town on the Swan River, was situated at the limit of lighter navigation and Kelmscott, which was beyond the limits of lighter navigation on the Canning River branch of the Swan River remained for a long time a town in name only.

There were three major areas of settlement beyond the navigable parts of the rivers. The largest of these was the Avon Valley (Upper Swan), which grew wheat and wool and relied on carting its produce to Guildford for lightering down the river to Perth and Fremantle. The second largest was in the upper regions of the Kalgan and Hay rivers beyond the dense wet sclerophyll forest of the lower regions surrounding Albany. To avoid the worst part of the forest, the land route between Albany and Perth also passed through this area, providing a transportation link to both harbours. The third was at the Williams River which was also on the overland route between Albany and Perth. Both these southern inland regions relied on walking stock to market.

In 1850, the free colony of Western Australia became the last of the British Australian convict colonies. The large pastoralists were the main agitators for convict labour. They had a problem not only with the scarcity and high cost of labour but also with the attitude this encouraged. Convicts provided a cheap and subservient underclass, and the pensioner guards who initially guarded the convicts were settled on the land as small farmers in small agricultural village type arrangements.

Gibbs (2001, 2007) has studied the shape and nature of the convict system in Western Australia and compared it to that in the penal colonies along the eastern seaboard. He concludes that the "reformatory, punishment and security elements of the NSW and Tasmanian convict establishments were completely absent" (Gibbs 2007:67) in Western Australia. The aim of Western Australian colonists in accepting convicts, which they demanded be young male minor offenders from rural backgrounds, into their free colony has been categorised as a tripartite aim of "providing cheap labour, providing public works, and encouraging imperial funding" (Gibbs 2007:67).

The Western Australian system was based around a central prison and a system of hiring depots, road and work stations, ticket-of-leave depots and branch establishments with road and work camps where construction was happening (Gibbs 2001). Unlike the early system in the eastern seaboard colonies, where isolation and security played a main role in the location of system elements, in Western Australia the main elements of the system, the prison, hiring depots, road and work stations, were located close to pockets of settlement density. The majority were located within the Perth–Fremantle–Swan valley central region, but a system of regional hiring depots, road and work stations were located in or adjacent to all the major population centres in the southwest. Additionally, a convict hiring station was located at Lynton shortly after the area was opened up for settlement and mining with the intention of aiding the opening up of the area and providing labour for the newly established government mine in the area.

The convicts not only provided a cheap and subservient labour force for the large pastoralists but they also provided the colonial government with the manpower and funding for public works. Not only did they build accommodation for themselves, their guards and administrators but they were also used extensively to build public buildings, roads, bridges, culverts, jetties, river and sea walls and carried out drainage and land filling projects, with much of the work aimed at improving the flow of goods and communications throughout the colony. Trinca (1997) when analysing the patterning of the Western Australian convict system and the development of a Western Australian police force suggested that the convict system also helped the colonial government to establish a security and surveillance network throughout the colony linked by the improved road network to help define the colonial landscape as a series of regulated places.

With the convicts came pensioner guards, retired soldiers who received passage to the colony for themselves and their families, a grant of land, cottage and other benefits in return for guarding convicts on the journey and for a period after they landed. They also had to spend 7 years in the Enrolled Pensioner Force, a reserve civil defence force. The pensioner guards were settled on the land as small farmers in villages close to depots and other centres of convict activity (Gibbs 2001).

The Western Australian convict system was clearly not shaped as a system of punishment, although that obviously occurred. It was overwhelmingly a system to support the production and transport of raw materials from the colony to the British homeland core, and thus the shape of the system is a pattern that have been carved by capitalist forces creating the differences between the earlier punishment regime of New South Wales, Tasmania and Queensland.

Land Regulations

The Swan River colony initially operated a system of land grants. In 1831, the Ripon Regulations were introduced to force granted land into cultivation or to have

it revert back to the government. The regulations also introduced a high price for buying crown land.

The Ripon Regulations for freehold land were still in force after later regulations were introduced for leasing crown land. The government was forced to introduce leasing by the spread of illegal occupation of crown lands by pastoralists during the 1840s. In 1851, crown land was divided up into A and B class land. Class A land was all land within three miles of a town or two miles of the coast or permanent water. Class B land was everything else.

Pastoral leases on Class A land were available on annual lease, while those for Class B were available for 8 year leases. Up to 20,000 acres of either class of land could be leased with a minimum section of 1,000 acres. Class A leaseholders had a pre-emptive right of purchase of the leased land, but limits were placed on the purchase of waterholes.

A system of tillage leases was also put into place. Tillage leases could be located anywhere in the colony and were for 8 years and could be renewed. A tillage lease could be for up to 320 acres.

Agriculture

The evolution of southwest agriculture has been studied extensively by Cameron (1975, 1981:172–174). His research has been drawn on to derive the following outline of the southwest agricultural system and the social system that went with it.

By 1860, the southwest colonists had evolved a mature system of land management with regional specialisations, which is classified by Cameron (1981) as a pastoral-dominant form of mixed farming. The technology and labour demands of raising stock and crops had been blended into a year long system in which each part complimented the other. This system is best documented in the Avon Valley.

Nov–Dec. Breeding flocks sent to outstations with a shepherd and a mobile shepherd's hut (called Cabaroo). Studs and wethers kept near homestead for closer care. All flocks kept in temporary folds at night. Small summer crops of potatoes and maize may be planted near homestead.

April. All flocks returned to homestead for lambing and to collect manure for crops. Sheep kept in temporary folds on land to be ploughed or manure collected from folds and spread over fields. Manure ploughed in, usually with the first rains.

May/June. Seed steeped in strong brine solution to contain smut and to aid germination. Wheat or barley seed was broadcast by hand over manured fields once the rains had started and was then ploughed in. Double harrowing after planting and enclosed with a fence (Ditch and bank, post and rail or brushwood fence).

After planting lambs were tailed and flocks reorganised and sent out to outstations again. Most were sent to nearer outstations but scabby sheep were sent to distance locations for treatment.

Aug. Young crops rolled to promote vigorous growth and compact soil to retain moisture.

Sept. Flocks brought in for shearing before the grass dried and caught in the fleece. Sheep washed 3 days before shearing and dried in a small fold strewn with black-boy rushes. The fleece was cut in one piece and then thrown onto a table where small dirty pieces were removed before it was tightly packed into a bale of similar quality wool.

After shearing, flocks were again divided and cured scabby sheep returned to their flocks and newly infected ones removed and sent to outstations. The rams were put in with the breeding flocks and the previous season's lambs removed and sent to outstations for weaning; wethers were probably castrated during this time.

Oct. All flocks returned to homestead and crop harvested.

Nov. Breeding flocks sent back to outstations.

The seasonal round concentrated on the two major crops of the system, wool and wheat, but the system was more diversified than this suggests. Cattle (both meat and dairy) also formed an important part of the system. Meat from sheep rather than wool was also important, so important that pastoralists had to compromise between market demands by breeding sheep with large carcasses with the best coat possible, instead of smaller sheep with fine wool for the British market alone. This pastoral-dominant form of land management allowed successful occupation of the inland areas of the southwest. It spread from the Avon valley northwards to the Victoria District near Champion Bay (Geraldton) and southwards to Albany and Esperance.

Through the device of operating dispersed pastoral leases, a pastoralist could deploy his stock over a wide area, bringing them back to the homestead for shearing and breeding. Similarly, tillage leases and freehold land were used for crop growing in favourable areas close to transport rather than throughout the region within which a pastoralist operated.

Social System

Southwest pastoralism evolved a social system different to the powerful squattocracy that emerged in eastern Australia. Flocks were smaller than commonly found in the eastern half of the country being 2,000–4,000 rather than over 10,000. Sharing flocks and labour were also common and led to a more complex social system than in the eastern Australian states.

This system consisted of large pastoralists in command of extensive operations, urban share owners of smaller flocks, rural share owners or managers of combined flocks, small agriculturists, high-wage-earning shepherds, labourers and servants, and after 1850, convicts to provide a cheap labour force.

Indigenous Australians were mainly excluded from this social system and pushed to the fringes of the occupied land and early towns. However, at the extreme limits of the southwest colonisation, in areas finally occupied in the early 1870s indigenous labour made up a large part of the pastoral workforce. The settlement around Esperance occurred both after the end of the transportation of convicts to the colony and after the initial phases of northwest colonisation, which had successfully incorporated indigenous people into the pastoral system as the mainstay of the work force. The Esperance settlers found themselves at the same disadvantage as the northwest colonists as no convict hiring stations or ticket-of-leave depots were set up within their region but were able to learn and adapt from the initiatives of their northwest colleagues whose process was reported regularly in the Perth newspapers.

Southwest pastoralists used convicts not only to replace expensive, independent free labour but also to create a landscape that reflected their desired social order. Virtually, all of the large southwest pastoral mansions were built during the 1860s by convict or ticket-of-leave labour.

Gibbs (2007) states that the archaeological evidence of elements of the convict system such as the Lynton Convict Hiring Deport and associated pensioner guard village provides an insight into the social and economic relationships the colonial government and large pastoralists were intent on creating. He concludes that the archaeology suggests "yet another attempt to manifest the yeoman ideal" (Gibbs 2007:66) with the Lynton depot and proposed town, established as they were ahead of major settlement, providing a chance for them to plan settlement to conform to their ideals.

Their ideal appears to have been an underclass of ticket-of-leave men providing agricultural and pastoral labourers easily acquired from a depot located in the middle of the town in close proximity to the intended church, school, police station and core administration building locations. The location of the station within the retail ribbon of the intended town clearly shows its function was economic not penal. The depot also contained an immigrant depot to provide women of suitable class and marriageable age for the labour force to encourage stability and permanence once the ticket-of-leave had expired.

The pensioner guards appear to be the intended second social tier. They were granted small blocks in small villages at the edge of towns, including Lynton suggesting that the ideal cast them in the role of yeoman smallholder and tenant farmers (Gibbs 2007). Gibbs presumes the middle social tier was intended to be the free settlers to the region expected to be working smaller landholdings, working trades, running shops or undertaking mining activities with the large-scale agriculturists/pastoralists and top government administrators at the top of the social order. This suggests that the mindset was little changed from that of the first wave of colonial administrators and large-scale colonists such as Peel who brought with them the ideal of an agricultural landscape based on the British model of landed gentry, middle classes and urban and rural poor providing labour.

Architecture

The first Swan River colonists brought with them ideas about suitable rural architectural styles based on the Georgian style that was still common in rural England. The first shelters were either huts built of local materials or prefabricated homes brought with the colonists. Huts were of timber, thatched and enclosed by brushwood. A widespread design appears from a contemporary drawing to have been the V-hut, which was shaped like a large thatched tent over a central ridge pole (Friend 1830 illustrated in Pitt Morrison and White 1979:513). Prefabricated homes were also in timber with wall panels fitted to pre-cut timber frames; however, no early V-hut or prefabricated homes are extant in Western Australia to compare historical information to physical evidence.

Also little archaeological research has been funded on first settlement sites in Western Australia. Peel's original town site of Clarence (Burke 2007) has been located and is now the only long-term research site in Western Australia. Unfortunately this research is in early stages and only one journal article (Burke 2007) has been published. Burke (2004) also surveyed sites associated with settlement along the upper Swan River from 1829 to 1860. His survey found 123 features such as fences, irrigation channels, standing buildings and building sites. Combining historical and archaeological research, he could identify no difference in construction materials between homestead and worker huts, but he did identify attempts to maintain a class system in the layout and size of buildings.

The homestead complexes he studied had a sequence of first tents or wooden frames covered with hessian, then wattle and daub buildings constructed within 6 months of arrival (1830–1836) followed by buildings of brick, mixes of brick, rammed earth and ironstone or timber, with timber the predominate material (1837–1846). He identified that the wattle and daub house or early brick-based house built for the gentry owner within the first 6 months was still quite substantial, in the order of 39 by 12 m (Burke 2004:120). Between 1847 and 1860, a third larger brick house would have been built on a narrow point of land, visible to visitors with building size and aesthetics, suggestive of an English country farmstead giving "a statement about social standing and the maintenance of power and control" (Burke 2004:334). Worker buildings, although also replaced in brick, were, in contrast, smaller and placed to be out of the sight of visitors and the homestead.

Historical sources such as early census records (1832, 1837) and contemporary descriptions help with defining a pattern of construction materials but are less helpful at defining ideologies frozen into landscape. They suggest that in Perth buildings created from local materials were of wattle and daub, mud brick, split log or limestone walls with lime mortar used to cement and plaster brick and stone buildings. Limestone was burnt and mixed with yellow sand to produce the coarse mortar and limewashes. Roofs were of bush pole framing covered with thatch or wooden shingles. No homes built before 1859 are still standing in the central Perth/Northbridge area to be compared to the scant historical information. There are six later homes dating to between 1859 and the mid 1860s (HCWA 2009). All but the

1859 bishop's residence are small brick homes in the Victorian Georgian style with thick walls, steep hipped roofs and small double hung windows with three described as having a basic four room layout.

Historical information also suggests Fremantle had a larger percentage of limestone buildings due to the availability of the material. Limestone was used in rubble stonework with some government buildings being constructed from cut limestone blocks (Pitt Morison and White 1979:519). Despite being built in the more durable stone, none of the Fremantle residential buildings from the period 1829 to 1849 are extant and available for comparison. However, some later buildings survive. There is one government built terrace of homes constructed in 1851 in the Victorian Georgian style and ten houses built between 1860 and 1880 surviving (HCWA 2009). Two of the three houses with confirmed construction dates of ca. 1860 are described as colonial Georgian in style, being small houses built of limestone with roofs sloping down over the verandah and small paned windows. The other building, originally a shop and residence, was built in the Victorian Georgian style, the style of all five of the other houses, all being built after 1860. All but one of these buildings were limestone, with two being limestone rubble.

There are 24 pre-1840 homes still standing in outlying districts of the southwest which architects can study and compare to historical information. According to historical information, dominant materials in outlying areas varied. In the Murray district, the main early materials were mud brick or wattle and daub (Richards 1978) but only one of these buildings survives, an 1830 old colonial style pise (rammed earth) homestead with a high pitched roof and a broken-back verandah. Two early stone buildings are extant, both in Mandurah (HCWA 2009). Ecott's 1830 two-room stone cottage is described as colonial vernacular with small jarrah framed windows, front verandah, a bagged limewash finish to the rough stone walls, an internal dividing wall which does not reach the ceiling and an ant bed floor covering under jarrah floorboards, which extends out onto the verandah. Hall's 1833 cottage of squared limestone blocks is larger with five rooms, four of which were bedrooms, kitchen, laundry and bathing arrangements being built separate to the house. The style is a simplified old colonial Georgian with a broken-back roof, a central chimney, jarrah floorboards and a verandah around three sides.

There are eleven other early extant places from the Murray region, three of which date to the 1840s. Two of these are of handmade brick with the third being the only surviving cottage in Western Australia built of black gin (Xanthorrhoea, the Australian grass tree). All are small cottages with the architectural style of only one being described in the Western Australian heritage database (HCWA 2009), that being noted as Victorian Georgian. The region also has three handmade brick homesteads built ca. 1850; the architectural style of the two smaller homesteads is not described in their heritage listing but that of the grand homestead at the centre of a homestead "village" is described as simple Victorian Regency. One of the remaining places dating to the 1860s is a Victorian Georgian brick homestead complex also associated with elites, while the other four are smaller homesteads and cottages of old colonial Georgian or Victorian Georgian.

In the Avon Valley historical sources say mud brick, stone or rammed earth (pise) homes were dominant (Garden 1979) and three from the 1830s still survive with

their style described as vernacular (HCWA 2009). In York there is a pise cottage which originally had a grass tree roof with an L shaped plan which includes a kitchen at the short end of the L with a large storeroom taking up much of the long part; beyond the storeroom were a living room and two bedrooms. In Northam, an adobe homestead, one room wide with front and back verandahs, survives as does a stone cottage which might have originally been a shepherds hut associated with an absentee landowner but which by 1836 was the homestead. Northam also has three stone and mud mortar buildings left from the 1840s with the first surviving building from Beverley, a vernacular styled abode homestead also from this period.

In the forested lower southwest historical sources say slab houses or wattle and daub was dominant. Slab houses were built with timber slabs caulked with clay. Chimneys were of timber lined with clay or of stone, and roofs were thatched. Associated huts were often of bark or thatch (Staples 1979). Four wattle and daub homes remain, two are from the 1840s, one from 1850 and one from 1869 (HCWA 2009). All are described in the heritage database as wattle and daub with stone chimneys. One is described as a two roomed farmhouse while the 1850 home is Victorian Georgian in style.

Only three slab homes remain, one in Busselton and two in Harvey, with one dating to 1840 and the others to 1860. One 1860 house is described as old colonial, while the other two are vernacular in style. Of the other surviving pre-1870 houses in the southwest, 17 are of stone, 5 are of adobe or mud brick, 6 are of handmade brick, 11 are of brick, 3 are of weatherboard and one is of a mix of stone and rammed earth. In style, 35.5% are described as Victorian Georgian and 25.5% as vernacular, given that the 31% which do not have a style described in the heritage database are also likely to be vernacular this gives a percentage of up to 56.5%. Both materials used in the surviving houses and the variety encompassed by the term vernacular suggests more variety and less formal style then in the metropolitan areas but unfortunately the descriptions contained in the heritage database are often lacking when describing both style and layout.

Based on the pre-1850 homes which have been preserved and historical information which is mainly pictorial architectural historians suggest ground plans are of two main types, a simple rectangle and a long design often only one room wide (Pitt Morison and White 1979). The rectangle design was often double storeyed and allowed for a simple unbroken hipped roof. The design was Georgian in style with regularly spaced windows and doors. It is suggested that windows were wooden shutters on simpler houses and double sashed square glass panes with glazing bars on the more elaborate. A front, one storey verandah was soon incorporated into this basic design. The long design was usually single storeyed and surrounded by a verandah with rooms opened onto each other or onto the verandah. Before 1850 a third general design can be identified as being present in towns. This design was two storeyed with a verandah and balcony at the front (Pitt Morison and White 1979:520).

The most common homestead design is thought to have been a rectangular cottage with either a hipped or gabled roof over two rooms divided by a central passage or a central room with access to two flanking rooms. Verandahs are thought to have been quickly incorporated into the homestead design. It is thought homesteads grew by adding on separate rooms linked by verandahs and breezeways with kitchens often

moved away from the main house in this process (Molyneux & White 1979:184). However, these identified designs are based on information from a tiny portion of early colonial buildings which have happened to survive and on pictorial information which is also not extensive for the early colonial period. It is clear that archaeological research on early colonial buildings has the potential to overturn this perception of two simple designs possibly to one of variety around two central themes.

The presence of convicts between 1850 and 1868 created a cheap labour force that was used both by the government and the wealthier colonists to improve buildings, communication and transport. The dominant style was still based on Georgian, but ground plans became more elaborate, and roofs often had semi-octagonal bays around which the encircling verandah followed. The verandah roof was usually separate from the main roof with small eaves and decorated brackets, plates, fascias and barges (Pitt Morison and White 1979:528). A common plan was a single storeyed building, square in plan being two rooms wide and two rooms deep with a lean-to behind enclosed by the same roof. A verandah then encircled this on three or four sides (White 1979:174).

The high cost of imported building material such as ironwork, nails, bolts, glass, paint, door and window frames restricted their use to a few government and private buildings (Campbell 1979:91). Bricks were made wherever pockets of clay were found and either sun dried or burnt in small kilns. In Perth, some high-quality bricks were available from a brickworks established to the east of the city. Roof shingles were usually made from casuarina with framing constructed out of jarrah or karri once the difficulties of working jarrah had been mastered. Jarrah was also used for floorboards with joining and moulding the only part of the construction where imported softwoods might dominate (Campbell 1979:91). The colonists quickly learnt that softwoods were easily destroyed by termites.

In country areas, successful pastoralists used convict labour to update their homes. In the Murray district, the typical homestead was built of bricks or limestone with wooden shingles and had wide verandahs, a central passageway, a large cellar and a separate kitchen. On the largest estates, the homesteads were large enough to be called mansions with up to fourteen rooms (Richards 1978). The Avon Valley had also moved up to larger brick built homesteads that were enlarged even further by convict labour (Garden 1979). In the southwest by the 1850s, the homestead had become a timber cottage which was extended with brick using convict labour or replaced entirely with a new house. The better quality homes of the 1860s were of pit sawn timber, local bricks, stone or local limestone with a wooden shingle roof (Staples 1979).

An overall picture of the size of houses and the materials used at the end of the southwest study period can be gained from the 1870 census. These figures show that 73% of buildings had less than four rooms with a further 27% having four to six rooms. The mansions of the large pastoralists and entrepreneurs with their 14 rooms, while dominating the local history information and heritage listings, were in a decided minority. Slate, tile or iron roofing was also in a minority with only one percentage of roofs being in these materials, 66% were shingled and the rest thatched with a larger percentage of thatch being used in the country areas.

In Perth, brick was the dominant building material, with limestone being dominant in Fremantle. Bricks were also found in country areas with good clay deposits such as the Avon and Murray valleys (Pitt Morison & White 1979:48), but timber was the popular all-round building material across all areas of southwest settlement. Unfortunately, the small timber buildings which made up the bulk of the pre-1870s housing stock are less likely to have survived successive waves of development pressures long enough to become heritage listed. Where they were replaced by pre-1950s building stock, archaeological evidence of design and use may still survive. However, unless the replacement building is now heritage listed on the State Register of Heritage Places or on a local government town planning scheme heritage list, evidence is not protected and is very unlikely to be ever excavated and researched.