

The Australian Bush

Fullerton, Mary E. (1868-1946)

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**The Australian Bush
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To the Memory of the stout-hearted. —
The pioneer Men and Women of the Bush.

Preface

RUPERT BROOKE, urged by some premonition that the world and its wonders were never going to be quite the same again, visited the Antipodes in the last weeks of such peace as he was to know; and finding himself at Auckland, wrote home describing his impressions of the place. It struck him as odd that he should be able to eat strawberries there at Christmas time. And that quaint conjunction of old associations made more piquant for him a further oddity. New Zealand, he goes on to relate, “turns out to be almost exactly like England.” Obviously, he had not expected that. No home-keeping Englishman does, even to-day when New Zealand is still more like England than it was in 1914.

So, in their various and characteristic ways, all the other far places where our English kin foregather are growing more like England: far places set along the trails blazed by their forefathers, to whose courage and hardihood our “dominion over palm and pine” persists in testifying. But the pioneers have passed on, their day is over, their young posterity is concerned less with empire-building than empire-keeping.

In no Jingo sense, however, England *has* expanded, more than ever so since Rupert Brooke ate his Yuletide strawberries in New Zealand, and was moved to a gentle astonishment. But that expansion is not traceable on the post-war maps. It is the times that have changed, not the territories.

Mostly, it is the women of our race who have brought the change about. Regiments, armies of them, are engaged in building up new Englands overseas within territorial confines plotted before they were born. In Malaya, Ceylon, India, in South, West and East Africa, I have myself seen the evidences of it. In Australia, New Zealand and Canada, other people have done likewise, and rendered me their testimony.

Consider our tropical dependencies. In the old days — we speak of them thus, but all we mean is just before the war — only the senior members of British mercantile firms were as a rule married men. Now even the juniors on their first agreements not infrequently are married, and bring their wives out. This is equally true of planters, and almost equally so of the civil, military, and technical services. Various factors have combined to make this possible. Better rates of pay all round, improvement in health conditions, leave arrangements, hill-stations, and possibly educational facilities, provision of wives' passages, and so forth. Boards of directors and government committees have taken counsel, and arrived at the practical, business-like conclusion to employ

married men by preference because it pays better.

What has followed is simply an Empire-wide social revolution, accomplished virtually in no time, and never yet properly chronicled. All over, as one might say, bar the shouting. Take Kipling's India as one example. It no longer exists. Take any other dominion, colony, or dependency of the British Empire, seek out any old stager, draw him aside, and listen to his strange tale of chances and changes that he probably finds bewildering. There is a new life — an English life — pulsing in these places that requires to be apprehended and recorded, as vividly and authoritatively as may be, by historians whose knowledge is at the same time wide, intimate, and fresh. So many people are longing to hear about it — travellers and emigrants *in esse* or *in posse*, their friends at home — all wanting to know things that the best and brightest of travel-books, the most crammed and earnest of guide-books, can never quite succeed in conveying. For them the OUTWARD BOUND books have been planned and written.

ASHLEY GIBSON.

Some Recent Books about Australia

- Brady, E. J. *Australia Unlimited*. Melbourne, 1917.
- Bryce, Viscount. *Modern Democracies*. London, 1921.
- Fox, Sir Frank. *Australia*. London, 1927.
- Johns, Fred. *Who's Who in Australia*. Sydney, 1922.
- Jose, A. W., and Carter, H.J. *Australian Encyclopaedia* (2 vols.). Sydney, 1925.
- Huntington, Ellsworth. *West of the Pacific*. New York, 1925.
- Smith, Sir Ross. *Fourteen Thousand Miles through the Air*. London, 1922.

Author's Preface

I FEEL that the quantity and variety of the material to be dealt with, the immense ground to be covered in the survey, renders it impossible for me in the space available to do full justice to my subject.

The idea aimed at, however, has been to indicate rather than to exhaust, and avoiding as far as possible mere catalogues and brain-fagging statistics, to give an account of the past, present and potential future of my beloved Australia, written in a readable way.

In some important respects the great southern Commonwealth is unique among the British possessions. In its geographical extent it is more than twenty-five times as large as Great Britain; in its geographical position it is many days' steam farther from the centre of the Empire than any other of the great parts.

The climate of Australia embraces every kind created by, and presided over by, our sun. Consequently the soils of the continent differ widely, and the nature of their products in the various parts. So, too, the human product is distinctive, physically and psychologically. The bush stamps her native. The art, the literature, the institutions of the country, are likewise distinctive and manifold in the making. These facts, and others, make the field to be gone over an extensive and a complex one.

My necessary limitations, though an ardent lover of my country, and as such I hope possessed of some degree of understanding of it, make me unable to lay claim to an absolute knowledge regarding much of what is treated in the following pages. A good deal of research work has had to be done, and where error may have crept in from lack of personal experience and first-hand knowledge, mercy is craved. Where doctors differ, who shall agree? The varying statements of authorities sometimes make but the light that darkens.

Thus it was, for instance, not possible to state the actual ascertained number of varieties of the genus *Eucalyptus*, Australia's most distinctive tree, except by a wide approximation. In historical matters, also, a choice between two or more opposing statements had occasionally to be made.

However, in the object aimed at, to give a general view of the Australian bush, its native life, animal and vegetable, and most of all of its human types, native black and white pioneer, for readers desirous of knowing something about these things — especially for the traveller and the migrator — such inadvertencies do not greatly matter.

What does matter is the authenticity of the picture as a whole, the veracity of

the representations made.

For these I take full responsibility.

M. E. F.

Acknowledgement

To Mr. E. J. Brady in his various writings I am indebted for much, and he has my grateful thanks. The scattered nature of my sources of information makes it difficult, and indeed hardly necessary, to acknowledge my debt to others in detail.

M. E. F.

The Call of the Bush

To his long task he sets his hand,
 In battle with the Tyrant Wild;
And lo! by ways none understand
 She makes of him her loving child.

She sets her mark upon her son,
 Baptises him in all her dyes,
Until subduing and subdued
 Have mingled deep their destinies.

Or wander he, her voice recalls,
 In the still night when naught's astir;
Or far or near he rises up,
 Or joy or pain goes back to her.

The Australian Bush

Australia

AUSTRALIA was the last of the great continents to yield up the contours of its coastline to the map of the world. Until Captain Cook planted the British flag on the shores of Botany Bay in 1769 the new Southern land had remained much of a mystery to the adventurous mariners of Europe. It was a period of discovery following on a still greater era of romantic exploration of seas unknown. Dutch, French, Spanish, Portuguese, they had all seen (and sailed away again) some portion of the shoreline of the mysterious continent. The general report of these various mariners was that the land sighted was a barren island inhabited by cruel savages. Most of them had a warm reception from the natives, and had no opportunity to penetrate into the country itself.

Captain James Cook himself was embroiled in immediate trouble with the natives when his little vessel, the *Endeavour*, anchored by the beautiful and now famous harbour of Port Jackson. He, however, did not beat a retreat altogether, but remained to prospect the coast. He took his vessel northward to Moreton Bay, charting the waters and observing the land as he went. In all, he skirted thirteen hundred miles of the eight thousand of the Australian coastline, enough to prove that the strange country was no mere island, and that the land was not a barren waste. The eastern coast disposed of the idea that those, such as Dirk Hartog, and others arriving at the west coast, had received. Cook, and those with him, had a glimpse of goodly lands, of a region not to be seen, sailed away from and forgotten.

The explorer had not come southward in the first place to observe either land or ocean, but the heavens. Not commerce or a search for trade routes had brought the *Endeavour* to those waters. Cook had been commissioned by the British Royal Astronomical Society to observe the Transit of Venus across the sun's face from a southern aspect. Accompanied by several scientists, that mission was accomplished; the exploration of the seas still farther south than the point of his observations was incidental — a side-line, an adventure apparently undertaken for pure love of the glorious game of discovery. Thus, it is to the unpractical curiosity of the star-gazers that Britain owes the gaining of the rich asset of Australia. It was the terrestrial planet that swam into their ken as the result of that other quest.

There is destiny in these things.

A capricious fate went with Cook on that so-adventurous voyage of his up the eastern coast of the continent. Besides the attacks of the aboriginals which he had encountered, he met with shipwreck. The *Endeavour* was almost lost on a coral shoal. So nearly he saw and was conquered by the dangers of the position. A great hole was torn in the bottom of the vessel, and it was only with the greatest resourcefulness and courage that it was saved from complete destruction. Later it was discovered that the cause of the disaster had been also the cause of their having been able to keep the vessel afloat. A shaft of coral had broken off, partly filling the hole that the reef had driven in the ship. It has been jestingly said that the tiny creatures of the sea, first conspiring to wreck the intruders, repented them, and at the last moment spared the mariners. A real fairy story of giants and mice if you will!

Cook was of the right stuff. Returning to England he hammered something of his enthusiasm into the government, with the result that he was commissioned to continue his explorations in the southern seas. He returned to Australia a second and a third time, meeting his death near there finally at the hands of the natives at Hawaii.

The British Government, finding itself with a new, greatly distant *terra incognita* on its hands, considered what to do with it. A proposition which was made at the time, if followed, would have caused the first chapter of the white man's history in that region to have been very different from what it became. The end of the War of Independence in America left England with many citizens of her late colonies over there on her hands. Those who had remained loyal to British rule were in a parlous position. The suggestion that they should be assisted to emigrate to the new British possession in the south was, however, not acted upon, but a very different human stream was instead directed to Australian shores.

The English laws in those days were so drastic, the penalties for breaking them so severe, that the question of what to do with those who had transgressed them was a live one. The new possession solved the difficulty; here was an excellent dumping-ground, far and safe. Then began the terrible period of the transportation of the Crown prisoners to Australia. The abuses of the convict transport system, and the harsh treatment for the most part meted out to the convicts under the military despotism overseas, make indeed a dark chapter in our annals.

As an Australian born, the writer (a descendant of hardy pioneers, voluntary emigrants who paid their own passage to Australia in the early days) has little regret that the pioneers of the gold rush period had been preceded by the involuntary brigade whose failure to play the part of good citizens elsewhere had brought them across the sea. The result has left no sully in the blood of the Australian people, no ill mark is upon the race. The convicts themselves, taken as a whole, were not a dehumanised

section of the British race. The writer has heard respectable fathers of unimpeachable families say that they too, but for the grace of God, or the friendly aid of circumstances, might have been of that unhappy band, so trivial often were the offences for which, without any grading whatsoever, persons were branded as criminals and transported from England. Any schoolboy with spirit enough to cut an ash sapling from a hedge was in danger of joining that dolorous brigade.

This is said here because too much of dark suggestion has been made by those ignorant of facts. Australians have long since ceased to squirm at the word "convict," at allusions to "birth stains." The transmuting power of time has erased the stigma. Indeed in our modern conceptions generally it is recognised that the excess of the qualities, initiative, energy and so on, that make the law-breaker, rightly directed may become valuable assets in a character.

Beginnings of the Settlement

NEW SOUTH WALES was formally proclaimed a Colony in 1788 on the arrival of the first ships containing the convicts, and the military. Governor Phillips was commissioned, and a government formed. Houses were built and roads made; many crops, the seed for which they had brought with them, were put in. Phillips was a fine man and a just, had he been backed up by his officials much of the later trouble would have been avoided. But the military authorities were disposed to be despotic, and by harshness to bring the worst out of the convicts. Frequent risings took place, and the natives, also harshly treated, retaliated from time to time, making things lively by their sorties. Phillips, broken in health with the strain, returned to England, and was followed by governor after governor, some good, some bad, some merely incompetent to deal with the unusual circumstances. The home authorities were kept busy (so far as they would heed) attending to complaints from Botany Bay.

Meantime, fitfully enough, a little exploration of the new colony was carried on. Wentworth and others, piercing beyond Mount Barrier, discovered whole regions of rich land, and many from the coast went out there with their flocks and herds. Cattle and sheep brought from England thrived well and multiplied apace. The new land was good for agriculture too. The convicts were pressed into service for field work, and also for the building of roads and houses. There was plenty of fine stone for building locally. A Supreme Court was set up, and the jury system inaugurated, local taxation was levied, and land laws brought into being — all the paraphernalia, in short, of local government, including the creation of a Legislative Council, a body to advise the governor, who, however, was free to disregard their advice if he thought fit.

A drought occurred about this time (during the Governorship of Thomas Brisbane) which, causing a partial failure of the crops, brought the settlement within measurable distance of famine. The drought continued for two years (1828–9), the convicts were rationed, the cattle died, and progress was at an end. Bushrangers came into being, free emigration ceased, and altogether there was a sad set-back. Then came the rains and a surfeit. But the circumstances had called attention to the need for exploring farther, so that in drought in one neighbourhood supplies could be depended upon from others.

Sir Thomas Brisbane had an original idea to encourage exploration. He

made a sporting offer to the convicts. He offered a free pardon to any man who, put ashore at Wilson's Promontory (south-east coast), made his way back to Sydney overland. The plan, modified somewhat, was carried out. Two free men, taking six convicts with them and vehicles with provisions, set out southward. This expedition resulted in the discovery of the River Murray, the finest river in all the mainland. Further expeditions followed this one, till what is now Victoria was penetrated right to the south coast. In 1836 Major Mitchell, leading an expedition, came across country southward by way of the Grampians and found himself in one of the richest districts in Australia, that about Portland Bay (south-west of Victoria). Here, to their astonishment, the party came upon a homestead in a beautiful parklike expanse of rolling downs. This was the home of the Hentys, who had come to the southern part of the mainland from Tasmania. Imagine how the exploring party from Sydney gazed at that unexpected sight — stared as those other explorers stared at the Pacific, “Silent upon a peak in Darien.”

The Next Stage

AT first settlement on the land in the new colony had been encouraged by free grants. In 1831 this practice was discontinued, five shillings per acre being thereafter the purchase price for Crown land. Even at that small sum, revenue began to flow in, but the government, flushed with the sense of a growing treasury, poured it out again lavishly. A boom was created, wages and prices rose high, altogether it was a period of false prosperity. It was followed by the bursting of the two longest-established banks, the Bank of New South Wales and the Bank of Australia. Four other banks, that had come into being during the boom, also crashed. A good deal of money borrowed from England had got into the country, helping to the bursting of the bubble, and creating in the Old Country a disgruntled feeling in regard to the new colony. The rebound locally was tremendous. Fat sheep which were plentiful on the stations that had been taken up in the pastoral districts of New South Wales, were sold for sixpence per head, cattle for three and sixpence per head, and there were not always buyers at those prices. There were no outside markets to take off the surplus. The expedient was resorted to of killing the fat sheep and boiling the carcasses down for tallow, the fat of a sheep was more valuable than the whole sheep alive or dead. The lowest ebb of this reverse was reached in 1843, when the slow recovery of the colony began.

The recovery was helped by the legislative action of W. C. Wentworth, the Australian-born son of an English settler. He had been educated in England, returned to Sydney to practise law, and had entered Parliament. W. C. Wentworth was one of the most forceful and gifted public men that Australia has produced. His idea was to move the deadlock by putting through a measure legalising liens on the wool, and the mortgage of the live stock. The Royal Assent to this was obtained, and the result was beneficial to the finances of the colony. About this time the first parliamentary agent in London was appointed — the beginning of the elaborate representation in the Homeland that Australia now has. Even so the delays in the negotiation of business, and the putting through of legislation, were vexatious. Mails were infrequent, and the journey across the sea took six months or even more.

The transportation of convicts to Botany Bay had been discontinued (1840), but its revival was contemplated. The Order in Council had

actually been given, but in deference to public sentiment in the colony was rescinded. The need for more population was a real one, labour was scarce, those on the land being at their wits' end for manual workers. The difficulty was met by wiser means than the transportation scheme. Mrs. Caroline Chisholm formed in London a Family Colonisation Society, which did excellent work in dispatching to Australia the right kind of men and women for the pioneer life. Mrs. Chisholm herself accompanied batches of immigrants on the voyage, and saw them successfully located over the other side. The name "Mother Chisholm" was often in the mouths of the Australians of two generations ago. One seldom hears it now, but a woman who performed such a service for her country should not be forgotten. Caroline Chisholm was, in her own field of mission, a Florence Nightingale. One would wish that a memorial to the memory of this valorous and public-spirited woman, who paved the way to fortune for so many, were erected in some prominent place in the Mother City of the New World — Sydney.

Separation of Victoria

In 1850, after much agitation, the south-eastern portion of the continent was separated from the colony of New South Wales. It had been known as the Port Phillip District. On its separation, it became Victoria (after the reigning Queen), and with a legislature and government of its own. This took place immediately before the discovery of gold in Victoria, and was not without some bearing on that discovery. La Trobe had been appointed the first governor of the new colony, and a find of gold in New South Wales threatened to draw away the population of the new colony. Alarm for its prosperity was felt, and an original remedy for the trouble was suggested — by La Trobe himself it is said. A counter-attraction in their own territory was the idea. The suggestion was taken up, and a “Gold Discovery Committee” was formed in Melbourne (so named after Queen Victoria's Prime Minister). The committee pledged itself to encourage the prospecting for minerals within the new colony. A reward of two hundred pounds was to be given to the finder of the first payable gold-field within two hundred miles of Melbourne. There were several small finds within a short time, but no big reefs. Then, in August 1851, the famous Ballarat fields were discovered, the beginning of the wild, romantic, “Roaring Fifties,” when men rushed from every quarter of the globe at the lure and the beckon of that most dominating of GOLD.

Prior to that time the settlement of Port Phillip had proceeded slowly. As early as 1803 a tentative expedition under Captain Collins had been sent from England to report on that part of the country. Collins's report was unfavourable, and later an expedition from Sydney corroborated this verdict. It was from the already established settlement in Van Dieman's Land (Tasmania) that the first Victorian settlers came. The Henty brothers (previously mentioned) coming across Bass's Strait, were so impressed with the country about Portland that they took up large holdings. There were eight sons of an adventurous father who, as early as 1828, had come out from England to settle in the New World. Three of the brothers came to Victoria, and their names are to-day bound up in the history of the colony.

Then came John Batman (1834), also from Tasmania. Batman was a native of New South Wales, a forceful character. He was famed as a capturer of bushrangers, of whom there were not a few in New South

Wales. Batman was a man of tact; he always managed to get on good terms with the blacks. The way to the simple hearts of the aboriginals was soon to be found by the offer of gifts such as knives, tomahawks, and gauds of one kind and another. Batman came over the Straits in a small vessel of only fifteen tons. Arriving at Geelong, the party pushed on along the coast, entering Hobson's Bay, and landing in the neighbourhood of where Melbourne now is. Batman quickly made friends with the aboriginals, who were in numbers about the coast there. He placated their fears and aggressiveness with gifts, and proceeded to treat with the chiefs for the purchase of a large area of the land that the tribe of that region owned. How the ownership of the land was settled among the natives, heaven knows, probably by the white man's own methods! At any rate each tribe had its own region bounded by river, mountain or what not. Batman, by the exchange of blankets, knives, etc., which he had brought with him for barter, received from the chiefs concerned (there were three of these simple persons) six hundred thousand acres of land, to have and to hold for ever. Not a bad bargain for the young Australian-born white to strike with the old Australian-born blacks!

The skeleton document for this transfer had been brought from Tasmania by Batman ready for signature. Those who care to do so may see this interesting relic at the British Museum, with the marks against their names set there by the native chiefs.

The deal completed, Batman pushed on up the bay to the mouth of the Yarra. On the site where Melbourne now is, with its fine modern streets and buildings, its splendid public gardens, and its well-ordered suburbs, Batman paused and looked about him. "Here is the place for a village," was his now historic remark.

The party returned to Tasmania with glowing accounts of the place, and others decided to follow the lead. The validity of Batman's land purchase was soon disputed. The Government of New South Wales claimed that the land belonged to the Crown, not to the natives at all. It was a novel problem, who had the right to dispose of it. The white man had taken it over as a matter of course from the nomad who never had made, never would make, any use of it. Ethics hardly came into the matter. Finally Batman's treaty with the blacks was declared null and void, the rights of the Crown to dispose of all lands in the country being upheld by the Home Office.

The second great pioneer of Port Phillip, John Pascoe Fawkner, arrived bringing with him the requisites for starting agriculture and stock-raising. Soon seventy or eighty families were on the spot, energetic people who quickly had "the village" created, seed sown and fruit-trees planted. Governor Burke came from Sydney, realising that a settlement was springing up, to adjudicate on various matters. The ownership of land

was still one of those. He was pleased with what he saw, and remained to see the streets of the village marked out, and the place named. Population began to come in steadily, and land cultivation and building went on apace. Then began the movement for separation already mentioned, and the appointment of La Trobe as the first Governor (or Superintendent as was his title). So we link up with the discovery of gold at Ballarat.

Discovery of Gold in Victoria

HARGRAVES, the discoverer of the first gold found at Ballarat, had gone from Victoria in 1848 to California, where the great rush was in full swing. While there he was struck by the resemblance of the gold-bearing region to certain country he had known in Victoria. On his return he prospected the place he had in mind, and quickly found some small nuggets of gold.

Within a month there were seventy thousand men on the field, first drawn from other parts of Australia, and Van Diemen's Land. Then from places more distant the human stream flowed in: from Europe (especially from Great Britain itself), from America, and notably from California, where the gold was petering out. A wild lawless lot were these men from the West, they brought a difficult element into the fields, where the soberer types had been amenable to the necessary hasty and imperfect rules and regulations framed to meet the new conditions. In 1840 there had been but ten thousand people in Victoria, one year after the finding of the gold there was a population of more than three hundred thousand, most of which was on the fields, feverishly seeking fortune.

Licensing regulations were made whereby a man, by the payment of thirty shillings per annum, was free to peg out a claim and dig for gold. What wealth, great or small, he found there, was his own. But there was much evasion of the law. When the troopers came to make their monthly inspection of licences, the many without them found it an easy matter to hide till the officers had gone elsewhere. Free fights among the men themselves for the possession of a claim were frequent. Beyond the fields also there was much lawlessness, the escorts taking gold to Melbourne (about one hundred miles from the fields), though mounted and armed, were often set upon and robbed. Bushranging became a profession. All along the line of mountains parallel with Ballarat finds of gold continued to be made, while Ballarat itself continued to prove exceedingly rich in reefs and in alluvial deposits. The ranges were full of auriferous ore, and every gully had its deposits among the gravel. In the gullies the gold was generally mixed with "wash dirt" and was recovered by washing in dishes. Standing deep in water, the diggers thus secured the fruit of their digging. Sometimes the nuggets were mere specks, sometimes large chunks of almost pure gold. In the Australian museums many such may be seen in duplicate, of which the originals were worth thousands of

pounds. Never was Fortune so free and so fickle, never showed she such favouritism. Men sinking shafts side by side, one shaft would yield its owner (or owners, for two men were required for getting the buckets of earth to the surface) wealth, while those at the other would not be making tucker. A volume could be filled with true (and sensational) tales of these pranks of fortune on the gold-fields of the fifties.

High and low, good and bad, literate and illiterate, eagerly men flocked to the diggings. Ships in the harbour lost their crews despite all precautions to retain them that the captains might make. Slipping over the vessel's side at night, men deserted, leaving the captain to swab his own decks. Indeed, the captain of a vessel occasionally himself deserted. The writer knew later more than one hoary grandfather who was fond of boasting how he had slipped off to the diggings, leaving the owners of the (often) cockleshell vessel of which he was the skipper, in the lurch. Gold was the common denominator.

So many it drew away from their ordinary occupations in town and country that in time, even as the government had assisted the discovery of the gold by offering rewards, so it began to take measures to discourage the rush to the fields of those already in the country, and the coming in of certain types from abroad. Raising the price of the gold-digging licences was one method employed, and the tightening up of the way of collecting the dues from the miners. More police were sent to the fields, licences were rigidly inspected, and payment exacted. The announcement that the government intended to charge an export duty on gold, which meant a levy on the miners, caused a determined opposition on their part. A stormy meeting was held on the field, and it was unanimously agreed that they would refuse to submit to the impost.

There was a good deal of friction of one kind and another, even after the government wisely resolved to change its mind as to the gold-tax. It was, however, after the resignation of La Trobe that the discontent came to a head, resulting in what is known in Victoria as "our only battle" — that of Eureka Stockade. Sir Charles Hotham, the new Governor, had caused to be sent to the field a detachment of military to assist the police in their various duties of tax-collecting, etc. This action angered the miners, and on the military entering the town the soldiers were "hustled." That same night the miners held a "meeting of revolt." A bonfire was kindled in which their mining licences were burnt with deliberation. This the authorities could not ignore. To bring matters to a head Hotham therefore ordered an inspection of all licences. The offices attempting to carry out this order were saluted with a shower of stones, disorder followed, the Riot Act was read, and the military called out.

The miners prepared for a pitched battle. They made an entrenchment, and erected barricades on Eureka Hill, a spot just outside Ballarat. Behind the barricade they placed themselves with all the weapons they

could muster — a motley of offensives and defensives.

On Sunday, 3 December, 1854, the collision between the parties took place. The soldiers advancing upon the barricades were greeted with a volley. A brisk exchange followed, and had the one result possible. The military, assisted by the police, stormed the barricade and took the trench. There were a number of casualties. The elected leader of the miners, Peter Lalor, lost an arm (Lalor afterwards became an honoured citizen, and a Speaker of the Legislative Assembly of Victoria). In all about forty were killed, and many of the insurgents were arrested. These were later tried for high treason, but all were acquitted amid popular acclamations. The affair cleared the air, a more reasonable system of taxation was inaugurated, the Miner's Right, carrying with it voting privileges, was substituted for the former licence. So began and ended the only conflict by arms that has occurred between the government and the citizens of Victoria. But it will be seen that before 1914 “diggers” belonging to Australia had fought in “trenches.”

Summary to Date (1928)

IT is not necessary in this brief account of the settlement of Australia to give in detail the early history of each state of the Commonwealth. The Mother State, New South Wales, has received special mention, and Victoria, because these two colonies with Van Dieman's Land were the earliest to receive a white population. In time, as the other parts of Australia became settled, they also obtained the rights and privileges of separate colonies.

But a word as to Van Dieman's Land, that part of the present federation having been the scene of one of the earliest settlements of the British in Australia. Discovered by Tasman in 1632, the island of Tasmania was at first supposed to be part of the mainland. Little about it was known for some time till there was fear that the French, whose explorers were known to have visited neighbouring waters, should take possession. A small company from the Sydney settlement was sent over to the island. A mere handful these were. Twenty-four convicts, twelve soldiers, ten women and three children. Others, free and bond, soon came, the place being found to possess a beautiful climate and a rich soil. There were few natives on the island, and nothing to check the progress which rapidly began. Hobart Town ("Town" since dropped from the title) became a flourishing centre. Land was acquired by a hardy type of settler under the easy laws of the period, and all went well. Nature has been kind to Tasmania in planting her in delightfully temperate latitudes, and in giving her a lovely landscape.

The transportation of convicts to the island soon ceased, but not before there was a repetition of the abuses that had existed in the Botany Bay settlement.

South and West Australia had greater natural difficulties to encounter in their early days, the climate in the interior and in the north of each of these places being tropical, the rivers few, and small in volume, much of the soil arid. Queensland is better watered, and had larger tracts of easily accessible land of good quality. It had, however, like South and West Australia, a large number of nomadic natives of a savage disposition. There are still a good many aboriginals in the northern parts of these three states, about whom more will be said in its place. Detailed exploration in Central and Northern Australia is even yet in its infancy, though an impetus has been given to it by the advent of the motor-car

and aeroplane.

The progress of Australia from the era of the liberal Land Acts of the sixties, whereby large tracts of rich land in the eastern states, held by squatters at a nominal payment per annum to the government, were broken up, has been steady. A period of "free selection" followed, there was a rush to the land by diggers from the gold-fields, then about petered out as far as the old easy methods of gold-getting went. The era of deep sinking and of quartz-crushing for gold was upon Victoria. "Free selection" is a comparative term; it did not mean exactly free grants of land to persons by the Crown. The government terms, however, were easy, a pound per acre, the payments extending over a long period. The payments completed, the land became freehold. Under the Act a man was not permitted to acquire large tracts of country, the object of the government being to get the land opened up and improved, and to settle an industrious population. A good deal of "dummying" was inevitable, but in the main the Act was successful in its objects.

Markets, local and overseas, improved as production increased. Except for occasional set-backs such as drought, fires, floods, and other acts of Nature's visitation upon man, the development and prosperity of Australia has, the initial spade-work done, gone steadily forward to the present day. The future promises limitless possibilities to be brought to fruition by the steady application of the will of a great people to the conditions about them.

Just as earlier the feeling of the growing populations in the various parts of the country had been for separation from New South Wales, so, as the times developed new conditions and ideals, grew the desire to make a federation of the various parts of the continent. The history of that movement is written largely in the political records of Australia. Into those records it is not necessary to enter in detail in this place, suffice it to say that in the progress of the movement as it became understood, "federation" came to be written upon the hearts of the people of Australia as a whole. It was then achieved in the real sense as well as by the seal and signature of authority. Of Australia, a federated nation desiring and obtaining a new national capital for her Commonwealth Parliament, the next few pages say something.

Establishment of Canberra, the Bush Capital

ON 9 May, 1901, the first Parliament of Federated Australia was opened in Melbourne by the present King, then Duke of York. On 9 May, 1927, the King's son, the present Duke of York, opened the new Houses of Parliament at Canberra — just twenty-six years later.

The idea of federation first having birth in the minds of individuals took some time to make its way in the hearts of the people of Australia, the scattered situation of the chief cities of the country being the main stumbling block. Sydney, as the oldest capital, claimed the right to be the centre of the political life of Australia, but the rest of the country was opposed. It is not necessary here to recapitulate the processes of the struggle between the various states (especially Victoria and New South Wales) for the honour, enough to say that finally a compromise was effected by the choice of a bush site in New South Wales 204 miles distant from Sydney by rail, and 429 miles distant from Melbourne.

The idea, whether wise or not time must decide, was to have the political capital well away from the various influences of established business interests, even as Washington is remote from New York and Chicago. To make the capital really central as regards the whole of the continent was not practicable, as a glance at the map of Australia, the distribution of its population, its topography, its soil, its rainfall, etc., will show. Whether a site farther from the east coast than is Canberra might not have been selected, however, is debatable. West and South Australia are very remote, and even in these days of quick travel the representatives of these states in the Federal Parliament may find the long periods of absence from their business interests during the sessions at Canberra inimical to the well-being of their private activities. But Canberra IS, and the aeroplane may be depended upon to solve the difficulty in the coming time.

Since it was to be a BUSH capital, Canberra was a good choice. There was a large tract of country easy of acquisition, mostly unimproved and open country. It was a clean slate on which to write. To make the area of the capital free of all State domination, the Federal Government purchased from the New South Wales Government nine hundred square miles of country, enough for all predictable expansion of a city, the whole with clear access to Jervis Bay, a beautiful port 123 miles from the capital on the eastern seaboard. The site of the city is on a plateau

amid an amphitheatre of hills with far backgrounds of mountains visible from every part of it. Though there are no large local rivers in the Canberra region there are several, chief of which is the Molonglo, a tributary of the Murray, which lend themselves under the engineer's genius to the supply of ample water for whatever population ultimately settles within the radius of this great City To Be.

There are about the neighbourhood materials sufficient and varied enough for the building of a fine city: durable hard woods, sandstone, and granites, slate, cement, marble, clay, and gravel quarries are all at hand. As Australians had decided to have a Washington of their own, it was not unfitting that an American, Mr. W. B. Griffin of Chicago, an architect and town planner, should submit the approved plans for the capital.

Competitive designs were submitted from almost every country in the world, and the task of the Selection Committee was an arduous one. Mr. Griffin's full scheme will not be realised in bricks and mortar, in roads and gardens, and all its many details, for long. Millions of money will require to be expended before the Canberra of his practicable dream arises amid the undulations of the Yass hills. The most essential buildings have been undertaken, some of them are already complete, among these of course being the Houses of Parliament, though the present buildings are to serve for but fifty years, when it is expected that Australia will have advanced so far in man and money-power as to justify the building of a more permanent Palace of Law-making. The trifle of eight millions already expended does not go far when it comes to evolving a city from the raw earth.

The first stone towards the building of the present Houses of Parliament at Canberra was put in place on 12 March, 1913, some twelve years after the establishment of the Commonwealth. (Thereafter came a delay owing to Australia's preoccupation with the war.) The occasion was one of official celebration; Lord Denman, the then Governor-General, with Lady Denman and a large parliamentary party, travelled to Canberra for the ceremony. Citizens from far and near attended, and the day was a historic one not only in that district but throughout Australia as a whole. It was perhaps a novel occasion in the history of the world — the congregating of a group of people on a far bush place in the New World to begin deliberately the building of a national capital on virgin soil. Arrived at the end of their long journey from Melbourne (the latter part of it done in cars), the Government party assembled at a point of Karrajung Hill, at the centre of which is the Grand Avenue, four hundred feet wide, and where the Houses of Parliament now stand. Lord Denman laid there the foundation-stone of the obelisk set up to mark the site of the buildings to be erected. The base of the obelisk is formed of six blocks of granite, one from each of the states of the Commonwealth.

These are crowned with a column of granite from Great Britain and Ireland, the stones buttressing the column being from every part of the Empire including India and Africa.

To Lady Denman fell the honour of naming the city. Much controversy had gone to the choice of a name — hitherto Canberra had been merely the name of the district, comprising also the Yass region. Many had desired that a new name entirely should be chosen for the capital, and both Parliaments and people had been much exercised over the question. Native (aboriginal) names were proposed (Canberra itself is a native name used by the Kernel tribe, now dead and the meaning of the name lost with it), and English names — Shakespeare was one name suggested. However, Canberra had it, and Lady Denman formally declared the fact, giving the correct emphasis to the first syllable of the word, and slurring the “e” of the second.

With many interruptions, the building of the capital went on, till the Parliament domiciled in Melbourne, urged by the representatives of New South Wales, finally faced the matter of removing the Treasury, themselves, and the various paraphernalia of government to the new capital. A day of national celebration for the opening of the New Parliament Houses was set apart, and on 9 May, 1927, as already said, the Duke of York, accompanied by the Duchess, and in the presence of a large gathering of the citizens of Australia, performed the ceremony, and the next session of the current Parliament, led by the Right Hon. Mr. S. M. Bruce, was inaugurated.

The stage was set on a lavish scale, and the series of ceremonies in connection with the occasion was memorably picturesque. As the Duke and Duchess drove up to the steps of Parliament House, Dame Nellie Melba moved forward to the dais and sang the first verse of the National Anthem, the New Canberra Philharmonic Society repeating it. It was a touch not to be forgotten by the visitors or by the *prima donna's* own people.

The new Houses of Parliament at their opening received two precious gifts from the Motherland, one from the King himself, being two dispatch boxes for use during the sittings of the Parliament. They are replicas of those on the table of the House of Commons, so exactly indeed are they reproductions of these time-honoured articles that on one of them is reproduced the indented marks made by Gladstone's signet-ring on the original as he thumped the box by which he stood while he launched his fiery eloquence upon the Commons. May Canberra ring yet with as fine eloquence as Westminster knew of old!

The second gift is not less interesting and appropriate. It is a Chair for the Speaker like that of the Speaker of the House of Commons, and was presented to the people of Australia by the United Kingdom branch of the Empire Parliamentary Association; it is made from oak taken from

the roof of Westminster Hall, and the arm-rests are of pieces of wood taken from Nelson's old *Victory*.

So in this, the newest of capitals, with historic reminders about them of the race to which they belong, will the future legislators of Australia continue to shape the Commonwealth's fate.

The Geography of Australia

BY the arbitrary mathematics of Nature the sun has different hours for his risings and his settings upon Australia from those of the Old World's diurnal calendar. By the arrangements of man, the difference has in some sort been adjusted, by making the mean time of the New World nine hours in advance of Great Britain's. The centre of the Australian continent is 132 degrees east of Greenwich, and 22 degrees south of the Equator. This adjustment of the solar risings and settings shows itself to be a purely human one, the more rapid the means of communication between the Old and the New Worlds becomes. For instance, the "Englishman in the street" realised the actual difference in the time reckoning between the Old World and the New recently, when the first wireless experiments between England and Australia were being carried out. Melbourne and Sydney were having their afternoon tea while London was only thinking of its breakfast-rasher. However, we Australians are satisfied at having Time by the forelock.

The Pacific Ocean is the eastward approach to Australia, lying as the continent does to the south-east of Asia. The area of Australia is about three million square miles. The sea on the east side shelves close to the land to a great depth, and northward upon this shelving floor, for a distance of about a thousand miles, coral polyps have builded that remarkable break-water known as the Great Barrier Reef. At some parts this reef approaches to within twenty miles of the land, at others it is a hundred and fifty miles away. Till thoroughly charted the Barrier Reef was the plague of mariners, now that it is understood its use as a break-water is gladly taken advantage of. Within it the sea is calm, the force of the rollers being spent against the reef.

The south coast of the continent lies to the Southern Ocean, and from Cape Otway, Victoria, to King George's Sound, West Australia, there is a deep crescent gap in the coastline, known as the Great Australian Bight, a rough piece of water that generally gives out-going passengers on the liners a severe breaking-in. The coast along the bight is somewhat inhospitable. Southward, into the Antarctic, Australia has gone in exploration as all the world knows, following the great traditions of European nations anxious to leave no part of the globe unknown.

Australia is bounded on the west by the Indian Ocean, and on the north lie the Gulf of Carpentaria, the Torres Straits, the Timor Sea, and the

Arafura Sea, which between them separate it from Papua and other lesser islands. Beside the gulf runs up the sharp spear of the Cape York Peninsula, one of the few peninsulas of the world that point northward. Beginning east of this point, there is a kind of balance in the shape of the continent. The great gap in the north is repeated in the south by the wider crescent of the Great Australian Bight's huge cut from the land mass. The east coast runs southward in a gentle bulge to about the centre, when the coastline gradually sweeps downward, narrowing to Wilson's Promontory in the south. The western coastline does something similar, giving a balanced effect to the land mass. Cape York Peninsula, however, refuses to conform, but stands with no complementary formation in the south of the continent, alone — dreadfully alone.

The mainland of Australia is divided politically into five states, the smallest of which is Victoria in the south-east, West Australia — the whole length of the continent — the largest, its area being 875,920 square miles.

South from the mainland across Bass Straits, at a distance from Victoria of about two hundred and sixty miles, is Tasmania, the sixth state of the Federation. Tasmania is a triangular-shaped island. The lowlands are confined to the southern part of the island, which has a “drowned coast,” in geological phrase. The west coast is rocky and wild. The mountains of Tasmania are thought to be a continuation of the Great Dividing Ranges of the mainland. The coastline is uneven, there being many bays, capes, and peninsulas. One of the most interesting features of Tasmania is the Eagle Hawk's Neck in the south — Tasman's Peninsula. This peninsula connects Port Arthur, the old penal settlement, with the mainland. The Neck is so narrow that at high tide the division is only about twenty yards. Even on a fair-sized map of Tasmania the peninsula appears as though it could be broken off by the hand. Tasmania has some fine harbours along her uneven coastline, lighted by several powerful lighthouses.

It is a country of mountains, which give great diversity to the scenery. Almost every view on the island has a background of mountain. There are also many fine rivers, notably the Tamar and the Derwent. Hobart stands beside the latter, with Mount Wellington (4000 ft.) making a delightful conjunction of natural features.

There are many fine lakes in Tasmania also, the most famous as a beauty spot being Lake St. Clair. Dotted about in the straits between Victoria and Tasmania, are several islands, the chief of which are the Furneaux group and King Island. Northward in the Gulf region islands are numerous, the most notable perhaps being Thursday Island, so famous for its pearl-fishing. Around the coastline of the continent (about 8000 miles) are many capes and bays. Some of the bays are splendid natural ports. Port Darwin, mentioned elsewhere in this volume, in the

north, within five days' steam of Japan, is a fine harbour. It makes much amends for the general inhospitality of the northern coast. The land approaches to the Gulf of Carpentaria, as Burke and Wills were the first to note, are flat and marshy.

Three of the capital cities on the east coast are well served with fine harbours, and the prospective port of the new federal capital, Jervis Bay, awaits its fleets, its sailors, its freights, and not least, its homing passengers. Brisbane has Moreton Bay, Port Jackson is Sydney's gift from Neptune, and Melbourne's harbour is Port Phillip. The opening to Port Jackson from the ocean is narrow, and there is, or was, a false opening which in the days of incomplete charting caused several wrecks. The loss there of the Scottish immigrant ship, the *Dunbar*, in the early days of immigration to New South Wales, through the captain of the vessel mistaking this false entrance for the true Heads, is one of the unforgettable tragedies of early Australia. Every soul on board the ship, passenger and sailor, was lost on the rocks, all save one sailor, who clung for hours through the darkness to the precipitous cliff to be rescued at dawn, and to live for a full fifty years to repeat his oft-told tale. Those rocks and that cliff for many a day past have been an objective of sight-seers. How a human being could have climbed and clung, though a sailor in the days of masts, is not easily understood. To-day a magnificent lighthouse marks the entrance to Port Jackson.

Melbourne's harbour is about forty miles long; it is entered through a narrow and very rough piece of water known as "the Rip" at Point Lonsdale. It may be mentioned that the flag-pole at the Point Lonsdale Look Out is the longest unspliced flag-pole in use anywhere. It came from the virgin forest of East Gippsland, where the long white-stemmed saplings run up to an incredible height without knot or blemish.

As to the "build" of the continent, it has, beginning at the east side, a belt of land about eighty miles in width between the coast and the principal mountain system. The mountain-range extends from Princess Charlotte's Bay (north) to Port Phillip (south) roughly. Some of the heights are above the snow-line. West of this mountain-belt the land slopes gradually to a level stretch of country extending from the Gulf of Carpentaria, (north) to Spencer Gulf (south). In this region lie the largest lakes of the continent. The mountains begin at Wilson's Promontory (south) and pass in a north-easterly direction through Victoria and New South Wales, and, more brokenly, north as far as Point Danger.

In Victoria the range is known as the Australian Alps. Slightly to the north of Melbourne begin the Pyrenees, and from these again run the Grampians, which show signs of extinct volcanoes. In New South Wales the principal mountain system is called the Blue Mountains, and farther north the Liverpool Range. Mount Kosciusko, the culminating point of the Great Divide, is seven thousand feet high; Mount Sea View, the

highest point of the Liverpool Range, is six thousand feet. In the Victorian Alps there are many high peaks.

Reaching Queensland the system is not so marked, the chief ranges there being in the south; they are the Darling Downs, the Denham Ranges, and many others. Westward are the Flinders Range, and the Denison Range overlooking Lake Eyre; in the central part of the continent the Macdonnell Ranges are the dominant feature. Still westward, in a southerly direction, are the Darling Range, the Herschel, the Victoria, and others.

The river system of Australia is remarkable. Some of the rivers flowing to the north lose their volume as they go; in the centre, and southward from the centre, the river-beds are permeable, too, and the waters of many of the rivers do not reach the ocean or any definite terminus, but are lost in the sands. The weariest river, in those regions, despite Swinburne, does not always wind safe to sea.

The Murray, the Nile of Australia, taking its rise in the Alps, is the noblest of the Australian rivers. It is navigable for 3200 miles; flowing westerly for 1300 miles it forms the boundary between Victoria and New South Wales. Then it goes for four hundred miles through South Australia before entering the Southern Ocean. This river was a puzzle to the early explorers because of its great length, and when met with at various parts it was by its successive "discoverers" renamed. Some confusion resulted later. The theory that the centre of the continent was an inland sea was persistent in the days of early exploration, and the search for this resulted in unravelling much of the river system of the continent by Sturt and others. Sturt was the first to navigate the waters of the Murray, and to point the way to the navigation of the Darling and the Murrumbidgee. The use of these and other rivers of Eastern Australia as the handmaids of commerce is apparent. The Murray-Darling is one of the longest rivers in the world: it is 2310 miles long. The part of the Australian Nile in the irrigation of the land receives separate mention in this volume.

Victoria, the southernmost of the states, is well supplied with rivers. In addition to the Murray of the northern boundary, it has the Glenelg, the Campaspe, Ovens, Mitta Mitta, Goulburn, and the Loddon in the northern parts, the Yarra Yarra and a number of others in the southern parts, not large as the great rivers of the world go, but serviceable in capacity, and beautiful in scenic effect.

New South Wales, too, has many fine rivers. The Richmond, Clarence, Manning, Hunter, Hawkesbury, and the Shoalhaven, flowing into the Pacific, are all exceptionally fine rivers. The Darling, Peel, Castlereagh, Macquarie, Bogong, Lachlan, and Murrumbidgee all flow into the Murray. The chief of the Queensland rivers are the Brisbane, Burnet, Fitzroy, Dawson, Condamine, and the Burdekin. Five large rivers flow

into the Gulf of Carpentaria, the Mitchell, Gilbert, Norman, Flinders, and the Nicholson. The largest rivers on the east coast flowing into the sea are the Fitzroy and the Burdekin.

South Australia is not so well watered as the eastern states. It has however, as noted, the Murray, and in addition the Roper, and several other large rivers, some of them on the map misleadingly called "creeks." Cooper's Creek is one of those rivers that after a course of a thousand miles fails to reach the sea; after many meanderings it empties into Lake Eyre.

West Australia has notably the Swan, on which Perth stands, a wonderfully fine river, the Murchison, Gascoyne, De Grey, Fortescue, and the Fitzroy, to mention some of the chief. The Victoria River, in the Northern Territory (S.A.), is just outside the Western Australian boundary. It is a river that has no rival, but a region to itself. It penetrates farther into the dry portion of the continent than any other river of the north — I would that it went farther still. Small craft can ascend it for about one hundred miles; it enters the sea at the north-west corner of the Territory. What hidden rivers this part of Australia may possess time will show. Of these mulga regions no subterranean map is available, only sparsely filled-in guides to the surface features of the country! The water diviner, the artesian borer, are as yet the only indicators that such rivers do exist.

Geologists account for the presence of the large lakes, existing within the great plateau regions west of the chief mountain system of the continent, by the hypothesis that until recent times there actually existed that inland sea which the early explorers sought. Many of the lakes are salt, and some of them have a marine fauna. The great salt lake, Amadeus (S.A.) is actually a mere expanse of salt, ninety miles long, and fifteen miles wide; no river flows into it. In the Territory there are several shallow inland basins, west of Powell's Creek into which enter many creeks, but the waters of the Interior are all too often salt. Southward South Australia has Lake Torrens, Gairdner, Frome, and Eyre, with innumerable smaller lakes. Lakes Albert and Alexandrina may be classed with the larger lakes of this part of South Australia.

The chief lakes of Western Australia are Lake Austin, Barlee, Carey, Moore, Lefroy, and Cowan. Towards the centre, and farther north, salt lakes continue, among the largest of these being Lake Disappointment, the name suggesting the feelings of the wayfarer who named it on finding that its waters were salt.

The final physical feature to be mentioned is the plains. These are extensive beyond the range system, as was to be assumed from the lie of the land. As well as the vast plains of the western part of the continent there are many and extensive plateaux among the more easterly highlands. Some of these are in the snow heights and bleak in the winter

months, others are in the form of undulating downs richly grassed, and there are others that, unsheltered by any mountains, lie shimmering under the summer suns — great pastoral levels. One of the most striking features of the topography of Queensland is the Atherton plateau; it is twelve thousand square miles in extent, and is bounded in part by ranges. A glorious country, New South Wales is also rich in plateaux amid her highlands, and Victoria too boasts of some wonderful mountain-plains before her lands begin, like Orion, to “slope slowly to the west.”

Nature loves diversity. Tiring of levels she breaks into mountains, and from the steeps sends forth the trickling streams that gather and broaden as they flow towards the valleys where, come to quieter ways, they spread their gracious bounty in the service of man. Anon for love of wide, peaceful surfaces, she makes for beauty and repose her lakes.

Not drying, dying seas all the lakes of Australia. Let not that be supposed. Nature has given the Island Continent many beautiful lakes to match her mountains and her rivers, her valleys, her plains, her caves, her waterfalls, and all those varied features that form the surface aspect of the glorious land of the Southern Cross. Elsewhere in this volume some of these features will be mentioned as “beauty spots”; at present I have been dealing with them merely as geographical features of the country.

The Bush

“THE BUSH” is a designation used in two senses. All of Australia that is not city, town, or suburb, is loosely referred to as “the bush” by most people. In its narrower and more correct meaning it still comprises a great part of the continent — that is when it is used to mean the actual timber and scrub country. In what follows we will confine the meaning to the out-back parts generally, such places, for instance, as the forests of Gippsland (Victoria), the wide pastoral plains of the Riverina, the scrub regions, the flowing lands of the Far North and the Interior.

In dealing with Australia we must remember that we are speaking of a vast continent lying in many latitudes, and consisting of many soils and climates, and with a distinctive vegetation in its varied parts. There is no such thing as an “Australian climate” at all. Under its skies its soils produce every class of vegetation known to every kind of climate. There are places in Australia where the snows never melt, other places where the nights are always cool however hot the days may be, and there are places where, in the summer hot spells, the nights make little difference to the day temperature. The southern part of the continent is temperate, the north tropical, but the climates of these divisions vary also in their different parts according to the disposition of the ranges, forests, etc.

Compare the products of the primeval bush of southern Victoria, for example, with those of the northern portions of that state, and one realises the difference in the soils and climate of the two parts. Similarly in Queensland, or in any other of the five states of the mainland. Compare the physical features of the West Australian bushlands and the sandy reaches of South Australia with the coast lands of New South Wales, and their products. Each is distinct.

The eucalyptus in some form is, it may be said, the connecting link between the different parts. Australia's wonderful tree, in leaf and form and stature so varied, grows over the whole face of the continent. It is met with in shrub or tree from Cape York Peninsula to Bass's Straits, from Dirk Hartog Island in the west to Bulli in the east — that is to say that the eucalyptus *is* the Bush. Now a crouching shrub, now wild tangled scrub through which a man cannot force a passage, now towering straight and tall, now stunted and dwarfed, now broad leaved and umbrageous, again scant of foliage. Now slim-stemmed and graceful, now mighty of bole, and tufted of top, now narrow-leafed and drooping

like a willow, now scented of leaf like the lemon, now pungent of turpentine, again acrid to the sense, or gorgeous of flower, ranging from oleander glow to the chaste texture and creaminess of colour of the water-lily. Now rough of bark on knobby bole, now smooth like satin close-drawn over a human limb, or gnarled of trunk and branch, bark black and corrugated as a furrow, now white as ghost, blue, or blazed as a panther, brown, or blood-coloured. Leaves tilted sideways, refusing to make a shade, or fan-like and horizontal.

One might go on, for the aspects are bewilderingly many of this tree, of which there are more than two hundred and fifty¹ varieties on the continent. Where the gum-tree (to use the more usual name) grows tall and straight in the great timber belts of Queensland, New South Wales, Victoria, and Tasmania, the trees are usually felled for the saw-mills from a platform built about fifteen feet from the ground, the butt of many species of the tree being “bumpy” and of great circumference. There are many rival stories about these giant trees in the timber-belt regions. One such story, told by a new selector in South Gippsland, where some of the largest trees in the world grow, caused a party of horsemen from an adjacent township to go to inspect the monster, and incidentally to confound the owner of the tree by evidence of his exaggeration. Arrived at the spot with their tape measures, a storm of rain came on and the party, still mounted, took refuge in the hollow bole of the tree. Tall trees make tall stories, but that one is vouched for. In another part of the same timbered country a man and his wife brought up their seven children in a fallen hollow tree which had conveniently formed a trough-like receptacle that, divided, made several “rooms.”

This gives some idea of the fact that all the tall trees are not in California.

The plainlands of Australia, grassed or scrubbed, and almost or quite treeless, have their own charm. The wanderer over Australia who has lived beneath the sun and stars in all these types of out-back country finds that. He is pulled now this way, now that, between the regions, it may be, of the Far North. The lands along the Barrier Reef call loudly to one who has once known them. So, too, do the great Queensland plateaux with their virgin jungles broken here and there by the beautiful maize farms that tell of the potentialities of the soil. The Never Never country, in its alternations of drought and of deluge, has not the least charm for those who know it. Its transformations are abrupt and tropical. Sudden come the rains and the parched, cracked earth responds. Almost in a night is laid the thin gauzy veil of greenness that in two or three weeks waves luxuriant to the stirrups. He who has lived a span in the great silences of those wide plains and level horizons, those places that in the spring are one wild wide vivid garden of flowers whose scent on the breeze goes half across the continent, who in summer has tasted the

weariness of the sun-baked plains, forgets his weariness in the joy of the rejuvenation of nature, and coming back to the more civilised places feels a lack of elbow-room. His heart is in the North, and he will go back to it in the end. It is the hope of Australia that more and more men will go yonder to have this spell put upon them, the Bush spell. Let the North have its chance so that it may bind and keep.

There are those whose allegiance is to the timber lands. Where the man of the plains is a shearer, a drover, a bullock-driver, the man of the timber country, when not a landowner himself, is a rail-splitter, a bark-stripper, a 'possum-trapper maybe, or a "bullocky." (The bullock has both the plains and the timbered bush; from the plains he brings in the wool, and from the bush the timber. Patient brute, the result of his tuggings go to far places of the earth.) The bush settler does not feel at home out of his timber region, he likes to have the tall trees about him. Close around his hut they stand like sentinels, and silhouetted along the half-cleared range beyond. From his hut door he can watch the moon make eerie the landscape where in the daytime he plies his axe. The tang of green wood and of dying eucalyptus leaves are to him incense, the great white boles towering high are the pillars of the only cathedral that he knows. In the dewy nights the aromas from the peaks and the pungent tangs from the gullies that bear about them more vegetation than water, fill the air with peppermint and musk. What wonder that its native loves the bush, and the "foreigner" who once submits himself to its spell!

There are places, too, such as the humid region of South Gippsland in its timbered parts, where the virgin forest all summer long is under the drip, drip of a precipitated moisture that is not mist, nor rain nor dew, but in the nature of all these. What a forest it is! One gets it again elsewhere as in the Cape Otway region, where much of it is preserved as a sanctuary for the wild native birds and beasts. What a growth! First the great giant trees blotting out the sun, and then the lesser trees — giants too by comparison with English types as to length of stem, then the tangle of scrub and shrubs, of fallen trunks and limbs, and the "ground-dressing" of ferns and flowers, and the smaller shrubs. This "four-ply" forest with its eternal moisture beneath and within it repels all but the stout-hearted. They who go in there, go by the charter of their muscles, the stoutness of their will. These remain triumphant to love it, and to call home the place they hew out of it, for it too is a spell-binder.

What a reward for the victor! Every acre denuded of its "four ply" of vegetation has a soil inexhaustible, twenty or thirty feet of decayed vegetation become soil, brought there by the filterings of long prehistoric ages, the siltings of the higher hills.

And of the many kinds of "bush" still another. There are the dryer gravelly regions where the ironbark- and box-trees grow on the peaks and spurs, where for hundreds of square miles the spring glory of the

broad-leafed wattle flings its yellow gold to the breezes, where in the gullies the clematis clammers among the black woods, and the wild cherry-tree anticipates Burbank by having its stone outside the fruit. Harsh, gravelly, and sparsely grassed, yet the soil of this class of bushland is not inhospitable. The trees ring-barked, their sap ceases to draw up the gravel, and soon a richer grass grows where the little spider orchid drew its thin life from the dry earth. Cleared, this makes fine grazing land for young stock. Every thrifty settler owning richer land in the neighbourhood of this bush country strives to possess a portion of it. It is warm, dry, and kindly to young stock until it is time to "top it off" for market on the richer herbage. Fruit-trees love this class of country, too. Tasmania's apples spring for the most part from a richer soil, but in many places in the other states orchards exist on this grey gravelly soil that bears apple for apple with the rich lands.

The bush exacts as she gives, sloth and neglect she will not have. The clearing grows again with springing dog-wood, willow, and fern. Again and again they must be hacked down and burned ere they accept the quietus. Autumn fires in the clearing! what a delight they are! There is no lack of material; the pungency of dried eucalyptus and the smoke of its burning fills the air. It is a glorious game disposing of the cut scrub at the fall of the year. Better bonfires the settler's children have than the Guy Fawkes celebrators of the Old World. On a waste piece of ground in a poor suburb of London, the writer watched, not long ago, some city children dancing round their bonfire. Odorous it was of all unpleasant things. As she watched, she wished for either a magic wand or for a sound and speedy scheme of immigration so that the little ones might have a real romantic celebration of the long-lived Guy. When in Australia recently, the Bishop of London said that he knew of whole families in London who had grown up without having ever worked, though of the poor, unemployed because there was no employment for them. The escape lies in immigration.

Oh, vast Australian bush that needs the millions! It will give bread, and it will give that which goes with bread, happiness and content and well-being. It will give the stranger what it gives its native, can he but reach it. It will put its magic upon him so that he love it for itself as well as for the material things that it yields him. But the immigration schemes must be right, and the immigrants must be right.

1 Authorities differ, and as well new varieties are still being catalogued. Probably three hundred would be nearer the fact.

The Australian Bushman

AN old race in a new country is bound to suffer change, and as the generations go on the changes become more emphasised. A new type arises — a race whose character and physique make it distinctive. While making his mark upon the new country, it sets its mark upon the man.

Australia is a huge country, and within its borders, as already emphasised, is every sort of climate, from the genial applecheek-making airs of Tasmania to the skin-baking atmosphere of the North and the Interior. Even now, after but a hundred years, the response to climate by the white man is observable. The southern born has more flesh, is more rosy-complexioned, possibly he is not so tall as the “cornstalk” of the less bland North. A hot temperature runs up a long wiry individual, carrying little superfluous flesh. An outdoor life in a hot climate demands energy, and keeps the tissues unclogged. Save in the very heart of the tropics, the white native is all energy. Watching a crowd of Australian men of the bush coming in from a day with the sheep or cattle, of work in the timber, or hard graft in the harvest-field, one notes the muscular fitness of the men, the absence of fleshiness. Physically the young Australian has become beautifully adapted for the task to which his fathers coming there have set him, the task of carving out his fortune in the far places of the bush. See him with the axe, watch him working a scarey mob of bullocks, and you realise that the physical type fits the job. The Australian began with a good heredity; they were no half-men, but men of rare qualities of courage and of initiative, who set out over strange seas to the other end of the earth from their homes. It took grit and optimism to send a man, often a man with wife and family, to that new kingdom so much in the rough.

So long as there is an out-back and a far-away, a road to be blazed, a railway built, a forest to subdue in that great continent, there is no danger that the hereditary character, deepened by the conditions of life overseas, will deteriorate. Where big timber and scrub grow there is no time for the rusting of energy; where wide, dry plains have to be travelled from tank to tank so far apart, there is the compulsion to push forward.

The pioneer is a resourceful person, were it not so he would go under. The grandfathers who still live to boast to the third generation of young Australians of their early-day makeshifts, their out-manoeuvrings of Fate, are witness indeed of that fact. If one thing will not serve the

pioneer at a job, he gets a substitute — forces something he *can* obtain to perform the office. The pioneer never went without a shelter because there were no bricks or tiles to his hand, he cut bark off the trees about him — with his jack-knife if he had nothing else. If lacking harness for his horse, then he put him in the plough with strips of kangaroo-hide for trace-chains, or if he had not a horse, he went into the “farther back,” caught and mastered a “brumby” for the work. Beaten he would not be.

Young Australia, so well sired, carries on the tradition; he refuses defeat, rejoices in overcoming difficulties. Life in the bush shows him at his best. The type has its crudities; its frankness is ingenuous to unsophistication, maybe. Critics say that it lacks subtlety. Possibly. Out of his element in the cities (even in the cities of his own land, for cities everywhere “rub down the angles” and conventionalise), he is bound to show some lack of polish, some ignorance of social formulas. But the bushman's unconventionalism does not always spring from ignorance, he has a very healthy dislike of much of the suavity that makes the social code of manners the easy insincerity that it is. He is called sometimes irreverent too, because he does not always regard the conventional objects of reverence as his gods. He is apt to smile at a bishop's gaiters and to make merry over such sacred institutions as the Parliamentary Mace and the Black Rod.

But he has his objects of reverence, his regard for the really august facts of life — and death. Observe him when sickness or accident bring tragedy across his path, watch his bearing at a bush funeral. The Australian bushman is self-reliant and persevering, amazingly patient in inveigling a wild colt into a yard, but he is very impatient of the time spent in shaving and in dressing — that is unless he be in love, when of course he is not himself!

He has a keen sense of humour, and a grim grin for his own misfortunes: rust in the wheat, the stockyard rails down and the beasts gone, the wedge immovable in the log. He grins, though he swears. It's all in the day's work. He is impatient of prigs, and of superior persons, a merciless ragger of those who don't happen to know the things that he knows, but only those other odd things — the things that don't matter. He has the qualities of the schoolboy in that, and in his horseplay. He earns his fun, his life exacts much and he responds nobly to its exactions. It is a glorious life, though, and he knows it, that of the toiler on the land, the man who is clearing off the timber and getting at the soil that produces not only food for his own fellow-Australian but much of that which goes into the cupboards of other parts of the Empire.

The man on the land out-back flings himself into his work, but he enjoys play, too. The Australian of town and country is nothing if not energetic in his sport. The world knows something of him as a record breaker, as champion in events other than merely those of his daily

life — log-chopping, turning furrows, cutting-out cattle. He is heard of as a cricketer, a tennis-player, a flyer, and in other spectacular directions. Yes, the Australian flings himself into whatever comes, vehemently and without pause, as he flung himself recklessly, doomfully up the cliffs at Gallipoli. Up those cliffs he dragged his guns, managing them as he managed the scarey unwilling bullock in the old home stock-yard. ...

His faults? Others may chronicle his faults. I have no insight that fits me for the task.

The Bush Woman

NO mention should be made of the Australian pioneers and their sons without its being accompanied by a word about the women of the bush. I once heard a lecturer on the old-time subject of women's rights remark that while much had been made of the trials and the courage of the Pilgrim Fathers, little is heard of the Pilgrim Mothers. "But," said the speaker, "had she not her trials too, not only all that the Pilgrim Fathers had, but she had the Pilgrim Fathers themselves."

The wives of the pioneers at any rate have had not less than their husbands to do and to bear of toil, of difficulty and of solitude. Australia owes much to its women, especially to those early comers over the seas, and they not less than the fathers have bequeathed to their sons and daughters their fine heritage of character. The Australian women born of these mothers are a fine self-reliant type. They are lovers of outdoor life, and they know horses as well as do their brothers — ride them as well too. (Heaven forbid that the motor or any other thing should ever oust the horse from his place. He was the link between the scattered homesteads in Australia long years before rubber tyres came threatening him as a social and business agent.)

It is of the bush woman of the less affluent classes, not of the large landowners such as squatters, that one would speak chiefly. Mother and daughter of her, she has had few rose-leaves for couch. The early-day woman who went into the farther settlements often came from a home of comfort and of culture to face toil, rough conditions, and solitude. She shared all her husband's toils and anxieties, incidentally producing, caring for, and training a family as well. No man of the out-back and the hard places but takes off his hat to the pioneer woman. He knows her for a valiant. With makeshifts and many lacks, she has plied her daily round year in year out, making of the rough hut a home, and easing the lot of all her household. Never suspecting it herself, she has been a heroine. Her work mean and obscure, apparently little in the sum total, but what greater can the human hand set itself to than the building up of a nation, the production and nurture of a race of forest-clearers and cultivators? An Australian poet has written of the out-back women — the settler's wife, the drover's, the timber-getter's helpmate:

In the slab-built zinc-roofed homestead of some lately broken "run,"
In the tent beside the bankment of a railway just begun,

In the huts on new selections, in the camps of man's unrest,
On the frontiers of the nation live the Women of the West. ...
We have hearts to do and dare, and yet o'er all the rest
The hearts that made the nation were the Women of the West.

The Women of the West, of the East and the North and the South, have not yet finished their task. The need for stout women's hearts and hands to help their men bring the wild to the uses of the civilised, is still urgent. Australia wants the country places populated, not her cities; the populating of cities the world over takes care of itself. The country wants a picked population, that is to say not an access of mere numbers for the sake of numbers. It wants the right type of men and of women. Better no emigrants than the wrong sort, better to trust to the natural increase of our own already established people. But population Australia needs. Where there is room for a hundred millions of people she has but a bare six millions, and a too-large proportion of those in the cities. She has her policy of a "White Australia," and to that it might be added a "Right Australia" — workers who will develop her marvellous resources. Women, too, who will be mates for those who are pushing back and back into the virgin lands.

The compensations are there — freedom, health, wealth, the joys of the material rewards of labour, and the happy consciousness of good work well performed. The writer has known thousands of the "right" women who have bent themselves willingly to the task, women some of them unapprenticed to rough ways, finding satisfaction and happiness in the far bush. Never one such has she yet heard regret the fate that took her there. One has but to see the glowing eye, hear the ring in the voice of the old settler, man or woman, recounting his or her early experiences, to realise that the compensations have been rich and full.

The demands of life nowadays, even in remote places of the country, are not so drastic as they were. The benefits of social life, because of the opening up already done, and the many new inventions and facilities for travel, become every passing year more readily obtainable. The motor-car, the aeroplane, the telephone, the wireless. Where are now the solitudes? The far settler listens-in to the news of the world, at his own fireside hears the *prima donna* singing in the distant capital. Scattered, but not solitary are the out-back people nowadays. Linked up with the world.

Life within the scattered communities themselves has its gaieties, a whole calendar of days whereon work is put aside for recreation. It is a poor district in Australia that has not its Mechanics' Institute or Hall where concerts, dances and such-like entertainments call the people together often. Where the travelling lecturer or showman gets an audience, where meetings of all and any sort are held, where there is a

circulating library. Local races are an annual fixture in most places — probably general sports make a day of general outing. Cricket matches and football struggles bring young and old together. There is the Agricultural Show, where the fathers assemble to talk of the points of the horses and cattle, the mothers to see what the other women have been doing in the way of jam-making and fruit-preserving, the young folks to enjoy themselves generally. Picnics, and riding parties to neighbouring places of interest, “the waterfall” or “the gorge,” and the farflung cinema and the ubiquitous gramophone. The political diversions when Federal or State elections loom, now and then a religious mission, and regularly the local church services. Country people are almost embarrassingly busy with their social concerns nowadays, especially in such places as still continue the one-time universal “tea-meeting.”

All these things within their own community, and as regards the less remote places it must be added the periodic trips to the city. Excursion trains are run from all places connected by rail several times in the year to the nearest capital city, when reduced fares enable most people at a distance from the larger centres to visit the hub, and enjoy the many pleasures it offers.

These improved facilities of social life touch the backblocks woman particularly, they mean that in her leisure she has entertainment abroad or at home, in sickness assistance and attention. Always it was the household woman who was most isolated, most left by circumstances to her own resources in sickness. If she were ill, or her husband or children, with little at hand, and little knowledge of how to act, she had none on whom to call for help or advice. A volume might be written of the tragedies of illness, of accident out-back where no help, no remedies could reach a sufferer till perhaps too late. That is changed; the telephone has put a magic network, if not everywhere about the continent, at least it has been linked up sufficiently by wire, and by that greater magic, the wireless communication, so that the most remote places need not be long in calling, or call in vain when emergency comes. The settler's wife was fortunate in the early days if she could obtain the kindly services of a neighbour woman when her babies came. That time is past, or is passing.

Some fifteen years ago Lady Dudley, the wife of the then Governor-General of the Commonwealth, set in motion a scheme for bush nursing, whereby country subscribers to the fund established to finance the project could be supplied with a qualified nurse at the shortest notice. This scheme has worked well, and has proved a blessing to many, and it is proposed to extend it till the most remote parts of Australia where there is a settlement are brought within its focus. The benefits of a system such as this can hardly be exaggerated. The very fact that it is in existence gives a feeling of security and comfort to women going out to the back blocks. It is one of the new factors in bush settlement that add

materially to its development.

Cost of Living

THE cost of living in the country places of Australia necessarily varies greatly. There are the far out-back places where the carriage of goods may double the original cost. To give a typical budget in such cases is hardly possible.

The only person interested in the cost of keeping a family in food and clothing in Australia is the intending settler. The tourist goes to the hotels, luxurious or less than luxurious according to his taste and his purse. The hotel tariff in the Australian towns compares well with that of other places of the civilised world as regards quality and price.

As for the settler; he is the man on the land, and the man on the land is invariably the producer of many of the articles of his own consumption. Circumstances as well as thrift demand that he shall be. If he wants fresh wholesome vegetables his own garden must be his greengrocer's shop. Likewise he is his own poulterer, his bacon curer, and his fresh meat supplier. As meat is a constant article on the table in the outdoor worker's home in Australia this fact "keeps the bills down." Nowadays bread is usually delivered regularly at his door, if not it can be obtained at a nearby township. In earlier times the housewife was the family baker, subject to occasional flour shortages owing to irregularities of transport, subject to bread shortage too, sometimes; owing to a welcome, if embarrassing influx of visitors her freshly baked batch of bread to serve for several days, vanished in an hour, while her home-made yeast refused to mature beyond its own pace for the next baking.

The settler's wife of to-day misses many of the rigours that fell to the lot of the pioneer women. Elsewhere in these pages her release from the drudgery of home butter-making is mentioned.

There remain the "dry goods"; these the local stores supply. Many of these items, such as dried fruits and preserves, etc., if the householder be a good Australian, he can obtain of local production, and in consequence cheaper than the imported article.

Clothing and boots, Australian-made from first to last, are also available. Imported articles in this domain carry a heavy duty, the policy of our legislation being by this method to encourage Australian manufacturing. Not to venture too near the bounds of political opinion, one may observe here that the exigencies of the late war demonstrated the wisdom of the policy.

The settler on the land lives rent free as regards his house. In the bush, Fashion is not the stern dame that she is in the cities; the cost per annum for clothing a family in the country is not great. Yet country people in Australia like to be, and are, well and comfortably clad.

As an indication: an ordinary kind of food-budget may be given showing the prices of the staple articles of diet for a country family. The list given was issued for the guidance of intending settlers in 1926. It is subject to slight variations in the price of the items from time to time:

#	<i>s. d.</i>
Bacon, per lb.	1 31/2
Beef, per lb.	8
Bread, 2-lb. loaf	53/4
Butter, per lb.	2 01/2
Cheese, per lb.	1 41/4
Coffee, per lb.	2 0
Eggs, per doz.	2 71/2
Flour, 25 lbs.	5 11/4
Milk, per quart	81/4
Mutton, per lb.	9
Pork, per lb.	1 11/4
Potatoes, 14 lbs.	2 51/4
Rice, per lb.	31/4
Sugar, per lb.	41/2
Tea, per lb.	2 3

The Bush Child

IT may be said by some that children are the same everywhere. Fundamentally they are just as their elders are, but the environmental influences of childhood are very potent in the creation of types. The wax-like brain of the child takes impressions more readily than that of his elders.

Charles Lamb averred that “the children of the poor never prattle,” and that is sadly true of the Old World slum child. The bush child, be his parents rich or poor, is a merry-hearted child; there is a freedom in his life which draws out his childlike capacities. It also draws out his man- or woman-like capacities. He is a resourceful, independent creature at an early age. He is shy, he is hardy, he is venturesome. He is the father of the man — the bushman to be presently. He knows all there is to know of the things about him, of bush lore, of the ways of the bush creatures, of bush work, of bush joys. He is an adept at an early age with horses; it would be incorrect, though, to say that the bush child takes early to the saddle, because his first exploits as a rider are generally performed saddleless. The youngster of seven or eight who cannot ride barebacked is a backward specimen. It is not unusual, indeed, to see calves and young bullocks answering to the urge of bare heels to their flanks, and the old draught-horse seems rather to enjoy his load of three or four youngsters whose legs can scarce span his broad back — the most rearward child probably slipping off over his tail before the home gate is reached.

The bush girl-child of the back blocks is all that her brother is, in toil, in play, in learning. There is a genuine sex equality among the children of the Australian farm and selection. No normal girl-child but will climb the tree her brother shins up to peep with him into the parrot's or the 'possum's nest. Why not? His tasks are hers, why not his pleasures? Cow for cow with the grown-ups in the yard passes under the expert fingers of the bush child. Boy and girl have their full share of the everlasting chores of the farm to perform. In fact, too much work before and after school in many instances is the portion of the bush child. One sees the early riser of the milking-yard, later in the day nodding in the hot school-house, over tasks easy enough to him were he wide awake. One is sorry for both child and teacher in such circumstances, the teacher who has to work on a system of “results,” to be adjudged of his capacity to teach by the

number of marks obtained by his scholars. Given a fair field the bush child is smart at his school work, his outlook is fresh, and his replies to questions in examination papers are often illuminating, if naïve.

The State school system of Australia is free, secular, and compulsory, no out-back place is without its school, be there ever so few children in the settlement. Half-time schools are sometimes established in thinly populated and scattered districts, a teacher going between two schools. The plan works well. It is a fact that the results from these half-time bush schools are not less satisfactory than those obtained from the full-time schools. "Home work" on the off-days no doubt accounts for that. But no out-back child (except in rare circumstances) need in Australia grow up ignorant of the three "R's," and something beyond the three "R's." The curriculum of the Australian State Education (varying little in the several states) is an excellently comprehensive one. On leaving school any child with a desire to continue his education has an excellent grounding to work on. He may, however, have won a scholarship; the provisions are liberal, taking him right through to the university. It is alleged by many that the curriculum of the State schools of the country sends a boy or girl out at the age of fourteen, with a better all-round knowledge of the most essential subjects than do the general run of the private elementary schools that deal with children over the same period. The old saying about every private carrying a field-marshal's baton in his knapsack might be varied in regard to the State schoolboy of Australia. It might be said of him that he carries a potential portfolio of political office in his pocket when he leaves school. At any rate a good long list could be compiled of the names of Australian-born politicians whose educational equipment was furnished them in their local State school.

The bush child in his own setting fits. He is a delightful youngster to conduct the town visitor around the places he knows, telling him of the things he knows. He is lamentably shy and out of focus on his first experience of town, very tongue-tied, very footsore, disappointed, too, in the size of the lions at the Zoo, rather disgruntled on the whole, and glad to get home, and to put his head again into the flank of a cow, though he boasts for long to his companions of the wonders seen "down in town."

The bush child at an astonishingly early age will tackle a large snake instead of fleeing for an elder to do the work of dispatch. He knows well that the snake would not wait for the coming of anyone. The child on the spot is the man for the job. The most remarkable authentic case of the precocity of the bush child in a situation needing quickness of action and intelligent resourcefulness that has come under my notice may be here recorded. A toddling child of eleven months old fell into a tub of water standing in the back-yard of a settler's home in the Gippsland bush. The only person present was the little sister, aged four and a half years, and this small person, instead of running indoors for mother (who would

probably have been too late to save the drowning baby), herself performed the rescue. The first that the mother knew of what had occurred was the entrance into the house of the youthful heroine, half dragging, half carrying the dripping infant, which she delivered to their parent with the remark, "Here is the baby, she fell in the tub." That is an absolutely true story, and not easily matched.

When he is a dreamer the bush child is generally an acute type; the imaginative nature has plenty to feed upon in the bush. The knobby gum-trees are to him men walking and talking, maybe they are black-fellows, the knobby excrescences being the gorgon heads of a tribe unchronicled by scientists. There are the brownies of the bush, too, the spider orchids themselves fairies made fast to the earth for punishment of a sin, a theme that forms the subject of a delightful poem by one of the Australian bush poetesses. These creatures of fancy have the bush colour, and a lore their own, a significance their own. That is fitting. Who would have them a pale southern reflex of the traditional fairies and gnomes of the northern mythologies? The true creator is bound to make his creatures to match the habitat that gives them birth and being. It is, indeed, a blessing that the bush produces the dream as well as the deed, the poet as well as the toiler; if it were not so the bush child would be a one-sided creature — a cow-yard and harvest-field plodder. Nature looks after her own.

"Your bush spawns poets and artists," said an Englishman to me. I, not denying the soft impeachment, replied: "Ah yes, but life and the publisher preserve their fellow-creatures from most of them." Some thousands, however, have already, within the fifty years or so of the blazing of the bush of Australia, achieved print and frames.

Bush child of the dreamy eye, of the active brain, of the toiling hand, the tensed muscles, so early in the harness, keep the dreams given by the compensating bush, the mother-lore that she sings to you in the strange language of the she-oak boughs, that she shows you in the sweet deep gullies, on the wide-horizoned plains. Keep the "vision splendid" of the early hours of life's day, the Heaven that lies in the bush about you in your infancy. Keep those dreams, let them be the soft velvet under the hard harness, so it shall gall you never.

Religion in the Bush

MANY years ago Marcus Clarke, in an essay on *The Character of the Future Australian*, predicted that he would evolve a religion of a “dour Presbyterian” kind. It was a curious idea, and one without much indication to support it; it is now thoroughly falsified by fact. The religion of Young Australia is not “dour,” whatever it may be. Why should it be? Why should a young nation in a free and bright new world develop that sombre Calvinistic religion that, even in the land that gave it birth, is long since moribund — if not altogether dead? The young Australian has more usually been described as an irreligious person by people who mistake the form of religion for the spirit. He is not an irreligious person at all, but he is an individual seldom given to the ceremonials and the trappings of religion; nevertheless in him the religious sense is as strongly developed as it is among other civilised nations. The negligent conformer to the rites of “curdled creeds” generally is dubbed by the thoughtless or careless observer Agnostic or Atheist. The bushman's religion is a shy kind of religion, a religion given him by his life amid the immensities of Nature about him, by the wide, lonely, awesome plains, by the star-sown fields of Heaven as seen from his camp in the quiet night. These influences slide imperceptibly into the soul of the lonely dweller in the bush. The precipitate of such moments is religion. ...

But the bushman does not talk about these feelings of his in the silent hours. Next day he is swearing away as cheerfully as ever at his patient bullocks. None the less, his religion is a religion of conduct, and if Arnold was right in his definitions of religion and of conduct respectively, the bushman is very religious, for his day is a long one, full three parts of his life. He knows how to be a good neighbour, a good friend, a good mate, leal to the uttermost to his code. Round goes the hat for the man who is down and out, away go the boys to the help of the neighbour in a tight place with his harvest. Oh, he knows, this bushman, the gospel of:

Kindness in another's trouble and courage in your own.

One of Henry Lawson's best prose-sketches turns on a tenet in the religion of the bushman. A drover on the track got “on the spree” and

drank himself into delirium tremens and death. His mates, arrived at the journey's end, were faced with the task of telling the man's wife of her loss. How nobly poor Baker died they impart to her, how his last words, his last thoughts, were of her. Touching messages mellowed the tidings and consoled the widow; the true end of the poor wretched failure, Baker, was safe in the hands of his mates. To some there may be nice moral points about the conduct of these rough bushmen; perhaps to the Holder of the Scales of man's conduct there are no niggling ethical points in the action to be considered at all.

Certain things, you may depend upon it, the bushman will do in certain circumstances, certain other things he will *not* do. His code and creed, though unwritten, are clear. So much for the *natural* religion of the Australian bushman.

The Church as an institution in the bush is widespread. Every township, every scattered district, has one or more buildings dedicated to religious observances. The Protestant faith is represented and the Roman Catholic; where there is the one there is the other, not there in any antagonistic spirit or in one of rivalry, but each religion represented by a church building, because the population of the place has adherents to each of the great Christian religions. Good will and good fellowship exist between the two branches of the faith. When either section is opening a fund for the erection of their church the adherents of the other section contribute to it as a matter of course: when they in turn are collecting for their church the other party returns the compliment, probably outdoing in its generosity those who have helped their fund. In the scattered places the clergyman has a good amount of travelling in order to keep his preaching engagements, and to visit his parishioners. It may be that services are held only fortnightly, or monthly (even less frequently than that), but the charge is so large, the roads so unequal, that the pastor of such a region spends much of his time in the saddle.

I remember a scattered district in Gippsland (Victoria), where in the days of early settlement the visits of the clergyman to his people were not without danger and difficulty. He was a great visitor, this elderly man, with a keen sense of his duty, and he spared himself not at all. What an event these visits were in the settler's home! There were books and magazines for sale and for gifts in the oilcloth roll on his saddle; he gave immediate pleasure in many a home, that cheery man, and left delight in his wake. Books, rare to come, and long to be read!

Bishops themselves, in their immense sees, had strenuous times in those days — still have in some parts of Australia, though the means of getting over the country have immeasurably improved. The present Bishop of Wilcannia (New South Wales), for instance, finding himself unable to get over the large province in his charge from year's end to year's end to his satisfaction, has recently purchased a Moth 'plane which

he has learned to pilot himself — a sky pilot indeed.

What would the late Bishop Moorhouse, one time Bishop of Melbourne — as fine a man, cleric or lay, as ever set the mark of his influence on Australia — what would he have thought of a 'plane to carry him over the dense forests, the quagmire swamps he had to negotiate on his pastoral peregrinations? A rough Cobb and Co.'s coach was often his means of getting to the remote parts of his see, the roads such that the passengers of the coach were flung from side to side, when not landed, coach and all, stationary in a bog.

A story yet treasured in Victoria of Bishop Moorhouse, is that of his “doing his bit” at shouldering a coach-wheel with a “heave-ho” and a right good will, on an occasion when a “Cobb and Co.” had landed him and the rest of its passengers deep in “the Glue Pot,” a famous piece of quagmire on the old Melbourne-Gippsland main road. What a human man was the bishop! They do not always send such perfect fits to the oversea parts of the Empire as was Doctor Moorhouse in Victoria.

This leads one to say explicitly that then or now, the parson in the Australian bush, be he bishop or be he the humblest curate, who does not know how to be a man among men is of no use “out-back.” The Australian's idea of a “parson” is not a shepherd with a crook driving his flock to fold. The far out-back padre (Heaven bless him) is, as a matter of fact, almost always the right man. A man of conduct and example in what deeply matters, the hail-fellow-well-met human being in his ordinary intercourse. It is a poor camp or hut where such a cleric is not welcome, and where his influence is not felt. As a social factor alone the padre is well worth his place out-back. He is a link between the bush and the world at large; he is generally a good talker and a tactful talker. He has the gift of knowing what *not* to say, no less than how and when to say the right word. There are places in Australia where the Inland Missions reach to the Back o' Beyond country, where the devoted padre ranges on his eternal journeyings. His visits are eagerly welcomed. His services (the “church” may be a wool-shed) are generally crowded; people go a great distance to the event of a church service. Lusty singing of the hymns (if not always tuneful) one hears at these places; always well-known hymns and tunes being chosen so that all may join in. And the sermon, if the padre knows his work, is of the wide-awake, breezy sort (no theology); a sermon with metaphors plain and clinching in their application to something familiar to his hearers. “Temptation,” I once heard one of these bush parsons say, “slinks round like a dingo at a sheep camp.”

They really do know their job, these men, and they do it. The bush christening out-back is often a big affair. Where the parson's visits are at long intervals, children of three or four years and older are brought under the ordeal, occasionally with ludicrous consequences; the bolting, or the

attempt to bolt, from the scene of a frightened child being not unknown. In newly settled districts the use of the local state school is allowed by the government for the holding of church services till the settlers are in a position to erect a building. Over the bush tracks come, Sunday by Sunday, the folk with their children, the latter a little peeved, maybe, at not being free of the schoolhouse on the first day of the week. Along too, Sunday by Sunday, in a stout spring-cart is borne the best piano (or it may be harmonium) that the place possesses, to add to the melody of the service. Quite good singing one hears sometimes in these out-of-the-way places, for remember, the Australians have voices, the climate is favourable to the production of strong human vocal chords.

A far place, indeed, it is in Australia that is beyond the radius of the churches, and poor the place that for long is without a building in which the people may assemble for worship. Sometimes the achieved building is left empty on a hot Sunday, the service being conducted under the shade of a drooping-leafed gum-tree. Indeed I know of at least one place in the bush where the "church" is the hollow bole of a great red-gum.

Literature of the Bush

THE beginnings of a new country's literature are generally the mere echo of that of the home country of the immigrants. The new-comer does not at once absorb the colour and spirit of the land of his adoption. It usually takes a generation or two of native-born people before the spirit of the place gets into its imaginative literature. The first poetry and prose written in Australia were, of course, the work of British-born men with their talent already cultivated. Some of these early writers kept to their old outlook, in that they wrote as though the Old World was still about them. The distinctive colour of the New World failed to impress itself upon them. It is an actual fact that the early painters of the Australian bush, looking upon the gum-trees, painted oaks and elms.

Those who did in some sort see the bush found in it the sadness that the exile feels. Marcus Clarke wrote of the grim despair, the brooding tragedy of the bush ranges and gullies. Him, the Englishman, the landscape, beloved of its native, only repelled. So also Gordon, born overseas, though he had seen Australian springs could write of "Scentless bright blossoms and songless bright birds," in the land of the wattle and of the magpie! Gordon, however, did not altogether miss the beauty of the bush, his poems contain many a line in its praise. He also went for themes sometimes beyond the nature about him, to the human product of the life of the bush. In *The Sick Stockrider* Gordon has written a poem beautiful in itself and true to fact. The dying man is a type, his reflections, his philosophy essentially the utterance of a bushman in the circumstances described. He has done his best, and takes his chance.

This I know, I should live the same life over if I had to live again, And
the chances are I go where most men go.

Very early in the history of Australian settlement were written some verses of which two lines are memorable. Barrington, a "gentleman convict," wrote a dramatic prologue which he spoke at a performance of a play in Sydney — a play acted entirely by the convicts.

True patriots we, for be it understood,
We left our country for our country's good.

Charles Harpur was the first writer of poetry born in Australia. At any

rate he has been called the Chaucer of Australia. Harpur was born in New South Wales as far back as 1817, and he spent his whole life among the gum-trees. When he sang his songs were always of the bush. It was not until Kendall began to write, however, that there was an Australian-born poet of power. Kendall was also born in New South Wales, and his muse was lyric, melodious, lovely, and bush-born. He has not been surpassed on his own lines since, though the bush has inspired many beautiful verses sincerely felt.

The river in the range And the flying gold on pool and creek

come quietly and naturally into his verse. He introduced the features of the wild places of his native land without straining. He had drunken the spirit of the bush, and its music slid into his art like the murmur of running gullies from the hills.

There were others of that time (the seventies and eighties of last century) but Kendall and Gordon were the chief. Brunton Stephens, Scottish born, living in Queensland, wrote some notable poems. His *Convict Once* stands as the longest and most successful narrative-poem written in Australia.

In the early eighties the establishment of the *Bulletin* in Sydney gave a great impetus to both prose and verse of Australian flavour. It was the deliberate policy of the journal to encourage young Australians of talent. In the *Bulletin* Lawson began to publish his vivid bush sketches in verse and in prose. A host of others found expression in the pages of the same journal, and new writers who have anything fresh and sincere to say always find a welcome by the editors of the *Bulletin*. The influence of that paper as the encourager of a true Australian literature, cannot be estimated. It has done more in that direction than any other journal published under the Southern Cross. (By "Australian literature" is meant, of course, simply writing that takes the life actually known and felt by the native-born authors.) Lawson is the Bret Harte of Australia, his prose sketches especially should be read by those who desire to know something of men's lives on the wide plains, and the level horizons, the far out-back regions of New South Wales and of Queensland. Lawson lived the life, and had the gift.

In Australia the novel preceded the short story and the prose sketch. Polished work in fiction had been done by Englishmen settled in Australia long before Lawson's day. Marcus Clarke had written with Hugoesque power the terrible epic of the convict days in Van Dieman's Land, and Henry Kingsley had made literature of the life of the squatting-station. More roughly, the romance of the bushranging days had been epitomised in *Robbery Under Arms*, by "Rolf Boldrewood" (T.

A. Browne), a police magistrate in Victoria, who wrote also *Melbourne Memories*, a book to be read in conjunction with Kingsley's *Geoffrey Hamlyn* by anyone desiring to have a picture of the station life of the period. It is remarkable that both Kingsley and Gordon were mounted police, and the recorder of the bushrangers' exploits, a magistrate.

Curiously enough, though the squatter, the convict, and the highwayman of the Antipodes has each had his chronicler in fiction, the selector and the farmer of Australia have yet to find theirs. In *My Brilliant Career* Miss Miles Franklin wrote vividly of life in the Mallee country (scrub land), but the theme still awaits a larger canvas, a more typical treatment. The story of the Australian farm awaits its Olive Schreiner.

The selector (purchaser of Crown lands on a government "time-payment system") also has not yet been adequately treated in his country's literature. He has been only humorously dealt with in a spirit of deliberate exaggeration by A. H. Davis in his *On our Selection* series of stories and sketches.

The gold rush of the fifties in Victoria, strangely enough, also awaits its epic treatment in art. Mr. Edward Dyson has only scratched the surface of the theme in his admirable *The Roaring 'Fifties* and Charles Reade did little more in *It is Never too Late to Mend*. The far distant Never Never country has inspired a delightful book that can hardly be described as a novel, there is so much of fact in it. Mrs. Gunn, the author of *We of the Never Never*, is a Victorian woman who lived for a time on the Ensay Station, "Back of Beyond," in North-western Australia. Life in that tropical region as lived by white men and "tamed" blacks on a big station is made vivid in Mrs. Gunn's pages. It is a unique book. This story, published in England, has run through more editions than any other book written by an Australian except A. B. Paterson's *Man from Snowy River*, a stirring ballad of the bush with a swing and a vigour in it that are irresistible.

In fiction and in poetry a whole host of talented Australians are busy reporting and interpreting the life of their country. The cities and townships as well as the bush are being explored; the rich colours of the adjacent Pacific Islands have been flung on many pages of adventurous story-telling.

The most notable tale of the bush published for some time is *Working Bullocks*, by Katherine Prichard. It is a vivid story of Western Australia, portraying bush types with power and realism. Anyone reading this story comes from it with a vast amount of information incidentally gathered, of saw-milling, bullock-driving, and of life generally in the big timber country.

The coming of Federation produced in many Australian poets an outpouring of national feeling which has tinged much of the literature

since. Australia's sense of nationhood began to find expression. Roderick Quinn, a Sydney poet, wrote in *The House of the Commonwealth*:

The house is finished, and the doors are wide,
Come enter in. ...
Behold the vision of a State
Where men are equal, just, and free.

Before Federation there was the sense of waiting for something yet to be. "The Day of the Dominion born ... the natal hour," sang Brunton Stephens in 1877.

The imperial sense, accelerated by Federation, found its expression in Lawson's *Star of Australasia*. Written before the Great War, the poem reads like a prophecy:

There are boys out here by the western creeks who hasten away from school,

To climb the sides of the breezy peaks, or dive in the shaded pool, Who will stick to their guns when the mountains quake to the tread of a mighty war,

Or fight for Right or a Grand Mistake as men never fought before.

When the peaks are scarred, and the seawalls crack till the farthest hills vibrate,

And the world for a while goes rolling back in a storm of love and hate.

It may be the influence of the bush (most of the poets come from the country places of Australia) that gives the impulse to sing. At any rate the desire to "say it in poetry" is strong among Australians. If it were possible to gather the sum total of all the poetic impulses of these our country's singers into one concentrated inspiration what an epic we should have! Almost every bushman is "a bit of a poet"; the rhythm of his environment gets into his pulses. There is an immense bibliography of the books of verse published by Australians; much that the volume chronicles is poor enough as poetry, but there remains the fact that a goodly amount of the verse is not mere empty husk. There is vision and feeling and melody in much of it, and the sincerity of a young race trying to utter itself, genuinely urged thereto.

The bush, I repeat, is the inspirer of much of the verse written in Australia. When not directly about the bush itself, the poetry is apt to show its source between the lines, implicitly, as one of Australia's living poets, Shaw Neilson, suggests honey in one of his verses:

The bees are home, All their day's love is sunken Deep in the comb.

And the bush that inspires is being interpreted by many a lover of her in prose and in poetry, her great silent peaks, her gullies deep and secret,

guarded by the sentinel gums and blackwoods.

So shall (as Bernard O'Dowd, one of Australia's finest singers, has said):

Dewed with dream, her silence flower in song.

The Aborigines

HOW the native black race came to Australia, or whether it originated there, is a matter of controversy among the scientists. Wallace thought its origin to be Caucasian, others have regarded it as of African origin, the aborigines having many of the physical features of the Negroid races: flat nose, thick lips, and frizzy hair, etc. Wherever he came from, when the white man took possession of the Australian continent, the blacks ranged over the whole country in tribes, each within its defined boundaries. Even then they were a dying race, especially in the southern part of the continent. Tasmania lost its last poor remnant long ago, and Victoria has but fifty-five full-blooded blacks left of its various tribes.

In the northern parts of Australia the actual number is not easy to compute; they are not a people who can readily be gathered together and counted. Various estimates as to their numbers range from fifty thousand to something like two hundred and fifty thousand. In any case they are rapidly decreasing. Civilisation disagrees with this primitive people (the Australian aboriginal is considered to be the third lowest in the human scale). He has little idea how to contend against such adversities as shortage of food and water in his native state, nor does he seem able to learn civilised arts in his contact with the white man. Where he does imitate it is often to his own undoing. Originally roving naked for the most part, when he has taken to clothing himself, conforming to the white man's insistence, he has largely become the victim of consumption, due probably to his often wearing his clothing soaked with rain.

There has been little difficulty with the native in Australia, owing to his rude and backward condition, his crude war weapons, and his separation into dissociated tribes. Spasmodic, and almost futile, were his early efforts to keep his domain for himself. His occasional assaults on the white invader have dwindled into isolated spearings of pioneering parties venturing into the far Interior. As a menace to settlement, however, the native is practically dead. He will linger on, a wretched remnant to be cared for by the whites, for fifty years or so yet; when he must disappear, leaving hardly a mark of his poor vagrant existence on the face of the land.

A member of a survey party in the Interior once told me that in all his experience of the tribes of that region he had but once seen evidence of any endeavour on their part to conserve water. There had been a drought,

and the dead bodies of several parched natives lay about in the dried mud of a sometime waterhole. Sharp sticks had been used to dig a rude hole in one part of the mud, and a rough channel led to the hole. Evidently a primitive attempt to drain from the shallow surface the vanishing water.

Some reasoning powers are suggested, and initiative in that, but it seemed to be a fugitive instance. In a land subject to drought, and where natural food is not over-plentiful, the dying-out in times of stress of an unintelligent race is inevitable.

Low in the human scale as he is, the aborigine has bound himself up in a whole network of elaborate customs and rites. He has never been, it would seem, a free man in any real sense. The boundaries of his moral and his social world have been as acutely defined as the limits of the tribal roving-grounds. Savegely he has insisted on the observance of the code he has built up (varying often in different tribes), torture and death the punishment of the disobedient. Some of the fiercest of his laws are those relating to marriage. One tenet is that no man shall marry a blood relation, and his relations are all those of his own tribe. This means the exchange of women with other tribes. The reason for this interdict is remarkable, says Professor Baldwin Spencer (than whom no living man knows more of the Australian aborigine), because the native appears not to believe that marriage has anything directly to do with child-birth. Every child born is the reincarnation of some dead ancestor whose spirit, left behind him, has been in some way stored in an object called a *churinga* (a stick or stone). This, entering into the body of a woman, makes a new birth. The old men of the tribe decide whose spirit is reincarnated, and the child is named accordingly. The religion of the aborigines is chiefly a belief in demons; they have no idea of worship, no idols, only some sort of belief in a future life.

When a boy is about fourteen he is initiated into the rank of manhood, and is put through various drastic ceremonies in which the infliction upon him of much physical suffering seems to be imperative. He is inducted into his new status by various gashings with stone instruments, with burnings, bludgeonings, and so forth. Coming pluckily from this ordeal, he is ready for marriage and to take his place with the men of the tribe. Monogomy is the rule with the blacks, though sometimes the old men have several wives.

As for the female aborigine, the *lubra*, or "black gin," as she is called, she has no status, no rights of any sort at any time. From start to finish she is a chattel to be claimed or disowned, beaten, burdened, or even killed at the discretion of her men-folk. The Australian *lubra* is veritably the most pitiful being in existence. Her lot at best is with the dogs. Maimed, mutilated perhaps by her husband, she does the chores of the camp, or roves the wilds catching the lesser animals, and insects, and gathering roots and seeds for the larder. This while the men idle, or

pursue the larger game. She has the bones at the feast, and the worst part of the shelter. Old and wrinkled at thirty-five, she drags on, to die when, and where, and how she may, none seem much to care. She produces a few piccaninnies, some of whom may be killed if troublesome; the surviving, if male, regard her with the bloodless indifference of the adult males, as soon as they cease to need her physically. No other point of difference is so marked between the civilised white man and the savage, as the respective treatment of their women. At some cross-road far away, and long ago, the two parted company in this, and civilisation began. ...

The food of the aborigine is simply all that is edible about him, and a good deal that civilised people would not look upon as edible at all. Cannibalism is not meant here (though some tribes practise that still, fear of the white man's law has almost stamped it out), but such things as grubs, flies, lizards, snakes, rodents, and any other vermin to hand. Also anything of the vegetable kingdom that is not actually poisonous. The aborigine's hunting weapons serve him well enough, though primitive, made of wood or stone, shaped and sharpened. Professor Baldwin Spencer, writing of the tribes of the Interior, remarks on the fact that these weapons belong to three distinct periods of the Stone Age. One and the same man of the aborigines may possess examples of all three kinds of weapons. He is skilful in their use, and can bring down a fleeing kangaroo or emu with them. The boomerang is the aboriginal's most "intellectual" production in the way of a weapon, and his use of it a sight not to be missed when opportunity to see it comes.

One reason alleged for the aborigine's failure to make provision for lean times while food is plentiful is that he has a superstitious belief that by certain magic arts he can create a supply at need. It is curious that experience has failed to cure him of this superstition.

The story of the Australian aborigine, with his crude beliefs and his repulsive practices, is not a pleasing one. Even his corroborees, which seem primarily to be the expression of jubilation, are often full of movements ugly and indecent. His character, so far as he may be said to have a character (it is rather tribal and racial than individual), is held by some to be entirely bad, and he is alleged not to be amenable to improvement in any domain. One should not too glibly assume that, even in the case of this poor specimen of humanity. There is testimony, and experience, to the contrary. This unevolved nomad, degraded and hopeless as he seems to be, is not without potentialities of something better. Lacking the power to advance of himself and often, when imitating, learning the white man's vices rather than his virtues, he has still under favourable circumstances shown himself to possess something of a good leaven in his nature. Devotion, gratitude, courage, are attributes that have shown themselves in individual aborigines. Heroic incidents could be recorded of conduct that a white man of hereditary

ideals of nobleness could not surpass. There are cases, too, where the strange mental arrest of this race has in an individual received an impetus from civilisation. One such instance is that of a full-blooded black of a Queensland tribe who has become something of a Booker Washington in learning and, at my last hearing, had departed on a religious mission to his people in the Interior.

The Explorers

THE history of Australia is very much the history of its exploration. At any rate without its explorers the settlement of the country could not have gone forward as it has done. Great mountain-ridges, jungles of scrub, deep belts of timber, difficult rivers, desert regions, hostile natives — all these things cut off one place from another on the great continent when the white man first set his foot upon it.

For the first twenty-five years after the foundation of Sydney hardly fifty miles from there had been explored; it was no one's business to push into the wilds, and there were few facilities for such enterprises. The Home Government seemed to have little curiosity about the interior of their new possession. Governor Phillip was by nature adventurous, but his duties kept him busy. It was he, however, who personally led the first tentative expedition inland when he discovered the Hawkesbury River. He encouraged others also to pioneer the unknown, and was with Hunter when the Blue Mountains (which Phillip named) were discovered.

These great mountains were for some time a check to exploration; it was long before they were penetrated and crossed, and the great lands beyond opened up. After that, exploration went on almost unceasingly in the eastern part of the continent. The end of the nineteenth century saw the map sketched out in a rough way, there being no longer vast tracts of unknown country in Australia. Explorations continue, however, in the interests of science, settlement, and the search for minerals and timber, and there will for many a year be plenty of work for such expeditions.

The explorer proper, discoverer and penetrator of wilds unknown and uncharted has, however, done his work in Australia, and it is with him, the map-maker not the land-seeker, the gold-seeker, or even the pure scientist, that we are just now concerned. Therefore this chapter ends with the era of the opening up by exploration of West Australia, the last of the states to settle a widespread population upon it. There are the men who won by sheer sweat (often by their blood) Australia for the race of to-day and to-morrow. A gallant band; men who loved danger and difficulty. Nowadays, with the facilities given to exploration by invention, such hardships as these men endured need not be suffered by the trail-blazer to the same extent.

These men are the heroes of the drama of British settlement in the southern world. Yet because their story is such a long one, their names so

numerous, their achievements so many, it is impossible to write it here. A mere epitome has to be resorted to, a bald list of names and accomplishments. And this not full or this volume would go beyond its limits. The hair's-breadth escapes, the grim duels with death, sudden and unexpected from spear or arrow, or it may be slow and agonising from the pangs of hunger — these and other dangers endured have to be passed over, as the thrilling triumphs have to be passed over because there is not room to chronicle them.

There are three instances in the history of Australian exploration, however, where danger and difficulty were not overcome, from which the explorer did not emerge triumphant, or at any rate alive. These, among all the stories that might be told, are selected for narration here as being, because of their tragedy, the longest to be felt and remembered beyond their own time and place.

The death of Edmund Kennedy of a poisoned spear-wound received from the Cape York blacks was one of those happenings against which no foresight could provide, for which no bad generalship was to blame.

Kennedy was making a voyage along the north-east coast, with inland excursions here and there along his route. For this purpose the expedition was split into three parts, the section Kennedy was with consisting of three men and a black boy, besides himself. The white men, owing to sickness, had dropped out, and Kennedy was alone with the black Jacky-Jacky when they were suddenly set upon by the natives. Both received a number of spear-wounds; one of Kennedy's was in his back, and he died in half an hour from receiving it. He had strength to give the black boy instructions regarding the papers of the expedition he had with him. The black boy, grieving and wounded, pushed on to join the schooner at the coast according to his master's instructions. For thirteen days and nights, in great suffering, in thirst and hunger, and continually threatened by hostile blacks, Jacky-Jacky struggled on. He reached the shore party, and had not only Kennedy's death to report but the probable starvation of the two other land parties.

Those on the schooner set off to rescue these men, and presently found that one party had been killed and eaten by the natives. There were still the three men whom Kennedy had had to leave behind him. When the black boy led the rescuers through the scrub to these, two were dead of hunger, the remaining man so weak that he could not stand. He alone of the three land parties was survivor. Surely the tale of cruelty and ferocity of the natives towards the Kennedy expedition has some counterbalance in the faithfulness and heroism of poor Jacky-Jacky.

The tragedy of the Leichhardt expedition is unparalleled save by that of Sir John Franklin's expedition in the Arctic regions. The end of Leichhardt and his party, like that of Franklin, is wrapped in mystery.

Leichhardt, who had already won fame from his explorations into the

Gulf of Carpentaria country, was chosen to lead an expedition across the continent. He was excellently equipped. The expedition consisted of six white men and two blacks, twelve horses, thirteen mules, fifty bullocks, two hundred and seventy goats, and carried with it stores and ammunition. It made a good start, and on 3 April, 1848, was at Cogoon Station on the route. After that no man ever saw it again, or authentic trace of it. It was as though the dry earth of the Interior had swallowed it up as the sea or ice swallowed up Franklin. Not time, or report, or search, have ever solved the mystery of that disappearance. All theories fail, as all search failed to account for such a strange happening.

For many a day the mystery exercised the minds of men, but question the natives as they would, and seek for relics as they might, the mystery remains a mystery, wrapped in the secret heart of the inhospitable region that compassed the fate of the explorers and their cavalcade.

Of bush tragedies none has ever excited the imagination and sympathy of the Australian public more than the fate of the Burke and Wills expedition at Cooper's Creek in the early sixties.

The leader, Robert O'Hara Burke, was an inspector of police in Victoria. He was not well equipped by nature for the undertaking, being an impatient and impulsive man, and lacking in generalship. He was well provided by government and people with horses and camels (£5000 worth of the latter having been brought from India for the expedition).

The object of the expedition was to cross the continent (south to north), and that was actually achieved before the disaster happened.

Burke had left most of the party at a depot established at Cooper's Creek, and himself, with Wills, Grey and King, had pushed on to the north. He had given instructions to those in charge of the depot to wait there three months for their return. It was four months before, reduced to weakness and misery by privation, the party (all but Grey, who had died) arrived at the depot. Those in charge had waited a month beyond the time specified by Burke, and that very morning had left the camp. They had buried provisions, and marked a tree indicating the spot. The famished three dug, and obtained the food. They rested five days, and then set out by a new route for Melbourne. Wills had objected, but Burke had overruled him in this, and so they went to their fate. Their remaining camels died, and food gave out. Some blacks befriended the party, but their food (*nardoo* nuts) was mere starvation to the white men, and Wills undertook to go back to Cooper's Creek for help should any of the camp party have returned there — a faint hope. Bache (the leader of that party) had in fact returned to Cooper's Creek during the absence of Burke and Wills, but he had gone again without having left any sign of his having returned. Wills lodged a note in hiding stating the condition of Burke and King, and left again. He joined Burke and King, but was too weak to travel, so leaving him with some native food, the other two set out to

reach the friendly blacks again. Burke's strength gave out the second day; when King awoke in the morning Burke was dead, lying with his rifle in his hand. King wandered back to Wills to find him dead also. Wills had made entries in his diary to the last. He was a man of spirit. Some of the entries are almost jocular; he compares himself in his predicament to Micawber "waiting for something to turn up." Poor Wills! King buried his companions as well as he could, and joined the blacks. Meantime the country was anxious about the fate of the expedition, and the return of Bache with the news that they (as he supposed) were still in the north had the effect of sending out several expeditions after the missing men. That from Melbourne, under A. W. Howitt, found King with the blacks. Thus ended a sad muddle; it was a case where human blundering and poor judgment brought disaster where success might have been accomplished.

I have often heard my mother tell of the excitement and enthusiasm of the people of Melbourne when the Burke and Wills expedition set out. With their train of horses and camels, Burke and Wills at the head of the expedition rode through the city along the Sydney road from Elizabeth Street on the beginning of their journey. All the town was out to watch them go, and cheer them from every vantage point. It is told that Burke looked a fine handsome man in the prime of life, happy and confident. After the expedition had passed along the Sydney road for some distance, Burke on his fine horse galloped back down Elizabeth Street into Melbourne for a final good-bye to the lady of his heart, a pretty young actress who was playing in Melbourne at the time.

My mother also witnessed from a window in Elizabeth Street, some two years later, the sad sequel to that triumphant going forth of the expedition. The funeral procession to the Melbourne Cemetery, when the remains of the ill-fated explorers were brought back for burial, took that route. That, too, was a day remembered by old colonists, and talked of for long. No black or purple cloth or ribbon could be bought in any shop in the town on the day of the funeral, all had been eager to do honour to the heroic dead.

ARTHUR PHILLIP, FIRST GOVERNOR of N.S.W.: Discovered the Hawkesbury River and the Blue Mountains (N.S.W.).

E. W. EVANS: Leader first Inland Expedition. Discoverer of the Lachlan River (N.S.W.).

JOHN OXLEY: The Liverpool Plains (N.S.W.). The Brisbane River (Queensland).

HAMILTON HUME: The Goulburn Plains. The Murray River (Victoria and N.S.W.).

ALLAN CUNNINGHAM: The Darling Downs (Queensland).

CHARLES STURT: Navigated the Murray River in a whale-boat. Explored central Australian Desert (N.W.).

SIR T. MITCHELL: The passage of the Darling, and survey.

Discovered Barcoo River. "Australia Felix" (Victoria) by way of Avoca and the Loddon Rivers (Victoria and N.S.W.).

ANGUS MCMILLAN: Discovered Gippsland (Victoria).

COUNT STRZELECKI: explored Western Port Country (Victoria).

LUDWIG LEICHHARDT: The Burdekin River (Queensland). Expedition to Gulf of Carpentaria opening up pastoral, agricultural and mineral country twelve times the size of England and Wales. Lost, and all with him, 1848.

EDMUND KENNEDY: East Coast to Cape York Peninsula (Queensland). Killed by natives of East Coast region.

EDWARD EYRE: First Overlander with cattle from Port Phillip to Adelaide, 1838. Pioneered route to settlement to West Coast (West Australia). Skirted Southern Coast along the Great Australian Bight. Reached King George's Sound.

HERSCHEL BABBAGE: Discovered Lake Eyre, and pioneered Salt Lake region (Central Australia).

JOHN MCDOUALL STUART: First to cross the continent (E. to W.). Discoverer of Macdonnell Ranges (West Central Australia).

ROBERT O'HARA BURKE and WILLIAM JOHN WILLS: Melbourne to Gulf of Carpentaria. Perished at Cooper's Creek, South Australia, when returning, 1861.

A. W. HOWITT: Burke and Wills relief expedition. Found King. Explorations in Gippsland and elsewhere.

J. MCKINLEY: Traversed Lake Torrens (South Australia). Penetrated Central Australia.

WM. LANDSBOROUGH: Flinders River and District (North Queensland).

WM. GOSSE: Alice Springs (interior). To Perth (West Australia).

ERNEST GILES: Traversed Central Australia twice. Many geographical discoveries.

ERNEST FEVENAC: Brisbane to Port Darwin (N.E. to N.W.).

H. STOCKDALE: Kimberley region (West Australia).

CAPTAIN BARCLAY: South Australia to Queensland border.

A. F. AND A. C. GREGORY, AND BARON VON MUELLER: Sturt's Creek and the Barcoo.

SIR GEORGE GREY: Glenelg River explored. Discovered the Gascoyne, and eight other rivers on West Coast. The painted caves (showing aboriginal drawings).

ROBERT AUSTEN: The Murchison, and Shark Bay (West Australia).

JOHN FORREST: Lake Barlee. From Perth to Adelaide, along Great Australian Bight. Through heart of Great Desert, and several other expeditions and discoveries in West Australian region.

ALEX. FORREST (brother of John Forrest): Discovered Nicholson's Plains (West Australia), and much other pioneering in the western states.

The Bushrangers

IT was not strange that when opportunity offered the convicts of Botany Bay and Van Dieman's Land sometimes escaped and took to the bush. Once there, food to be obtained had to be stolen. Thus bushranging began.

The father of the bushrangers was George Clarke, who fraternised with the blacks when he found himself outlawed; with them he made predatory raids on the cattle and sheep of the settlers. That tribe, for the time that Clarke was with it, was a well fed tribe; they profited by the white man's brains, and lived on the fat of the land. Clarke was captured and sentenced to death, but was reprieved.

Others followed, sometimes many bushrangers at a time infested the bush in the neighbourhood of Sydney and of Hobart. One man of gruesome fame was Piece, who was given to eating human flesh not because driven to it by hunger, for in his confession he declared that he preferred it to all other. Some of the escaped men felt the pangs of starvation, and it was not unusual for a man to surrender himself after a time of dubiously happy freedom. It meant at least a penalty of fifty lashes, so the delights of the bush could not have been great to some who tried it. It was often the lash in the first place that caused men to plan escape, for the authorities were fond of the "cat" as a method of keeping discipline. Five hundred lashes with a double cat-o'-nine-tails was not unknown at a flogging.

John Lynch was among the most callous of these manufactured bushrangers; his depredations against life and property would fill a book to recount. He was hanged in 1842.

Jackey-Jackey, the nickname of a youth transported to Sydney at the age of sixteen, was the first bushranger to set up a code of road manners. He may have been an admirer of the English Jack Sheppard and Dick Turpin in his childhood. At any rate he brought new manners to the profession of highwaymen in the new field. Jackey-Jackey would do nothing petty; he was always polite to his victims, and prided himself on treating ladies well. From him that had little Jackey would take nothing, from him that had much, all. Many times he was captured, but by one ruse and another always escaped from jail. Finally his luck failed him, and he was executed at the age of twenty-six.

The name of Martin Cash stands out among the early outlaws of

Australia. Cash had a grim sense of humour; he enjoyed forcing storekeepers whom he had raided to carry the plunder to his camp for him. The storekeepers generally delivered the goods.

Cash was finally captured and sent to Norfolk Island, a place seven hundred miles from Sydney, where especially difficult criminals were in those days sent. Cash had inspired others to bushranging; he had many pupils who, after his capture, under the name of Cash and Co. — these fellows were fond of a jest — carried on his “trade.”

The discovery of gold in Victoria changed the character of bushranging and the methods. It became more dignified, if one may put it so. There were then mails to loot, coaches to hold up with rich passengers in them, gold escorts to rob, in fact, at a single adventure more might be obtained than earlier ten such stickings-up would yield. It was a very paying game indeed, that of bushranging — till the day of reckoning came. Some of the bushrangers would hold up anyone and everyone met on the road, others disdained small things, confining themselves to the big hauls such as the gold escorts, or a bank. Many a poor miner tramping to the nearest town from the field with his “dust” or nuggets on him lost it all to the stranger emerging from the bush, and presenting the muzzle of a rifle at him with the more or less polite request to “bail up.”

Passengers in the Cobb and Co. mail-coaches of the fifties had their troubles; bad roads and bone-racking vehicles had added to them the constant fear of a sortie from the roadside, when one or more gentlemen of the bush would keep the driver and all aboard the coach with their hands up, under the persuasion of fire-arms while others went through the pockets of everyone. Some fine gold watches would change hands on such an occasion, it being in those days in Victoria the usual thing for a man to have a watch of colonial gold — a large, heavy one too, the gold as pure as the jeweller could work with.

Drastic action was compelled. To discourage bushranging, the government speedily outlawed a man taking to the bush. A price on his head, and the permit to police or civilian to shoot the lawbreaker at sight, seemed to deter little. At all events bushranging went on. In some instances a man “wanted” for an offence, possibly a slight one, rather than suffer arrest took to the bush. His path was then a rough one, his end generally a violent one, either by the rifle of his fellow countrymen in a hand-to-hand encounter or, failing that, on the scaffold.

Captain Melville (Victoria) of the fifties was a notorious figure among the gentlemen of the bush. On one exploit, with but one companion, he held up and robbed eighteen men, whom he left pinioned and rode off. Melville was a terror on the roads for some time. His history was a strange one. Just before he went bushranging he was engaged in translating the Bible into the language of the aborigines. He finally hanged himself in jail while undergoing a life sentence.

Gardiner was a dashing figure. He, of all the Victorian and New South Wales bushrangers, did well in his exploits. He retired from the roads and the bush having amassed a competency, and took to keeping a shanty in a remote part of the country. After a time he was recognised by someone, was arrested, and taken to Sydney for trial. There were no murders to his charge, but the sentence was a heavy one, especially seeing that the man had changed his way of living. It amounted to thirty-two years on all counts, but when Gardiner had served five years the public petitioned for his pardon. It was granted on one condition — that he left the country. This Gardiner on his release did; he spent the rest of his career in America, and died there a decent citizen. But such moral endings are rare in the records.

Ben Hall had a hectic period of outlawry, and Dunn of the same time. Dunn was hanged at twenty-two years of age with a long list of crimes to his name. Morgan was one of the bloodthirsty type, and a great dare-devil. He always stole well-bred horses for his use, and rode hard. On one occasion, after holding up the gold escort near Wagga (N.S.W.), he disguised himself, went to some public entertainment, and had lunch with the citizens of the place. No one recognised him. So swift were Morgan's movements on his fine horses that no one knew where he would pop up next; now this side the border, now that. Morgan was shot dead by the police in a fracas.

Captain Thunderbolt had a picturesque name, and a character, from all accounts, to suit it. He, too, loved a good horse, a good haul, and a good joke against the police.

Captain Moonlight had been a lay-reader in the Church. Seized by a sudden moral aberration, he announced to his friends that he was going bushranging. So far from his character such a proceeding seemed that he was not believed, but Moonlight forthwith “went out” and was for some time a terror in that part of the country. He was fond of holding up banks and stations (squatters' homes). There he would “bail up” all present, and any others coming along while he was there. He would take all valuables from their persons in the most gentlemanly way — in the best highwayman tradition.

A. L. Gordon gives a brisk verse or two about a bushranger in the same poem in which he refers to Moonlight as “Captain Starlight.”

It is the description of a bushranger hunt by police and civilians — quite a frequent thing in those regions in the sixties and seventies. Gordon puts it:

We led the hunt throughout, Ned, on the chestnut and the bay,
And the troopers were three hundred yards behind
When we emptied our six-shooters on the bushrangers there at bay
In the creek with stunted box-trees for a blind.

There you grappled with the leader, man to man, and horse to horse,
And you rolled together when the chestnut reared,
He blazed away, and missed you in the shallow water-course —
A narrow shave — his powder singed your beard.

On one occasion Moonlight had a whole station hold up all hands in one room while he and his men held a mock court trial on them for various make-believe offences. He became over-bold at such pranks as this, was captured, and hanged.

Power was a tamer kind of man. He attempted no big coups, contenting himself with horse and sheep-stealing in a small way. Power haunted the region of the Divide (between Victoria and N.S.W), and he was often alone — that is, except when he had with him certain young lads who liked the man and better still his life for its touch of deviltry. Power was a hero to such. He had a long run; his robberies being small, the police were inclined to leave him alone. However, he was at last tracked by them and captured while he was asleep. Power was given a long sentence, served it all, and came out to die not long after his release.

My father used to tell how he was on one occasion, in the wilds of Gippsland, “stuck up” by Power. The “sticking up” was but a request for some matches. While the bushranger lit his pipe, he asked, “Do you know who I am?” My father admitting that he recognised him, Power then declared that he wished that he had the courage to give himself up, being sick of the life.

The last of the bushrangers were some of the former pupils and admirers of Power. He taught the Kelly brothers horse-stealing, and generally inspired them to emulation of his ways. The Kelly gang's exploits make a lurid and exciting last chapter in the record of Australian bushranging. Ned and Dan Kelly, with two other young men — Steve Harte and Joe Byrne — all of the Benalla district of Victoria, took to the bush to avoid arrest for horse-stealing. For some two years they held the country in the region of the Strathbogie Ranges, their chief haunt, in terror. They would sally forth, rob a bank, “stick up” a township, or a station, and disappear again into the mountains. The gang knew the mountains in that neighbourhood well, the police knew them little, and were thus at a disadvantage when they sought to bring the outlaws to book. Several “engagements” between the two parties were fought, the police cutting rather a poor figure in the encounters.

The most daring of all the Kelly exploits was the “sticking up” of a whole town — Jerilderie. This town of some hundreds of inhabitants was under the rule of the four outlaws from midnight on a Saturday to the afternoon of the following Wednesday. They had taken all by surprise; at the time they rode in and “bailed up” the whole place they were thought to be a hundred and fifty miles away in the fastnesses of the Strathbogie

Ranges. On another occasion the gang performed another feat almost as bold. For a whole day all the men of a station, numbering thirty-four, were held prisoners in the store-room at the station while the Kellys enjoyed the hospitality of the house. They made the ladies wait on them at a hearty meal, then commandeered them as dancing partners, enjoying themselves to the full till nightfall, when they rode away, leaving thirty-four very chagrined men behind them. The ladies declared that the gang treated them in a gentlemanly way, and that Ned at least made an excellent dancing partner.

The final escapade, when they ceased to exist as a gang owing to too great recklessness on their part, took place at the Glenrowan Hotel, a roadside hostelry in a somewhat lonely spot in Victoria. In a fierce fight with the police the hotel caught on fire, the outlaws carrying on from inside their defensive against the police and not a few civilians. Dan Kelly and Steve Harte were burned with the wooden building, and Byrne was shot. Ned Kelly, in a spirit of amazing bravado — evidently the thing was planned — walked out in the midst of the fight amongst the police. He advanced, firing upon them, and called upon himself a fusillade of bullets which apparently were harmless. Kelly was clad in armour, uncouth enough, but effective in turning aside the bullets that struck it. He had on his head also an immense helmet like a nail-can with apertures for eyes and mouth. The police, of course, after the first bewilderment, realised that to strike the outlaw they must fire low. The word went, “His legs” — and Kelly fell, struck in feet and legs by many bullets.

The end of this sensational drama was effected when Ned Kelly, the last of his gang and the last of the bushrangers, walked on to the scaffold at Melbourne Jail with a cigar in his mouth. His last words were “Such is life” — full of braggadocio, and picturesque to the last.

The wonderful armour, the work of a sympathetic blacksmith near the Kellys' old home, is preserved in the Melbourne Museum. It is formed of ploughshares beaten into the necessary shape and skilfully manipulated. The strange rig-out is lent on occasion to entertainments in the cause of charity. The last time I saw it, it was doing duty as a fancy costume for a handsome young artist in a procession down Collins Street, Melbourne.

The Place Names of Australia

THE place names of Australia are (roughly) drawn from four sources:
The names of explorers and pioneers.

British place names, and those of famous persons (British).

Freak names or names suggested by some incident or characteristic of the place itself.

Aboriginal names.

“Freak” names, as we have called them, are such as spring up on the spur of the moment when men come to a new place and are struck by something outstanding in its appearance. The name given so often sticks even when its chance application has ceased to exist. How many Dead Man's Flats, and One Tree Plains, Devil's Elbows, Kangaroo Gullies, and even Hell's Holes has Australia to-day?

Humbug Scrub is an amusing name of this kind. Sheoak Log strikes a stranger's ear as a queer name. “Why log?” he asks. The story of the genesis of the name explains it. When the place was in the wild, and without a road or track to it, a settler blazed a trail from Kapunda (S.A.), so that the store-keeper could find his hut. The method was by drawing a log — a small sheoak tree — to make a mark among the scrub for guidance. From incidents of that kind have sprung many Australian place names. Flourbag Cutting in the Wallalla district, Victoria, received its name because of a bolting pack-horse sprinkling a stream of flour along the siding. Chain of Ponds shows the white man at the black man's game, using the physical features of the landscape for its name.

An interesting place name derived from an incident is that of “The Heart,” in Gippsland, Victoria. Soon after the discovery of Gippsland some white men found carved on the bark of a gum-tree the diagram of a heart, done, they were convinced, by the hand of a civilised person. Near the tree was found part of a woman's chemise, left there as though to attract the notice of a passer-by. There were not known to be any white women in Gippsland at that time, thus the thing was a puzzle. The white men questioned some blacks whom they met about it, and were told that a white woman had some time before that escaped from a wreck on the Ninety Mile beach, and that she was then roving the bush with one of the local tribes. Search for a woman was made for some time but without avail, and the mystery of the carved diagram and the torn garment was never cleared up. The name given the place by the men sticks to this day,

though few remember the tradition.

Of the names of famous English persons attached to places in Australia there is a long list. Most of the capital cities bear testimony to that, and there is a host of towns, districts, counties, etc., of names so derived also — Gladstone, Palmerston, Hopetoun, and so forth. The governors of the colonies in the early days generally, wittingly or unwittingly, left their name on the Australian map. Sir George Gipps persists in the southern part of Victoria, and the unpopular La Trobe, while Governor Phillip gave his name to Melbourne's port. Lord Glenelg supplies South Australia with the only palindrome name in the country — there are not many place names anywhere that read the same backwards as they do forwards. A jester once observed that there was a symbolism in the name, though he did not venture as to what the suggestion is.

The explorers, pioneers, and discoverers generally of the early days of the country find an honoured perpetuity in its place names. A cosmopolitan touch is also given by such names on the map as Leichhardt and Strzelecki, and various Dutch, French, and German names scattered over the continent and along its shores.

Sturt's name is embalmed in no fewer than eight place names about South Australia. Most of the streets of the main cities are named after the pioneers, though in Melbourne Fawkner and Batman give their name to but a park and a hill respectively, while later and lesser men are memorialised on more prominent places such as street corner-posts. Bourke Street, Melbourne, was not, as some think, named after the luckless explorer whose name appears elsewhere in this volume, but Collins Street, the Regent Street of that city, received its name from Captain Collins of the abortive expedition to Port Phillip from Sydney, already mentioned.

Less admirable in practice was the naming of places in the new country after English towns, counties, etc. There are hundreds of places in Australia so named, very inept are some of the duplications. There is for instance a Piccadilly where was never a seller of pickadil skirts at any time. Sentiment and lack of inventiveness were the cause of much misnaming. What a vexation to the postal authorities must these oversea duplications of British names be! Many a letter not intended to go twenty miles from the place of posting has had a world tour because of the custom.

The perpetuation of aboriginal words in the place names of Australia cannot be too greatly approved. This dying race will so live, this race that of its handcraft will leave so little that is lasting. No remains of castles or of paved roads, only long overgrown tracks of fugitive unshod feet, and altogether obliterated *miamia* dwellings less stable than the eyrie of the mountain eagle.

There are to-day probably more aboriginal words saved for all time in

this way than remain of the aboriginals themselves. Unfortunately, however, the meanings of many of these names have been lost with the passing of the tribe from whose language they were taken. So much for the sentiment of the matter; there is a practical reason for the perpetuation of the native names too. A letter addressed to Mr. Smith of Coondobolin, for instance, is not likely to be missent to one of the name in Birmingham, or even to find its way deviously to Alaska.

The euphonic quality of the aboriginal words is most agreeable to the ear. The primitive habit of repeating a syllable is common in the languages of the Australian natives. (One says "languages," for words and their meanings differed much between tribe and tribe.) We have these repetitions in many place names. Yarra Yarra, Wagga Wagga, Mitta Mitta, Buln Buln, etc. We have adopted them, but it is noticeable that in our ready every-day speech we busy white folk shun the repetition. No one nowadays talks of "the widening of the Yarra Yarra," or of "the wool from Wagga Wagga." The aboriginal was never a man in a hurry (except perhaps when pursuing or fleeing from an enemy), and when he named his haunts he was inclined to be prodigal of syllables. Woolloomooloo with its many "o's," is shortened by the hurrying Sydney people by a syllable, being even then quite long enough, and Coomooboolaroo is another generous display of the same vowel. One aboriginal place name in South Australia contains twenty-three letters. In consideration of the printers' possibly limited supply of "o's," I do not reproduce it here. But such excesses apart, many of the names taken over by us from the aboriginal's vocabulary in this way are beautiful.

An interesting suggestion was followed up some time ago by a writer as to the onomatopoeic character of the language of the Australian natives. He found that there is a great predominance of the liquids in their words pertaining to water. Where murmuring, flowing, gushing, dripping, etc., were involved, the several sounds are, he contended, suggested in the word used. In short, the sound of the thing is the basis of the name for the thing. Not a new idea, of course, for many philologists regard all languages as springing from that source. (Our own bears the primitive signs in such words as murmur, hum, etc.). The writer referred to took the aboriginal names for the rivers and water-courses generally, and found the letters "m," "n," "l" and "r" very prominent.

At any rate it is clear that many places were named by the aboriginal from some physical feature if not from some sound suggestion, as in Lal Lal, which in their language is a waterfall. An interesting name of the latter kind is Kapunda, which means "water jump out" — a spring. A "billibong" means a dead creek, "water not flowing."

This onomatopoeic tendency has a traceable resemblance, it is said, to that exhibited by many other primitive languages, and raises the question as to whether the Australian aboriginal came at some far period from the

mainland of Africa or of Asia. Every primitive race has a sense of rhythm and a love of sounds for their own sake (more or less meaningless chants and lullabies are common to all peoples). It may be that a mere delight in the sound of words originally without meaning caused meanings to be linked to them later. As a child I myself had a whole host of made-up words with which objects were from time to time associated. Thus perhaps with the aboriginal "Wandiligong" — first an entertaining sound, then the name of a place in the tribe's domain.

Yet definite descriptive names he had for localities. Oodnadatta, which we retain on our Australian maps, has the native meaning of "the blossom of the mulga," so that when the tribal chief said to his people, "Oodnadatta" he, as the Americans would say, "said a whole mouthful." "Let us go to where the mulga is in bloom," he conveyed in that one word. It may be, indeed (most is surmise about the aborigines of Australia) — it may be that he lacked not words for his meanings at all, that his few syllables meant as much as our many. At any rate we find that the aboriginal had prepositional and adjectival meanings to many of his single words. Onkaparinga means at or near something — probably trees or water. Such terminations as "inga," "onga," "unga" are frequent in his language; they are as sweet-sounding as the Italian diminutives. One imagines that when the dusky lover under the Southern Cross was not wooing his lady with a *nulla nulla* (a club), he may have been murmuring to her in these "dear diminutives." Who knows?

The Interior

AUSTRALIA still has her *terra incognita* so far as many of her own people, and practically all the rest of the world, are concerned. For long called “the Dead Heart of Australia” (and the name allowed without question by Australians themselves), the Interior, and the central portion of the continent running north, is now proving by a closer acquaintance with it, by a more careful study of its possibilities, that it need not always remain the scapegoat and Cinderella that it has been in the past.

Motorists and travel writers, such as Michael Terry, and eminent anthropologists like Professor Sir Baldwin Spencer, each in his own way has cast irradiating light on this so little known and proverbially desolate region. In the article on the aborigines in this volume mention is made of Professor Spencer's works on the native tribes of the Interior. In the extended and revised volume recently published by Messrs. Macmillan, the author gives the area of the country inhabited by the Arunta tribe of aborigines as the portion “in the heart of the Australian continent extending north and south for four hundred and fifty miles, and east and west for two hundred miles.” This will give some idea of the vastness of the *terra incognita* yet to be brought under civilisation, for this is but a part of the great territory of which we are now speaking.

Stepping for a moment into the realm of conjecture, there is a theory extant that complete geological connection existed at one time between Northern Australia and the Malayan Archipelago, and scientists assert that a fall of a bare hundred feet in the present sea-level would reunite Papua with the mainland. In discussing the provision of an adequate water-supply for the Interior, I have heard it suggested as an engineering possibility that water could be brought by pipes from the Fly River in Papua to the waterless tracts of Northern Australia, where almost the whole of the rainfall occurs as a deluge in the summer months.

There are those who allege that enough underground rivers exist in the dry regions of the Interior to supply all needs, and that it only remains to tap these streams to overcome the worst feature of the difficulty. If that is so, a great future assuredly awaits this region, and the Land of Promise will become the Land of Achievement.

To the accompaniment of a royal salute, the first illstarred settlement of the North was established at Melville Island in 1824 — on the anniversary of the Battle of Trafalgar. The first difficulties experienced

were connected with the food-supply for the settlement. The natives murdered the crew of the first vessel carrying provisions, and sea pirates captured and burned the next off the coast of Timor. Finally, disease broke out among the settlers (who were mostly of the involuntary order, being convicts), and they were removed to Raffles Bay, another short-lived colonising venture, abandoned in 1830. In 1839 the *Beagle*, the ship in which Darwin paid a visit to the Australian shores, discovered and charted Port Darwin, and the Victorian River, a stream which penetrates farther into the continent than any other known river on the north coast. the *Beagle* also discovered the Flinders and the Albert Rivers, now within the Queensland border.

The history of the Territory was for long after that in a state of standstill, until 1865 in fact, when Queensland secured an extension, and Western Australia the north-west *en bloc*, the whole of the remainder, 523,620 square miles, being apportioned to South Australia. Each state grappled as well as might be with its bit of Cinderella. South Australia established a town at Port Darwin, and the Overland Telegraph line was constructed between Port Darwin and Adelaide. About that time a rumour spread that gold had been discovered along the line. Prospecting companies sprang up overnight, ships were chartered, and there began one of the wildest gold rushes since the old Victorian days. There was gold sure enough; discoveries were made at Pine Creek, Yam Creek, Howley, and at other places, and mining plants were dispatched from Adelaide to the fields.

The impetus was short-lived, the gold either petering out or going deep. The labour difficulty led the South Australian Government to recruit two hundred Chinese coolies at Singapore. The Chinese in Australia have the reputation of being able to get a living anywhere, having the art of making things grow under any conditions. Besides engaging in mining, these emigrants took to growing fruit, rice, pea-nuts and vegetables, and established a small fishing industry — chiefly in the form of tortoiseshell and *bêche-de-mer*. However, according to the last census returns, the Chinese population, which had grown considerably, has dwindled.

In 1886 a transcontinental north-to-south railway was begun. It was constructed from Darwin to Pine Creek in the north, and from Adelaide to Oodnadatta in the south, leaving an intervening gap of eleven hundred miles.

The cost of this undertaking proved too great for one state, and the coming of federation witnessed the transfer of the Northern Territory to the care of the Commonwealth, an arrangement that met with general approval. The railway has now been extended to the Katherine River in the north (the river has been bridged) and will subsequently be extended to Daly Waters. In the meantime, work at the Oonadatta end is going on towards Alice Springs — the new official capital of Central Australia.

Before the coming of the motor-car this three-hundred-mile journey was a slow camel-train or pack-horse one. Since 1923 Territorians have had a member in the Federal House of Representatives, but owing to the small number whom he represents this member may only take part in debates; he has no vote. A somewhat curious position!

To open up the Territory, pastoral leases are granted for a period of forty-two years, and agricultural leases (which are held in perpetuity) devise that the land held under them must be fenced, stocked, and cultivated — in fact, improved as prescribed by the Act. The North Australian Act, passed by Mr. Bruce's government, provides for the division of the Territory into two parts, Central Australia and North Australia. A commission is now engaged in furthering the development of the Territory. It will be seen that this part of the continent has already had some political changes.

Meanwhile, some production is going on. Five hundred head of cattle are shipped from Port Darwin to Manila every month, and another outlet for this kind of product is provided by the freezing-works at Wyndham, on the north-west coast. Rice, tobacco, coco-nuts, mangoes, cotton, various fodder-plants, and pea-nuts can be grown easily. Horses thrive well, and in 1925 numbered about forty-six thousand. Buffaloes, which are supposed to have been introduced from the Island of Timor by one of the early eighteenth-century Dutch settlers of the Port Essington region, have increased in size and in number over a period of fifty years. Shooting the buffalo is now not only the pursuit of sport, but has an industrial side to it; the hide of a buffalo has a market value of two pounds. The “bag” of a good shot (they are all good shots in the north) is about twenty head per day. About six thousand hides a year are sent from this part.

About two years ago highly improved wireless stations were installed, connecting the Territory with outside places, chiefly with a view to collecting and distributing messages from private stations that will be erected.

The solution of one of the problems of the North and the Interior undoubtedly lies in the aeroplane. The Royal Air Force has surveyed and prepared for us a service route from Camooweal to Port Darwin, and via Anthony's Lagoon, Newcastle, and Katherine.

No North Australian is ever likely to forget a certain epoch-making event that took place one early morning at Port Darwin several years since. The event was not unexpected, that is to say, the people had been advised that it was to occur, and they were ready. Events of the kind, even now, do not however always happen as scheduled, yet the Darwinians, having in their remoteness not many events, and being of a faith that this one would happen, went forth every man, woman and child of them all agog. The trek was to the seashore.

Far away in the sky came towards the waiting people a small but rapidly growing speck. A bird! ... Then the sound as well as the sight. Then the circling and the graceful landing.

Absolutely on time from the thirteen-thousand-miles flight, the great deed done, Ross Smith, and Keith, his brother, the two Australian-born winners of the Commonwealth Government's ten-thousand-pound prize for the first aeroplane flight from England to Australia, brought their plane to rest on the north headland of their homeland. What a moment it was! Never to be repeated. Done first, done well, done in a sense once for all. Melbourne and Sydney declared that they heard the Darwinian folk cheering. Be that as it may their own bottled-up cheers were dry in the throat, the intrepid brothers landing later in the southern parts when none expected them. The North for once had the thrill: none grudged it the honour of giving the airmen the first welcome.

Consider what the 'plane will do in connection with the mails, the carrying of stores from station to station, the passenger facilities. What a part it will play (does play even now) in the locating of things in the vast spaces, in finding water, in locating herds of cattle. In a hundred and one respects it will be a boon in these wide regions so far, so long, so weary to the foot.

Port Darwin, little known, is by some considered to be among the first half-dozen ports of the world. It is deep and wide and of such capacity that we cannot predict a time when, in the trade that will come to it from many waters as the years go on, the harbour will prove inadequate to the demands made on its accommodation for vessels of every draught.

At present it does not give harbour to many vessels. There is a meagre sixty-day mail service between Fremantle and Darwin, by state-owned (West Australian) vessels. This serves the northern Interior. The more southern parts are served from Adelaide. Ships *en route* from Queensland to China, Java, and India, call there. Port Darwin is also the terminus of cables to Java and Singapore. The islands offshore enclose a great expanse of water where ships could ride at anchor.

The Australian who lives in Darwin becomes attached to it. Life there is by no means dull, on the contrary, full of colour and of interest. One may dance all night if one wishes, there are the cinema, tennis, swimming, riding and motoring. The town is well situated on a promontory with cliffs fifty feet in height, and beaches that delight the eye and are a joy to the bather. Shady walks, tropic palms in moonlight clear as day, the scent of the frangipani in bloom, an abundance of other flowering trees and shrubs, and fine motor drives. Is not the picture alluring? The fashions find their way to Darwin almost as soon as to the southern cities, and the women take full advantage of the circumstance. Though the climate is warm, the tropic heat is more endurable to those who have become accustomed to it than the more changeful and humid

heat of the south. The heat is not enervating except to the lazy — the lazy person is “enervated” wherever he is. Though most homes have black servants, there are enough domestic duties to be supervised to keep the white woman physically fit. She may work hard at tennis or other games in the afternoon if she feels like it. It is as full a life, and perhaps one happier and freer, than the life of Sydney or Melbourne.

The woman whose fate takes her into the more isolated parts of the Territory does not get such diversified attractions as these perhaps, but at least she can now be assured of many comforts and pleasures that her predecessors had not. The activities of the Bush Nursing Association (referred to elsewhere in this volume) and a hospital scheme sponsored by the Presbyterian Church, make trained nurses and medical attention obtainable in almost every part. This means much to the remote dweller.

Of the four thousand people (white) now in the Territory, about half are concentrated in and about Darwin, and on the mining-fields of Pine Creek, others are scattered about the Barkley Tableland, at Alice Springs, Victoria River, and along the Overland Telegraph line. The remaining few (about one thousand five hundred), are dotted over half a million square miles — probably the most sparse population of white men in any part of the British Empire. These men are for the most part stockmen, buffalo-hunters, and prospectors. Part of the estimated number may, indeed, be made up of blacks and their *lubras*, who in this part still rove the wilds innocent of any clothing.

No one can long remain a stranger in the atmosphere of good-fellowship which pervades the homesteads of the frontier. The fact that the Northern Territory police force consists of thirty-two men — magnificent men they are, at home alike in the saddle or at the wheel of a car, and that they have a district as large as the area of the Balkans, suggests that the Interior is less turbulent than poor overcrowded mid-Europe.

Men get used (one cannot insist on that fortunate fact too often) to the life of the far-back regions; in time the ordinary amenities of social intercourse are to a man “well lost.”

Even into these far-away places comes the wanderer of the more southern plains. That wanderlust being, the restless ever-moving sundowner, well known of station and of the outer settlements. He obtained his name from his habit of contriving always to strike a homestead at the day's end if homesteads there are in the neighbourhood. There he asks for “tucker” as his right, and it is generally granted even if the genus is disliked by the landowner, as it usually is. There are considerations; a mysterious fire in the grass has been known to follow the refusal of the gentleman's demand for food, shelter, or tobacco, or whatever his need of the moment has made him call for. But there are genuine tramps looking for genuine jobs; how else may a man seeking

work at the shearing-shed travel to it, owning no horse, and there being no railway? It is weary work, the tramp's, be he sundowner or be he honest job-seeker, and many a one has perished on the plains getting astray from the water route, or falling a victim to the heat. Lawson, who had tramped many a mile swag on back himself, and knew the life, has put the tramp's case in many a stirring verse. He tells how:

As the shearer knew, the time had come to carry his swag Out Back,
With seldom a track that a man can trust, or a mountain peak to guide,

All day long in the dust and heat when summer is on the track
With stunted stomach and blistered feet he carries his swag Out Back

And of the pioneer in the farther Never Never country Barcroft Boake,
an Australian poet of promise who died young, writes:

Out on the plains of the Never Never,
That's where the dead men lie;
There where the heat-waves dance for ever —
That's where the dead men lie.

Yes, like all wild places in course of coming under the dominion of man, the Interior and the Far North have taken their toll. Explorer, pioneer, settler, gold-seeker, tramp, but the day is coming when the great distances will be as a day's journey, and the hardships of the traveller and the settler reduced to a minimum. The enterprising motorist even now makes his thousand-mile journey into the Interior with little thought of peril or of difficulty, and returns full of traveller's tales and enraptured accounts of the scenery, telling of the glory of the sunsets, and of the air like sparkling champagne. As a popular pastime the across-Australia trip bids fair to rival the swimming of the Channel and the flying of the Atlantic. The route most favoured lies across the Macdonnell Ranges. These ranges tower ruggedly above wide plains, and extend east and west for about three hundred miles. Structurally there are no ranges in Australia similar to them; the closest resemblance among the mountains of the world to the Macdonnell Ranges is presented by the Appalachians of the United States.

The water coming from these ranges is absorbed by sandy beds, probably forming part of the supply tapped by the artesian bores farther to the south. About the ranges some minerals have been found, but little prospecting has yet been done. Who knows what wealth may lie in this far place?

Among the granite rocks in the neighbourhood grow lovely little wild flowers, some red like the pimpernel, some blue as forget-me-nots. Blossoms of the golden grevillea shine like torches through the red dust of the great Burt Plain, and Sturt's desert rose — a species of hibiscus — and the brilliant crimson seeds of the bean trees, are among the floral

beauties that flourish on the fiery heart of the Interior.

Most beautiful of all the Central Australian trees, indeed one of the loveliest in the world those who have seen it in its native growing ground say, is the white-washed gum (*Eucalyptus terminalis*). It is the perfect gum-tree with its pure white bole and bough stems, its leaves of delicate but vivid green — the subtle sea-blue green that Hans Heysen knows so well how to paint upon canvas. The white of the *terminalis* is like a wash of powder — brush a bole with your hand, and instantly your hand is covered with its white magic.

No record of the Territory would be complete without mention of the late Mrs. S. A. White, who accompanied her husband, Captain S. A. White, the well-known South Australian explorer, on one of his expeditions into the heart of Australia, making the longest camel ride ever accomplished by a woman. She shared the hardships and adventures cheerfully, accepting the difficulties and dangers of the journey equally with the men.

I have just heard of another thrilling journey undertaken by a woman from a cattle station on the Finke River south of the ranges to Oodnadatta by camel and motor-truck, doing her bit with the men, and with the aid of planks, jacks, wire-netting, and the invaluable coco-nut-matting in the steep, sandy, and boggy places gone through. A remarkable feat recorded on the part of two women in adventurous travel in the Territory, is that of two New Zealand women — Mrs. Gladys Sandford and Miss who drove a covered car twice across Australia — once from east to west, and again from north to south. Experts declare that this performance is without parallel in the history of Australian motoring. Mrs. Sandford, the leader, served her apprenticeship for this twelve-thousand-mile run by long weeks of ambulance-driving in France and amid the sands of Egypt. She is an expert mechanic, and the first New Zealand woman to hold an air-pilot's certificate. Mrs. Sandford has picked out her landing-grounds for the day when she will fly across Australia. Such expeditions as these help to bring the Territory into proper focus, and to hasten the time when the word "desert" will be deleted from the map of Australia. Deserts, like mirages, are given to disappear as we approach them. They have a way, too, of becoming resolved into gardens when the apparently inhospitable soil of them is attacked by man's implements of agriculture. Let us not forget the wealthy Mallee country of North-western Victoria, once condemned scrub-land, now the centre of great granaries, gardens and vineyards sending their produce all over the world.

The Native Timbers

ALL the states of the Commonwealth except South Australia, which is somewhat scantily supplied, are rich in the quantity and quality of their ornamental and commercial timbers. In the days of the early settlement the eastern part of the continent and Tasmania contained such vast and impenetrable forests that the progress of the colonists in exploring and subduing them was slow. In the circumstances, the forests were looked upon by the early pioneers as an incubus. To use the soil meant that it had to be cleared, and the timber, as well as being prolific, was often difficult to deal with. Dense undergrowth had kept the great belts waterlogged and, obscured by the tall tree-tops, it was little of the sun that got through to warm the ground. Consequently in clearing the timber was slow to burn, and the tools at the disposal of the settler were of a primitive nature — there were no “forest devils,” no steam-rollers, no stump-jumping ploughs in those days.

However, clear the land he must, the man who had put his pegs into a block of it. Where fire would help, to fire he appealed, and where he could roll the great logs away into the gullies, that was done.

In the process of clearing some valuable kinds of timbers have been swept away entirely, whole districts being denuded of their natural wealth. However, man cannot have it both ways; the settler needed the rich land for the plough, and the timber that encumbered it had to go in the easiest fashion — no fashion of disposing of it was easy.

In Tasmania, one of the finest forest regions in the world, the Huon pine, a magnificent timber, coniferous, yet having the qualities of the best hard woods, so suffered from haphazard and wasteful cutting down that there is little left of it in accessible places. Its value has been realised only just in time, and its conservation is maintained — indeed the government is planting large stretches of the country with it where of old primeval forests of it towered.

What is true of the destruction of the Huon pine in Tasmania is true also of other Australian woods elsewhere, in many instances the axe has had an able assistant in the bush fires that now and again kill much of the lovely growths of the country's forests. Wilful waste has been checked, and that caused by the fires is being militated against by various means, such as by the cutting of fire-breaks in the heavily timbered parts of the bush, and by the watchfulness of the settlers in bush districts against the

conflagrations that spring up in the dry season. Besides these precautions, there is the more deliberate conservation. A great deal of planting is being done in the various states where sawmills are depleting the natural bush.

Saw-millers are now licensed, and under supervision, and settlers, realising that a good timber tree is valuable, no longer waste it. I know of a remote place in the wilds of eastern Victoria where many thousands of pounds' worth of beautiful timber, blackwood logs, lie heaped in deep gorges. There they were sent by the aid of levers and of gravitation — a costly clearing of the land, for those piles of logs, seasoned as they now are, would be of tremendous value in the market. The blackwood is a lovely furniture timber, and it is used in the making of violins too. It takes a beautiful polish. I remember that in my native district the blackwood was so little regarded that it was used for the meanest purposes. Fiddle-back blackwood in a rough brush or log fence does seem rather an ignoble use for a wood now prized by the best furniture makers. The Australians for a long time failed altogether to realise the beauty of their own timbers in cabinet-making, and continued for many a year to import the known and approved Old World varieties into their homes. Now they use the many woods available at their own doors. The pulpit in St. Paul's Cathedral in Melbourne, it may be mentioned, is of Australian blackwood; it is beautifully carved, and is a fine piece of work.

Many a bush house in the early days of settlement contained home-made furniture of the native woods. There was no other furniture to be had. Often roughly made by hands untutored in such work, the articles served well, and strongly put together, in time by use took a polish. I know of the existence to this day of some roughly made chairs and sofas of red-gum timber; they have the durability of oaken furniture, and an excellent appearance with the darkening of years upon them. These items of bush furniture were made upwards of sixty years ago by an early settler who, as he put it himself, had “never seen a tool till he went to the bush.”

Tasmania has no fewer than thirty-five varieties of commercial timber; among these for building purposes the blue-gum stands first in favour. It is a different timber altogether from that known as blue-gum in Victoria and other parts of the mainland. (There is much confusion in the nomenclature of trees and plants in Australia as there is in the animal kingdom; the black wattle, for instance, in some places is the silver wattle, and so on in most confusing manner. Now that many Australian timbers are largely exported something should be done to right this confusion.)

The vast family of the eucalypt forms the greater part of the Australian forests. There are upwards of two hundred varieties of this genus on the

continent, New South Wales alone having a hundred. Many of the eucalyptus order attain to great height and girth, and of these giant types there are many that are of great commercial value. The annual export of gum-tree timber of one sort and another to Great Britain and elsewhere is enormous, and is steadily growing. At the far ends of the earth there are streets paved with gum-tree blocks, and sea-resisting piles of the same timber form piers and aid in breakwater construction in places all over the British field of action. For railway sleepers the eucalypt has been found admirably durable. (An object lesson in Australian timbers for uses combining all building requirements and decorative purposes may be had by a visit to Australia House, where there are examples polished and unpolished in abundance.)

One species (the swamp gum — scientific names are avoided in these chapters, and the common nomenclature preferred for obvious reasons) runs up in a clean straight stem without branch or knot for eighty or a hundred feet. This tree is of a soft straight-grained wood, and is a good paling timber much favoured for fences, butter-boxes, fruit-cases, and so on. Felled, the tree is cut into sections of fifteen feet in length, when to be split for palings. The paling knife entered, it needs but a dexterous turn of the wrist to send flying from the body of the log the clean straight paling. To the skilled operator it is as simple as cutting a piece of cheese. In Queensland they use the Moreton Bay pine for butter boxes, each state has its favourite woods for various uses.

West Australia is very rich in hard woods, the two best-known commercial timbers being jarrah and karri, both trees of great girth and height. Karri grows only in the south-western part of the state, but jarrah is found over a wide region. There are about eight million acres of it, and jarrah is and will continue to be with karri one of the most permanent assets of the West. For railway sleepers, houses, ship-building, street blocks, and any other work that requires the employment of durable timbers, neither can be surpassed. They are beautiful timbers too, close grained and of clean texture. Oiled instead of painted, jarrah is a splendid house timber. New South Wales and Queensland have many woods in common, among those for building purposes being tallow-wood, black-butt, woolly-butt, iron-bark, yellow stringy-bark, etc. For ornamental work these states have a remarkable variety from which to draw; such as rose mahogany, yellow ash, silky oak, white quandong, coachwood, grey teak, boolywood, cedar, blackwood, blackbean, myall, sheoak, and yet others. The utilisation of the native woods for decorative uses is as yet in its infancy, other timbers as time goes on will prove suitable for such purposes. Queensland needlewood is much favoured for pipes, and recently the root of the mallee scrub has been proved to be equal for this purpose to the best French brier.

Queensland and West Australia have a good export trade in sandal-

wood, China and India being both large purchasers.

As well as timber there are many profitable by-products obtained from the native trees of Australia. People overseas are familiar with the medicinal oil that is obtained from the eucalyptus. There is a large manufacture of this oil in Victoria, and its usefulness for colds, and as a lubricant for muscular strains, etc., is unquestioned. Bushmen often acquire the habit of biting at a twig of eucalyptus as they ride about, and many declare that this mechanical habit has had the effect of preserving their teeth. At any rate the teeth of the bushman appear to survive the slings and arrows of civilisation better than do the townsman's. Gums and tan barks have a large local and export value in Australia. For tanning hides the bark of the black wattle is unsurpassed. Lemon essence is manufactured from the lemon gum; the scent of lemon exuding from the leaf of this species fills the air delightfully on a hot day.

The "black boy," a resinous West Australian grass-tree, yields a number of useful products. It has one of the toughest and best fibres for brooms known. Australia has many fibrous barks that have been put to use. A small industry was started in Victoria shortly after the war by a lady who had discovered that the inner fibre of the stringybark-tree's outer covering, dried and dyed with aniline dyes, made excellent baskets, mats, rugs, and various other useful things. This discovery provided a small band of blind soldiers with work. I myself can testify as to the durability of slippers made of stringy-bark fibre treated in this way. I possess a pair made by a blind pupil of this lady, that after four years' wear are practically as good as new. Other discoveries for using the by-products of various Australian trees will no doubt be made.

Stringy-bark (the outer covering of the stringybark-tree) was a great friend to the early-day settler. Of it he built his bush house, roof and walls. Again I myself can testify as to the worth of this "by-product"; I was born and brought up in a house built entirely of stringy-bark by my father. A sound, weather-resisting, comfortable home it was. In summer little heat struck through the several layers of bark that formed the roof, and like the Irishman's coat, what kept out the heat kept out the cold, so the house was snug in the winter too. Less picturesque and less serviceable was the roof of iron that with railway communications established came to the early settlements. The only advantage over the stringy-bark roof that the iron had was that clear tank-water could be saved when rain came. Rain-water from the bark roofs had the appearance of milkless tea, and was of course unfit to drink.

No honey is prized more, or commands more favour in and beyond Australia, than that made from the blossom of the eucalyptus-trees of certain kinds. Red-box and yellow-box honey are among the best. Each of these varieties of eucalyptus grow plentifully about the bush ranges; they hold much country in common with the broad-leafed wattle, and

always the wild bees nest in the hollows of these and others of the box-trees. The wild bees' honey is not always the clear amber of that made in the prepared boxes of the apiarist. From a bush apiary, however, when the pure box-tree blossom has gone to the making of the honey, free of the woody flavour of the tree itself, no more delicious nectar in colour or in flavour is known. Australia produces a good deal of bush-blossom honey for export, some of which goes to England, and more to America.

The manufacture of paper from wood-pulps is being carried on in Tasmania, and from present indications it is certain that a great industry will arise, Australia making her own paper, and so cheapening the cost of printing. The hard woods, it is found by the Tasmanian experience, need but the addition of a small amount of soft wood fibre to make a paper of perfect quality. As Australia has ninety per cent of hard woods this is a satisfactory discovery. Queensland has her rubber, another by-product, as it were, of nature's overflowing forest cornucopia. It would seem that where all is beautiful, all is also useful, or that each thing has some part which rightly understood will serve some commercial end. Wood, bark, gum, leaf, seed, flower, root. How rich and varied the offering!

The Native Animals

“MANY of your four-footed animals are only two-footed,” the world traveller observed to the Australian. He was, of course, referring to the kangaroo tribe, of which there are thirty-eight different kinds throughout the continent.

Australia, as everyone knows, is the home of the marsupial. Save for one species of opossum in America, the pouch is exclusively an Australian possession. Has the fact any significance? Is not the pocket among mankind regarded as a sign (good or bad) of civilisation? at any rate the savage has not evolved that useful receptacle — he does not need it. In the case of the kangaroo the pocket is a cradle, not a coffer.

Somewhat grotesque-looking is this marsupial with his great hind legs, and strong-nailed feet, his infantine forearms and paws, his huge balancing tail, small tapering head, long ears, large gentle eyes. Mrs. Kangaroo, with a large prick-eared “joey” in her pouch, standing erect while she timidly looks at one, makes a poor prey for a bullet. Many cannot bear to speed that bullet.

Innocent, disarming creatures are all of the tribe. Australia has put the kangaroo on her national shield, and the emu; the motto that goes with them, “Advance Australia,” is a declaration and a challenge, and gives a positive meaning to her escutcheon. The absence of any beast of prey upon the national coat-of-arms must not be assumed to indicate that the national spirit is lacking in virility.

The kangaroo is the king of the marsupials; he greatly varies in size and colouring in different parts of Australia; he is to be found in every shade of grey, and of brown. His character and habits vary little in his various habitats; always gentle and timid, he, however, loves the juicy growths of the cultivated lands, and will leave the wiry grasses of the bush, and take the risks of dog and gun in his trespasses. The settler has had to shoot him, and though he is now protected because of his diminished numbers — he is not a very prolific breeder — in the out-back places permits to destroy him are freely issued to the settlers. In the early days kangaroos were plentiful in most bush places; on a journey of a few miles in the bush, one would encounter perhaps several mobs of thirty or forty kangaroos, led always by one or more “old man” — the full-grown male. Leaping along, covering fifteen or twenty feet at a bound, a mob of kangaroo was an interesting sight to the stranger.

Pursued, the joeys would leap into the mother's pouch, if of an age to have left it to "try its wings." Cumbered thus, the mother kangaroo often fell a victim when the rest of the mob escaped, but frequently a joey in the flight would fall from the pouch, and be captured. I have had pets obtained thus. Affectionate creatures the little kangaroos are; a pet joey will soon follow one like Mary's lamb. There comes a time, however, when nature asserts itself, and the young kangaroo "goes bush" unless confined by very high fences indeed.

Unaggressive though he is, the kangaroo will show fight if cornered in a chase. It is not infrequent that, pursued, he will take refuge in a waterhole from the dogs. Many a dog carrying on the attack in the water has been drowned by the kangaroo at bay. He will grasp the enemy with his fore-paws, and hold him under till drowned. The writer has seen this done. Brought to bay on the dry ground, the kangaroo will fight the dogs, striking with his powerful hind feet. Terrible wounds are sometimes inflicted with the kangaroo's long iron-like nails, a dog is frequently ripped up by these weapons. The kangaroo ceases to be gentle when goaded.

This marsupial is supposed to be one of the few animals that are entirely inarticulate, but under stress the kangaroo will utter a cry, a plaintive indescribable note. But rarely.

Though long ago settled to the satisfaction of the scientist, bushmen will still dispute on the subject of the incubation of the young kangaroo. They will say that the embryo issues into the mother's pouch prenatally, while the scientist lays it down that at a stage of gestation, the embryo leaves the body of its parent in the manner of the mammals, and is lifted into the pouch by the mother to complete there the final stages of its gestation. At any rate, once having reached the pouch, and fastened its mouth to the teat of the mother, the young one becomes so adhered to her that it is impossible to separate them without injury to both.

As well as the kangaroo, properly so called, there are the allied species, the wallaroo, the wallaby, the kangaroo rat, and others. Of the marsupials there are many apart from these — the bandicoot, pademelon, wombat, kaola (native bear), opossums (many kinds), flying squirrel, and other nocturnal animals.

Of all the Australian animals the most interesting, because the most complicated, and contradictory of creatures, is the platypus (*Ornithorhynchus paradoxus*). He is truly a thing of shreds and patches, odds and ends of bird, beast, and fish. An indecisive creature. Amphibious, and it is believed by some at once egg-laying and mammalian in its methods of reproduction. The platypus is web-footed, has a bill like that of a duck, a seal-like tail, while its body is covered with the most beautiful fine fur. He is to be found in the fresh-water creeks and rivers of many parts of Australia. I have seen him caught with

an ordinary fish-hook. One, so captured, and taken half a mile from the creek where he was caught, made his way back in a few hours though put under a tub on a hard clay floor. The platypus had made a tunnel through the earth to freedom with his strongly-nailed webbed feet.

The “duckbill,” as he is called, makes some attempt at a pouch, but this is rudimentary — indecisive like the rest of the animal. The mother, by turning inward her flexible tail, holds the young one to her body at a part where the skin is thin and almost furless. The young one lies with its mouth to this embryo udder, and the milk oozes through the skin to the warm pressure of the young one's body.

The platypus is sought for its fur, which is valued for coats, rugs, etc. The animal is protected, though “East of Suez,” so to speak, the regulation is ignored. The expert shot lies with his weapon at cock at a shallow of the river between two deep holes; he knows that from time to time in the sunlight, a platypus will dart across the shallow. At the flying gleam he aims, quickly snatches his booty before it is borne away by the current. None but a bushman has the eye to do the trick.

I knew one man who had in this way secured enough skins for a large rug, which, prepared, and made up skillfully by a taxidermist, contained two hundred skins. Large sums were offered for the rug, but it was not for sale. There is no fur more soft and glossy.

The platypus will not bear transportation overseas. Again and again efforts have been made to convey specimens to European and American Zoos, in vain, the platypus will not survive a voyage. Those who wish to see him can generally do so at the various Australian Zoos, though occasionally the captives there too die off quickly. An American tourist visiting Australia recently declared that he had come specially to see this home-loving native; he was able to do so without poring over a bush creek, as it happened. A volume is at the present time being compiled about this unique creature; it will probably be issued before this is in print. The platypus well deserves a book to himself.

Australia has so many interesting animals that De Rougemont had no need to invent a “flying wombat” with which to edify the Royal Geographical Society of Great Britain. He could have stuck to truth, and been equally entertaining. The flying squirrel, the flying fox, the tree kangaroo, the ring-tailed 'possum that shot on his tree will hang by his tail to a branch, so prehensile his clasp that he will swing there till decayed, the porcupine that rolls on snakes as a way of attack (I have not seen this performance). Are not these strange enough? Nature is a great inventor, hard to surpass.

One may go all over the Australian bush, and find no four-footed creature that will menace one. The dingo is the nearest approach to the wolf that Australia has, but he does not go in large packs, seldom in packs at all, and he is a timid beast. The long-drawn howl of the dingo in

the ranges is all that many country people know of him. The sheep owner knows him more intimately, and lays his poison baits for him.

Of all the defenceless creatures of the bush, the kaola (monkey bear), is the most so. On the tree he takes the bullets crying piteously; attacked on the ground he attempts a heavy lumbering flight towards the nearest tree. He has no chance whatever against the dogs. I have seen the monkey bear under every sort of provocation, "stuck up" by man or dog, but I have never seen him strike a blow for life. So helpless and so foolish is he with his round, owl-like face, and his thick lumpish body. The rhymester was all at sea about the Australian bear who wrote of him thus:

Let us track to his lair the fierce native bear, And engage him in deadly combat.

It is clear that the writer of that couplet had never tracked to his lair our poor old kaola. The originator of the Teddy bear must surely have had the Australian native bear in mind in designing that friend of the nursery. "Teddy" has the same lovable face that one, wandering in the Australian bush, suddenly sees on a gum sapling peeping at one over the head of the mother bear. Firm in a fork of the tree, her young one no less firm, gripping her thick fur, is the mother bear; the four eyes look down upon one with a gravity half-foolish, half-wise.

The opossum, varied as is the kangaroo in the different parts of Australia, is also a timid creature. He is a nocturnal animal, and is slaughtered for his fur. The aborigines were the first to find the value of the 'possum's coat for clothing, and to strip it from him. I have recollections of sundry vagrants of the Timboon (Gippsland) tribes of aborigines clad in these furs in the shape of rugs slung over the shoulder. If the day were cold and but one rug between a man and his lubra, the gentleman usually had the rug, if the day were one of dazzling heat, the lady was graciously allowed to have it. These rugs, the blacks sewed with the sinews of animals, the skins prepared after drying by being beaten with stones to soften them. Bushmen have sometimes, when meat has been short, tried the flesh of the 'possum, but it is too tangy of eucalyptus — smell and taste — for any palate but the aborigines'! The flesh of the kangaroo can be eaten by white people as it is a grass-eating animal. It is not regarded as a dainty, however, except the tail made into soup — very excellent soup it is, as I can testify.

'Possums are favourite pets with bush children. In my early home there was generally a young one. The only objection to be taken to an opossum as a pet in a house is the creature's habit of roving about at night. To awaken with two glowing eyes gazing at one from the rail of the bed is

well enough, but cold little feet pattering over one's face are apt to give one a shock. The pet 'possum, like the pet kangaroo, was bound at last to "go bush," though sometimes one missing and mourned as faithless would turn up at last in the pocket of a coat — a pleasant pouch-like home.

Tasmania has the doubtful honour of possessing a very unpleasant creature all her own. Some kind of fate cut him off from the mainland. The Tasmanian Devil has no worse name than he deserves. There is little or no good in him, his character and habits gain him no friends. He is a very bad-tempered animal, and when angry he utters a husky, snarling note, very disagreeable to the ear. He is a marsupial wolf, a flesh-hunter, and a flesh-eater. Though only the size of a cat, he will tackle large animals. His method of hunting is sinister. On the track of a wallaby, for instance, he does not pursue the creature at great speed, but at a steady, implacable trot; on and on he follows the doomed animal till it is exhausted. Strong, cunning and vindictive, the "devil" has but one ruling passion to which all his others minister — a voracious love of food. There is no limit to his greed. The only way in which the Tasmanian Devil will allow himself to be handled, is if he is plied meanwhile with meat. He will then lie in the hands of the captor, but let for a moment his mouth be empty, and his bad temper shows itself instantly and viciously. A most unpeppable beast, the only unlikable member of all that large family of the wide Australian bush.

The Bush Birds

BEFORE the British introduced into Australia the many English birds that have now made the country their home, the bush contained a great variety of winged life of its own.

Among the birds imported into Australia by the home sentiment of the pioneers is the skylark, which may be heard in many parts of the New World to delight the recent comer. One would not in the least disparage the song of this, the beloved of the English poets, but the Australian, generally speaking, prefers the more flute-like warble of his own native magpie. I boldly assert that I do myself. There is a richness in the note of the magpie lacking in the shrill soprano of the skylark. What more melodious sound than the morning and evening song of a dozen magpies in the gum saplings! The exiled Australian becomes homesick, filled with the bush nostalgia, thinking of that glorious chorus:

Oh, I love to be by Bindi where the fragrant pastures are,
And the Tambo to her bosom takes the trembling Evening Star, —
Just to hear the magpies warble in the bluegum on the hill,
When the frail green flower of twilight in the day is lingering still;
Calling, calling, calling to the abdicating day.
Oh, they fill my heart with music while I loiter on my way.

The same writer (F. S. Williamson, a bush school-teacher), can pay a tribute to the English thrush in Australia as well, whose song is, he declares —

Changeless in Austral garden ... it lights my bosom with its glow.
And he loves, too, the native Australian thrush, its “grey Australian brother”:

Singing by a purple mountain wall.

In Australia, as elsewhere, it is generally the soberer birds that have the song. When the bright-plumaged parrots are vocal one does not applaud. Not theirs the gift.

The gorgeous-coloured king parrot, the mountain parrot, the galah, the rosella, the shrill paroquet, nature has made these for the eye rather than for the ear. Like members of the tribe elsewhere, the parrot is a favourite pet in Australia; the young ones are easily obtained from the nest in the

hollow of a “pipy” gum-tree. The magpie, too, is a favoured pet, and the several kinds of cockatoos. They are all great talkers; bushmen declare that these birds swear by instinct.

Knocking one day at the door of a bush home, I was greeted with quite a volley of oaths, and ordered to “clear out.” No one was visible, but at the moment the hospitable door swung open, whereupon the sulphur-crested (and sulphurous-tongued) cockatoo strangled a final malediction.

One of the most beautiful of the bush creatures is the bower-bird; he has both colour and song. The plumage is olive-green, spotted with many colours, the eyes are violet-blue, soft and unbirdlike. Ulysses' syrens might have had such eyes as the bower-birds'. The eggs are the colour of burnt sienna, and the melody is a beautiful flute-like legato trill — a voice with “quality” in it. An aristocrat of the feathered creation this, beautiful and beauty loving. The bower-bird collects bright objects, stones, moss, pieces of glass, dropped feathers, any gay thing obtainable. It makes mounds, from one to the other of which it lays in rows these gatherings, and there it dances and prances, preens, and flirts up and down, with all the airs and graces of the society belle. Shy things of the deep bush, they do not court a human audience; not all Australians know this lovely dweller of range and gully.

The bower-bird is, however, but the prince; there is the king of the forest, and he surpasses all other birds of the bush for beauty and talent. The lyre-bird is also of the secret places of the wild; he has no rival there. The beautiful tail of the male when outspread is shaped like a lyre, a many-coloured, perfectly formed lyre. One may be in the bush for long, and not catch him, tail outspread, at his extraordinary performances. He is a mound dancer too; he piles up the mould of the ferny gully sides, and dances to his audience of the plainer hen birds. A pair of males, their tails fanned, with agile grace go through their dignified minuets. It is a rare sight to behold this performance, and once seen, not to be forgotten. Consider the theatre of the play! Pillared by the boles of great gum-trees, a hundred feet to the green ceiling, but under that ceiling, and as well as those pillars, the brown stems and the wide fans of the tree-ferns, twenty or thirty feet in height those fern stems. The strong meridian sun can but filter down through that greenness fitfully. There is the gurgling of the gully water maybe for gentle accompaniment to the performance, and back against the range-side among the tangle of shrub and of climber, an unseen audience in the back seats perchance — the birds of another feather enjoying the play they may not imitate.

I have called him a “talented” bird, because the lyre-bird cultivates his native powers. He has the gift of mimicry, and uses it. No bird of the bush whose note he cannot ape. He

Thieves the ballads from his neighbours' throats,

as one of the Australian poets aptly puts it.

There is no end to his repertoire, the sounds that civilisation brings to the bush he adds to his list. The bushman will tell of wild-goose chases after horses, or bullocks among the gullies where they were not, though his acute ear had heard the bells of the team there. The cracking of stock-whips among the tree-ferns near may cause the lonely hut dweller to "swing the billy" on hospitable thoughts intent, for the approaching stranger who, however, fails to materialise. Mr. Lyre-bird is a good mimic.

I have heard the lyre-bird make harsh his melodious throat in imitation of the sounds of the bush saw-mill. What a draw this bird would be at, say, any London music-hall, could he be bribed to come before the footlights! Fortunately the lyre-bird may be counted on to reject all offers to lure him from his native haunts. He does not survive long even in the bush when made captive.

The lyre-bird is sometimes called a pheasant — a curiously misleading name, its one aptness is perhaps that the shape of the body is not unlike that of the English game-bird. An Englishman not long arrived in Australia made the mistake of trying to roast a lyre-bird for his dinner. He found it so tough as to resist knife and teeth. After trying other ways of cooking the "pheasant," the new chum decided that one should not try to put the nightingale into a pie.

That companion of the kangaroo on the national coat-of-arms of Australia, the emu, already referred to, like the aborigines of the country, is passing. In fifty years' time there will be few left of these cassowaries, so essentially are they denizens of the wild. Within my recollection, it was possible about North Gippsland to see in the early morning or in the evening at sunset half a dozen or so of these majestic creatures pacing one after the other along the sky-line of a cleared hill or plain. That place knows them no more. Back and back the emu goes before the oncoming tide of settlement. The great green-coloured eggs of this bird are sometimes set in silver, and used as ornaments in bush homes. Far out-back, the emu egg sometimes still appears on the breakfast-table, but the flavour is coarse, and only a hungry bushman can attack it. Many other of the bird eggs of Australia also demand an acquired taste, and the same may be said of some of the birds that figure now and then on a menu. The mutton-bird, supposed to resemble mutton in flavour, is occasionally eaten. This bird among other nesting-places, has claimed a great portion of the tussocky cliff-lands about Phillip Island (Victoria). There in the hatching season are to be marked thousands of nests which produce millions of fluffy little birds that presently overrun the place, scuttling like rabbits among the honeycombed cliff-lands at one's approach. I

remember a feast of roasted mutton-birds offered to a party of trippers on this island, when not one of the hungry guests found the dish palatable. The eggs of the several species of wild duck known to Australia as frequenters of the inland lagoons and waterholes are generally rather rank in flavour. There are, of course, about the continent many species of game-birds, native and imported, and about these as delicacies there can be no two opinions.

The native companion, a long-legged heron-like bird, has the graceful appearance of others of his tribe; he is to be found in many parts of Australia. Black or white swans, sometimes both, abound in many of the inland waters. It is a sight to see in the evening light, a flight of black swans phalanxed against the sky, uttering their call on their way to a mountain lake. These birds of the wilderness, some maintain, are good weather prophets, and can be relied on to indicate by their migration inland that rough weather from seaward is approaching. I remember that on the day prior to the beginning of the greatest floods that Southern Victoria has experienced since the coming there of white man, great flights of these birds went crying over the land, bound for a lake (not then discovered by man) in the far deep ranges. A. B. Paterson, the Sydney poet, writes thus of these black swans:

I hear the clang of their leader crying
To a laggard mate in the rearward flying,
And they fade away, in the darkness dying
Where the stars are mustering one by one.

The pelican, that lover of remote places, builds her nest in many an Australian wilderness. One of our poetesses uses the fact as a refrain in one of her best-known lyrics. The men are going forth as they ever do in a new land, to conquer fresh fortresses of the wild:

And thirst and hunger were banished words,
When they spoke of that unknown West,
No drought they dreaded, no flood they feared,
Where the pelican builds her nest.

There is a strange member of the friar-birds in Australia, a harsh-noted, hypocritical fellow for all his shaven head. The leatherhead is the foe of the orchardist. That cunning little eye of his glints sideways, as with that small head, leathery, crinkled, and featherless, he stands ready to peck the ripening cherry — to peck, but not to eat outright. He is a connoisseur, and will try many, leaving a wreckage behind him quite incommensurate with his eating capacity. The jays, black magpies as some call them, are destructive birds in the orchard too; they always have a scout on a high tree to give the thieves warning of an approaching gun.

The wedge-tailed eagle, and the eagle hawk, a smaller bird, but as much to be feared in the poultry-yard, build their eyries in the bush ranges, remote and aloft as possible, as is the way of all their kind. These birds trouble the sheep-owner in the lambing season, not less than does the crow in time of drought. In the one case, the young lambs are carried off to the eyrie, in the other, sheep and lambs alike, tottery from starvation, suffer terrible things from the crows. The crow is the most hated bird that inhabits the great pasture-lands of Australia.

The bush has some species of the owl of its own, the boobook owl being one of the most distinctive. His weird call fills the bush ranges on a moonlight night when all else is still. Not a rustle in the tree-tops beyond which the moon sails, flooding the great solemn greenness below, and peering with her mellow lantern above the dark ravines where not even the strong search-light of the sun may fully enter. Into the silence comes the strange note of night's king-bird, "mo-poke, mo-poke." The strange thing is that this queer cry in the moonlit stillness of the bush seems to fit the hour and the place, to be consonant with the spirit of the great high gums, and the dark sharp mountain-ridges.

Another weird cry is the curlew's. He is of the marshy ground, a bird known in many parts of the world. The aborigines were superstitious about the curlew. Heard in the swamps, he was to them no less fearful than the vagrant animal from the sea, spoken of later in this volume, the seal, that became, because of its eerie note, a debbil-debbil.

Who writes of the birds of Australia in small compass must needs leave out many, but one that must be included in the briefest account of them is the jolliest Mark Tapley of the whole feathered kingdom — the kookaburra, known also as "the settler's clock," and as the laughing jackass. The kookaburra does not retreat before the settler, he stays, and adjusts himself to the new conditions. To obtain his beloved worms and grubs, he discovers that the wake of a plough is a good place. He continues therefore to bring up his generations about the farm that was once a part of the bush. The name "settler's clock" was given to the kookaburra because his extraordinary outbreaks of sound are especially indulged in at morning and at evening time. His laughter gives to him his other commonplace name too. To those first hearing the long-sustained volley (sometimes a chorus of it) the sound causes amazement, then evokes responsive laughter. It is infectious. What it is all about no one knows, but then one often laughs at a joke the point of which is obscure to one. This embodiment of the Comic Spirit on the dry gum-tree branch seems to be the most logical of philosophers, in that in no circumstances does he allow misfortune to subjugate him. He cannot for long forget to laugh. The uproarious joke of the bush-fire that earlier in the day almost singed his tail, is at sunset already sufficiently humorous in retrospect, to form the subject of much mirth with him and his fraternity.

In days of beauty, and of peace, in times of dryness and of grey drought, always and ever the Falstaffian optimist of the bush, the kookaburra wins the affectionate regard of every soul who has heard him laugh, and has laughed back to hear the robustiousness of his incorrigible merriment.

The Bush Flowers

WHEN Captain Cook, landing by Sydney Harbour, saw a profusion of wild flowers about the fore-shores, the name Botany Bay must have come without searching. Sir Joseph Banks, among the first white men to see, and the first to observe scientifically, the spring bush flowers of Australia — or some of them (New South Wales alone has eight thousand varieties of native flowering plants) — must have felt himself in a very paradise. So much that was lovely, and all new to him!

Nature, in creating the Australian bush, forgot nothing for seasonal relief of the otherwise possibly monotonous evergreens of the eucalypt trees. She made so many beautiful flowering plants in fact that, amid the richness of choice they afford, the young Australian race seeking a national floral emblem could not unanimously agree on the selection of any one flower to stand for Australia as the rose stands for England. Victoria, steeped in the pollen gold of her September wattles, could not get away from the haunting of its pervading beauty for the flaunting glory of the more northern waratah. She clung to the queen of her ranges, while New South Wales adopted the more gorgeous blossom as her emblem.

“The dear little heads of gold” of the Victorian bush beside the waratah blossom are like the gentle beauty of a Saxon maiden as compared with the bold loveliness of an Oriental queen. Each is lovely, to which we award the palm is a matter of taste.

The first recollections of this bush-born writer remain with the gold of the range wattle, with the clinging clematis of the creek banks, the gay battalions of blue-bells on the cleared hillside, and with the starry legions of the harbingers of spring spangling the grasslands everywhere. Many other flowers of bush, and creek, and of grassy swards there were, but these the dominant in memory at least. The little “harbinger” with its bulbous stem true to its name came first — and it remained long. The finding of the first in early August, or sooner, is an event beloved of the bush child. The trophy is carried home with all the pride of a young Red Indian exhibiting his first scalp.

Blossoms of the chief varieties of Victorian eucalyptus are sober in tone, and strong in scent, more prized for honey-yielding than for decorative purposes. It is the western part of Australia that possesses the varieties of gum blossoms that are so famous for their beauty. No one

can realise what Australia has in native flowering trees till he has seen something of the West Australian eucalyptus in bloom. Many a traveller with but a few hours to spend ashore from Fremantle, taking from there the run into Perth by way of the beautiful park reserve, secured to the people through the energy of the late Sir John Forrest, has been filled with amazement at the beauty and variety of the flowering gums to be seen. Every shade of reds and pinks and creams, curdling into white, are to be seen in season along that wonderful roadway. The magnolia-like blooms of the flowering gums so well suit the majestic beauty of the trees.

But though her eucalyptus are soberer than those of the West, as already stated, the south-eastern part of Australia has no lack of gay blossoms in her spring and summer bush.

The broad-leafed wattle that makes golden the ranges in the spring is never without its royal purple accompaniment. Riotously the sarsaparilla clings, and flings itself over the gold and green of the trees so that the eye is filled with it, and one sees the purple even where it is not.

There is a gay day in Melbourne annually known as Wattle Day, when the city is filled with the colour and scent of the state's national flower, and there is another day also in the springtime when the lovely native of Western Australia, acclimatised, and made at home in the east, scents all the city air. One realises coming into Melbourne on that day that the boronia has arrived, and one's step quickens. First the scent, then the blossom. There could be no mistake, one knew emerging from the Flinders Street Station, that at the intersections of Elizabeth and Swanston Streets with Collins Street, at the exits from the Centre-way, the baskets and the barrows laden with this unobtrusive but all permeating flower of the sandy westlands would await one.

What are its colours? Some people from memory will say that the little bells are green and blue, others, nearer the truth, will declare that the tints are old gold and peacock-blue. One Australian artist has painted the boronia purple and golden brown, but the artist, we know, carries his colours in his own eye. (There are Australian artists who paint the bush in mauves, others who give it the hazy tones of goblin blue, others again who see it in sage-greens ... and each is right.)

West and South Australia have many flowers in common; there are orchids in these two states of amazing beauty of form and colour. Sturt's desert pea, in its rich crimson, possesses whole regions of its own in the sandy desert expanses; it glows, strong, and avid, loving the glare and the dryness. The kangaroo paw grows luxuriantly in its greens, its reds, its browns and its oranges — a very distinctive native indeed. It suggests, somehow, the region where it grows as the Pyramids suggest Africa. The hibiscus belongs to the West as to the North of the continent. It is, however, the multitudes of smaller, less flaunting flowers, wild amid

wild grasses, that make spring in the West Australian bush, northward from Perth, the magical thing that it is.

A somewhat prosaic young man of the cities told me once, that on a cycling tour to the Coolgardie goldfields some years ago the revelation of the beauty of nature in its wild flowers so overcame him that he dismounted and rolled about the sward. A queer way perhaps to express ecstasy, but understandable where —

That rain of laughing flowers along the grass was spread.

More particularly her own than most of her other wild flowers, is the flannel flower of New South Wales. Quite close to Sydney its chaste pale blossoms may still be gathered. It is called the edelweiss of Australia, and the name serves well, perhaps better than “flannel,” which does not suggest the beautiful texture, and colour — or lack of colour, the flower is almost white — of this grave and beautiful bloom of the bush. The flannel flower is one of the few bush blossoms (apart from the heaths, of which there are many) that do not fade rapidly when gathered, but which with a little care will remain fresh for weeks; when dry, like the everlasting, the flannel flower is still full of charm. Generally speaking, the regrettable thing about the Australian bush flowers is that they do not survive gathering. It is sheer vandalism, for instance, to fill one's arms with the trailing glory of the wattle. Leave it when you have spent your time of joy amongst it; it is poor homage to strew the homeward way with withering branches. One must go to the bush, must go

Where the little creek goes winding
Through gums of white and blue

for the wattle, or to the gravelly range where

The little birds keep house —
A house with a grassy floor,
Tiny twigs for a roof,
And a gum nut over the door.

and coming away one must leave the bush except so much as one may bear away — the harvest of a quiet eye.

Queensland, so rich in her fruits, is not less rich in her flowers. The waratah flame does not rule there uncontested, the hibiscus with her scarlet trumpets proclaims her presence, the magnolia almost sets the senses aswoon. But those who know the flowers of Queensland best will talk of the jacaranda blossoms as a more soothing joy, while of all the blossoms of the north the frangipanni trees in full flower give the keenest delight. Flower and fragrance are a “sweet compulsion” to joy. The

passing train where these trees bloom is filled with their scent. As E. J. Brady puts it, writing of Northern Queensland:

“A thousand hot-house blooms breathe forth their allurements in this seraglio of flowers, but the frangipanni reigns — sultana above them all.”

Evergreen Nature in the bush yet contrives to renew herself without shedding her leaves. The tender young shoots that come upon the branches of the native bush trees give a fresh beauty to the wilds, as pristine an effect as though the denuding hand of autumn had prepared the way for an entirely new garment for the forests' wearing. On a spring day the sight of an expanse of young stringy-bark saplings, their tops lit by the sunlight against a blue sky, is a sight to stir the senses. Every soft shade conceivable gives back the sun, coloured by its own hues, as soft-toned lamp-shades transmute the quality of the light they shade and rob of its harshness. This has been put well by one of Australia's poetesses in lines “To a Gum-tree”:

Through all thy height
How dost thou blossom, giving back the sun,
Each leaf a light!
Thou unconsumèd one. ...

The utility and the beauty of this tree-tip growth has come to be appreciated by city people in Australia. Beautiful as flowers is the dainty foliage borne away from the bush to adorn in great bowls the homes of the thousands to whom the bush is a place that lies remote, to be visited only on those rare days when the dusty city releases them.

The Native Fruits

IN native fruits, edible or otherwise, the south portion of the continent is very deficient. There is not one kind of indigenous fruit in that part of Australia of which one could make a meal. Reviewing childhood's experimental testings and tastings of such wild fruits and berries as grow in southern Victoria, I remember no feast afforded unless it be in the case of wild raspberries, but even in the case of those hunger will grow apace with the gathering. The raspberries grow prolifically about the banks of the creeks and backwaters in that part of Australia (elsewhere in the country as well). By venturing among frogs, lizards, and possibly, yes, assuredly, snakes, a resolute person, child or adult, may at the expense of a few scratches obtain enough of this good-tasting fruit to encourage another visit among the rambles.

Then there is the kangaroo-apple, a yellow loquat-looking fruit, with something of the flavour of the tomato. The tree grows bushy, and is generally flanked by many briers and ferns. An unget-at-able tree. However, Eve's children in the Southern Hemisphere *do* get at the kangaroo-apples, especially if warned against the fruit by their parents, who believe it to be poisonous. It is an unsatisfactory fruit, a poor reward for disobedience.

Strangely sickly and unsustaining is the cranberry. The plant grows close to the sandy soil, so closely that the berry itself is earthy; it is three parts stone, and one part skin and grit. However, in my time I have often arrived at the bush school late because of the cranberry.

Most tangy and unfruitlike of berries is the fruit of the wild cherry-tree. The tree itself is a lovely and symmetrical one. The fruit, as mentioned elsewhere in these pages, has its stone (if stone it can be called) outside the berry. The fruit part is as large as a grain of swan shot, and is acrid to the tongue; one might as well eat green wood as the wild cherry. Yet, again, one climbed for it in one's childhood.

The nut of the sheoak has the same quality of acridness — and of lure. The sheoak “apple,” as it is called, is armed with semi-pricks, placed like the covering of the pine-cones. These, to get the teeth into the dubious luxury within the nut (the astringent heart of it), have to be cut, or bitten away.

So early the imported things became broadcast that many of them, such as the blackberry, might almost be native to Australia, so speedy and so

strong are they to take hold on the soil of new places. (The blackberry has been by - lawed against in many districts in Victoria.) Such run-about fruits go, in one's recollections, among the real native plants.

When we go northward where the tropical climate reigns, the native fruits increase in substance and variety. Northern Queensland is rich in them; of gourds that grow on ground-vines there are no end in that state. To enjoy some varieties of these melon fruits one has to acquire a taste. To the stranger the melon that the Queenslander takes upon his plate, and enjoys with avidity — his breakfast “cool down” for the hot day coming — to the uninitiate, the feast is not very palatable. Some of the tropical marsh fruits grow in the mud — like the Lily of Malud — and they taste “marshy.”

But do not tell the Queenslander that.

With many of the Queensland fruits, however, the most fastidious can find no fault. The flavour of some kinds of these richly ripened products of Nature is so subtle in its blended elements as to seem like several different kinds of fruit — a fruit salad in fact.

The passion-fruit is one of these, and the grenadilla, which has no rival in delicacy of flavour unless it be the mangosteen. Queensland cultivates for export such of her fruits as will carry over the world. The paw-paw will not, nor the mango. Bananas, of course, will go anywhere provided they are gathered unripe. The delightful quality of the passion-fruit has been discovered by English people and appreciated. The fruit, separated from the skin, is exported. It is sold in the London shops, and is popular for salads and for a “filling” for cakes. Nothing but the sun could give these fruits their delicacy and richness of flavour. Though southern Victoria will ripen the orange and the grape, these fruits are at their best only farther north in Australia. The climate (hot and dry) of Mildura, the great vine-growing region, irrigated by the waters of the Murray River, and established by the Chaffey Brothers some thirty-five years ago, produces wine-making grapes, sultana raisins, currants, oranges and lemons, and all other commercial seed-fruits. It is also the centre of the dried, and preserved, stone-fruits and the Australian wines' export trade. But the products of Mildura are of course acclimatised, not native fruits.

The wild fig-tree of Queensland has the bad reputation of being the murderer of its own parent. In its growth it forms a network round the mother tree, which in time is strangled to death.

Queensland, like Brazil, is “the place where the nuts come from.” There are several varieties, some edible, some not. The fruit of the quandong is of a peculiar blue colour; when the nut is dry it is light brown and is very hard. The quandong nut is sometimes made into necklaces, and I have seen bushmen with a taste for “jewellery” wearing scarf- or finger-rings carved from the quandong. Pea-nuts are cultivated in the north; they are in demand for margarine, and are much used also

by confectioners. Nutmegs, ginger, vanilla, coconuts; these are all cultivated in Queensland, and bear plentifully.

E. J. Brady, the best informed and most enthusiastic writer on Northern Australia, says that in Queensland growers of the custard-apple can clear from four hundred to five hundred pounds per annum from a ten-acre orchard of this fruit. The custard-apple grows there like Jonah's gourd.

Let British boys take notice of the fact that the delectable, but in England high-priced, pineapple may be bought in the northern parts of Australia where it grows, at twopence each. At times, indeed, pineapples have been sold in Sydney at two a penny. A pineapple is worth something for its aroma alone. It is common in Australia in the hot weather to keep a pineapple on the sideboard for the invigorating effect of its perfume, a delight little less than that given to the palate by this rich product of the tropical sun.

The fruits of Queensland have been dwelt on here, because that state, by its tropical position on the map, its ample sea-board, its mountains and topographical features generally, is specially favoured by nature for the production of varied indigenous fruits. It is doubtful if any country in the world can surpass Queensland in this particular.

One reflects that the fact that in the north of Australia the aborigines were found to be (as they still remain) in a state of greater virility than in the south, may be due to the more plentiful and more varied natural vegetable foods obtainable in those northern regions. From what has been said of the fruits of the southern part of the continent it will be seen that the vegetable diet at the disposal of the natives was limited and poor. Beside the fruits mentioned as belonging to the northern parts of Australia (and others not mentioned here), there are the fungi. The bread-fruit of different kinds is plentiful, some varieties of it growing to a great size. Some of the Queensland yams grow to ten or twelve pounds in weight, while the Victorian varieties of the yam are very poor as to size and substance.

Mr. Bernard Shaw recently declared in characteristic fashion that "the vegetarians are a ferocious people." Of all the native tribes of Australia, none have a greater reputation for "ferocity" than certain of the Queensland tribes. Can the profusion of vegetable food in that region have been the cause of this lamentable idiosyncrasy?

The Reptiles

AUSTRALIA has not had a St. Patrick to cast out its native reptiles. There are a great variety of snakes, lizards, and other unpopular specimens of animal life on the continent. In the tropical parts reptiles are, of course, more numerous than in the temperate regions of the south. Tasmania, for instance, has but three kinds of poisonous snakes, and Victoria has eight, while South Australia in the northern parts has thirteen venomous species of reptiles, and Queensland twenty-eight varieties that will cause death to a human being. In all there are tabled forty-two kinds of deadly snakes in the continent.

The list looks a formidable one, but the actual deaths from snake-bite in Australia are few. In the first place not many people are bitten, and those who are have generally the remedy at hand to nullify the effects of the poison. If nothing else, a pocket-knife with which to scarify the bitten part, or a piece of cord or a handkerchief to make a ligature, thus stopping the flow of the poison to the heart. Snake-virus is purely a blood poison.

Bush people know the habits of snakes, and act accordingly. Most varieties will slide away hearing or seeing a human being, attacking only if menaced, trodden on, or if one is inadvertently between the reptile and its hole. Then almost any snake will show fight.

In the state schools coloured plates of the local venomous snakes are displayed on the walls, and instruction given as to how to act in case of necessity. The bush child is not panic-stricken when he (or she) meets a snake in the bush; the reptile is usually left dead over a log with a broken back. One smack with a stick will break a snake's back, and the dispatch is easy. Every rightly constituted bush house has its "snake sticks" by the door corner; if seasons are dry the reptiles will seek water at homesteads, otherwise they avoid the selector's clearing. On the whole it is remarkable that more people are not bitten by snakes in the bush. It was a common thing where I was brought up to kill sixty or seventy snakes in a season, yet no one was ever bitten. Everyone who lives in the bush has his escapes, and wonderful tales are told when the bush folk get together. "Swapping" stories is a staple entertainment while people wait at the bush church for the arrival of the parson or the organist (generally the "organ" is an old and wheezy harmonium). The talk at such times is more often, in fact, of the serpent than of Eve. Themes, where little

happens, would be short were it not for the snake. Thus it will be seen he has his uses.

As a child I myself had "an escape." While pursuing a hive of migrating bees I trod on a black snake. With the bush child's presence of mind, the big bullock bell I was ringing to "settle" the bees was dropped on the snake's head before it could strike. A story used to be told of a woman in that same district (North Gippsland) who, seeing a snake on the track ahead, stooped to pick up a stick with which to dispatch it, when the "stick" slid away. Such stories as these are none the worse for being true.

Some of the northern Australian reptiles are more fearsome in their aspect than in their actions. The carpet snake with his brilliant ten or twelve feet (up to eighteen feet) of body is terrifying but harmless. The death adder seldom causes death, his bite is not necessarily fatal at all, but he is an ugly, sinister-looking creature. So is the frilled lizard (Queensland), which when angry or excited shoots out a frill-like membrane from the neck — as a bushman put it, "his Elizabethan ruffle." There are a great variety of small lizards in Australia, all harmless.

There are harmless pythons, too, in Queensland, and tree snakes that are not agreeable overhead when one is dozing in the shade. Numerous water snakes abound about the coastal seas of Australia; nearly all the varieties of these are venomous, and they are sometimes brought ashore on high tides. There are several kinds of tortoises about the continent; they are waterhole (inland) creatures, unlike the turtle of the northern parts, which belongs to the sea.

The iguana (by bushmen called "goanna") is not really an iguana at all, but a tree lizard (there is a smaller so-called iguana that lives in the water). The tree lizard attains to a length of six or seven feet, and has a great eating capacity. He visits farmyards and clears out the nests, and is partial to chickens as well as eggs. He is portly and torpid after a gorge of 'possum, one of his natural victims of the hollow trees where both live. Though a gorger at times the tree lizard will make long fasts. One in captivity in an antipodean Zoo took no food whatever for the first nine months of his captivity. Then he suddenly roused himself, and swallowed several young rabbits alive. The "goanna" (to give him his bush name) has a tail like a sword, and will spring from a tree upon an attacker with a whirl through the air. A blow from his tail could kill a man, but the bushman sighting him with his rifle is wary.

The much heard-of Queensland alligator is another creature falsely named. This haunter of the northern rivers, and swamps of eastern Australia is really a crocodile, but by whatever name he may be called is a horrible brute, either as a spectacle, or as companion to a swimmer. The natives have always dreaded this monster lurking log-like about the

streams and lagoons. Many a black, and sometimes a white man too, has met his death by the sudden snap of an alligator among the reeds. The sound made by the alligator is blood-curdling. Heard by night in a lonely place among the swamps, the bushman confesses that it is almost terrifying. It is like no other sound in nature.

The cry of a strange animal occasionally heard by the blacks in inland arms of the sea is responsible for some of their legends. The aboriginals did not associate the sound heard with an animal, to them the weird cry came from a "debbil debbil," and hearing it they would flee. The "debbil debbil" they had named the bunyip, and when the white man pierced the legendary mystery, he preserved the name. In Gippsland, Victoria, there is a thriving township, the centre of a rich agricultural district, once a swampy marsh, that bears the name of Bunyip.

The "debbil debbils" at close quarters proved to be seals, that now and then got inland borne by tides from the great ocean. Those who know the weird cry of the seal can imagine how the aboriginal myth of the swamps arose.

Insects and Pests

THERE being more kinds of insects in the world than of any other order of things, it may be assumed that Australia has her share.

Much of insect life is so infinitesimally small that it does not "meet the eye." In the Australian bush one may go all day and observe little of it but the various species of ants that run over the ground or up the tree-trunks, that build their hillock nests in decaying tree stumps, or throw up the hard ground into earthworks. Few people trouble to notice the varied activities of these multitudes. There is the little red ant, probably of the kind that shoved the elephant going into the ark, there is that which we call the sugar ant, and the little black ant from the moral tales. The "Jumper" is there, and the bulldog that bushmen note to avoid, for his sting is a fiery experience. These and more have their busy colonies about the dry bush ranges.

In the tropical parts of Australia there are the termites that erect their earthwork towers with mathematical skill, and of a permanency surpassing the power of the aboriginal to attain to in his flimsy efforts at home-making. These mansions the most casual observer cannot fail to note. But there are hordes of unobtrusive insects native to the bush lurking in leaf, bark, rock and rubble. Spiders of many kinds, some of them poisonous, but none of the species large like those African monsters eight inches in length. The Australian spiders on the whole do not invade houses; they "keep themselves to themselves" very properly. But in damp weather the tarantula (regarded as a spider by the bush people) comes fly-catching on walls and ceilings.

Earwigs, cockroaches, centipedes, beetles, hornets, daddy-long-legs, horse-stingers, wasps, scorpions, Australia has its share of these ubiquitous creatures. I have recollections of a record hot day spent picnicking in Buckley's Cave at Point Lonsdale (Victoria) in the companionship of thousands of horse-stingers that had taken refuge from the heat in the cave. (Buckley was the Wild White Man who for thirty-two years lived with the blacks of Port Phillip. For a time he lived in the cave spoken of under the rocky cliff of the sea-shore.)

The aborigines probably knew more about the insects of Australia than do the generality of white men. The natives were interested in them for their larders. They knew the ways, for instance, of the juicy white grubs that live under the scaly loose outer wood of dry gum-trees. Not the

woodpecker himself could more cunningly find these dainties. The natives regarded them as the white child regards the wild plums hidden in the hedge. It is an acquired taste, the appetite for the white grub, like the zest for *pâté de foie gras* of the cultivated gourmet.

Mosquitoes of many varieties tropical Australia has. Less in size and virulence is the mosquito of the southern parts, though his hordes can give a lively summer's evening to people seeking to cool down after a day of high temperatures. It has often in my experience been a choice between "being eaten" by the mosquitoes or being smoked out by the checkmate — a smouldering fire of horse-dung or something equally pungent.

In the tropical regions of the country, the mosquito is undoubtedly the causer and the carrier of malaria, and much experimentation for the prevention of the evil has so far failed to cope successfully with it. In New Guinea the mosquito has contested every inch of progress the white man has made; the rifle is of no avail against his proboscis. Some of the most virulent of these kinds appear to have got south of the Arafura Sea, and incline to come still farther south. The best remedy for scotching the malarial mosquito so far hit upon seems to be that employed in the Panama regions, where white oil (kerosene), put on all open water surfaces and tanks, destroys him in his billions.

To most of us, to refer to insects is to refer to what we regard as pests, forgetful of the soil - renewing and various other beneficial operations of some species.

Flies in summer time in Australia are something more than a nuisance, they are a positive menace to health. Among animals the blowfly is death-dealing. The annual loss in sheep in New South Wales alone, caused by this pest, is computed at two million pounds.

There are also the drought-loving insects such as the cicadas that shrill all the summer's day and night from the cracked ground.

There are the wet season pests such as the caterpillars of various species that come in legions, steadily writhing onward, instinctively making for the green harvest. Nothing will stop the horde but water in the path, or digged pits into which blindly leaders and legions will a squirming ghastly mass. I have seen this race of caterpillar against the ripening of grain, the farmer unable to delay the one or to hasten the other. The power of small things massed!

The dry-weather scourge of locust or of grasshopper is an experience once known, never forgotten. On one dazzling summer there went over a part of New South Wales, in a wide undeviating sweep, a relentless army of grasshoppers that left behind it not one blade, green or dry. More, it invaded the houses on its path when it might, and devoured window - curtains or any other fabric available. Whence generated the horde and whither it went no one can say, but not again has the grasshopper bred

like that in the same region. It was a plague spawn, a freak of prolific generation.

Many of Australia's parasitic pests are not native, but have come there of deliberation or inadvertently with legitimate imports. Some are microscopic, and no amount of vigilance could detect and keep them out. Some, however, of those that take annual toll of Australia's potential wealth might with care have been kept from entering. The codlin moth, the apple pest, is one of these. This destroyer of so much of one of the country's chief exports was originally introduced in empty fruit-cases.

Now that cotton growing is becoming one of Australia's big industries, all possible care is being taken against the introduction of the boll weevil, that has proved such a pest in cotton-fields elsewhere. Insect life breeds so rapidly, and so prolifically, that a pest species sweeps like a tide over a region when it is once acclimatised, and has found its food. The trouble about parasitic insects and (to go a little from our subject) weed seeds and such-like pests, is that often, when introduced into a new country, they may do more harm than they did in their natural habitat. In the new place, the enemies that kept the balance may be absent, or the intruder may change his food and habits — as the English starling in Australia has become a fruit-eating bird.

Within living memory there was in Queensland no single plant of the prickly pear, that present-day pest that covers thirty million acres of farm-lands in that state. One fears to mention that “insect” the rabbit, the deliberate but short-sighted importation from England into the country. How many “eaten-out” landowners in the Antipodes have cursed the day on which those few innocent little bunnies were landed at an Australian port. (Let it be added that, as regards the rabbit pest in Australia, the time is past when his being there is regarded as an unadulterated misfortune. Industries in flesh and fur have sprung up, and many thousands of trappers and others are making a good living out of the rabbit — and incidentally coping well with his tremendous fecundity.)

Insects, visible and invisible, beneficent and harmful, it would almost seem, have in some cases the power of disseminating themselves from place to place in supernatural fashion. Or is it by spontaneous generation that parasitic life comes to tropical countries? Where none was perceptible yesterday, millions may swarm to-morrow. In the case of Krakatoa for instance; that island was completely sterilised by volcanic eruption in 1883. It was covered by ashes and pumice to a depth of from one hundred to two hundred feet, yet soon four hundred different species of insects were found on the island, though it is twelve miles from any other land.

Every animal (including man) has its parasite or parasites, and every vegetable too, it would seem — that which gets its life by creating disease in its “host.” The big fleas and the lesser fleas. The fact is that no

part of the world can keep itself free from the invasion of animal and vegetable germs of ill character. They smuggle themselves in as the bad brownies did into the house in the fairy-tale. One wonders what injurious exports may have gone abroad in our Australian wheat and wool, unregarded and untaxed.

Sheep. Wool

NO industry in Australia has played so important a part in the development of the great island continent as the wool industry, which it is estimated now helps to clothe more than a quarter of the population of the civilised globe. No wonder the greasy wool that grows on the sheep's back in the Riverina and the far west of New South Wales, in Queensland and in other parts of Australia, is called the "golden fleece," when it is worth sixty million sterling a year to a people numbering just over six million.

His Majesty the Merino, the proud little sheep with big ruffles round his neck and little yolk in his wool — the Australian sheep *par excellence* — is the backbone of the country's prosperity, the symbol of its stability. Sixteen hundred guineas is no uncommon figure for a breeder to pay for the particular sire he needs to improve the quality of his stud — to put size into the frame, and quality and bulk into the covering of the merino. When Captain John Macarthur — the pioneer of the industry who introduced the Spanish strain by means of eight rams which he purchased at His Majesty's sale at Kew in 1804 — wanted to claim something very flattering for Australian sheep, he said that the weight of the fleece had gone up from three and a half pounds to five pounds. There are stud rams in Australia to-day with a fleece weighing over forty pounds, and on the wide, sheeny, pebble-strewn plains out-back the descendants of Captain Macarthur's rams are one hundred million strong.

This state of affairs is all the more remarkable when one considers the innumerable pests with which the Australian sheep-owner has to contend. Thistles, Bathurst burr, horehound and a hundred other noxious growths call for his eternal vigilance, not to mention the rabbits who raid his pastures, the hated blow-fly and the dreaded mouse plague — pestiferous nibblers who infest both shed and paddock and take constant toll of everything from roots to wheat, from saddles to blankets, even burrowing in the sheep's backs after seeds. By a subtle irony, these nuisances are chiefly in evidence during a particularly bountiful season after a dry spell.

Practically all the great Australian flocks and herds are reared and sustained on the native grasses alone, and are neither hand-fed nor housed from one year's end to another. Three generations of breeders

have so profited by this generous endowment on the part of Mother Nature that Australian merino wool commands the highest prices in the markets of the modern world. The average price for the 1924–5 clip, sold in Australia, was £34 19s. 8d. a bale, which constitutes an absolute record for the Australian sales. Eighty per cent of the clip is sold in this way to overseas buyers on the spot before shipment overseas. Incidentally, Australia's own factories are consuming more and more of her product — roughly about ten per cent of the entire clip. Closely allied with wool production is the export of chilled mutton and lamb. Cargoes worth two million pounds left our shores in the first nine months of 1925–6, bound for the British Isles.

Pastoral holdings in Australia in some cases cover a territory larger than an English county, in others they embrace an area of from two thousand to five thousand acres. New South Wales remains the leading wool-growing state of the Commonwealth, with its forty-seven million sheep, Queensland comes next with nineteen million, and Victoria a not-to-be-despised third with a useful twelve and a half million. These enormous sheep-runs, known as homestead leases, are as self-contained as an English village. Besides the actual homestead, where the manager and his wife live with their children and a couple of “jackeroos” — a colloquial name for apprentices in the pastoral industry — there are the overseer's cottage and the hut for the station hands, the carpenter's shop, the garage, the smithy and engine-room, the saw-mill, the saddler's work-room, and sometimes a school. It is not unusual for a modern homestead to be equipped with electric light, covered-in swimming-bath, a refrigerator, a cinema-projection hall, a tennis-court, a wireless outfit, a septic tank, and a central heating system.

An infinite variety of jobs falls to the lot of the station hand, such as repairing machinery, moulding concrete sheep-troughs, turning out lengths of weather-board, manufacturing screw bolts, or making scores of gadgets that simplify the working of the run. For some part of the year, the larger holdings on the Darling and Warrego Rivers are more in the nature of factory towns. Four enormous buildings are kept humming for two months in the year with the industry of from one hundred to one hundred and fifty men, who shear the wool by machinery in one great shed, scour it by machinery in another, dry it on the green and press and dump it by machinery in a third, and store it in a fourth, while one or more steamers make continual trips to Bourke and back as fast as ever they can get away with the cargo.

Down the long wool track from the paddock to the loom, the merino has built up, not only a nation's prosperity, but the genus Australian — the tall, bronzed bushman, whose stalwart frame was fashioned, in the words of one of our popular balladists, by “fighting the fires and floods and drought in nights of terror and days of doubt.” And, after all, he is a

much more important asset than the tallow and glue and cold cream and other by-products of the great industry that helps to clothe and feed and beautify the world.

C. E. W. Bean, the well-known press correspondent, graphically describes the gigantic preparations for shearing at a famous shed. It is more like a campaign than anything else. Regiment after regiment of sheep is moved in like troops to a military encampment. Five thousand sheep are put into the woolshed paddock, those of the same age and sex are driven into the drafting yards, and from there a thousand or two enter the shed, where twenty or thirty shearers are at work in the pens. A shiny brown forearm — slippery with grease from the wool — steers the machine over a fat merino, leaving it shorn clean white like a peeled orange. A good man will shear one hundred sheep a day; many shear twice that number, according to the class of sheep, varying from young wethers, which are hard to shear, to old ewes, which are easy. The stiffest and wrinkliest sheep of all is called “the cobbler,” because he “sticks to the last.” Suddenly a shout for “Tar!” is heard, and the tar-boy dashes off for what looks like a pot of treacly paint. It used to be tar and lamp-black, but is now mostly sheep-dip. He dabs it on a nasty cut on the sheep's flank, and when shorn, the animal is pushed through a small door in the side of the shed down a chute into a counting-out pen, a separate pen being used by each shearer so that a record may be kept of his tally. Periodically the sheep are removed from these pens, passing through a race in which they are branded, then through a “dip,” where immersion in a disinfectant kills the ticks or other parasites with which they may be infested. Thence they return to their pastures to graze and grow more wool.

Well-managed flocks will clip from nine to ten pounds of wool per sheep, and the very best flocks considerably more. The whole of the back wool of the sheep comes off as one fleece, and lies for a second like a soft shawl on the floor. A special boy gathers it up carefully by the hips and races off with it — the biggest and most precious part of the clip — to spread it with one clever throw over one of the tables at the end of the shed. There it lies like a bearskin hearthrug, the points — shoulders, neck and haunches — hanging over the edges. These flanks have been brushing through the herbage all the year, and are full of burrs and very uneven. The men at the table skirt them off, and throw the pieces on the floor. The fleece itself, once the back of the sheep, and so away from the herbage and burrs — containing perhaps a few easily removable grass seeds — they roll into a woolly round muff and put this, the pick of the wool, on the wool-classer's table.

From the wool-classer's table, it is shipped to the seaboard at Sydney, Melbourne, Geelong — a centre which invariably secures the premier position at Australian wool sales — Brisbane, Adelaide, Perth, Hobart or

Launceston, as the case may be, there to be stored in the dark vaults of some wool store. A third of each lot, however, is spread under the fierce glare of the glassed-in roof on the top floor of the wool store, and thither come astute buyers from Paris and London, Berlin and Antwerp, New York and Tokyo to select the very finest fabric that will set the fashion for shooting-tweeds or Ascot gown.

The Horse

DRIVING along a bush road one day some twenty years ago, when the motor-car was still rarely seen in such places, the horse drawing my wagonette suddenly stood upon his hind legs, ears agitated and nostrils distended. A thing new to him, emitting strange sounds and spurting fumes, had emerged round a curve of the road. The horse was naturally afraid; the Unknown appals the stoutest.

“Never mind, old fellow,” my companion soothed him, “it won't hurt you, it is your *tribe* it is going to kill.”

Is the process of killing the equine “tribe” going on? It almost looks like it. At any rate the supremacy of the noble animal is already gone, rubber has challenged leather, and petrol has outpaced muscular horseflesh in many directions in Australia as elsewhere. Yet one cannot believe in the commercial and social atrophy of the horse in the New World, he has been such a factor in its civilisation. Moreover, love of him is deeply in the vitals of the people; he has an aesthetic value as well as a utilitarian one. Menaced on every hand he is, though, a fact that keeps down his numerical progress. In Queensland and in the north generally he is maintaining his position perhaps better than he is doing in the southern-most parts of the continent. There many things have challenged him, not his least rival perhaps the dairy cow. Horse-breeding belongs to wide spaces, large areas, and the cutting up of the rich lands of the earlier-settled parts of Australia has meant butter production and agriculture rather than the growing of horseflesh for either home service or for exportation. North and west he is still bred in large numbers for the Indian market. Java, Japan, China, and the East generally, purchase Australian horses freely, though the Indian demand is not what it was. Cattle stations and huge sheep runs are more frequent than stations that breed horses exclusively even in the north. The waning demand for remounts for the Indian Army may have had something to do with that.

In Victoria and New South Wales one used to meet here, there, and everywhere the Indian horse buyer; a type of horse was bred especially for him. He was a feature in country life, a type himself indeed. My recollection of him is of a sparely built, quick-eyed, alert individual, wearing strapped trousers, and carrying a short hunting-crop eternally in his hand. He was brisk in his dealing, a know-all in his own line. He could flash his eye over a horse and tell in an instant the weakness that

disqualified it for his market. He knew that a horse's pastern wasn't horse's knee, even if Dr. Johnson was shaky on the point. Where is he now, this all-alive, somewhat swaggersome individual of the strapped trousers and the restless hunting-crop? Gone north maybe, following the horse, one can imagine him at no other trade.

Southward, the noble Clydesdale still flourishes. No finer animal in the world than those great draughts to be seen at the Grand National shows held annually in the cities, and in the local shows of the large district centres where the Men of the Land gather round him and talk animatedly of his points. That the quality of these fine horses shall not decline, even if their numbers should do so, is ensured by the careful system of stud stock inspection in force.

The useful draught horse of the ordinary small farm does not go unmenaced by innovation either in these days of road traction transport, of steam ploughs, chaff-cutters, threshing-machines, and what not. Between them Othello's occupation is curtailed to a degree. Who sees now in a country district in Australia the old-time threshing-machine circulating from farm to farm, worked by two or more horses going giddily round in a ring, or even working the machine, as an early Gippsland thresher of my recollection used to be worked by a pair of horses on a kind of treadmill — an escalator-like contraption. The tide of progress has changed all that.

After all, however, it may be the lighter build of horse that is being supplanted by machines to a greater extent than is the load-bearing animal — the pull-in-harness horse. The light hack, the riding horse, is suffering eclipse undoubtedly. Many in Australia who once rode on horseback, now motor. How many people who once used a buggy, or wagonette, in the bush, how many city people who once kept a carriage, or who rode in a four-wheeler cab or a hansom, now sprint along road or street in a petrol-fed vehicle!

Out-back in the timbered country where the roads are still bad, and will be for many a day, the “riding” horse has still no rival. He is often a rough, useful, Jack-of-all-trades animal, capable of going in the shafts, or even into plough harness, when not bearing his owner in the saddle over rutty tracks too narrow or too precipitous for a wheel of any kind. Yes, the horse is still well entrenched in the deep timber country, rough-haired, ungroomed nag that he is, not so finely bred as to sniff at the mingled and many tasks he is called upon to perform. The mountain horse is a type by himself. He is a hardy, sagacious animal, having a goat-like power of keeping his foothold on shaly mountain-sides, reminiscent of the prehistoric time when, as evolutionists tell us, the horse was a three-toed animal. The mountain horse can tread with sureness where the horse of the plains would probably go over with his rider into the deep ravine below the precarious track. A stanch and

companionable creature, loving the hard, narrow track as his master loves it, master and horse in full understanding of each other. A long day before the rubber supplants that horse's rough-shod feet.

The pack-horse, of useful, indeterminate breed, on the narrow mountain roads and across the plains is not yet extinct, but the plains know him less now than of old. Wagon and motor, even mule and camel, tread places that once belonged to him. But road-making in remote mountain places progresses slowly, there are many townships still, remnants of the gold-digging days, in the ranges where a handful of folk live their quiet lives almost untouched by change, where the pack-horse is still the delivery van. The pack-horse, what-ever he may be now, used to be a short-lived, galled-backed, over-worked creature carrying his load of stores and sundries carefully along the narrow backs of the old gold-bearing ranges, sidling gingerly between the closely growing trees and pacing steadily, as an Egyptian water-carrier paces, along the precipice edge. Rest well, all such noble steeds as have died in harness. I well remember the thrill of the first wagon coming into Walhalla. The old diggings revived by the wonderful gold being got from the Long Tunnel mine brought a new population, and made the township a brisk scene, gave it also a new dignity which converted the commonplace name of "Stringer's Creek" into the euphonious "Walhalla." The first wagon brought there over the pack-horse track was, however, drawn by a team of bullocks, not by horses, and lest there be those still alive who saw and cheered the performance, let me add that I did not actually *see* the achievement, only shared the thrill of it conveyed by good narration. *The driver of the bullock team was an English woman.* Need there be any wonder that the British have made good as pioneers?

Horse-breaking is a profession in Australia. It is a gift, the man who has not the gift had better not essay the task. Something psychological goes to the success of the horse-breaker, something in the man there is that puts him in touch with the horse, that gives him the command of it, that gains the respect of the animal, and finally its affection. It is a wonderfully fine performance, and one good to watch, the breaking in to the saddle of a wild station colt, or finer still, maybe, is the conquest of the yet more scary "brumby" of the bush, who at sight of a human being is sent in terrified flight. The capture and subdual of a wild stallion of the bush who somehow had pedigree blood in him is graphically described in the recently published Australian novel *Working Bullocks* — already referred to in these pages.

The horse-breaker is a juggler, an acrobat; he performs his feats with ease, is never flurried, or taken unaware, when the quadruped that he is bringing under his dominion suddenly becomes a *biped*, or a camel-backed fury, or when the horse plunges like a harpooned whale, madly, blindly, about the yard or paddock, the man who has juggled bit into

mouth, saddle upon back, and himself into the saddle, sits there master, cool, vigilant, till presently the animal so kinglike among his kind is obeying the will of his superior.

It has been alleged as a reproach to the taste and outlook of the Australian that he has made a King Charles's head of the horse in his literature, that the beat of the horse's hoofs echoes too continuously through it:

Cattle duffers, bold bushrangers, diggers, drovers, bush race-courses,
And on all the other pages, horses, horses, horses, horses.

Why not? Just as feudal knights in armour, and barons bold, bulk large among the earlier literature of England, and have a romantic place in it still, so has the horse his place in the early literature of Australia whose history he has helped to make. The rhythm of a galloping horse's hoofs is a fine rhythm for a ballad, and the ballad belongs to all early poetry. It is a stage in the evolutionary course of a country's literary art — to a psychological, sophisticated type of literature. Some may even prefer that the literature should stop before the over-analytical stage is reached; like Whitman, desiring to “turn and live with the animals,” that are not always “questioning about their souls.”

However that may be, we are not ashamed that our noble helper in the development of our country is the hero of much of our verse. Galloping rhymes indeed are not inconsistent with contemplative thought to a man “sitting loosely in the saddle,” nor are the “Grey Horses” of Will Ogilvie incompatible with the bushman's other large preoccupation — “Fair Girls.” Go to Flemington, Melbourne, when the Spring Race Meeting is being held. There will be seen, in the gayest setting imaginable, the HORSE. A triumph of breeding for the short sprint, a rippling rhythm of beautiful muscles under satiny skin, clean, flawless legs, symmetrical body, and proud, sensitive, intelligent head. The Australian's gala horse, not his workaday nag. Concerned with his holiday spirit, but deeply entrenched in his life.

The racehorse is at least secure in Australia that preserves for the museum its dead “Carbine.” The living race of racehorses, giver of the passionate thrill, master of the emotions of a nation while he flings the turf on his carnival days. Secure? ... Never, surely, the *electric* racehorse! Should the day come, Australia may ring down the curtain on the very soul and being of Sport as the national spirit to-day conceives of it.

Cattle. Pastoral

As we know, the first cattle came to Sydney from England; the first were brought to Victoria from Tasmania by the Hentys, and by Batman. These were the progenitors of the millions of cattle that to-day make one of Australia's sources of wealth. "Cattle" is a comprehensive term; in relation to Australia it connotes the fresh meat industry, the frozen meat export trade, and the dairying industry, not to omit altogether that patient serf, the working bullock. We will confine the consideration of cattle for the moment to the pastoral — the production of beef, fresh, frozen, tinned.

Australia is a great meat-eating country, chiefly so perhaps because meat is plentiful and cheap, for the climate does not naturally suggest the propriety of a large meat diet. But consume meat as it may, the population of Australia could not possibly cope with the supply, a glut would occur speedily were it not for the export trade. The pastoral lands of the continent are so vast. Take Northern Australia for instance, where the largest stations are given up to the production of beef cattle. These stations comprise an area of 56, 250 square miles. There are individual stations in Queensland the boundaries of which exceed the area of several English counties. A single "ring" fence enclosing one of these may be as long as the road from London to Bristol. There are over seven millions of cattle in Queensland alone.

Westward, these figures of miles and of cattle are exceeded. The Victoria River Downs Station and the Wave Hill Station are each more than twice the size of Yorkshire. Two other stations in Northern Australia make an area of something like thirty thousand square miles. Mr. Sidney Kidman, the Australian cattle king, has stations all over the Commonwealth; he musters his bullocks by the hundred thousand. Beginning in a small way, Mr. Kidman is now a bush millionaire. He travels from station to station, most of which are devoted to cattle, continuously. His possessions can hardly be counted in acres; his progress to wealth would read like a romance had one space to dwell on it. One station in the north-west is devoted to Bovril works, which the owner established there some time ago. He is thus able to send the beef produced on that station in a very condensed manner abroad. A country that can raise the Bovril-producing animal as Australia can should surely never experience "that sinking feeling."

There are cattle stations by the thousand in Australia, ranging from these vast areas to places of more reasonable extent. No, Australia could never consume her meat, the cattle country is so vast, and its development is going on at so great a pace. Had not science come to her aid the country would long ago have been glutted with her own production, but science as usual *did* come to the rescue.

The invention of the refrigerating chamber by James Harrison, a journalist of Geelong, Victoria, solved the problem of what to do with the over-produced commodity. Australia's frozen meat now goes all over the world. And who has heard of James Harrison? His name deserves to stand beside that of Watt, or Arkwright, or of any other of the great innovators in industrial methods.

The life on an ordinary cattle station in Australia has been heard of often enough by people overseas; of the life of men on the vast runs Back o' Beyond less is known. The man who has a genius for the life loves it, whether he be owner, jackeroo, or ordinary station hand. The seasons on a station bring their own special work, not so varied perhaps as that of the farm, but sufficiently so as to create the necessary spice to labour. Branding, mustering, drafting, droving and the rest. The work calls for skill, the skill that is won only by experience. Even in these days when railways are beginning to creep over the continent, droving is still the main method of getting cattle to market over wide spaces of the country. Weeks, even months on the stock routes is the rule.

The cattle-drover is a type by himself; a lean brown man, with a head ready for any emergency, the emergency of a petering out of grass (the bores have practically ended the water difficulty on the droving routes), the emergency may be of the senseless stampede that sometimes takes place among cattle on the march.

The night is still, darkly starlight; tired horses, tired men and cattle are camped in some favourable spot. The drovers, after a quiet yarn and smoke, have settled down for the night. It is pleasantly chilly, very quiet, earth and sky remote, yet near, all the far noisy world as though it did not exist, remote as the stars that blaze like diamonds above. A strange mystical brooding; a sense of peace, something of awe. It is the hour that puts that dash of the poet into the bushman. The dark sea of cattle is just visible, the sound of their breathings is audible, the bovine odour perceptible, milky even among bullocks. There are the longer breathings of the horses, the ready horses, that the knowledgeable bushman has always at hand in droving when he lies down to rest. A munching, the faint creakings of leathern harness. These the only sounds, no night creature native to the spot to blend its note with them. ...

Silence upon talk, sleep upon silence, the drovers have drifted into a still more intangible world. All is well.

Suddenly, something, nothing, and the sea of cattle sways. Those at the

far point have taken a sudden panic; they stampede in a body forward, blind, pelting. Joints creak, horns clash, some of those in front of the mad stampeders have not time to rise and run too, they are trampled, some few of them crippled perhaps. Others scramble to their feet, and away with the rest, blindly, senselessly into the wild. The sleepers are up like a shot (how lightly these men sleep with cattle on their brain!), dash from their blankets, and afoot or on their horses strive to the one end — to head the mob.

That is done soon or late, but all will be weary and the night almost spent when quiet is restored. But the drover loves his job. I have heard one of these men say that a bed was “no good” to him, nor a roof either; he liked the sky, and the feel of the ground. They like also to feel the ribs of a horse under their thighs, a knowledgeable sympathetic horse that is on the side of the man and not of the cattle when foolishness gets into the mob. All day, and many days, the drover sits intimately on his understanding horse, a part of it, it a part of him. He grows round-shouldered, slightly slouched, the horseman of the plains, as the sailor, the horseman of the sea, grows bow-legged.

Read of the drovers in Henry Lawson's short stories, and of station life and its varied activities in many another Australian writer's pages. They know the life, these writers, and can impart the thrill. And it holds thrill. Mustering, cutting out, all the home work of the cattle station. All the dust, the heat, the galloping, the shouting, the whip-cracking, the cunning inveigling of the scary bullocks, the pressing through the rails at the last spurt, the long sighs, the rattling of hooves and horns, the quick bang of rails or of gate — the triumph of the yarding:

'Twas merry 'mid the black woods when we spied the station roofs,
To wheel the wild scrub cattle at the yard,
With the running fire of stock whips, and a fiery run of hoofs;
Oh, the hardest day was never then too hard.

Gordon has put it once and for all.

Life on the station changes not so much as life elsewhere, perhaps, still it does change. Since Henry Kingsley wrote his *Geoffrey Hamlyn*, that well-drawn picture of station life of the early days, railways, motors, and other innovations have broken up the old conditions. For one thing, to have one of the old-time kangaroo hunts, one must go well out-back. The kangaroo hopped over the nearer horizons as he was pressed; not even the law's protection will bring him back. The motor-horn sounded his “Last Post”; he is now deceased to civilisation.

The stations in the more developed parts of Australia have near and easy touch with each other, and with the world at large. The squatters are now almost city folks; they come to Adelaide, to Sydney, to Brisbane, to

Melbourne, as once they rode to the neighbouring run. Many have a town house; they have become rich with their cattle, their horses, their sheep. They have beautiful homesteads on their great estates, with up-to-date comforts and luxuries. Their children go to college. They are the landed people, the gentry. In the wool districts the squatters are called the “pure merinos.” If a nickname for the cattle squatter has been invented, I have not heard it, but it will come if not already arrived. It will not identify the grower of the Australian bullock with the grower of the Australian cow — the Lady of the Dairy. It will differentiate the two as they are differentiated in fact. To the squatter the Hereford, to the dairyman the Shorthorn, let us say. There is the relative status of the two to be maintained; even in a democracy there is a slight distinction between the beef-growing man, and the butter-producing man. May not the one, the seasons being good, sit at ease under his wistaria-covered veranda, and behold his coming cheques plumping out into fat figures on his pastures before him, while the other, come good or come bad seasons, must always be at the daily round in order that his cheques shall materialise?

The Dairy Cow

ONE of our poets has affected to see in “the arrogant stare of an Australian cow,” evidence that she is the descendant of an old deity worshipped by men of a bygone civilisation. The poet goes on to suggest that she knows that she is still worshipped, though now it is for “her pail of cream.” However that may be, the Dairy Cow is queen of the farm, her golden produce its prime asset. Everything must stand aside for the Lady of the Butter.

The apotheosis of the dairy cow in Australia was not a sudden event; it was a process beginning with the cutting up of the large holdings of the great squatting era. Mention has already been made of the rush for the land that took place in Victoria at the petering out of the alluvial gold in the early sixties. The quartzmining era necessarily turned away many of the old diggers, men whose work had been with shovel and windlass, with pan and “dolly.” These men would work for no master. Thousands to whom the goddess had proved fickle, or who had been thriftless of her gifts, began to raise the cry, “Open the Lands.” The government of the day complied with the demand.

The Duffy Land Act of 1862 was passed, a measure by which a man with little or no capital could become, on easy terms, the ultimate owner of a holding. Much of the good lands of the colony had been lavishly bestowed on yet easier terms by a leasing system to the pioneer squatters. Naturally the squatters sought to resist the innovation, and a good deal of “dummying” took place, whereby the land still remained the squatters' or by which one “selector” acquired many blocks beyond the maximum allowed an individual by the Act. However, under a second Act, by which blocks of various acreage and quality were apportioned by ballot, a revolution in the settlement of the lands of the colony was effected. It was a gamble, yet with some sort of prize for the hand that dipped into the box. One man would draw a prize of hundreds of acres of rich land with little or no clearing to be done upon it, another at his elbow a small holding of eighty or a hundred acres in a primeval tangle of vegetation. Diggers used to the element of “luck” in their lives liked the excitement of these government ballotings, and flocked to the land-offices in great numbers on the fateful day of the drawing of the lots.

I could tell many interesting stories of these ballotings learned from my father, who having himself given away the gifts of the golden goddess

that had come to him on the Fields, was one of the land balloters in the rush for the Gippsland holdings. As it happened he drew a small but succulent plum, a fact that caused me to be born a bush child on a small selection with all the concomitants of bush pioneering about me. The early bush home was built of stringy-bark on rough timbers of red-gum, and erected by my father's own hands. Virgin forest covered the river valley of the selection from scrub to tall giant trees, and under it all soil of unimagined richness.

All along that valley came the selectors and set to work at their long task. Soon by hard toil a clearing would be made in the timbers, and the acres one by one would feel the single-furrow plough. All over the squatters' leaseholds the small freeholder was improving his land and establishing his family.

One of the first essentials was of course a cow; there were always plenty of children wanting milk for their breakfast porridge. The cow came, perhaps but one at first to graze on the first small space cleared in the jungle. I cannot affect to remember the actual instalment of that first cow upon the scene of my early home. But better than that, I can remember that the fact of "Blackie's" enthronement had already been achieved. The cow was a beautiful creature, made to be petted by children as well as to yield a tremendous quantity of milk daily. That cow must surely have been of the race of that record breaker much heard of recently, the cow that yielded in a year 1,614 pounds of butter fat. At any rate "Blackie" was a good pioneer cow, the stare of whose docile eyes could in no wise be called "arrogant."

These cows of the new selections became the mothers of many herds, with which began in a very small way the era of butter production in the colony. The history of the Dairy Industry in other parts of Australia differs in detail from that of Victoria, in some places the nucleus was not laid by the breaking up of the large holdings at all, but by systems of sub-leasing, share farming, and so on. But the dairies of the small farms were Victoria's beginning of what is now a great industry. The stage of breaking up large leaseholds as time goes on will in Australia become widespread, either by the resumption by re-purchase of the lands by the governments for closer settlement (as is being done now in some parts) or by large areas coming naturally into the market. Large holdings by pastoralists seem in many instances the necessary beginning of the utilisation of the wild or remote tracts of country, but the fact that already many of the best dairy districts in Australia are old squatters' runs cut up, indicates that there are many more such that will come into the hands of the small landowner for agriculture and dairying as time goes on. The settlement of the land in a new country proceeds naturally in that way, first the pastoral areas where easy production is a necessity, and the "produce" such as can carry itself to market. But grazing is not the best

use of rich land; it belongs by right to the plough — or to the cow.

Where land merely grazed will support ten persons, under dairying or agriculture it will probably support ten times that number. Thus the Crown policy is to break up the unimproved areas, and settle a producing population upon them. Thousands and thousands of dairy farms with beautiful homesteads upon them bespeak the value of this policy in the past. The large leaseholder naturally is not friendly to the cutting up of the large holdings, but he must make way for the tide of progress, he has had a good turn, and is by no means an injured person, in that he is never dispossessed but is actually given the pick of his leasehold to make his freehold and the freehold of his heirs for ever.

The early selector's children and grandchildren, they too are the heirs of the good pioneering of parents and of governments from the eighties onwards. The system of land settlement in Australia is ever broadening, and the placing of the Australian-born on the land where he can make a competency for himself and his family is not the sole aim of the policy of the governments of the various states of the Commonwealth. The provision of suitable holdings for the British immigrant is zestfully prosecuted. All details as to the conditions on which men can get on to the land are given inquirers at the Migration Department at Australia House. Persons wanting to learn something of the life of the country, and of the opportunities offered to the immigrant, can also see demonstrations daily at Australia House by the cinema. There are shown the kind of land and the kind of life they are invited to share in this Land of Opportunities. Australia is ninety-eight per cent British, a fact which is remarkable when one considers America and others of the immigration countries.

The land settlement schemes have for the most part the dairy cow in the forefront; if not in the forefront, she is usually somewhere fairly prominent. The same inventions that have made the Australian meat export industry the success it has become have made the production and export of butter hardly second in importance. Australian butter and cheese go to the ends of the earth year by year in increasing quantities. The whole process of manufacture has been reconstituted from the early beginnings of the milk cow on the land. Well do I remember the old regime of a dairy farm; every process performed at home, and by primitive appliances. Butter-making in midsummer in the old-time dairy was a process to tax the spirit of the pioneer woman to whose lot the labour fell. Now have come to her entire relief half a dozen benevolent inventions — inventions that take the business absolutely out of her hands. Milking machines are used on many dairy farms, though possibly the perfect milking machine has yet to be made. There are farmers who will not use them at present, believing in the old hand-milking as the most efficient way. In any case there is the separator, which is a perfect

extractor of cream from milk, expeditious, easy, sanitary. Where the milk is separated on the farm, the cream is taken to the creamery; there are creameries everywhere within handy reach of all in the dairy districts. Butter-making is not a farm labour anywhere now in Australia. The central depots collect the cream or the farmers deliver it to them, the farmer is paid for his butter-fat, and that is the end of his part in the matter. The butter factory companies (in which the producers may be shareholders) transport the butter for shipment, or place it for home consumption as the case may be. In 1925–6 Australia produced 273,937,933 pounds of butter and 28,700,000 pounds of cheese, a performance to justify the writing of “Cow” large, as one of the country's solid assets. There are the potentialities to double, nay, treble this output within the next few years if the present policies of land settlement are prosecuted as no doubt they will be. To Wool and Wheat must be added Butter as one of Australia's great sources of wealth. What wonder if Her Majesty the Dairy Cow has become “arrogant”?

Wheat, the Romance of the Mallee

Man cannot live by bread alone, and it is equally true that civilised man cannot very well do without bread as a staple article of his diet. The history of wheat-growing in Australia is the history of a struggle and a triumph. The triumph is to some extent known to the world, the golden grain has itself told that part of the story. But the struggle (also part of the glory) has not been much heard of. It is interesting to recount, showing two things in particular, how wealth may lie at men's feet unrecognised, and how, when it is realised that it is there, man the indomitable sets himself to master all that is in the way of the winning. Not Australia's gold itself lay in reef and alluvial soils more secretly than lay the potentiality of wheat in the soils of the Mallee country. The natural conditions were there, the organic seed was absent.

Wheat, roughly speaking, may be grown in any part of Australia, though the coastal regions are not so suitable for its production as are the inland parts of the continent. By nature's kindly provision the rainfall as well as the soils of an immense area are adapted to wheat production. It was through not understanding this fact that the early difficulties were for the most part encountered, and that the wheat-growing operations were confined to the parts least adapted for it. Rich lands were used whose very richness militated against the best results. It was discovered early in the history of Australian agriculture that the best quality wheat could be grown in the country. As far back as the great exhibition of 1851 in London, South Australian wheat took first prize against the world — five years before South Australia was made an independent colony. Since that time more than eight hundred and fifty million bushels of the golden grain have gone into the mills of the world from South Australia alone.

But the real wheat belt was not then (in 1851) discovered, except in the explorer's sense; its uses, so far from being recognised, were held to be non-existent. "A worthless wilderness" was the verdict of the official surveyors who had found the scrub almost impenetrable in parts. The wheat-belt country is roughly the Mallee country, though the Riverina and the Queensland pastoral districts grow it also to perfection.

The belt proper stretches from northern Victoria, west of the Divide, through to the west of the continent, involving four of the five states of the mainland. The belt widens as it goes west, till in South Australia and

Western Australia it embraces vast areas. It is estimated that the true wheatlands of the continent number two hundred and fifty million acres. Should Central Australia in the future fulfil the predictions made it will be greater than that. E. J. Brady, in *Australia Unlimited*, says that he believes that vast region will some day be added to the wheat-growing lands. If that happens Australia will be supplying the world — with something over for Mars.

At any rate the golden tide is, year by year, invading farther and farther the virgin distances. As the government schemes for settlers, Australian-born and immigrant, develop, fresh sections of the belt are being opened up, especially in South and West Australia. Railways are pushed out to tap the new places, water by dam, or bore, or channels, is being provided where rivers are wanting. A great spread of population is going on, a healthy development which means also a *wealthy* development, for it is the PRODUCER that the country wants.

West Australia, that began her development much in the way Victoria did, is largely dedicating her energies at present to wheat production, the days of the volcanic fever of gold-digging being to an extent in the past.

What is this Mallee? this scrub of the “wilderness” that is becoming so rapidly a garden? It is a species of eucalyptus growing densely and to a height of ten or twelve feet, the stems are crooked and tough, the branches straggly. Amongst it no grass grows, it will suffer nothing in its acrid domain unless it be here and there a tree of the oak or pine variety (quite unlike the English oak and pine).

It was a grim wall of vegetation to which the settler reluctantly came, feeling that even when cleared the soil of his holding was poor. Easy grants by the government, assistance to clear and to seed, were hardly temptation enough to bring the average man to the task. As a rule those who came, toiled, and were conquered. But these brave pioneers established the fact that the Mallee would grow wheat — they sowed for others to reap their experience if not their corn. Given a water-supply for domestic use, the Mallee would settle a population.

Then came many brains to the several problems, attacking them at all points. How to clear the land? How to get the best kind of wheat to suit the soil? How to provide water? The story of the triumph began at this period. Many brains have now lightened the handwork of the Mallee farmer. The invention of a huge roller drawn by horses, bullocks, or by a traction engine as the case may be, solved the scrub-clearing difficulty. This is a wonderful thing to see at work. The man who drives it all day deserves his wage.

Over the scrub it smashes, breaking it out at the roots from the sandy soil. The scrub is then left to wither, and in the autumn a fire is put over it, making a clean burn — except the roots, of which more anon. The huge disc or shear stump-jumping plough next comes over the rough

ground, turning anything from four to fifteen furrows at a time. This is followed by the scarifier, which thoroughly breaks up the soil. Fallowing well is a great point, and affects the result of the sowing immeasurably. The seed-sower (in some cases the same implement) drills in the seed and the superphosphates generally used in this class of land. The work of planting is finished towards the end of May. Then is pause so far as the work with the wheat is concerned, but no one ever saw a farmer pause actually, he has always plenty to do somewhere about his farm.

The harvester has its turn when the seed has come to green blade, the blade to ear, the ear to golden ripeness. The harvester, like all the other implements of the Mallee, is an Australian invention, a wonderful monster of man's making. To the borders of the great golden sea waving to the fence-top, and level as a billiard-table (the perfect wheat crop of intelligent farming in a normal year) — to that it comes, driver aloft and ready team, and like a benevolent Robot begins its human-like manipulation of the grain. One man with one machine can harvest in a day from ten to fifteen acres, and harvesting means stripping, threshing and winnowing the wheat, the processes done by the one machine in the one act — or as by one act. It is a fascinating operation, and possible only in a climate where the grain can remain on the stalk till absolutely ripe and dry, and where the soil will hold a machine of this weight on its surface. The surface of a good wheatfield is prepared as carefully as the roadmaker makes his road. In making it the farmer's object is to capture the moisture for the sub-soil.

The stalks are burnt on the ground for its enrichment, or in rare instances saved for hay. Part of the triumph of the Mallee wheat-growing industry must be given to the experimental wheat-breeder, and most of that to one man, William Farrar, a trained Cambridge University man who, after years of patient experimentation, produced a wheat ideal for the Mallee soil. Millions of pounds sterling have been put into the pockets of Australian wheat-growers by the work of this one man. Did space allow, other benefactors might also be mentioned in this connection, such as Mr. Pye of the Dookie Experimental College. This drought- and rust-resisting wheat of Mr. Farrar's breeding has made a grain eagerly sought by millers far overseas, because of the quantity and quality of its flour.

Science has also contributed to the triumph of the Mallee wheat-growing, by solving the difficulty of the water-supply in this region of few rivers. It was discovered that by boring to a depth of about two hundred and fifty feet under the limestone, water could be obtained. In this way, and by irrigation channels, pipes, and by various other methods, the settlements as they spring up are well supplied.

The roots of the destroyed scrub have proved an asset; the man clearing his land does not now burn these as they are dislodged. City people have

discovered that half a dozen of these “knobbly” gorgon-like Mallee roots make the jolliest fire possible. They burn with heat and glow in either grate or open fire-place. Before a Mallee-root fire dullness cannot be, it loosens wit as wine does. When the truck-loads of this fire-wood come to the cities the retailers are besieged with orders from their patrons, and a rationing system has sometimes to be resorted to, the demand exceeding the supply.

Thus the forbidding scrubland, it must be admitted, has turned out something of a fairy godmother region after all.

In the old pioneer days, when settlers were few and far between in the Victorian part of the Mallee, there happened a circumstance still remembered among the stern yet beautiful things of the out-back records. The story of the Duff children is a tradition. I remember the story as a child, chiefly from the tale of the occurrence being told in verse in an English magazine. The poem was of the long-winded ballad order, consisting of upwards of fifty verses. So captured was the imagination by it, however, that in our family it was learned by rote, much of it being remembered to this day. The children of the story belonged to an early settler on the fringe on the Mallee. There were three, Janie the eldest, a girl of nine, a boy of five, and a younger boy of three. Sent out to cut some mallee for brooms they got lost, and wandering here and there in confusion the scrub swallowed them up hopelessly. The girl carried the toddler when he wearied, and covered him at night-time with her frock. Day followed day, and the frantic father with a gathering crowd of neighbours sought for them in vain. Here and there the searchers found traces of the lost ones; where they had lain down, a piece of cotton frock on a twig, a footprint anon on a soft spot on the ground, but never the children, alive or dead. It was dry summer-time but the nights were chilly; there was no food, no water. Hope died, but the father searched on, and some of the neighbours with him. Weak to exhaustion, but living and unscathed, the children were found at the end of the ninth day, Janie, the little heroine of nine years of age, in the act of spreading some leaves for the baby's bed.

The story has a sequel. It is the practice of the State School Department of Victoria to issue monthly school papers for the various classes, a section of these being given up to subjects especially Australian. Not long since in one of them was told the old story of the Duff children lost in the Mallee. “Where now, we wonder,” concluded the narrative, “is that heroic sister?”

The answer soon came. A grey-headed woman called at the Education Department in Melbourne, and introduced herself to the director, Mr. Tate, as Mrs. Turnbull, *née* Janie Duff.

It was a cruel Mallee in those days (even though one might not be lost in its wilderness) a grim, monotonous region calculated to balk all but

the stoutest hearts. Little wonder that the early surveyors dubbed it as they did a “waste land,” or that it was shunned by squatter and selector alike. You who in many lands eat the bread won from this same Mallee, or from some other distant place where the virile sons of Britain have pioneered, remember, and remembering honour the courage and hardihood that brings the loaf to your larder.

Wine, and the Grape

THE first grape-vines were brought to Australia from the Cape of Good Hope. Planted in a gully behind Farm Cove, Sydney, a place now occupied by the Botanical Gardens, they did not thrive, being attacked by scale. A number of experiments from time to time were made with French and Spanish vines, and many varieties were tried before success was attained. New South Wales is the mother of vine and wine in Australia, but South Australia was early in the field (1838) and the Henty brothers grew grapes at Portland, Victoria, in 1841. A vigorous wine industry was established in the Hunter River Valley, New South Wales, and a second at Rutherglen, Victoria. These were the first vineyards of any extent in Australia.

A scourge of phylloxera destroyed many of the vines, and the industry received a bad set-back. The vineyards had to be uprooted finally to get rid of the pest. Then followed experiments in the production of phylloxera-proof vines. These were successful, replanting was done, and to-day grape-growing is flourishing in these and other parts of Australia. In Victoria, the Rutherglen grapes are famous for their alcoholic content, and the St. Hubert vineyards of Lilydale, Victoria, produce wines of the Bordeaux type to perfection.

At Mildura the grapes grown are chiefly raisin and table varieties. The raisins and currants produced in Australia (chiefly at Mildura) in 1924–5 amounted to 765,536 hundredweights. As much as three tons per acre of table grapes are grown in some of the vineyards. Under irrigation as much as eleven tons per acre have been produced.

Victorian grapes are sold in England in the very early summer. Our raisins and currants are well advertised in London. Waiting for one's bus one sees a whole fleet of these vehicles pouring down the Strand or along Piccadilly, announcing in large letters the good qualities of Australian sultanas. In the chief London newspapers at the approach of Christmas is given by the King's chef, "by His Majesty's permission," a recipe for "an Empire Christmas pudding." At the head of the ingredients stands: "5 pounds currants, Australian; 5 pounds sultanas, Australian." What better advertisement could those products have?

The South Australian vineyards produce mainly Burgundy, hock, and port wines. The South Australian climate is especially suited to grape-growing; it discourages fungoid growths. The government of South

Australia has taken great pains to preserve clean vines, imports are closely watched, and the vineyards are stringently inspected. The chief wine district in the state is about fifty miles north of Adelaide, and it happens that there William Macarthur made the first wine produced in Australia — long enough ago for the bottles to be well cobwebbed if any of that vintage be still left. Along the Murray, near the Victorian border, is another good wine district in South Australia. Generally speaking, the inland-grown grapes in Australia make the sweet wines, those grown near the coast the light and dry varieties. As regards grape production, Victoria leads, having the Rutherglen and the great Mildura vineyards; she is not first, however, in wine production. South Australia has the largest winery and distillery in Australia. A good deal of brandy is turned out as well as wine from Australian grapes, and also the by-products of vinegar and cream of tartar.

Australian wines were exhibited in London as far back as 1851, and in Paris a little later. It was, however, some time before an Australian wine won an award of merit in an open competition. St. Hubert's vineyard was the first wine producer to do that; its product won a trophy in 1881, awarded by the then German Emperor for “the wine of the highest quality grown in the colonies.”

Like all the productions of a new country, Australian wines have had to fight their way to acceptance with people abroad. Coming new and untried into a market of proved wines, it was not to be expected that they would meet with instant favour. Many mistakes were made by exporters, also poor wines were sent into the Old World markets, and much wrong naming caused confusion and created prejudice against the new-comer to the market. Only within the last ten years has that, through the following of wiser counsels, been altered. Now Australian wines are accepted abroad freely — more than accepted, they are asked for.

One large hotel at Brighton, the Grand, has instituted an “Australian Wine Night,” when no other wines are served. The Australians themselves, taking the nation all round, show little sign of emulating the people of Italy or of other Old World wine-growing countries, as regards the consumption of their own production. The out-of-doors Australian remains faithful to his first choice — tea. This he drinks all day long, so hot that strangers wonder what his throat is made of. His choice is a good one; wine is not a thirst-quencher as tea is. If the Australian bushman drank wine till his thirst was quenched one trembles to contemplate what his state would be at the day's end. The steaming cup instead of the beaker with the beaded bubbles winking at the brim! However, aristocratic society in Australia, as all the world over, does drink its wine — in Australia moderately, be it said. What it consumes is little compared to what it exports of this growing product of the soil. In 1924–5 there were 13,299,290 gallons of wine made in Australia, as against

64,577 gallons in 1900–1, figures that show that wine bids fair to become the third “W” in the country's products, in this wise: WOOL, WHEAT, WINE.

Sugar — Cane and Beet

SUGAR-GROWING in Australia is one of those industries that has had its full share of vicissitudes, and in this case the difficulties have been mainly of a political character. Sugar has not been a sweetener in Australian politics, indeed for years it was an embitterer. As a party cry “sugar” has echoed round the continent. The question of labour in connection with sugar-growing in Queensland was the *raison d'être* of the White Australia policy.

The history of cane-growing in the country dates back one hundred years, when two Quakers, who had had some experience in cane-growing in the West Indies, proved that cane could be grown profitably where the city of Brisbane now stands. Nothing practical was done, except to establish the fact that the climate and soil of Queensland were suitable for sugar-growing.

When Moreton Bay became a separate state with its own legislature, an endeavour was made to start the industry, but the labour question at once arose, and stood like a lion in the path. One of the first Acts passed by the new Parliament was aimed at the development of the industry, grants of land being offered to persons desirous of experimenting in cane-growing. A Mr. Louis Hope, afterwards a member of the Queensland Legislative Council, and one of the Hope family that later supplied the Commonwealth with its first Governor-General, began to grow sugarcane, and others followed his example. The growers began to import coloured labour from the Melanesian Islands, and “blackbirding” soon became a scandal. The system was one little short of slavery, and one that ultimately brought about the most consolidated feeling arrived at on any question in Australian politics. This did not occur in a day. The sugar-growers impressed many with the belief that the work of the canefields could only be done by black labour, possibly it was their honest belief that this was so, at any rate, it was long before it was proved that white men could do all the work of the field without injury to their physical fitness. The Federal Government's action in legislating against the further importation of the Kanakas, it must be admitted, helped to establish the fact, and since that time sugar-cane growing in Queensland has been done by white men and at a white man's wage. There were, of course, predictions of a gloomy character regarding the industry when the Kanakas were repatriated by the Federal Government Act, and sent

back to their own islands. Sugar-planting was killed. The state of the industry to-day is the best answer to that. The acreage planted, and the yield per acre, are continually on the increase. In the busy season there are twenty-five thousand men in the fields, and of course thousands more are employed in the mills and refineries. The annual wages bill is six million sterling, and it is estimated that one hundred thousand persons live by the Queensland sugar-growing industry. There are upwards of 253,502 acres under cane in the state, and fifty mills for treatment of the cane, apart from the refineries — a good deal of the sugar refining is done outside Queensland. The mills are dotted over the sugar-growing districts, the cane areas being connected by tram-lines. One Bowen mill alone has fifty miles of tram-lines to bring in its 13,300 tons of sugar still in the cane.

Only the coastal belts have been utilised as yet for sugar-growing; there are great tracts of country in the state in every way suited to the crop. The chief centres at present are Cairns, Mackay, and Bundaberg; three hundred thousand tons of raw sugar per annum is well below the sum total of Queensland's production.

It may not be generally known that sugar-cane has not to be planted annually as maize is planted. Several crops are taken from the one planting, the second and third being the shoots after the first cutting. Inventors, it may be mentioned, are experimenting in the production of an effective cutting machine which will limit the cost of harvesting the cane considerably.

Though the profits are good, growers are not yet getting the full possible return from the crop. Many by-products of the cane are at present going to waste. Molasses is one of these, though a percentage of it is treated by the Colonial Sugar Refining Company at Sydney and turned into spirits, but though some is made into stock fodder as well, the bulk is wasted. Brandy, rum, and methylated spirits are by-products of sugar-cane that in Queensland are made little use of. A good deal of potential paper is thrown away also in the fibre that would be serviceable in a country that imports most of its paper. It is asserted, moreover, that from the sugar-cane grown in Queensland enough petrol to supply the whole of the country's requirements could be manufactured. Thus it will be seen that sugar-growing is a wealth-producing industry, and that in Queensland it is a lucrative pursuit despite the waste of so many of its by-products, and the legal enforcements and prohibitions with which a wise nation has seen fit to hedge it.

The production of sugar from beet is confined at present in Australia to a limited area in North Gippsland. It is some years since the experiment was first begun there. An initial mistake was made in establishing the mills in a district owned by rich pastoralists.

So magnificent are the soils of the Maffra district, that men owning

large holdings, and able to sit under their own vine and fig-tree watching their bullocks transforming themselves into easily made money, were not eager to break up their grass lands for the toil of root-crop growing. Good government bonuses failed to induce them to do so, and it was some years before enough beet was forthcoming to make a success of the enterprise. I know the district well, and as an early shareholder in the company am well acquainted with its vicissitudes. However, the future of the industry at Maffra seems now assured. A wider area of smaller holdings has been made available for the factory's supply by the construction of a weir in the Glenmaggie River which irrigates a large tract of splendid beet-producing land, the owners of which are not already too rich to lend their land and their labour to the production of the raw material for the sugar mills.

Cotton

COTTON-GROWING in Australia is still one of the minor industries, but because of the recent development in it, the history of the industry and its progress may be specially referred to.

The history of the idea of cotton-growing goes back a long way before the experiment was actually begun anywhere on the continent. In 1845 Sturt brought back with him from the Barrier Ranges a plant of the cotton family, named by Von Mueller, who was with the expedition, *Gossypium Sturti*, in honour of the explorer. The plant is now known as Sturt's desert-rose. It bears no actual lint, but has a slight "fuzz" in the seed coat. The opinion held by Von Mueller, however, was that the plant was potentially cotton-bearing, its presence in that region being at any rate a hint.

The next heard of cotton in Australia is that the Curator of the Botanical Gardens at Darwin experimented on a true lint-bearing plant found on the Wildmans River. Certain other native plants were also experimented on, fitfully and by different persons here and there in the north of the continent. Governor Darling, as far back as 1825, had sent a sample of cotton that he had raised from English seed to that country, and which he himself declared was equal in quality and in colour to the best Georgian article. Nothing came of that apparently; what the opinion of the English experts was on the sample does not appear to be recorded.

The first real getting to grips with the matter was when John Dunsmore Lang, whose name is written in the early history of New South Wales in several connections, conceived the idea of making Australia a cotton-producing country as a means of effectually killing the American slave trade, by that time become a world-wide scandal. He published a book on the subject, and gathered a devoted band of Presbyterian followers ready to put the idea into practice. This scheme was nipped in the bud through the Colonial Government refusing Lang a grant of land. He was, however, of the race that does not readily submit to failure. Lang went to England, taking with him samples of the cotton he had raised to show the Manchester experts. The accounts say that "the experts were impressed," and though nothing directly came of Lang's endeavours, Manchester did not forget the fact that good cotton had been grown in Australia.

About 1854 a small shipment of cotton was sent to England, and a certain amount of interest there was aroused. Still nothing practical came

of it till, in 1859, the Manchester Cotton Supply Association wrote to the Government of New South Wales offering to find a market for all the cotton Australia could produce. The Government began then to rouse itself, and offered a bonus on all cotton grown. At last it looked as though a start would be made; the Manchester Association actually sent machinery for the preparation of cotton to Brisbane. The American slave question had come to a crisis in the outbreak of the Civil War, and the Manchester millowners were eager for supplies; thus they did all they could to promote the growing of cotton in Australia.

It was represented that the question was one of labour, and an application for the importation of coloured labour into Queensland was made. Kanakas, on an indenture system, began to be imported into the country, but the feeling of the Australian people was naturally against anything that approximated to the system that had caused the trouble in America, and they insisted on severe restrictions. The Civil War coming to an end caused the industry to languish. The ports were opened again to the American article, and Manchester ceased to be eager for the Australian cotton.

Incidentally, I have heard Old Melburnians of those days tell of the shortage, and high price of cotton goods in Australia during the Civil War blockades. In the period of the worst depression, a Calico Ball under viceregal patronage was held in the Melbourne Town Hall, at which all the ladies wore frocks of cotton materials. The circumstance reminds one of the Gilbertian axiom — “when cloth of gold is the only wear, up goes the price of shoddy.” What is scarce assumes a new value and becomes desirable. However, regarding this Calico Ball, narrators who were present at it used to declare that the general effect was as gay and as pleasing as though the ladies had worn their finest silk attire.

For long in Australia, after the set-back, enough cotton only for local use in the cordite factories was grown. When Federation was inaugurated a move forward was made. An expert in cotton production was appointed to the Queensland Department of Agriculture, and the question was faced with determination. The Commonwealth offer of a bounty brought a similar offer to growers from the Queensland Government — or better, it offered a guaranteed price to growers for their raw cotton. Experiments by hybridisation were successfully made, and the labour problem was tried out, it being proved that the field work in connection with cotton production could be done by white men, and at a white man's living wage.

That was yesterday. To-day the industry may be said, after many ups and downs, to be fairly and firmly established. The small grower is being encouraged as well as the larger producer. Five hundred pounds of cotton to the acre is the average, the guaranteed price for which is fivepence per pound, ensuring for the grower a profit of something like £10 per acre

when all expenses are paid.

Ginneries are being established for the treatment of the raw cotton in Queensland, and a Director of Cotton Culture has been appointed. An overseas market has been established, an ideal seed for the climate has been produced, and added to that there are millions of acres of land perfectly suited to the raising of cotton in Queensland. In 1925, 18,178,555 pounds of cotton were grown on 40,000 acres in that state. The industry should now go on by leaps and bounds, provided that the dreaded boll-weevil is kept out of the country, and rigorous precautions to that end are being taken.

Irrigation

IT shall not be said by future historians that the young Australian nation was oblivious of the possibilities of its rivers in the development of the country. As soon as the era of the small holdings set in, the possibilities of intensifying the productive capacities of the land by irrigation were seen. It was natural that Australia's greatest river should be the first stream tapped to that end. Schemes for using the waters of the Murray for cultivation were formulated, and had been put into action in the latter part of last century. That was the beginning, what the end will be no one yet can predict, for the schemes grow apace with results of ever-widening benefit. Locks, dams, channels, pipes — according to the nature of the situation and of the result to be attained, mark the vigorous carrying out of the policy formulated by the governments of the various states in the first place, and brought into unity by early acts of the Commonwealth Government. Irrigation in Australia is now a national affair.

In 1913 the River Murray Commission was created, to control and conserve the waters of the Murray. Spirited schemes were put in hand, and irrigation went on, every year wider areas coming under the beneficence of a water-supply that could be used at will. A farther push forward of the various schemes was given at the close of the Great War, when the governments undertook to provide irrigated land for the repatriated men. The valley of the Murray has become the home of hundreds of Anzacs on blocks large enough to support them and their families comfortably. The area in Victoria now watered by the Murray is 374,000 acres, and there is much more still to come under irrigation. In South Australia the area watered by the Murray is 36,000 acres, and approximately 85,000 more are available in this state. The scheme formulated by the River Murray Commission included the provision of twenty-six weirs and locks to be built in the river, and the construction of large storage works for supporting the supply and for maintaining the flow of the river, and its capacity for navigating vessels. The Hume Reservoir, still under construction, when complete will be larger than the famous Assuan Dam in Egypt; it will be second only to the Elephant Butte Reservoir in the U.S.A. The Hume Reservoir will hold 543,629 million gallons of water, giving a surface four and a half times as large as Sydney Harbour. This lock is a hundred and seventy miles from the

mouth of the Murray. Some of the other locks of the scheme are completed, and still others in course of construction. The enormous expense of the undertaking is shared *pro rata* by the states it benefits, and is mothered by the Federal Government itself. When a lock is complete the cost in working it is very small, one man with an assistant being all that is required. By these and various other catchment schemes the water-supply of the river is actually increased instead of being diminished, as without them it would long since have been. The great conservation scheme of the Burrinjuck Dam would require a chapter to itself.

What is being done on the Murray and its tributaries is also being applied to many other rivers as well. New South Wales already has schemes for the establishment of large irrigation colonies to be watered by rivers such as the Darling, the Hunter, Lachlan, and the Macquarie. Queensland has instituted a vigorous irrigation policy in connection with her Closer Settlement schemes. Among other parts of her great territory to be benefited in this way is the region of the Dawson Valley, where hundreds of small farms will be irrigated. A water scheme already in operation in Queensland is that of the Inkerman Estate in North Queensland; here a great sugar-cane district is supplied. All the Australian states have their schemes of irrigation, even Tasmania, the temperate region so well watered by rivers, and having so good a rainfall.

Allied to irrigation by river manipulation is the subject of artesian water. I have already referred to the wells existing in various parts of the drier regions of the continent, those wells which, with dams and other expedients, have opened up lands and routes hitherto impossible to settle in, or to traverse. What has been accomplished in supplying the deficiency of rivers and of rainfall in these places is but an earnest of what will be done in the future. The artesian basin is estimated to cover more than half Queensland, all that part west of the Dividing Range, a portion of New South Wales, the north-east of South Australia, and the south-eastern corner of the Northern Territory. The extent of the basin is 569,000 square miles.

One bore in Queensland gives four and a half million gallons of water per day, and many others not far from that quantity. The water from some of these bores is conveyed by ditches, channels, etc., over large tracts of country. Cattle in that once almost waterless region can now live, or travel anywhere. Some of the bore-water, however, is unfortunately not fit for irrigation purposes because of the mineral content. The water in some of the bores ebbs and flows with the ocean tides.

A curious natural pool exists in Western Australia without this basin area. It is a natural well, quite isolated, and in a cave one hundred and fifteen feet long; the pool is about four feet deep, and the water is fresh,

clear, and cool.

Water, like much else in this little-known region, has its mysterious ways. The power of man to locate it in the dry country is sometimes mysterious, too. The water diviner out-back is an accepted fact, with his slip of willow and his strange powers. There are too many accredited instances of the display of these powers to allow of coincidence. Certain people have apparently this gift.

The diviner takes a piece of forked willow (for preference). He brings the rod to his chest, and begins slowly to walk. The rod dips when he is over the hidden water; he can even estimate, apparently, how deep the water is below the surface. Should the twig of willow be burnt at the tip it will make no sign. With some diviners the willow is seen to pull definitely downwards where the water is, so that the man cannot restrain the twig; it will bend, or even break if he attempt to use force against its inclination. Some men are said to be able similarly to locate coal, or salt, by holding some of the mineral in the hand with the willow. I do not know if that be true, but having seen the miracle of water-finding by means of the willow twig, I must admit the fact, leaving the cause alternatively to science or to supernaturalism.

Irrigation in Action — Mildura and Renmark

WHAT are the fruits of irrigation, it may be asked? To understand fully what the effect of irrigation is on the culture of the soil, one requires to see the opulent wealth of vegetation that it creates. To go up the Murray River by boat, a trip that makes a popular holiday for the tourist nowadays, gives a feast to the eye, and an invigoration to the spirit. There, on either hand, one sees the many beautiful settlements brought into being by the use of the river waters.

Renmark, the chief irrigation settlement in South Australia, was at one time little more than a wilderness; to-day it is a picture of smiling affluence, a place that sends its products to the ends of the earth, and that supports a large population of its own. Renmark produces apricots, peaches, pears, nectarines, oranges, lemons, raisins, currants, and several other fruits. Sundrying is carried on largely, the climate of South Australia being admirably suited to the process. Renmark oranges have been regarded in England as some of the finest fruit to be bought at Covent Garden. Lucerne on this irrigation area may be cut five or six times during the season, and what is true of Renmark is true of the other irrigated parts of the Murray lands also. The valley along the whole course of the river is said to be capable of supporting ten millions of people — almost twice the whole of the present population of the continent.

Of Mildura, the mother of the Murray Settlements, a word should be said. Mildura was the vision of the Chaffey brothers, who came to Australia from California in 1886. They convinced the Victorian Government of the possibilities of the place if irrigated by the Murray. Obtaining a charter from the Government, they set to work to translate their vision into fact. Prosaic figures of market returns confirm the portents of the dream, and the amazing feast of the orchards and vinelands of Mildura assure as well the eye. Twenty-seven tons of lemons from one and a quarter acres! Ten thousand cases of oranges have been sent away in a season. Mildura is a paradise of production, a prodigy of intense culture. It would be difficult to exaggerate its prolific powers, or the productive powers of others of the settlements along this great valley. Pumpkins, maize, lucerne, fodder-stuffs in general, root-crops, what you will, alike respond, and flourish as Jonah's gourd to the magic of well watered soil.

Where a few sheep ran between wire fences in many parts of Australia, now under irrigation rich gardens have sprung. If he who makes two blades of grass grow where one was, is a benefactor of his kind, how great benefactors are these men (many they are) who from first to last, by vision, and by toil of brain and hand, have wrought these things by the harnessing of those waters that ran almost unregarded into the wide fruitless wilderness of the ocean.

Minor Products

Bee-Farming

BEE-FARMING is in Australia mostly like poultry-farming, a sideline industry. Small apiaries will be located in or near an orchard or a clover paddock, where the wageless toilers will carry on their work of transmuting to the super-sweetness of honey the blossoms at hand. Most farms have at least three or four hives. One can hardly avoid the opportunity of securing a settling swarm of bees on a bright day. They will come to rest on a branch in the garden, or on a climber on the kitchen wall maybe, asking to be shaken off into a comfortable box, and placed where they may get to work hexagon making and hexagon filling.

The bush in many places is full of bee-hives in hollow gum-trees. Many a merry evening, albeit filled with occasional alarming moments, have I spent with depredating parties, felling and plundering these bee trees. A typical bush entertainment this for a still summer's night. In the flare of brushwood fires, and the fitful glare of stable lanterns, in the intervening glooms, to the merry sound of axes in sappy wood, flying chips, and the grunts of the axemen, the chatting of the desultory onlookers, the nervous yapping of the dogs, the sudden unknown sounds in the dark bush beyond the flare. How jolly an entertainment it all is! how fascinating, and to such useful end!

The groaning of the great gum-tree, not long in falling, hollow — else the bees had not nested in it. There is the shouted warning of the choppers, and away from the danger area, from the groanings and the creakings, run the bold onlookers. A sudden louder cracking, a swishing of boughs, a thud, and the quivering branches, the confused hum of the riven colony dwellers. Salt-petre fumes, nymphs holding precarious flares to the choppers on the log busy locating the honey, veiled against the half-dazed protesting bee that now and again comes clumsily at neck or face.

The chips fly again, the aperture is made, revealing long lines of glistening sticky honeycomb all surging with sleepy dazed bees. Then the ladles and the tubs, and the general fuss of bees, of humans and of the dogs now pressing forward, now dashing with shrill cries into the dark bush. A great hour, and a great harvest that which is borne home to be strained, and to make the breakfast delight in the settler's home all the

winter long. A trifle brown in colour, this gum-tree honey of the bush, not amber-clear as that of the carefully prepared box of the garden hive, but good to the palate of the Australian bush folk. At a pinch the tea was sometimes sweetened with it, when the stores did not come on time, or when the storekeeper was “out” of sugar. And cakes it made desirable as a novelty, but making life all too honeyed for the grown-up folk when too often on the bill of fare. How wistfully they would talk of good crystal sugar! ...

But this is reminiscence, though the thing still *is*. It is not honey considered commercially, or even as a sideline. Beside the small home hive or hives there are outright professional apiarists in Australia who devote themselves entirely to the production of honey. Honey-producing is an industry of men as well as of bees. The total of honey produced in Australia in a typical year, from all registered sources, is something like ten million pounds' weight. There is now and then a Bee Farmer's Convention held in the capital cities, at which experiences and ideas are exchanged among the fraternity of bee-keepers, and the trade in all its aspects is discussed, the relative merits of “queens,” and of various honey-producing blossoms. These and other questions allow of a difference of opinion. “Bees that soar for bloom high as the topmost peak” (to curtail Wordsworth), gathering their honey from the yellow or red box-trees of the ranges, produce an elixir that takes its place in colour and in flavour with the best and the finest known to the epicure. Some prefer, and advocate, the blossoms of the orchard or of the tilled field before the natural flowers of the wild. Both are perhaps right; it is a matter of taste.

I know one man who lived intimately among his apiaries in the bush ranges for some years, who stood for the honey of the yellow box-tree before all other, backing his preference by the evidence of his market returns. He exported his honey to America, while in London the preference seems to go to the orchard honeys. In bee-keeping every man is his own Lubbock, there is much to observe and much to learn of the ways of these willing little slaves whose time-sheet is marked only by the sun. The life of a bush bee-keeper in Australia is full of variety and of interest, full of charm, too, and of “strong days and restful nights.” And normally *honey* spells *money*.

Tobacco

A lady, long passed away, whom I once knew, used to say that she was glad that tobacco was not grown in Australia. The small child who used to hear her say that used to ponder the meaning of the pious thanksgiving, for over the mantel in the lady's best parlour hung an engraving depicting the well-known incident of Sir Walter Raleigh's

manservant in the act of throwing a pail of water over his master to put out the fire that he imagined was consuming him. The picture may of course have been hung there because of an imagined moral application, to the lady it may have seemed retributory and that the man who introduced the wicked weed into England was well rewarded by having a pail of cold water thrown over him.

To-day tobacco *is* grown in Australia, though not yet to any great extent. It is possible that the grandchildren (male and female) of that old lady are consuming the home-grown article.

The area under cultivation is only about three thousand acres, and a good deal has yet to be learned about the production and the drying of tobacco-leaf by growers in Australia. Texas, in Queensland, is the chief centre of its production, with Bowen, Queensland, second. New South Wales and Victoria also grow a little tobacco. In the early days of the industry the greater part of the work was done by Chinese, who were supposed to understand the whole process. Their methods, however, were antiquated and faulty, so that the product did not get the best reputation. They produced a coarse leaf, and dried it badly. This fact possibly kept the industry back, but white men have now taken up tobacco-growing, and with the help of experts attached to the government experimental farms are producing excellent pipe and cigar leaf.

The old methods of shed-drying are abandoned in favour of kiln-drying, and more suitable and better-cultured plants are grown. The yield per acre has improved, and good prices are now obtained. As much as £75 per acre has been realised, a handsome return, as tobacco is a crop that is easily produced and quickly harvested.

Experiments have shown that there is no reason why the crops should be confined only to the richest valley lands; light and rather poor soils having proved suitable to the product. It can be grown in heavy black volcanic soil, too, as I happen to know. The only tobacco plants I have seen growing in Australia were grown on such soil. A little patch on a hillside was enclosed by a brush fence, and on it was produced some of the earliest-grown tobacco in that part of Victoria. The experiment was made by an early settler, who had been driven by necessity to produce something wherewith to fill his pipe. Far from the stores, in those days smokers were apt to run out of the precious weed — a very great calamity indeed, as every good bush dweller will agree. How the seed for that patch of tobacco was obtained I do not know, but I do remember that the plants grew well, producing broad leaves which at a stage were gathered, dried, and pressed in primitive but effectual way. At any rate, the odour from the pipes it filled was as the scent of “bought” tobacco.

A curious fate, by the way, befell the tobacco-patch in the brush-wood enclosure. The kangaroos, attracted no doubt by the greenness, hopped

over the brush and demolished most of the plants. As the owner of the wrecked garden ruefully remarked, "they probably filled their pouches as well as their stomachs."

The Australians have been called a tea-drinking race. They may as fitly be called a tobacco-consuming race. The value of the annual importation of tobacco into the country amounts to over three millions of pounds sterling. Considering the small population of Australia, this suggests a large consumption per head of the tobacco-smoking section of it. It suggests, too, that the present small home-grown amount could profitably be increased.

Pigs and Poultry

The above juxtaposition is not made merely because of the alliteration, for pigs and poultry on the farm have a close relationship. What the pig is to the Australian farmer, poultry is to his wife, a source of frequent and quickly coming money. A farm without pigs at any rate as a by-product, the eater-up of much good food that would otherwise be wasted, is unthinkable. No good farmer is without his pigs.

Nor is it easy to find a home in the pastoral, agricultural, or bush parts of the country where the crowing cock is not heard as one approaches the gate. Besides eggs and poultry for the home table, every farm wife looks to her hens for that little extra and private hoard to supplement her husband's cheque when she goes to town. In fact, fresh eggs are the farmer's wife's nest egg. As well as the eggs there are the seasons, Christmas and Easter time especially, when everyone in the cities is wanting poultry and is willing to pay good prices for nice farm chickens, geese and turkeys. At such times it is that the good manager reaps her reward, her crates go forth, and her cheque comes in.

The small landowner inevitably looks to the several lines of production of his farm for the support of himself and his family. To turn all to account without waste is his object, and both pigs and fowls are notoriously the pickers-up of much that would otherwise be wasted. Poultry on a farm gets half its own living, and pigs a good deal of theirs. Where either is reared as the farm's chief product extra attention is of course paid to them, nor does the poultry cheque usually go into the wife's pocket then. The pig all the world over is a good rent payer if given his chance. He matures quickly, fattens quickly if intended for bacon, though he will sell well at any stage, a profitable animal if the breeder knows his trade. Root crops should be part of the product of the farm where pigs are kept, and maize or peas.

The pig is a much maligned animal, accredited with unsavoury habits and tastes, but he is a very decent creature if bred so. Your well-bred pig scorns offal just as does the well-bred dog. From his clean trough of

well-boiled barley and potatoes, from his pollard or his maize meal, a hungry human being might without indignity satisfy his hunger. It pays to fatten well and cleanly, to make firm pure pork or bacon of him. Keep the sty clean and warm; the water often renewed. Then the pig is not the dirty creature report makes him.

Bacon is the climax; on the whole the pig's reason for being. What would the Anglo-Saxon the world over do without his breakfast rasher? In Australia most of the bacon-curing, like the butter-making, is now done in the factory, which, well equipped with all the most up-to-date scientific machinery and methods, naturally produces a better article than is most of the home-cured bacon. As well as satisfying the large local demand, a good deal of bacon is exported from Australia. In 1923 for instance, 67,600,000 pounds of bacon and ham were cured in Australian factories, much of which found overseas markets.

The meeting point of Pigs and Poultry is achieved in *Bacon and Eggs*, and our title justified!

To return to the latter for a moment, the difficulty of keeping eggs fresh (good in parts will not do) for long balked their exportation from one country to another. That difficulty has now been largely overcome. We find English buyers for South Australian eggs, just as we find them inquiring for the Danish article. That is something like a triumph over distance.

In Australia there are sometimes lively competitions among egg producers; egg-laying tests being made with different kinds of birds. In these competitions keen interest is taken, and some wagering is done. The champion egg-layer of the world is an Australian hen. This feathered winner of the blue ribbon laid 338 eggs in twelve months, the highest record ever officially vouched for. Another world's record was won by six white leghorns, with a total of 1699 eggs for the year. This competition was also held under Government supervision.

These results show what careful breeding will do; not many years ago a hen that laid two hundred eggs per annum was regarded as a prodigy. The poultry industry commends itself to many as one which, though it entails plenty of work and care, demands no hard manual labour. It is an industry that women can run as well as men — possibly better.

Said an established immigrant in Australia who had been brought up in poverty in London, as she scattered the grain to the flocks that has helped to make her comfortable home: "I'm getting quite tired of roast chickens; no more till Christmas."

Potatoes and Onions

The potato is a modest vegetable hiding altogether underground, or its quality suffers. It is an easily grown vegetable, and in good soil in

Australia a profitable crop, in a poor soil, disappointing.

I have sometimes home-sick thoughts of the wonderful tubers flung out upon the fork from the rich virgin river valley soil of my early home. Were there ever such potatoes before or since as those “pink eyes” and “Brown's River” for quality, quantity, and size?

The Brown's River district of Tasmania has long been a famous potato-growing centre, producing anything from six to eight tons per acre which have always commanded the top price in the markets. A large export trade is done from there.

Every farm and garden plot in Australia has its potato-patch, there is no waste with this vegetable; the ubiquitous pig takes what the market and the home pot rejects. Potatoes are worth three millions per annum to Australia within her shores; the export trade, though not negligible, is not large; it is confined mostly to the Pacific Islands, and to New Zealand.

As well as potatoes, turnips and mangolds are usually grown on small farms. All these roots are autumn crops, coming to maturity at a time when the rush of the cereal harvesting is over. All are useful for home stock feeding, and should receive the small land-holder's attention.

Onion-growing on small farms is a frequent sideline. But unless a market is available there is apt to be a good deal of waste. The home culinary uses for the onion are limited, and stock, even pigs, turn up the nose at its pungency.

Cereals, Fodders, and Fruits

Oats, barley, maize, and peas are all grown largely in Australia.

South Australia grows more barley than any of the other states; a great deal of it being used for malting purposes in the country's own breweries.

Tasmania and Victoria both produce great quantities of oats (for grain and hay uses), peas and barley, with a small quantity of beans. Maize in the rich river valleys grows like Jack's bean-stalk. There are parts of Queensland, New South Wales, and in the Snowy River Valley, East Gippsland, where maize “grows into the sky.” It is a wonderfully beautiful sight to see a valley of maize, twelve, thirteen or even fourteen feet high, with its tassels and leaves moving and rustling in the gentle breeze. It is a place to linger in, and to dream in if one is a visitor. If one is the *owner* of the waving acres it means work, yet easy and agreeable work, and with imminent £ s. d. associated with the golden cobs. Maize-growers become wealthy in these rich valleys, and where there is irrigation the large yields are at least doubled. No more desirable fate can be imagined than that of the maize-grower on a rich soil.

Ensilage is sometimes made with the lopped-off shoots of the maize, or the whole crop may be “potted down” for fodder in that way; it is often done in dairying districts, and with oats and lucerne as well.

Fruit-growing is carried on all over Australia in the settled parts. Mention has been made of the irrigated fruit-growing centres where drying and preserving are done as well as the marketing of fresh fruits, but it is a poor district anywhere that has not its orchards. A roughly compiled list of the chief fruits grown on the continent as a whole will indicate the vast variations of the climate from south to north.

Tasmania, known as "Apple Land," grows and exports a tremendous quantity of apples; nearly a million bushels per annum of her crop goes to the United Kingdom. Add to her apple product, and to that of Victoria, practically all the stone and pip fruits known to Europe.

Following the climate westward, we have South Australia with many seed fruits and loquats, almonds, walnuts, figs, and other fruits little grown in the south-eastern states. Northward, in Queensland, the tropics announce themselves in a list of fruits that positively exude the sunlight. Bananas, pineapples, oranges, mangoes, paw-paws, guaves, coco-nuts and pea-nuts, custard apples, persimmons, and passion fruit.

Yet might be mentioned several small lines of production, but more than enough has been said in these pages to show that the small landholder in Australia, given the right conditions and a normal brain equipment, is bound to "make good."

Again let it be emphasised that, by the maintenance of good market outlets for produce, and good labour conditions; under the various immigration schemes of the several State Governments, there is plenty of room on the land in Australia for British immigrants. Haphazard immigration of skilled, or of unskilled labourers, or of settlers, unadaptive, is not desired in the Commonwealth, either by the governments or by the people. Such immigration to the oversea parts of the Empire only creates a new problem instead of happily solving the existing one — how to people the country with a virile and industrious white population. Any scheme that in any wise would pull down the established scale of living among the Australian people would meet with a strenuous opposition.

Gold

GOLD! For which men will brave all hardships, all dangers; thirst on the track to Kimberley, frost-bitten death on the trail to Klondyke! If tomorrow a find of gold on Mars were reported, no doubt hardy adventurers would be found to essay the trip on the frailest 'plane, pick in hand.

To the world at large, gold and Australia are synonymous terms. People who know little about us in a general way, know all about our gold rushes, especially about the old Victorian rushes to the rich ore-bearing belt which takes in Ballarat, Bendigo, Maryborough, Castlemaine, Ararat, Creswick, Daylesford, and many another place that leapt to fame in a day. The pick point introduces these far places to the world more dramatically than does the ploughshare.

During the nine or ten giddy years of the discoveries in Victoria roughly from '51 to '60, something like one hundred million pounds' worth of gold was taken from the alluvial and rock deposits along this great belt of country. Of the original discovery of the gold that led to the rush in Victoria a word has been said already, but much more might be said and still the picture be very inadequate — the picture of the events of the roaring years that followed the discovery of those yellow specks at Ballarat in the first year of the fifties. No effective limning of the events can be attempted in small space, the theme indeed needs an artist of the pen, an epic genius. The colour, the dash, the splendour, the fret, the restlessness, the excitement, the heroic lights and heights, the shadowy depths of human passions, the nobleness and, alas, the degradation to which men may descend in the wild pursuit of wealth. All the medley!

The gold-fields made comradeship a pinnacled thing, and they made murder for greed a recurring incident. Men were killed in their sleep for a pickle of gold, men were rescued from danger by the sublime sacrifice and courage of their fellows, from rising waters, from foul air. These extremes are of human nature everywhere, circumstances bring the traits into action in moving times.

What wild spendthrift recklessness was seen on the old gold-fields! Sudden wealth sent men mad; men from the Somerset turnip fields, men from the Lancashire looms who had never fingered more than a small weekly wage at a time, suddenly rich beyond their dreams, would they not paint the town red, even though it were only a town of canvas? And

the wellbred adventurer not less than the peasant or the mill hand, the Jack Hamlyns that flocked to Ballarat and Bendigo from California, how gay and picturesque these were in their money-spending, how they gambled, boasted, and “showed off”! The diggers affected a gay attire, gay as their temper in the pauses between moneymaking. To spend lavishly was the idea, to take no thought for to-morrow. To the nearest thing to a city that the colony could afford, the lucky digger would go for his gay time. What an air they gave to Melbourne with their blue “jumpers,” their wide-awake hats, their bright waist scarves! They threw their money about like water, lit their pipes with five-pound notes (a favourite “show off”), tossed nuggets of gold to the actresses on the stage of the old Bourke Street Theatre, anything and everything that would lighten their so easily filled pockets. “Lucky diggers” they were called, and they liked to add “gay dogs” to the title.

Once at Bendigo four of these fine fellows, a little heady from their luck, and at a loss how to express their feelings and impress their fellows, had a horse shod with gold shoes on which they galloped turn about up and down the main streets of “dear Old Bendigo.” Oh, picturesque the men of those times, and their doings!

The alluvial bubble burst, as we know, and soon many who had had good or bad fortunes on the fields turned their thoughts to the honest surface of the soil, leaving the deeps to the kings of the machinery and paper-mining era — quartz reefs, “scrip, and shares, bulls and bears.” Deep went the gold, and after it went the speculators, and the men who had money, and who had faith in “saddle reefs.” These men made Bendigo the scene of the deepest mines in Australia. Their operations have bored into the earth in some places more than four thousand feet. Bendigo's deep-sinking history is bound up in the history of George Lansell, the son of a Margate grocer. Lansell went to Australia in 1853. He saw that the future of the fields lay in quartz-mining, in those extraordinary reefs, twenty miles long by seven miles wide was the area. When the time was ripe, Lansell, plunged, pledged his faith in the deep-sinking possibilities of Bendigo in expensive machinery and labour. Ruin came close sometimes, shares went begging now and then, the stampers ceased to crush the rock sometimes, but always the wheels turned again, faith came back to speculators, and with it fortune. Eventually, Lansell was justified of his belief in the saddle reefs. Here, there, everywhere about the Bendigo belt the reefs went down, and the sinking followed them. In the development and in the success of the great enterprises that have brought so much gold from this region, the name of George Lansell stands foremost. He died not long since, well advanced in his eighties, and is honoured with a statue in the city in whose making his enterprise and energy played so large a part.

The last alluvial mine in Ballarat, the Madame Berry, which closed

down only recently, was one of a group that produced twenty million pounds' worth of gold. Ararat, however, was the richest alluvial field that the world has known; it was discovered in 1855. My own father was in the first rush there, and was one of the first to "strike oil" — where is that gold of yesteryear?

The story of Mount Morgan, to skip from Victoria to Queensland, is among the most romantic of Australian gold annals. Mount Morgan is the richest *single* mine on the continent; it has produced twenty million pounds' worth of gold. The locality of the find to the experts promised nothing, its amazing yield is still the puzzle of the geologist. The gold-bearing rock was an outcrop of black stone in a small mountain of black stone, standing isolated, and unrelated to its surroundings. A man named Edwin Morgan broke off a piece of the jet-black stone, and the fracture showed gold. Morgan kept the discovery a secret between himself and his brothers. The family got a lease of the ground, and began to get gold rapidly. The discovery became one of the wonders of the world because of the remarkable character of the stone, and its richness.

Canny in keeping the find to themselves as long as possible, the Morgans, curiously enough, fell short of making themselves millionaires. They parted with their interest in the mine while still unaware of its magnitude for £ 159,000 — a mere song considering what it held.

Queensland has more extensive fields than Mount Morgan — the single-mine field. At Charters Towers is the locality of some of the most famous, while the Gympie mines have contributed no mean quantity of the precious metal.

Gold was discovered at Coolgardie (West Australia) in 1893 by a man named Bayley, and a rush set in which lasted on a crest of gold-getting for a considerable time. About a year after the Coolgardie discovery gold was found at Kalgoorlie, not far from the first field. A man named Hannan made the discovery in a low range of hills which have since been ground to dust in the pursuit of the treasure. This field became known as the "Golden Mile"; there are thirteen mines in the mile length.

The total gold production of West Australia to 1923 was £152,529,478 worth, an immense output, though not equal to that of Victoria in her palmy days. The first gold found in West Australia was at Hall's Creek, East Kimberley, in the early eighties. The Kimberley is a region that has been described as a place "reeking with minerals." Eighty thousand square miles there are of it, only "scratched" here and there.

The Great Boulder mine at Kalgoorlie, it should be said, is the premier gold-mine of the state. Though the yield from the West Australian mines has declined from that of the first years of the discoveries, that State is contributing sixty per cent of the gold being got over the whole continent.

In the gold-getting history of Australia, some large nuggets have been

discovered. The first great nugget discovered in 1851 in Victoria weighed just over one pound, but it was almost all pure gold, and caused great excitement at the time. This find was soon beaten. A piece of gold was won on the new Victorian fields in '53 which turned the scale at 1629 ounces. The famous "Welcome Nugget," found at Ballarat, weighed 2217 ounces, and the "Welcome Stranger" 2385 ounces.

The greatest mass of gold ever found in Australia, however, was obtained from a shaft at Hill End, New South Wales, in 1872. The specimen was four feet nine inches in height, two feet nine inches wide, and four inches in thickness, almost all pure gold. Let us stop at that; it remains unbeaten.

Silver and Other Minerals

FROM gold to silver is an easy transition — too easy sometimes.

In Australia, Broken Hill in New South Wales is the centre of the silver-production. When we think of silver-getting in Australia, we think of Broken Hill; it looms large, eclipsing every other field of silver-production with the many other less precious by-products of silver-bearing country. Broken Hill has produced £94,871,079 worth of silver as against Queensland's £3,573,789 worth, Queensland of the Australian states coming second in production.

Broken Hill is situated in the Barrier Ranges of New South Wales. It is one thousand feet above the sea-level, and is thirty-five miles from the South Australian border. Port Pirie, South Australia, is Broken Hill's natural port. The Barrier Ranges were discovered by Sturt (what a name is his in Australian discovery!) in 1844. As far back as 1867 there was a rush to the district. Lack of water proved the difficulty, and the general impression was that the ore was almost worthless. That it was actually silver was not realised. The reefs are of white quartz in sedimentary rocks, and granite for the most part. The miners of those days were more used to the indications of gold, hence perhaps the failure to realise the wealth of the new find that was to make Broken Hill one of the richest mining centres in the world. Later, in 1876, some samples of the ore (a considerable quantity of it) were shipped to England, the report on which caused an immediate rush. Five thousand acres were taken up on lease, and some very large reefs were discovered. Besides silver, several other ores were found on the Barrier, blast-furnaces were set up, and soon Broken Hill was a roaring scene of wealth-getting. It was not long before it was the second largest city in New South Wales, with all the accompaniments of a gold-rush town, plus many features distinctive of itself. The ore available has been set down at thirteen million tons, with unknown possibilities beyond that amount. Silver, lead, zinc, sulphides, chlorides, iodides, carbonates, and other mineral substances, have for long been taken from the field. Though some smelting is done at the mines, most of the important refining, and chemical work generally, is done at Port Pirie, from whence the mine's contributions to commerce and invention are shipped to other parts of the world. Some of the zinc concentrates, it should be said, are sent for final treatment to Belgium and elsewhere in Europe. That is not to last. Great advance in the art of

chemical extraction of the varied content of the ores has been made in Australia, in the first place in saving a greater percentage of the content, and secondly in dealing with the raw metals. The name of an Australian chemist, Potter, will be remembered in this connection. To the end of 1924 the value of the output of Broken Hill was £120,810,000. In the age ahead, which men agree in prospectively calling a "chemical age," what a part will the products of Broken Hill play!

The Cloncurry copper-fields (Queensland) are known of all over the world, and second only to the Cloncurry output of copper is that of the Mount Lyall mines (Tasmania). The Mount Lyall mines are famed, too, for their output of tin. Tasmania has also zinc and oil-shales in abundance, indeed the island, like West Australia, is said to "teem with commercial minerals." Iron is there, and South Australia's great Iron Knob and Iron Monarch must not be forgotten; the potentialities are vast of these mines, greater even than those of Tasmania, which is said to have in sight forty-one million tons of iron. There are iron-works at Lithgow (New South Wales), and steel-works at Newcastle. In the smelting-works at Port Pirie, already referred to in connection with Broken Hill, Australia has the largest smelting-works in the British Empire.

Radium ores have been found in many parts of the continent, and that comparatively rare metal, osmiridium, is found in Tasmania, and recently in North Gippsland, Victoria. Wolfram is widely scattered; manganese, molybdenite, antimony, mica and many other ores abound. Indeed, to name all the minerals known to exist in Australia would be to name all those known to science.

At Roma, Queensland, at the time of writing, discovery stands on tiptoe. There, it is reported, has been tapped the much sought-for petroleum. If the report of the find be confirmed the discovery will mean the finding of an El Dorado to a country at present importing its white oil in such quantities as Australia is doing.

There are those who believe that the great future El Dorados of Australia will be found in the hinterlands of the country, in the North-West, or in the Interior itself. It maybe that gold, man's greatest lodestone, itself lurks there to be discovered in season. There have been indications from time to time that deposits of valuable minerals of one kind and another do exist in these out-of-the-way places. For instance, the reef formations at Pine Creek resemble the rich saddle reefs at Bendigo. The present government geologist of Victoria, among others, is so impressed by the suggestiveness of this fact, that after a recent visit to the region he predicted that the story of the Victorian Fifties would be repeated there some day.

The folds of the Great Plateau of the Northern Territory roll across from the gold-bearing regions of West Australia to those of Queensland.

Room enough between those two proved mineral regions for a thousand El Dorados. ... Is that the secret of the Great Interior?

The Gem-stones

THE gem-stone which above all others prefers to blush unseen in this young El Dorado of the South is the opal — the only jewel that cannot be imitated by the pseudolapidaries who ply such a flourishing trade in the world to-day. W. H. Ogilvie, our Queensland poet, sees in it:

Green of fluttering gum-leaves above dim water-courses,
Red of rolling dust-clouds, blue of summer skies,
Flash of flints a-fire beneath the hoofs of racing horses,
Sunlight and moonlight and light of lovers' eyes —

amid the many colours that fill its milky breast with living fire. The more prosaic-minded opal expert, however, will have none of your common, or milky, variety. Precious opal, we are told, is of four varieties — boulder opal, sandstone opal, seam opal and black opal, and the most precious of these is black opal from Lightning Ridge in New South Wales.

Boulder opal was first discovered in Queensland about 1875, and was introduced to the London market about 1879, but with little success. It occurs in parallel veins ramifying through ironshot boulders, and in layers so thin that the cut stone (which is very brilliant in tint) must be left with a flat face and a backing of matrix. West of Cunnamulla in Queensland boulder opal is found in minute boulders known as “Yowah nuts,” which sometimes contain the usual thin veins and sometimes kernel-like gems.

Sandstone opal, which was discovered in Western Queensland about 1886, usually occurs as pipes of varying diameter from an inch downwards, the sandstone through which they run overlying in patches the great Rolling Downs formation — a belt of country extending about five hundred and fifty miles north-west from Hungerford on the New South Wales border to Kynuna at the head of the Diamantina River. Sandstone opal is as a rule thick enough to be cut cabochon shape. The introduction of these stones to the London market (which took place in 1889) was successful, and from that time Australian opal has been reckoned among valuable gems. According to Alexander Macdonald, the well-known pioneer prospector and author, “the land of the ghingi,” west of Cooper's Creek, is ablaze with the blood-flashing jewel. The total production in Queensland up to the end of 1924 is valued at about

£181,000, although these figures cannot be absolutely relied upon, as parcels of stone are often disposed of privately, and not recorded. The industry — which is not followed by practical miners — suffers from the peculiar disability that in good seasons there is plenty of work available on the great pastoral holdings of Queensland, and most men prefer this to the uncertain returns obtained by “fossicking.”

One needs neither money nor experience to start operations on the opal fields. A pick, rope, and bucket are all that is required in the way of tools, although a crude windlass is generally added when the fortune-seeker takes on the indispensable mate. Queer friendships are struck up in these scattered camps, where the cautious Scot may wield his pick beside the happy-go-lucky Irishman, the duke's son share his “damper” with the Queensland “bullocky.” Glistening white “dumps” indicate the miners' shafts, and two or three “bush shanties” reinforced by half a dozen tents complete the settlement, where the majority prefer to sleep without any intervening canvas between them and the tropic brilliance of the Southern Cross.

The real romance of Australian opal began in the year 1889, when a kangaroo-hunter picked up at White Cliffs in western New South Wales a brilliant piece of opal lying on the surface. The neighbourhood was at once prospected and large deposits of a new kind of opal — seam opal — were uncovered, besides opalised shells, fossil remains of curious reptilian skeletons and bunches of crystal, belonging to a remote geological period, and called by the miners “pineapples.” This opal is free of matrix and occurs either as flat cakes up to seven ounces in weight, or as lumps weighing as much as fifty ounces. White Cliffs opal soon became popular in Europe and the United States of America. Although a milky Hungarian opal was traditionally the finest procurable, the superior brilliance of the Australian variety appealed to wearers of jewels, and in twelve years White Cliffs output attained a value of over one and a half million sterling.

In 1903, when the supply was beginning to dwindle, two prospectors along the Upper Darling struck opal at Lightning Ridge, near Walgett. This type was distinguished by the black body-ground in which the colours gleamed, the normal opal's body-ground being colourless or milky. For some years the new variety was difficult to market, specimens fetched only one or two pounds per ounce at a time when the White Cliffs product was selling at prices up to fifty pounds per ounce. By 1910, however, Lightning Ridge was yielding two-thirds of the Australian output, and in 1914 eighty per cent of it, White Cliffs having been practically abandoned. Single stones valued at £300 and £600 have at times been recovered from this field, whose total yield for 1924 realised £10,500. No less than twelve thousand acres of opal-bearing country still remain unprospected. Both black and white opal of beautiful

fire were found in 1904 at Coolgardie, in Western Australia. Flame opal of rich red-brown colour and high translucency is found in nodules up to an inch or more in diameter east of Laverton and in the vicinity of Mundiwindi, while tiger's eye occurs in association with asbestos at Lionel and Yarra Yarra Creek in the north-west of this state, and is often cut into trinkets.

In 1915 a new field was discovered in the Stuart Range, west of Lake Eyre in South Australia. This produces chiefly a light opal identical with the White Cliffs stone, but occasional specimens (in no way related to the true black opal) show an inky colouring matter. The trade depression in recent years has limited the opal market, and the lack of permanent water at the Stuart Range (Coberpedy) field has likewise restricted its output. A fine collection of gems from this field was on display at the Australian Pavilion at Wembley. Little mining was carried on in 1924, the estimated value of the production being £4000. According to a report a few years ago by the Australian Trade Commissioner in the East, there is a good sale for these gems in China. It is stated that there is no difficulty in cutting and polishing, as the Chinese method of dealing with jade — dating back many centuries — can also be applied to opal.

Next in importance to the opal is the diamond, first discovered in Australia by E. H. Hargraves, near Guyong in New South Wales, late in June 1851. During the ten years that followed, other diamonds were found in the Macquarie and several of its tributaries, but no industry was started until in 1867 a deposit of some size was discovered in the Cudgegong valley, about nineteen miles north-west of Mudgee. This deposit was worked for a short time, but the value of the stones obtained did not cover the heavy expenses, and a flood in 1870 destroyed practically all the plant.

In 1867 diamonds were also found near Bingara in the hills west of Inverell, and subsequent discoveries on various tributaries of the Gwydir River have produced most of the stones recorded from New South Wales. Great scientific interest attaches to the discovery of diamonds *in situ* in a dolerite dyke at Oakey Creek, near Barraba, while at Mittagong — only fifty miles on direct railway line from Sydney — diamonds were found in 1890 in clay at the bottom of a pebble drift (possibly the old channel of the Nepean River), but attempts to open a mine there were frustrated by inrushes of water. On the whole the working of the industry has been very spasmodic; in the nineties, for instance, production ranged from less than 500 carats in 1892 to nearly 26,000 in 1899. At the present time the yield in New South Wales — the output of other states is too small to be included in the official returns — is still mainly derived by individual miners at Copeton in the Inverell-Tingha district, the total production up to the end of 1924 (no later figures are available) being estimated at 202,000 carats (valued at

£144,000).

In Queensland a discovery was made in that year at Diamond Vale, about two miles east of Stanthorpe, a popular health resort on the southern border — the stones being found in the alluvial tin wash. One flawless green diamond — an extremely rare specimen — weighing one and a half carats and valued at £1750, was exhibited at Wembley.

The most valuable gem-stones, other than diamonds and opals, found in Australia are sapphires. These were first discovered at Burrandong in New South Wales in 1851, but the present yield is derived chiefly from the Inverell district and the Anakie mineral field in Queensland, whence stones to the value of £24,339 were obtained in 1924. Fancy stones occasionally bring high prices, and a yellow sapphire found in 1923 at the quaintly named Iguana Flat in Queensland was purchased for one hundred pounds, while a similar stone, cut by the local lapidary in the following year, was valued at the same figure. Sapphires abound in the tin drifts of the Ringaroono and Portland districts of Tasmania, but the stones are, as a rule, small and not worth saving. In 1890, emeralds were found near Emmaville in New South Wales, over two thousand carats being sent to London during that year. Miners in search of lode-tin ore on the Murchison Goldfields at Poona in Western Australia in 1912 found a number of small gems, which were favourably reported upon by a Hatton Garden merchant, but the waterless and inaccessible nature of the district makes the promulgation of the search well-nigh impossible at the present time.

Turquoises have been found both in Victoria and New South Wales, while coloured tourmaline suitable for cutting was at one time procured at Kangaroo Island in South Australia. Garnet is known to exist in the Macdonnell Ranges, and crystals of great size and regular shape form part of the ore-strata of the Broken Hill lode. This does not complete the list of precious stones with which Nature has so lavishly endowed the Commonwealth, for topaz and beryl are associated with tin and wolfram in the alluvial and lode deposits, while agates, rubies, amethysts, chiastolite, olivines, and moon-stones, await the stroke of the eager prospector's pick in this modern El Dorado.

Pearling in Australian Waters

BEHIND the gleaming pearls worn by lovely women the world over there lies a fascinating, and sometimes tragic, story of life in the Coral Seas — of men cut off in their prime among the treacherous shallows of the Ninety Mile Beach. The graveyards at Broome and at Thursday Island offer silent testimony to the fate of many who have dared to rob the deep of its spoils. The divers, for the most part, are Japanese and Malays — attempts to enforce the “White Australia” policy on the pearling industry have so far failed — and for weeks on end they spend their days beneath the sea. Their “diving” life, however, is but a short one, and five years of the work usually finds them shattered and broken wrecks.

The pioneer of Australian pearling was one Tays, an American sailor, who settled at Nickol Bay in Western Australia. Recognising the value of the pearlshell scattered about in abundance, he began in 1861 to gather it for export. The high price commanded by mother-of-pearl in the market formed the basis of a profitable industry, for contrary to popular belief, pearls play quite a subsidiary part in pearl-fishing. They are too rare to attract the fortune-hunter — the jewel itself may not be seen in the course of a whole season. When Tays had stripped the beach of shell, he engaged aborigines to dive offshore. When they had reached the limit of their endurance — about fifty feet — diving dresses were provided for them so that the shell might be followed into still deeper water.

The industry expanded so fast that in 1871 the western fishery employed a fleet of a dozen vessels of from fifteen to ninety tons, which collected in the aggregate one hundred and eighty tons of mother-of-pearl.

The Torres Straits Fisheries began in 1868, when William Banner, master of the brig *Julia Percy*, began operations on the Warrior Reefs with such success that in 1871 ten vessels secured nearly two hundred tons of shell. By 1883 the Queensland pearling fleet consisted of two hundred and six vessels. Thursday Island was selected as the pearling port in 1887. Hard-bitten merchant captains ashore in those days could spin richly embroidered yarns of their adventures to open-mouthed landsmen, tales as evocative of shudders as that of the Ancient Mariner to the Wedding Guest. It was indeed a life of amazing adventure, of hair's-breadth escapes. The trade was with the Orient, and it was danger

all the way. Steering a vessel through the intricate channels of the Great Barrier Reef was in those days no light task.

As the fisheries grew in importance, the government was obliged to regulate them by various restrictions and enactments. Both men and boats were licensed, the gear submitted for inspection, and limits placed on the size of the shell and on the depths from which it might be taken. In fair weather and with modern diving-dress, a diver may spend two hours at a time in water from eight to ten fathoms deep. In greater depths his stay must be shorter. The oysters are so scattered that the diver must walk long distances on the ocean bed, gathering his harvest as he goes. The shells lie about singly or fastened in strings to the rocks. Usually the valves gape apart, and the diver must take care that his fingers are not nipped as they close, or that his airtube does not get severed by the jagged coral as he goes on his precarious way. Another danger that besets the diver at his task is the nasty habit that the Malays who man the air-pumps have of falling out among themselves and leaving their posts in order to settle their differences.

“Beachcomber” is the term applied to the less prosperous of the pearl-ers — men who have lost their boats and gear through heavy storms or by striking an uncharted rock, and who try to regain sufficient capital to start afresh by “combing” the beach for odd shells that may be washed ashore. After a gale the beach-comber's pains are rewarded, and even though his methods may be undignified, they occasionally earn for him as rich returns as fall to the lot of the owner of a trim little lugger or the brass-buttoned schooner captain.

Only three species of pearl-oyster are recognised by the trade — the golden-lip, the black-lip, and the Shark Bay shell. By far the most lustrous and valuable is the golden- or silver-lip, which in Australian waters occurs on the tropical coasts between Exmouth Bay on the west and Townsville on the east. This is much the largest of the family, the weight of a pair amounting to over eight pounds. The handsome and costly pearls which this oyster often contains are regarded as a by-product, however, the trade depending on the oyster-shell or mother-of-pearl itself, which is exported for manufacture into knife-handles and articles of jewellery.

The black-lip ranges beyond Australia to Ceylon and the South Sea Islands. Neither in size nor in the quality of its nacre and pearls does it compare with the golden-lip. The headquarters of this trade is at Papeete, capital of Tahiti, in the Eastern Pacific. In the hurricane season (December to March) dozens of pearling cutters tie up to the trees along the water-front, while the native skippers turn night into day ashore. None of these men know a compass from a quadrant, and navigate their frail craft by dead reckoning alone, taking weeks to accomplish short distances at sea. The boats are tiny things, but their storage capacity is

tremendous, accommodating at times, besides the pearl-shell and copra and half a dozen turtles, a horse, a more or less cut-throat crew, the rigging festooned with clusters of bread-fruit and bunches of ripening bananas.

The Shark Bay shell is a small kind, and is gathered for the pearls alone. The oysters are separated from the shell and thrown into a tub to rot. When the mass is softened by decomposition, the contained pearls are strained out uninjured and rolled into an adjacent trough, whence they are collected and sold to agents on the spot at prices varying from eighty to a hundred and fifty pounds — that is, if not already stolen by the Chinese or others whose job it is to clean the shell.

Among famous Australian pearls, the “Southern Cross” is notable, chiefly perhaps on account of its unique shape. It was found off Baldwin in Western Australia in 1883, and is formed of nine separate pearls grouped in the form of a cross one and a half inches long. The finest pearl yet found, however, is a drop-shaped gem the size of a sparrow's egg, weighing one hundred grammes, which was recovered on the Western Australian coast in 1917. It was named “The Star of the West,” and valued at £14,000.

Experiments already made in cultivating the pearl-oyster on suitable banks show that the presence therein of a foreign substance such as a small bead or grain of sand “tickles its ribs,” so to speak, and causes the mollusc to secrete a pearly substance over the surface. This secretion goes on for a long time, perhaps as long as the oyster lives. To get a fairly thick coat of pearl covering the foreign core requires about twelve months, and then to all intents and purposes a real pearl is formed.

It is a far cry from the rowdy little township of Broome to the glittering ballroom of Buckingham Palace — from the beachcomber who haunts the shark-infested waters of the mangrove-fringed creeks along the Ninety Mile Beach to the elegantly-gowned young *débutante* making her first curtsy to the Queen — but the pearling industry touches life at many points, and even the humblest coolie of them all has helped to “paint the lily” and make fair women fairer still.

Curiously enough, pearl-fishing is practically a British Empire monopoly, and of the world's supply Australia contributes eighty-five per cent — or the lion's share — of this treasure plundered from the sea.

The Great Barrier Reef

AN additional word about this “giant rampart wrought by midgets,” as the Reef has been called, may not be out of place in view of the great interest that at present is centring in it. By the time that this volume is published an expedition from Britain will have begun its year's work at the Reef. The expedition is under the leadership of Dr. C. M. Young, of the Plymouth Marine Biological Station, and its object is to survey the Reef, to chart its waters more thoroughly than has yet been done, and to study its economic possibilities. Dr. Young is to be assisted by a group of enthusiasts in the several departments of science to which the Reef promises to contribute something. It is a rich field as yet little explored, and it is expected that it will yield to pure science as great a harvest as will be gathered in the interests of commerce.

Without doubt many forms of life, vegetable and animal exist in the deep waters around the reef, and amongst its islands, species not yet known. The pearl oyster, already mentioned as flourishing in the locality, is a great asset to Australia, and it is thought that the yield may be added to by the introduction of artificial beds. The output of trochus-shell, from which pearl buttons are made, and *bêche-de-mer*, which go to China and to Japan respectively, it is expected will be increased as a result of the investigations of the expedition. There are also several kinds of soup turtles that may be turned to account, and doubtless some species of edible fish lurk among the coral islands, as yet unknown to trawlers.

The introduction of sponges of commercial value is contemplated too; the Syrian sponge of the Levant is to be acclimatised and brought to the Reef; it is expected that thereby a valuable new primary industry will be given to Australia.

It is not strange that little exploration of this interesting region has yet been done from Australia, a country still with much to be done within its own terra firma borders. Yet occasionally parties of scientific students and others have spent periods at the Reef studying its physiography and biology. The British expedition is, however, on a more systematic scale and, thoroughly equipped as it is, will assuredly have more substantial results.

Interesting as are the economic aspects of the work of Dr. Young's party to Australia, the world-wide interest will centre round the more purely academic aspects of the work. This Great Barrier is the largest

coral reef in the world; it is the coral incognita of the seas; its prime mystery is the problem of its own growth. The wonder of the assimilation by minute creatures of millions of tons of calcium from the sea water, its transformation and deposition into rock and shell, is little understood. There are problems for physiology and chemistry on the reef, therefore, as well as for botany and zoology, and the several other sciences whose happy hunting-ground it promises to be.

A submarine world over one thousand miles in length peopled with many forms of life, this world itself created by the instinct of one of its lowest life-forms out of nothing, so to speak, does it not pique our capacity for wonder, and in the thrilling of his imagination make the man of science at one with the poet?

Fish and Fishing

THE Australian ocean waters are rich in various kinds of fish, especially on the eastern coast. Approximately one thousand eight hundred species are known to exist around the continent, no doubt in the deep waters there are still varieties unknown to the trawler, and to the scientist. Some of the known kinds are not found elsewhere; they are “between types” in the way that that strange amphibious creature, the platypus, is.

Of fresh-water fish there are not many indigenous varieties, though the Australian rivers are mostly well stocked now, fish having been brought to them by acclimatisation societies which have been enthusiastic in the matter. Among the best table-fish native to the fresh-water rivers is the Burnet River salmon; perch and trout are widely spread, and the Murray River cod is a noble fish. It sometimes weighs as much as fifty pounds; the Murray cod is a fish that puts the temptation to exaggerate beyond the thought of the angler.

Inland, in isolated creeks and waterholes, fish appear mysteriously from time to time, reviving the superstition of spontaneous generation in the minds of unreflecting observers. More knowledgeable folk account for the phenomena of these “fallings from the clouds” by assuming the agency of whirlwinds in the matter — winds that sometimes do catch up small fry, sending them a distance through the air before dropping them to earth. Fish stories are notoriously suspect, but strange tales of such queer appearances as these may be excused, especially as in the case of the spangled grunter, which sometimes appears mysteriously in the waters of a new bore, far from any surface water. This fish is usually blind when appearing in such manner, because of the gases in the artesian water it is assumed, but it may be because the creature's subterranean life has rendered eyes superfluous. The presence of this fish in the artesian water is surely another hint as to the existence of that underground sea of which scientists speak, the spangled grunter giving authentic tidings of the invisible thing.

Inland fish in the dry regions of Australia do certainly develop remarkable powers of survival under stress. In drought they will bury themselves deep in the mud of drying waterholes, remaining there for months under a surface baked hard by fiery suns, when rain comes to emerge and to disport themselves as lively as ever in the newly filled

basin.

The turtle industry in the northern waters of Australia is fairly active, bringing this dainty in its most approved form to the table of the epicure. Another marine creature that does not come into the fish kingdom is the dugong, a porpoise-like mammal found along the northern coast. This animal yields a valuable oil, and some people enjoy the flesh of it cured like bacon. The hide of the dugong has its uses too, being very tough and durable. The whale, another mammal, is hunted in both the northern and the southern waters; the value of the oil obtained is considerable.

The pursuit of the edible oyster — shyest of house-dwellers — is energetically prosecuted about many of the coastal parts of Australia. There are several kinds of this bivalve on the market. The most popular, as the most expensive oyster, is the Sydney Rock product. It is obtained in various parts about the Sydney waters, and is regarded as one of the finest flavoured oysters in the world. The Moreton Bay oyster comes next to this succulent fellow in popularity, though to the writer's crude palate there are certain rocks on the Phillip Island beach where just as fine oysters as either can be obtained for midnight orgies in the adjacent boarding-houses. That is if the fishermen are not on the alert. ...

It is a curious fact about the oysters found in Sydney waters that the mud oyster (not such a delicacy as the rock variety, yet very marketable) is unisexual, while the rock oyster is bisexual. The oyster industry about the eastern coast is an important one. There are many inlets and salt estuaries about the coast of New South Wales especially which serve as culture beds for young oysters, gathered by dredges from the sea. These are dumped from punts upon the flat bottoms of the shallows of these sea arms, where the process of maturing and of fattening is carried on. The process is a long one, three years being the time allowed before the oysters are collected and taken to market.

Places for the Tourist to Visit

THE time and money at the disposal of the tourist, and his personal inclination, will largely determine the places he will visit in Australia. Distances are great, and Nature often plants her finest beauties amid her deepest fastnesses. Still, within easy reach of the various capitals there are many delightful places that may be visited in one day's journey from the starting point. In all the chief centres there are travel bureaux just as there are in the Old World cities. At these places the traveller can get all information regarding things to be seen farther afield, and he can be conducted to them by the easiest means, by river, sea, road or rail. He does not need to do anything for himself, except to book and to be on hand at the starting time.

There are the long trips in the course of which one may be weeks in the hands of tourist agents. No one, for instance, who wishes to know something of tropical Australia in its prolific areas should miss seeing the scenery of Queensland. He might well journey to Cairns from the south, and so reach the Barron River, the Falls and the Gorge by a short trip by rail. Such a scene as the Falls, says a writer, is "gorgeous and awe-inspiring; it spiritualises travel."

The Cairns Ranges, the crater near Herberton, the Tully Falls, the Chillagoe Caves, Innisfail, more beautiful even than its Celtic namesake, the Mourilyan Harbour, all these should be seen when the traveller is in the north of Queensland. And much more. Queensland has an immense feast to offer the eye in her rich forests, her glorious tablelands, her great gorges and falls — Nature in her catastrophic mood. Above all, the coastal trip inside the Barrier Reef should be taken by steamer. Whitsunday Passage, once seen, is never to be forgotten. It is sheer romance to move among the many islands that dot the route. It is another world even to the Australian from the south, this region of fringed palms, of gorgeous colouring. On the Whitsunday trip upwards of seventy islands are seen dotted like gems in the sea.

The Blue Mountains of New South Wales are the Delectable Mountains of all who see them — the Blue Hills of Dream. Of these, and of the Jenolan Caves, everyone has heard. The visitor to Sydney may see them in a day's trip. The caves are not only large, they are beautiful beyond description in their diversity, a masterpiece of Nature's. By slow droppings and drippings superimposed upon her earlier Promethean

rivings and rendings she has made this beauty of form and of colour. *The Jenolan Caves must be seen.* So, too, must the Buchan Caves in Victoria, those caverns measureless to man that lay so long before they were known, to white man at least, though their hollow echoes sounded so mysteriously above ground. They were the home, no doubt, of the King Debbil Debbil in the aborigine days. A fine palace indeed! All the states have their caves. Tasmania has the Ulverstone Caves, which attract visitors in great numbers. South Australia has fine caves at Naracoorte.

Tasmania is an island of concentrated beauty; she has the calm, she has the wild, and the tourist may see it all by land routes or by sea routes from Ulverstone to Tasman Peninsula, the lakes, the mountains, the rivers, the falls, and the "sweet English rural views" that put the English visitor in mind of his Surrey and his Kent.

Victoria offers, among much, her Mount Buffalo for those who like high altitudes and glorious panoramas; her intriguing Grampians are the artist's and the botanist's paradise. The Gippsland Lakes, a day's return trip from Melbourne, along the coast by steamer which enters and circumnavigates the whole chain of these so famously beautiful children of the ocean, are not to be ignored. The vast primeval bird and beast sanctuary with its one hundred thousand acres of wonderful bush at Wilson's Promontory, the deep fern gullies of Sassafras and Marysville, these for the peace of the lonely places; they capture the spirit of the beholder. Or the sea lover will find his rapture by the shores of Ninety Mile Beach, where the long wash of Australasian seas bring in their eternal surge a pensive joy. Or the gullies of Lorne and of Apollo Bay; who shall decide between such charms?

Those who would have the juxtaposition of extremes to hold in memory should see the West Australian jarrah and karri forests before penetrating into that state's regions of treeless reaches of plains and far level horizons. If he be indeed thorough in his quest of contrast he will leave the easy ways of trains, and take a camel's back for an inland jaunt whereon he may push into the region of mulga and of porcupine grass, see Emily's Gap in the sacred Macdonnells with his own eyes, and be ever after able to recount his glamoured memories of these regions off the beaten track.

It is such areas that the road-weary tourist should travel. The trackless bush, blazed only to the acute eye of the bushman who knows it by his spiritual compass. Surrendered to his guidance, the traveller will find himself "above humanity," upon peaks it may be that only the birds know, peaks that have boiled up from day's rim into the sky, from whence far below the awe-stricken traveller may view a world of sunlit hills of purple gorges, and deep immeasurable leagues of dark green forest trees. Oh yes, these far-off-the-track trips are the best of all, and Australia, the land of infinite bush, has, for those who would reach them,

a thousand such rendezvous for man with Solitude; places, beautiful, stupendous, silent.

But should the traveller in this new land, this land of little history, feel his historic sense quite unappeased by the vision of nature unrelated to the life of man, he might be given a brief but interesting catalogue of places where history has set her authentic foot. The traveller might be told of the place where Batman stood when he landed from his coracle by the Yarra, the spot where Captain Cook set up the Union Jack at Sydney; the gum-tree arched like a portal under which South Australia became a province. And if Mahomet will go to the mount he may be told of that historic glen still far from man's everyday life, where Sturt and his company for eight long months defied drought and doom, or of that tragic spot on Cooper's Creek where Burke and Wills had their depot. And many a cairn stands, often still far and lone about the continent, marking the memory of valiants long gone. Many more such cairns will yet be raised to stand eloquent to the coming race of their forefathers' pioneering energy and gallant courage.

Coal — Black and Brown

ALARMING predictions as to the exhaustion of the world's coal supply are sometimes heard. The fact is, however, that without any fresh discoveries, there are sufficient coal measures already known of to “outlast the sun”; when he ceases to warm the earth man may well close down the shutters and give up the game of Living.

The exploitation of coal in Australia is hardly begun, though the first discovery of it was made early in the history of the colonisation of the country. It was discovered in 1791 by an escaped convict from Botany Bay, one William Bryant, who had been transported for “interfering with the excise officers in the execution of their duty” — another way of saying for “assisting smugglers.” Bryant, having some knowledge of the sea, had escaped from the penal settlement in a boat, and after many adventures, had found himself not far from Newcastle, north of Sydney. There he made the discovery of coal. The original spot is not now known, though the fact of Bryant's discovery is chronicled in several existing journals. On being recaptured, the convict made known his find to the authorities, who seem, however, to have concerned themselves little with it. Elsewhere along the same line of country another outcrop was discovered some years later by some fishermen; it was difficult of access and no attempt was made to exploit it. A further find on the Hunter River was shortly afterwards made, and some of the coal was brought down the river to Sydney. The coal began to be used in small craft, and a shipment was sent to India — the first coal to leave Australia. The government worked the seam a little, using convict labour; they also secured the area to the Crown, and named the place Newcastle. That field to-day is the foremost coal-producing place in Australia. The coal is fine, hard, gassy, and almost smokeless, equal to the best Welsh article. The strata extend from Newcastle harbour, inland for fifty square miles, and are practically inexhaustible. Newcastle coal has supplied Victoria for long as well as New South Wales, and shipping innumerable, yet, as one who knows the region says, it is only “scratched.”

Queensland has large coal areas too, notably at Wide Bay, Ipswich, and at Rockhampton. The surveyed coal areas of the state are 78,073 square miles — a total greater than all England and Wales. At Clermont, where the discovery was made in sinking a well, 258 million tons are available. There are four state-run coal-mines in Queensland, and coastal shipping

is supplied from her mines. Bowen has the only true anthracite coal as yet discovered in Australia.

West Australia has also immense coal-fields as yet hardly touched. South Australia has good deposits too, the chief of these being north of Port Augusta. Tasmania, so rich in underground deposits, has large coal-bearing areas.

Until comparatively recently, Victoria had little known coal, though a discovery of black coal in small quantities had been made near Western Port as far back as 1825. Supplies for industrial purposes and for household use had come from the Newcastle mines. So far as black coal is concerned, Victoria will continue to get her coal outside the state. She has nothing in black coal as yet known of to compare with the New South Wales article for heat or for steam qualities. Yet Victoria, through a recent discovery, is perhaps writing the most interesting chapter of all in the story of Australian coal. Brown coal deposits of vast extent were found at Mirboo, and at other parts of South Gippsland. The discovery was opportune, as the government was at the time promoting a scheme for a hydro-electric supply for the cities and for the state's industrial concerns generally. The handicap of having to bring practically all her coal so far was being felt. There were difficulties in the way of the proposed means of escape from the power shortage, and a solution was found in the discovery of Gippsland brown coal. As a rival for black coal in direct application (if we may put it so) brown coal counts little; it is a "young coal," geologically speaking, its qualities immature. But the Mirboo and Powlett River find was of such vast extent, and so easily and cheaply procured, that for the purpose to which the new scheme intended to apply it, it was admirably suited.

Boring operations had proved that the area was of the extent of eighty square miles, and the coal within from thirty or one hundred feet from the surface, and of a thickness ranging from two hundred to six hundred feet. One bore went through seven beds of an aggregate thickness of 781 feet. One square mile of the coal, it is computed, will last for all possible purposes for a century.

This then is the supply of brown coal with which the Victorian electric power scheme is dealing. Upon the discovery being proved, the possibilities were at once seen in connection with the electrical needs of the state. The hydro scheme was put aside, and the brown coal as a power generator put into harness. Seldom have vision and constructive skill been more quickly translated into action. It is barely a decade since the discovery of the coal was made, half that since its extent was proved, and about four years only since the electric power and light scheme was begun.

A power-house was put up, the name of the place being changed to Yallourn (a native word meaning "yellow fuel"), and directed by the

genius of Sir John Monash and his assistants the work was soon in hand. At the great power-house there are five turbines, each of twelve thousand five hundred kilowatts; twelve boilers supply the steam which generates the electricity. Two thousand seven hundred tons of coal per day are conveyed to the screening-house. The generated electricity is transmitted to Yarraville, the main Metropolitan distributing station. Electricity from Yallourn can be transmitted to all parts of the state; already seventy-five per cent of the people of Victoria are enjoying the benefits of the electrical energy; sixty-four centres are supplied by it, and some towns over the New South Wales border are also using it.

As a by-product, briquettes made from the coal screenings are in great demand as a cheap fuel. Yallourn, as a model new industrial town, is a place to be visited. Its sudden rise from the deep-timbered bush, through the newly discovered use for its long secreted wealth, lends a romantic aspect to the place.

Marbles and Building-stones

AUSTRALIA began with human homes composed of boughs and bark, called *mia mias*, or *gunyahs*, the constructions of the aborigines. The white pioneer started with very humble structures also, though considerably in advance of his black neighbours'. In those days, in the country places of Australia, men were too busy to spend much time or thought about the building of houses. The materials about them, roughly shaped, served well enough for a beginning. There is a peculiar picturesqueness, though, about these bush homes of the early coloniser that one remembers with something like affection. They fitted the circumstances, and thus were right.

The race that began with the stringy-bark and shingle bush houses will probably develop into a race that dwells in marble halls, for Australia is rich in marbles, a fact that has now been discovered, and is beginning to be appreciated.

Sydney, following the precept of taking what was to hand, began first with the utilisation of the stone with which her neighbourhood is rich, and she had the labour at hand too. The first stone bridge was built in Sydney, or near it, in 1833, of sandstone, easily wrought and plentiful. Very early, houses were constructed of the various fine sandstones about the city, and many roads were cut through the stone, "not for a season, but for all time." Beautiful roads they are, those in the neighbourhood of Sydney, made by the labour of the convicts. Apart from this, the earliest "underground material" used in house building seemed to have been the Towrang marble, discovered by Mitchell in his early expeditions; this was used for mantelpieces, and for other internal house decoration purposes.

In the London Exhibition of 1851, there were no marbles shown from the mainland, but small samples, dressed and undressed, from Tasmania, were exhibited. About 1870 some of the more ambitious buildings in the Australian capitals began to be made of these more durable materials. The Sydney sandstones also found their way farther afield; they have the merit of being easily worked.

Not until 1908 was any representative collection of Australian building-stones sent out of the country for exhibition. Samples of many varieties were in that year shown in the Franco-British Exhibition, and were much admired. Visitors to England from all parts of the world

should see the examples of Australian marbles and stones (not overlooking the great varieties of timber, polished and unpolished) that have been used in the construction of that fine building in the Strand — Australia House. Such a display as is there leaves no doubt in the mind of the visitor as to the beauty and diversity of our building materials. Canberra is to display, as building goes on there, the wealth of the country's marbles and granites. As the aborigines left it unmarked by dwelling, the white man will turn this site amid the hills to a marble city, as Augustus turned Rome.

Even yet, strangely enough, stone is brought from abroad to Australia. It takes people a long time to realise the beauty and worth of the materials at their own door. The same thing has happened in Australia in regard to the arts less concrete than that in which the builder deals. Eyes hereditarily full of the things of the Old World have to be opened to the perception of the qualities (especially to the aesthetic qualities) of the things of their new environment. Statuary marble said to be equal to the famous Carrara has been found at Gilmore, in New South Wales.

Two important qualities in building-stones are durability and colour. Nature, it may be assumed, takes care to provide materials suitable to the environment in which they are found, since they are part of that environment. How beautifully adapted, for instance, are the qualities and colours of the Sydney sandstones for use in the erections of man's making on the landscape and against the sea- and sky-scapes of that region of Port Jackson which is now the site of the City Beautiful. The lovely shades of the sandstones were surely naturally adapted — made *en suite* — for those skies, and those waters. The city has grown to harmonise with its surroundings. The buffs, the greys, the creams! The Borenose marbles give diversity, harmony, and dignity — a wonderful trinity. With all its dignity and stability, Sydney is a gala city, as befits her blue skies and blue waters.

Character in keeping with the climate and with the landscape is what architects must, with the richness of the material around them, continue to aim at in Australia. There is no excuse for unsightly or inharmonious buildings with so much “conscious stone” waiting to be made beautiful. The general effect of builded stone in the dry airs and hot suns of Australia will be, when age is upon it, far different from that of the damp and foggy climate of England. Who, on first seeing St. Paul's, for instance, has not had a shock of surprise at the sharp contrasts of black and white of pillar and abutment. A shock of surprise, followed instantly by a sense of satisfaction; a feeling that this is right. That is the realisation of the part that climate plays in the being of builded stone. That acute blackness, that bleached relief done by the quiet, constant brush of climate, so fitting in its relation to the London that has made it so! But such an effect would be out of place in the golden air of an

Australian city.

New South Wales has developed her marbles and granites more than any of the other states have done as yet. South Australia comes next, and Victoria is beginning to quarry some of her resources at Buchan and other places where she has good deposits. In southern New South Wales there is some beautiful porphyry. When polished it is a fine olive-green; it is hard and exceedingly durable under tests; a great future is predicted for this porphyry.

In South Australia one of the most worked quarries is at Kapunda, where there is much white and coloured marble; the roads about Kapunda ring to the horses' feet. I have recollections of a dashing party of horsemen literally ringing down the main road there on a night when the moon tumbled in and out of the clouds. The dark moments were never very dark on that gleaming road, and when the moon came clear there were flashes as from crystal at early morn. A place of spectral beauty, and a road for the cavalcade of a conquering king. At Queanbeyan, not far from the new Federal capital, they have a marble which when given a clean-cut face looks like a picture of a greying evening stealing over sea and sky. One expects the streaks of light to shift and change and die under the vision. But it is nature static, solidified. These Queanbeyan marbles are destined to play a great part in the building of Canberra.

Great belts of serpentine outcrop at Gundagai, New South Wales, the colour is chiefly a mottled green.

About Melbourne there are large deposits of blue metal of the best road-making quality. Prisoners at Pentridge, in Melbourne, under hard-labour sentence, would be prepared to say that this stone is exceedingly hard. There are volcanic outcrops of this metal in many parts of the continent; extensive lava flows have formed the substratum of the New England plateau in New South Wales, where there is enough good metal to make and keep the roads of the whole state for all time.

Australia is beginning also to use her clays for tiles, as she has for long used them for bricks, and local slate is being applied to roofing; till recently all the supply of slate was imported. At Gundagai there are large slate deposits as yet little exploited, and good flagging-slate outcrops at Mintaro, South Australia. Little has been done to develop these resources.

Recently, on a Crown reserve in North Gippsland, some work has been done in a slate quarry by a company formed by the late Hugh McKay of the Sunshine Harvester Co. Samples of the slate have been pronounced by experts to be of good quality and colour, equal to the famous Welsh slate for roofing. I happen to know this quarry; in its virgin days it was a place of romantic interest to me, not a little fearsome, too, with its dark beetling hill and river cliffs, where the layers of slate jutted out in

irregular formation. Long before Commerce touched that slate its use had been discovered by the children of that region for monumental slabs. Suitably engraved, many a piece of it marked the grave of a deceased pet that deserved something more than the tribute of a passing sigh.

Many of the Australian granites have been put to severe tests, by fire, by water, and by being subjected to great pressure; the tests have been carried out drastically. From these most of the cubes treated have emerged triumphant. Whatever forces went to the making of these stones they were fierce and efficient. "Battered with the shocks of doom," tempered sharply by fire and by water or by other unseen agencies, they have emerged from the convulsive periods of moulding, immobile, impermeable — stable as anything in nature may be called stable.

What other riches, smaller and more precious because rare and difficult to find and to win, lie, one wonders, in the sands, the clays, the rocks, hidden there by jeweller Time? Gold? more than what these seventy years of search and toil have brought to the world's mints from the mines of Australia. Secret, hiding, still to be found; and much gold never to be found. Gems of many kinds, and metals hiding their uncut beauty deeply in the earth. In river bed, in "scarp'd cliff," in the deep clays, lurk millions never to be won, search as man will. As well expect the sea to give up all she hides while Time lasts, as expect to burgle to the uttermost the wallets of the earth.

General — Conclusion

THE consideration of “quarried stone” leads naturally to thoughts upon the geological age of Australia, upon the forming forces that laid down the bases before herb or moving creature appeared. Such considerations, even to the scientist, are largely theoretical. There are things enough of the surface, things above the “top dressing” of the mysterious foundations of our great Island Continent, to engage us, and if we do for a moment turn the eye speculatively below the surface it will be but to note some of the hypotheses of the men of science themselves. After all none of us were there, neither they nor we, unless indeed potentially, at the making of Australia.

How did she come? Did she rise, the phoenix of Atlantis from the sea? Did she slowly form through millions of ages, stratum by stratum, under the hand of Time, made as the insects made the coral reefs along her northern coasts? Came she by giant erosions from other lands, a broken-off waif sent adrift over far seas, till, frightened by the Antarctic desolateness, she “grounded”?

Was she of Asia, or of South America, of the Malays, was she even of Africa? When, and how, and why, did she push Tasmania away from her — the very hem of her cast off? Is she old among the old, or new among the new? There are theories for and against all these, and many other ideas concerning her genesis; arguments from evidence to be gained from the study of her primitive people, her outworn native race, deductions to be made from signs in the rocks, from her fossils suggestions enough to plump out many and opposing hypotheses. How and from whence, indeed, came her dying aborigines, and at what period to the surface made roughly ready to their crude needs, by the long-labouring ages? This creature of unknown origin, whence came he? Did some sea convulsion tear him from an older habitat, and leave him nomadic lord of his all too great heritage?

Last sea thing dredged by sailor Time from Space,

wrote the Australian poet of his country, but all through the sonnet of which those words are the first line, he entrenches his imagination in question marks. He is not committed to the view that Australia is “the last sea thing” any more than is the man of science. But poet and scientist

are at one in the conclusion that this sunny southern queen of the sea is well made and richly clad, and each renders her homage accordingly.

On the highest point of Mount Wellington, seashells have been picked up. Australia's volcanoes are dead, exhausted, immobile. The palaeozoic plateaux of the inland western part of Australia rolled over in rich folds, mixed in the matrix of Time. When did their heaving change to simmering, their simmering, lie quiet and cool at last for organic life to get its foothold upon the mass?

She is not new as human history is new, as human life itself is new — a thing of yesterday. Man is new to the oldest of the continents — whichever that may be. But how old do Australia's fossils declare her to be? There are fossils of marine vegetation, tertiary deposits existing in dwarfed and fragmentary shapes about Australia's coasts and far inland. The claws of a dinosaur brute have been found in the basalt on the Victorian coast. Remains also of great marsupials of elephantine proportions that suggest the pliocene period. A great creature twelve feet in length, of huge jaws, and a small brain-pan, a cast of which has been taken and is in the possession of the Queensland government geologist. A gigantic ancestor of the emu, thirteen feet in height (as though the present-day emu were not tall enough for a *bird*), has delivered up its remains from the strata to the Adelaide Museum. The remains of an animal as large as a rhinoceros, and a giant wombat have been found. The skull of an extinct marsupial was discovered in 1921 at a depth of seventy feet in the clay while a well was being sunk at Darling Downs. The skull was two feet long, the cheek-bones were huge, as large as a bullock's, the animal was in life herbivorous. Reptile remains found in Queensland had a large head, short neck; the teeth were ten inches long.

A thousand types are gone.

These things are of the *New World*, and are now where men may come and guess about them, their age, their origin. Stems of trees, fossil fruits, and fossil fish abound near Sydney and elsewhere.

There where the long street roars, has been
The stillness of the central sea. ...

A great lake once stretched in Northern Australia for a thousand miles. Southern Victoria was once all lakes and swamps; in that period our coal measures were laid down. Port Jackson shows signs of "recent" sinking. (The melting of the ice at the passing of the Ice Age in Antarctica caused a rising of the sea which altered the land-level of Australia.) A rise of two hundred feet in the sea bottom would reunite Tasmania with the mainland, and would alter the relation of the continent to the Arafura

Sea, probably joining us up with Papua, as we were joined with that wild region once before.

All the continent is essentially a vast peneplane abandoned by the ocean; in parts warped upward or downward, in arches, in troughs, accompanied by heavy fractures. In all these changes earthquake has been the handmaid of Time, causing evolution's catastrophic leaps.

Considered as time is thought of in history, all this did not happen in a day, considered geologically it must still have been a long day's work of the Secret Process.

Young among the nations, however, we undoubtedly are, new the history of the civilised race that came to her when, in the fullness of time, evolution had made ready Australia's wide stretches to receive it. To that fair, fertile, well-clad land, soil upon mineral, vegetable upon soil — to that good heritage we have come, marked by Destiny to use the gifts laid ready for our use.

What matters the geological age of this great Australia (save as a riddle for our curious brains)? What matter how and whence she came? SHE IS. And she is ours. Let us see to it that we use the gift well and wisely.
