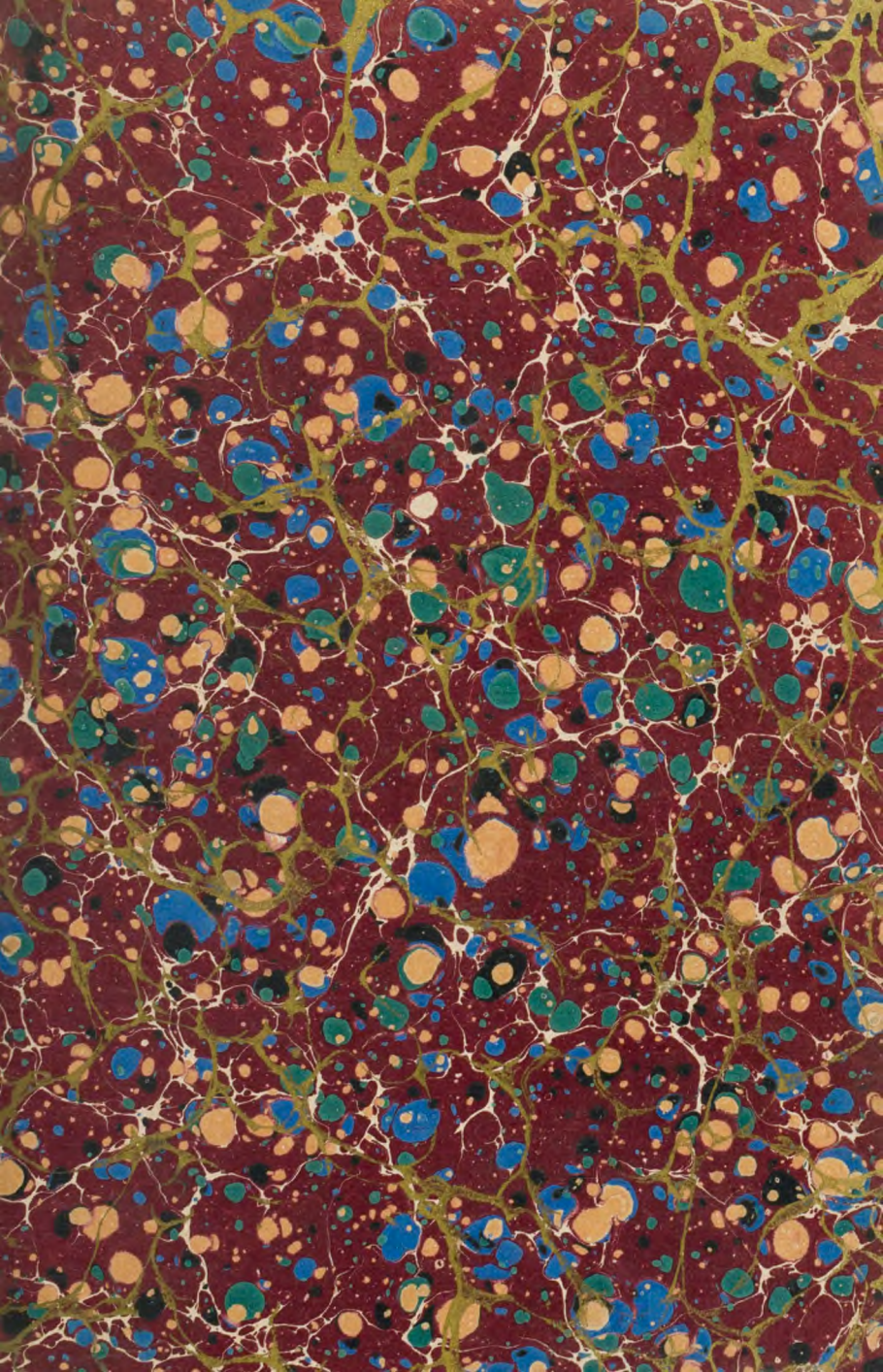

A HANDBOOK

TO

Western Australia

AND ITS

GOLD-FIELDS.

By HAROLD G. PARSONS,

Barrister-at-Law.

GEORGE ROBERTSON & COMPANY,

LONDON, MELBOURNE, SYDNEY, ADELAIDE, AND BRISBANE.

1894.

A HANDBOOK

TO

WESTERN AUSTRALIA

AND ITS GOLD-FIELDS.

BEING A
GUIDE TO THE RESOURCES (AGRICULTURAL, MINERAL, AND MISCELLANEOUS) OF THE COLONY; AND A COLLECTION OF HINTS TO THE INTENDING IMMIGRANT.

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1894.

Butler & Tanner,
The Selwood Printing Works,
Frome, and London.


WESTERN AUSTRALIA
Railways shown thus
Telegraphs
Boundaries of Land Districts
Routes of Steamships
Submarine Teleg. Cable
KIMBERLEY DIVISION
NORTH WEST DIVISION
EASTERN DIVISION
GASCOYNE DIVISION
SOUTH WEST DIVISION
GREAT SOUTHERN PLAIN DIVISION
LUCIA DIVISION
PILBARRA GOLDFIELDS
ASHBURTON GOLD FIELDS
MURCHISON GOLD FIELDS
YILGARN GOLDFIELDS
KIMBERLEY GOLDFIELDS
COLGARDIE
Tropic of Capricorn
Londonderry
Admiralty Gulf
Wyndham
Roe's R.
Camden Sd.
Collier B.
King Leopold Ra.
Prince Regents R.
Carr Boyd Ra.
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Roebuck Bay
Coastal Contract
Geoffroy Bay
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Fortescue R.
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Barrow Id.
Monte Bello Is.
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Depuch Id.
De Grey R.
Oakover R.
Sturt
Joanna Sp.
Lady Edith's Lag.
Mt. Mueller
Mt. Wilson
Mt. Russell
Mt. Macpherson
Norton Plains
Mt. Arthur
Mt. Tuckfield
St. George Ra.
Denison Plains
Mt. Robinson
Ophthalmia Ra.
Ashburton R.
Peraverae Barlee Ra.
Mt. Thomson
Mt. Augustus
Teano Ra.
Mt. Labouchere
Mt. Gorton
Mt. James
Mt. Steere
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Windich Sp.
Mt. Gould
Mt. Maitland
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Sanford R.
Lyons R.
Tallering Pk.
Mt. Holmes
Mt. Malcolm
Mt. Weld
L. Carey
Port Gregory
Nor'thampton
Champion B.
Geraldton
Greenough Flats
Mt. Kenneth
L. Monger
Mt. Singleton
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Mt. Destruction
Cills Pinnacle
L. Christopher
Mt. Forrest
Mt. Butterfield
Alice Falls
Mt. Deering
Barlee Sp.
Alexander Sp.
Mt. Elliott
Alfred's Marie Ra.
Tomlinson Ra.
Blyth Ra.
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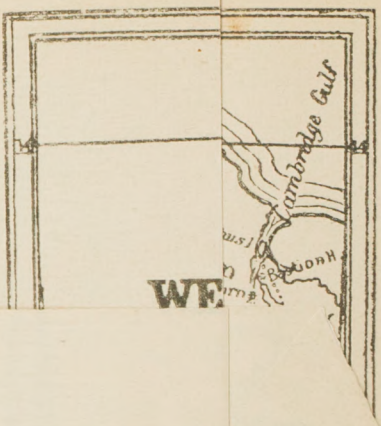
Cumbridge Gulf
WE

PREFACE.

THIS book is very hastily compiled, but its facts and its figures may be relied on as accurate; and I feel that it is to the interest both of the Colony and of the British public that I should waste no time over literary elegancies—which (besides) would be quite out of place in a Guide-book.

I have to acknowledge the kind assistance of many Government officials here, particularly of Mr. Fraser, the Registrar-General, upon whose Year-books, together with the Reports of the Government Geologist and of the Agricultural Commission, I have been mainly dependent for my information. The Blue-books, and the official returns of the several Departments, have been very obligingly placed at my disposal by the heads of those Departments, as well as by several members of the Assembly. I have particularly to thank Mr. Prinsep, the chief of the Survey Office, for his courtesy in supplying me with the latest maps and geographical returns. Mr. A. Canning, an Associate of the Supreme Court, has been good enough to revise my materials, and to correct some of the errors due to my want of local experience.

I can make no claim to originality. There is a great deal to be said, at this moment, about Western Australia; and I have attempted—not to say it (for I have written very little of this book), but—to lay it before the English public.

WELD CLUB, PERTH,
WESTERN AUSTRALIA.
August 16th, 1893.

CONTENTS.

INTRODUCTORY.

In Guide-books, Year-books, Blue-books, and other *biblia abiblia* with which the British public has generally no concern, it is written, "Terra Australis Incognita was first visited by the Portuguese under Menezes, in the year 1527, when exploring the Indian Seas;" and again, "The Swan River Settlement was founded in 1829, by Captain and Lieutenant-Governor Stirling." But these statements are as uninteresting, and therefore, for practical purposes, as untrue, as another favourite tale of the romantic pedant; to wit, that Dampier landed at Cossack (a township which, naturally, in Dampier's time, had no existence), and discovered the Pilbarra Goldfields. After all, Arab dhows, or at least Chinese junks, must have visited Cossack before Menezes; and the thousand settlers who followed their *oikistes* Stirling had as little to do with the founding of Western Australia as the Portuguese, the Arabs, the Chinese, or, for that matter, those singularly unenterprising aborigines who, in inquiries of this kind, are of course to be neglected. For in effect, Western Australia, though it has lately been re-discovered by Sir John Forrest, and given Responsible Government by the House of Lords; though it maintains telephones, a tariff, and an Agent-General; though it exports sandal-wood, oyster-shells, and blocks for wood-pavement; though its railways be built (or building) by land-grant Companies, and its stamps long since familiar to the British schoolboy; nevertheless, Western Australia, I say,

remains to be founded. Victoria began with Bendigo and Ballarat. Western Australia must begin with Coolgardie—or not at all.

The Cinderella amongst colonies, as the silver-tongued journalist is permitted to call her ("the Cinderella amongst colonies, which has at last found her fairy godmother"),—"W. A." (in the local phrase)—is both unlike Gaul in many other respects, and particularly because she is divided into six parts. Two of these, Kimberley and the North-West Division, are beyond the scope of this work. They are not "white men's country;" though the pearl-shell fisheries and the mines of Kimberley may yet make many white men's fortunes. Two others, the Eucla Division and the Gascoyne, concern us very little; the Gascoyne (being the centre of the western coast-line, with a fair allowance of *hinter land*) chiefly because it contains the Murchison Goldfields; the Eucla Division, a mere sandy country along the Australian Bight, only because here, as we shall see, from Espérance Bay, is a possible route to Coolgardie. It is with the two remaining parts—one, in a manner of speaking, desert, the other comparatively settled—the one interesting chiefly to diggers, the other to agriculturists—that I now, for the benefit and information of intending immigrants, propose to deal.

The Eastern Division—that great expanse, still blank on most maps, which will be thought of by the English reader as the Great Australian Desert—is the whole interior of the Colony, surrounded, on the N., N.W., W., S.W., and S., by the five other, or coastal, districts. Here the gold finds have been made.

The S.W., or settled, Division is a long strip of territory (on an average about 100 miles wide, but broader at its southern extremity), which stretches from the Mur-

chison River on the north to the Southern Ocean at Albany. It is an undulating country, nearly the size of France, heavily timbered, almost throughout, with jarrah, the Australian mahogany. The sea-coast is flat and sandy, but behind the sandhills we have a land of disintegrated iron-stained granite rocks, with now an open plain covered with shrubs and gorgeous flowering plants; now the rare clearing along the line of railway; now, again, a forest of gigantic karri trees; but always, surrounding, dominating, and drowning all, the everlasting jarrah. Within the bounds of this district the settlement and the enterprise of the Colony have so far been concentrated. Here is Perth, the capital, with its port of Fremantle. Here is Albany, and the railway connecting it with Perth. Here are the coastal settlements of Bunbury and Busselton, Geraldton (the port for the Murchison), the thriving agricultural townships of Northam and York, and all the villages which are clustering round the southern railways. It is only when you leave the railroad at York, and push on into the Eastern Division towards the Yilgarn Fields and Coolgardie, that you must prepare yourself for hardship and difficulty, desert and thirst, and adventure. And yet the difficulties are none so insuperable; while the fortune that rewards them—well, for the fortune, we shall see.

PERTH,

And the Surrounding District.

THE new-comer in Western Australia must land either at Albany or at Fremantle. In either case he will be wise if he come direct to Perth—there to settle, or at least to make preparations for his ultimate destination.

"Perth, the capital of the Colony," says the *Year-book* for 1891, "(latitude 31° 57′ 24″ S. and longitude 115° 52′ 42″ E.), is pleasantly and picturesquely situated on the banks of the Swan River, about 12 miles in a north-easterly direction from the port of Fremantle, which is in latitude 32° 03′ and longitude 115° 45′."

The estimated population of Perth on Dec. 31st, 1891, was 10,040.

"**ALBANY** is situated on the north side of Princess Royal Harbour, King George's Sound, about 254 miles by road, and 352 miles by rail from Perth. The harbour is the finest in the southern portion of the Colony, and is the port of call for the mail steamers between Europe and Australia; it is now being fortified, with the intention of making it an Imperial naval coaling depôt. The town has grown rapidly since the opening of the Great Southern Railway, which connects it with Perth."

"**FREMANTLE** is the chief port of the Colony, and is situated at the mouth of the Swan River, about 12 miles W.S.W. of Perth, with which it is connected by road, railway, river, telegraph and telephone. Extensive

harbour improvements are now in course of being carried out." Pop. 7,000.

"Perth," as a local handbook puts it, "is one of the most beautifully situated cities in Australia. It slopes gently down to the edge of the lovely Swan River, and of this river the people of Perth are almost as proud as are those of Sydney of their harbour. Along the base of the city is a fine recreation ground, much of which has been reclaimed from the river, and it is intended to widely extend it by the process of reclamation. Here the leading cricket and football clubs of the city indulge in those games, which form so large and important a portion of our lives under these sunny Australian skies," etc. . . . "A mimic fleet is moored in the river facing the ground. These are the boats belonging to the members of that select and sportsmanlike institution, the Royal Perth Yacht Club. . . . The regattas on the river are as picturesque as they are often exciting," etc. . . . "Close by the Recreation Ground are the Botanical Gardens, prettily situated and well laid out grounds." κ.τ.λ. . . . "On the top of the picturesque hill with the unromantic name of Mount Eliza, which overhangs the river, are the Rifle Butts; also a People's Park" (not yet laid out). . . "The public and other chief buildings of the city are far from unimposing. Government House is indeed one of the handsomest and most beautifully situated gubernatorial residences in Australia, its minarets or towers giving it a picturesque, not to say imposing appearance. The front of the house faces towards St. George's Terrace—a handsome thoroughfare, resembling the Continental boulevards, being broad and bordered on each side by leafy lilac trees, which are gratefully green and refreshing to the eye. In this thoroughfare are situated the Public Offices, including the Post Office,

a large block of buildings, erected at a cost of nearly £30,000; the St. George's (Anglican) Cathedral—a handsome Gothic structure, recently erected at a cost of £17,000; and the banks and insurance offices. Prominent among the latter . . . " and so on. "The main business street of the city is called Hay Street, and its continuation, Howick Street. This thoroughfare, though somewhat narrow, is about two miles in length, and contains several handsome shops and places of business. One of its principal buildings is the Town Hall, adjoining which is the building in which the Legislative Assembly temporarily transacts its business." But why continue these bald categories, which are (for different reasons) perfectly useless both to those who have and to those who have not lived in Perth? Let us take two more paragraphs from our guidebook friend, and have done. "Social entertainments are frequent, and Perth is fortunate, at the time of writing, in having a Governor who sets an example of hospitality to the community; we refer to Sir W. C. F. Robinson. Balls, paper-chases, kangaroo hunts, and picnics down the beautiful river or up among the Darling hills, are of frequent occurrence, and these are most enjoyable. Nearly all the chief public officials live in Perth, and owing to the large number of representatives of old English families that settled in the Colony in its early days, the tone of society is distinctly good."

Finally (for the purpose of comparison), "Albany, which has a population of 2,700, has a fine harbour (King George's Sound), and is at present the first calling point in Australia of the mail steamers from England and the East. In addition to the P. & O. and Orient Companies, the Messageries Maritimes steamers also call at King George's Sound. Albany is a very picturesquely situated

town, and has a very energetic and thriving population. It has an excellent Town Hall, and its streets are wide and well laid out, while steps are being taken to light it with the electric light. It is the depôt of the Great Southern Railway, which is the property of the W.A. Land Company, and this fact has largely conduced to its growth and prosperity of late years. The Land Company, in addition to the railway station at Albany, have built a fine jetty, 700 feet long. Albany is to be one of the fortified ports of Australia, owing to its importance as a coaling station and a *point d'appui*, and, at the time of writing, the fortification works are being constructed. It is a favourite health and summer resort, owing to the exceptional mildness and geniality of its climate."

So much for the customary guidebook-isms, which I am glad to get done for me at second hand. With Albany as a sanatorium or a coaling station we are not concerned. For the rest, it has changed very little since I first knew it, as a chance wayfarer by the P. & O., twelve years ago. It still is, as it has always been, the sleepiest of all sleepy towns, with untrodden sandy streets, a long parade facing the glistering Sound, two jarrah-wood jetties, and half a dozen public-houses dozing in the sun. Presently the farmers in the back country will begin to ship their produce. Then it is clear that Albany must awake. But at present, even the hundreds of diggers who are arriving weekly from the eastern colonies have had no perceptible effect upon business. They have not even sent up the price of pickaxes. And they bring their own swags.

Very much the same is to be said of Fremantle: with the difference that the streets, in this case, were once macadamized; that there are many more hotels, and that there is always a steady (though not a boisterously

evident) trade going on with the ports up coast to the north.

Perth is certainly a spacious and (in its way) a handsome township, which reminds one of many other half-forgotten corners of Great Britain which have had their day, or are biding their time. It is like what Durban was before the Zulu war; but not so hopeless. It is like Eureka and Arcata, the lumber settlements of North California; but not so picturesque, nor, it may be added, quite so appallingly remote from the tracks of commerce. The buildings—Government House, the Town Hall, the disused Pensioners' Barracks, and the rest—built in the old days, by convict labour, of large, honest-looking bricks, show a good deal of old-world taste; and even those erected in later times are better, because less pretentious, than the superfluous piles of the eastward colonies. The town is really in Hay Street, with St. George's Terrace next, and parallel thereto: the one for business, the other for show. Where these two are crossed (at right angles, of course) by the street which runs up from the railway station and down the slope again to the river, stand the Town Hall and the Government Offices. At the points of intersection gather the loafers—diggers on the look-out for a mate, farmers in the intervals of business (market days, stupidly enough, are not yet invented in W.A.), and all the ne'er-do-weels of a lazy population. The whole of this block, in fact, is the club of the lower classes; even as, at the bottom or river end of the street, the Weld, pleasantest and most exclusive of several well-known clubs in the Colonies, receives the squatters, the bureaucrats, and the ever-increasing body of globe-trotters.

Houses and shops are mainly of the same solid brick, of the simplest architecture which can be applied to two

stories, and with the ordinary Australian corrugated iron verandah. Fortunately, however, many of them avoid the everlasting tin roof, substituting jarrah-wood shingles, which have most of the advantages, including, at a distance, the appearance of slate. Also, instead of the unsightly split posts-and-rails which disfigure even the St. Kilda Road in Melbourne, you have everywhere neat palings, still of jarrah, round the unoccupied allotments; so that the east end of St. George's Terrace, which does duty for the suburbs of Perth, has none of the dishevelled and bush-like appearance of most of the outskirts of Australian towns. Indeed, after nightfall, it might almost pass for, say, a road in Park-town, at Oxford.

Living in Perth is cheap, and, on the whole, moderately good. The hotels are rough, but clean, and you may live in the best of them for thirty shillings a week, though the new-arrived digger must pay, in his humble coffee-house, at least a pound. The waiters at the club, and many of the cooks and servants, both in hotels and in private houses, are Chinese; so the cooking is always at least fair.

The variety of Orientals (by the way) who settle in the Colony is extraordinary. Not to speak of the medley of native divers—Malays and the like—who work the pearl fisheries of the north, you shall find Hindoo hawkers and Afghan camel-drivers in our remotest back-blocks; while in Perth itself there are, besides the Chinese market-gardeners and laundry-men, several stores kept by Indian firms, and, in particular, quite a number of small Cingalese traders in moonstones, stuffs, and cheap jewellery. Such is one result of the *pax Britannica*, under which the whole border line of the Indian Ocean, from Zanzibar even unto Perth, is becoming a field for the enterprise of Her Majesty's Indian subjects.

The singular want of enterprise of the West Australians

themselves is evident even in their diet. You must drink Dublin stout and Scotch whisky and eat Normandy pippins at the hotels, though the natives never tire of boasting the merits of their local fruit and wine. Both wine and fruit, indeed, are excellent, and to be obtained by him that cares for them. The former particularly—though, like most Australian wines, it is hopelessly unlike claret—is quite good enough for the unprejudiced person who (failing claret) is content to fortify his laxity by remembering the vintage of the Mediterranean, the tastes of Theocritus, of Horace, and of the Middle Ages—Falernian, Malmsey, and, for that matter, the good *rezino* which Greeks of the present day are too stupid, or too wise, to give to the foreigner. Olives, too, are grown here, of a quite remarkable quality, though nobody eats them. The mutton, for its part, is admirable. And who shall sing the delicate flavour of the vegetables, grown on a soil of pure sand (for choice), with the mere aid of sun and water, and no manure! After all, a man of discernment may be as comfortable in Perth as ever that eternal Mr. Stevenson in his Samoa; for if we have no dusky, flower-garlanded South Sea Island *soubrettes*, in compensation we have no tribes of cannibals in our back gardens. But what are mutton, olives, and wine to a generation which prefers its potato-pie and its Bass?

Potatoes, by the bye, which are in N.S.W. £5 a ton *f.o.b.*, and for which in New Zealand they are glad to get 25*s.* a ton on the wharf, are sold at Busselton, down the coast here, for £8; and most of the farmers are too lazy to grow them. But this is of a piece with the whole character of W.A., which, with thousands of acres of excellent wheat land lying uncropped, has always been in the habit of *importing* a large proportion of its wheat supply from Adelaide.

The chief amusements in Perth are, for the elect, a fortnightly paper-chase, and for the commons the bell-man and the Salvation Army. [That there should be a bell-man only shows—what I shall several times have to repeat—that West Australia is not in Australia at all.]

There are concerts, of course. To your true Colonial, dissipation spells Offenbach, with the stalls at five shillings. But in the eastern colonies times are changed. Comic opera is too costly, and the harmless citizen solaces himself with a concert, or rather with three concerts a week, at the Town Hall, which is the real reason why life in Melbourne has become intolerable. In Perth, where times have never changed, the concerts are undertaken by amateurs, and the nearest approach to a play is —theatricals at Government House. The outside world spends its unsophisticated leisure in leaning against a post, a bar-counter, or the rails on the football ground. For West Australia is not a horsey country; though to say so to a West Australian is to make an enemy for life. The streets of Perth are not as the streets of Sale or Maffra. In the Gippsland towns the local youth is for ever cantering round the street corners. In Perth he congregates at the crossing of the ways, and gazes down four empty vistas of sand.

The Timor, the local pony, an overgrown Exmoor, is useless for most purposes, his merits being staying power and an extraordinarily complaisant digestion. He sells for about thirty shillings, but nobody rides him. The side walks, at present, are full of strangers; but the carriages of Perth, in which ladies go shopping, number about two low phaetons and a dog-cart.

There is a circulating library, at which I have heard inquiries for Balzac, Dumas, and Pierre Loti. But that is because the proprietor has laid in a stock of cheap

translations; and his other literature has never risen above Harrison Ainsworth. As for Mr. Barrie, his very name is unknown.

On the whole, Perth, to a civilized Briton, is very much what America was to Poe,—a savage country lighted by gas. But there is always one comfort: it is no worse than New York; and it is considerably better than the rest of Australia. It is a shock, indeed, at one of the still-recurring concerts, to pass from the good-natured imbecilities round to the face of the Governor—informed, cultivated, in touch with the ruling English caste. But at all events we have here no turbulent democracy. Every one, of course, is socially-democratic, on the surface. You must "shout" for all comers, and drink with the barman. But of the 62,000 inhabitants of the Colony, less than half are enfranchised citizens; and there are constituencies, up north, of twenty voters.

Parliament sits, at most, two months in the year; and, during that time, only on certain days in the week. The members, unlike other Australian legislators, are unpaid; and those of them who represent country districts insist on spending the week-end at home. There is no Opposition; the collective wisdom occupies itself with criticising, and backing, Sir John Forrest's efforts to build railways, encourage land settlement, and generally make the best of the slowest of all possible colonies. The Premier's brother, by the way, is Mayor of Perth; and for the other public offices, are they not filled by those intelligent oligarchs, the Six Families of W.A.? But we shall best arrive at the real "note" of the place by observing the bitterness with which it fills the democratic or latter-day visitor from the other colonies.

One Mr. P. P. J. Rowe lately contributed two articles dealing with Western Australia to *The Voice*, an Adelaide

paper. "In no province of the group," he says with virtuous indignation, "is 'society' hedged round with more rigid exclusiveness than in the 'benighted' West, where the cry is more 'Who are you?' than 'What are you?' The little coterie that rules society in the western Colony apes the British more than the Australian society code, and its petty tyrannies are sometimes amusingly extravagant to those outside the pale of the 'six families' and their multitudinous 'connections' of lesser light. There are several really first-class families, whose antecedents are of what is known as 'the very best' in the old country, but the majority of the heads of society belonged to the respectable English or Scotch or Irish middle class, with a dash of the alleged 'lower orders' thrown in here and there, as was the case with the early history of society in other parts of Australia. . . . From all which it will appear that, as far as social order or caste is concerned, life in West Australia runs in a similar channel to that of the social world of the other provinces. It is as difficult, if not more so, to obtain a foothold in the 'Weld Club' of Perth as it is to become a member of the Adelaide Club. This exclusiveness is carried even into the amateur musical and theatrical life of the place, and no person lower in the social scale than a bank clerk or a bank clerk's sister is allowed to cater for the public amusement in the Perth Musical Union and the Perth Amateur Operatic Society. The vulgar public are allowed to patronise the entertainments, but no recruits are taken from the ranks except a heavy forfeit be paid, and the aspirant, it it be a lady, enamelled by strange devices.

"The wealth of many of the leading families was acquired in the good old days when money among the masses was scarce, and the 'truck' system reigned

supreme over farmer and artisan and labourer alike—the days when honest labour of nearly every description was under the thumb of the truck shopkeeper, and men received their hard-earned wages in shoddy goods. It was only during the last few years that this infamous system of barter was generally exchanged for the actual wage system, and even now in some parts of the Colony it defrauds the labourer of his hire, and enriches the usurious shopkeeper. By means of this vile traffic some of what were once the best farms in West Australia came into the possession of many of the storekeepers, some of whom are now dignified by the title of merchants. Farmer customers were deliberately encouraged in the purchase of luxuries and useless articles, and when the end came, their lands and labour and goods and chattels passed into the hands of the indulgent robber, who retained the lands idle for speculative purposes. Hundreds of thousands of tons of sandalwood passed by means of the truck system of labour into the same hands, and were exported at boom prices to the idol-makers and worshippers of China. Until recent years the bulk of the shopkeeping business of the community was transacted by, and through the old identities, who monopolised the money power of the Colony. Of late, things have changed, and business men from Eastern Australia are gradually gaining ground in every town and settlement."

Local politics come in for strong censure, and in the wholesale denunciation the Press is included, and feeling reference in made to papers which have failed. "The fiscal policy of the country," says Mr. Rowe, "is a bastard form of protection, but the near approach of a fiscal war will probably split up the dull and flabby harmony hitherto existing between the members of the Ministry and their various hangers-on—a harmony which has as

its basis *the discouragement of land settlement* and land taxation. At the present time in West Australia a proposal to tax unoccupied and unimproved land would be received in Parliament with about as much sympathy as would the proposals of the Nihilists in St. Petersburg by the Czar. The wail of the landocrat is heard throughout the land, and *his cry is for* '*population*,' to further add to his unearned increment and glut the labour market. The idea of levying an income or even absentee tax would be simply laughed at in Parliament, and a proposal for the payment of members would receive the support of about three Assembly members, and the rest would boil over with patriotic indignation at such an attempt to democratise 'our Colony.' Members representing vast landed and propertied interests prefer to draw thousands indirectly from the State by virtue of their immunity from land taxation, to drawing a few paltry hundreds from the Treasury counter. . . . To persons of genteel occupations and to manual labourers who have no capital upon which to subsist for a time, West Australia is about the worst place they could fix their minds upon. On account of the distance and the rates of fares, it is a veritable man-trap to those who would have little difficulty in migrating in other parts of Australia, whilst the cost of living is out of all proportion higher in West Australia than in any other province.

"The progressive policy of South Australia and New Zealand is only mentioned by the party in power in Western Australia with horror and loathing, and referred to by the Government Press as infernal 'paternal State despotism.' But, notwithstanding, Western Australia for other reasons deserves to be called the 'coming Colony.'

"The rapidly increasing population inflowing from

Eastern Australia is making itself visibly felt in the metropolitan centres of the Colony, in associations and trades unions, and no doubt with an extended franchise and a wider scope of Parliamentary selection, the 'other side' element would be powerful enough to change the whole aspect of the political life of the place. Several democratic or liberal weekly journals have been frozen out by the conservative party, which hitherto held the monopoly of the advertising power in their hands, and used it either as a lever to corrupt, or a weapon to altogether efface straightforward journalism. But the time is rapidly coming when the demand for a fearless daily paper in the metropolis must be supplied; but the supply both in brains and capital must come from an outside source, so that no compromises need be made with the local prejudices, purposely festered by the two subsidized dailies to exclude competition. In conclusion, I may state that as regards Imperial politics, the leaning of the dominant party in West Australia is towards Imperial federation. In fact, the old identities are much more English than Australian in sympathy, and always refer to the rest of the group as 'the Colonies,' after the British fashion. All the 'leading people, doncherknow,' are always in readiness to squeak out a bar of the English National Anthem in order to drown any cry for Australian national aspirations, which are looked upon as in 'bad form,' either in public or private. The ghost of Downing Street still sits in high places in the western land of the swan."

The italics are mine. They go to show, at all events, the state of Mr. Rowe's mind. The general impression of his report will not be unpleasant to the Englishman. Its facts are fairly accurate. Western Australia is poor, and till lately was so poor that barter was the only means

of trade; she is governed by a discreet oligarchy; and with the influx of new settlers it is possible that, some time, an Opposition may show itself. On the other hand, living is *not* expensive; and the facilities for settling on the land are many, and, with a Homestead Bill in prospect, are likely to be more. It is true, however, that professional men and clerks are not wanted in the Colony; that diggers and prospectors will be wise to land with not less than £50 in their pockets; and that a capital of, say, £1 per acre is required by the intending farmer (see chapters on Agriculture, Immigration, and the Mines). One thing is universally admitted: that "new chums" from England are more cordially received by all classes than arrivals from the eastern colonies. Public sentiment, here, jumps with the feeling in California, where Englishmen and Australians are more popular than Yankees. For the rest, the Colony, the Premier said lately (July, 1893), in a speech to his constituents, was never more prosperous. Crops, stock, and vegetables have had everything in their favour; new mineral finds are being made every day, and land values are steadily rising. No "boom" is to be expected or feared; but the small investors of Melbourne and Sydney, forced to distrust the banks, are buying up land lots in Perth; and the Earl of Carnarvon, and other British capitalists, have made heavy purchases in Hay Street and St. George's Terrace.

"The rateable value of property in Perth increased from £26,000 per annum in 1880, to £67,000 in 1887, and £82,000 in 1890. A new valuation has been ordered by the City Council, and, having regard to the low rate of past valuations, and the increase of population which is likely to follow from the establishment of a Responsible Government in the Colony, the valuable discoveries of

gold which have recently been made, and the initiation of a vigorous policy of public works, it may be expected that within five years the rateable value of the city property will not be less than £120,000 per annum, and may reach £150,000."

Public Institutions.

The Royal Agricultural Society of Western Australia.
Royal Perth Yacht Club.
Weld Club.
Metropolitan Cricket Club.
West Australian Cricketing Association.
West Australian Rifle Association.
Metropolitan Rifle Volunteers; Perth Artillery Volunteers; Fremantle Rifle Volunteers; Fremantle Artillery Volunteers.
Metropolitan Fire Brigade.
Freemasons (five lodges).
Fremantle Club.
West Australian Turf Club.
Perth Musical Union.
Perth Amateur Operatic Society.
Western Liedertafel.
Fremantle Musical Association.
Perth Horticultural Society.
West Australian Dog and Poultry Society.
Perth Working Men's Club.
Perth Working Men's Institute.
Public Library, Perth.
Perth Museum.

The Perth Benefit Building, Investment and Loan Society is established under the Friendly Societies Act,

1863, for the purpose of raising, by weekly or monthly subscriptions, a fund with which to make advances to members of the value of their share or shares, either on loan, or to enable them to erect, repair, or purchase houses or other freehold or leasehold estate to be mortgaged to the Society for the purpose of securing the weekly or monthly repayments.

There are in all about twenty Friendly Societies in the Colony, with about four thousand members.

Charitable Institutions.—There are eleven Hospitals and two casualty wards distributed amongst the principal towns of the Colony. Perth has two Poor Houses, in which old and infirm paupers are supported by the State. These in 1891 numbered 169. Other paupers receive out-door relief. It is calculated that during 1891 the daily average of paupers was 414. There is a Lunatic Asylum at Fremantle, containing 145 inmates. The State also subsidizes Native Institutions for aboriginal and half-caste children, of whom 37 were provided for during 1891, and there are also Roman Catholic and Church of England Orphanages, which during 1891 contained 197 inmates.

There has been some talk, as in the other colonies, of an "unemployed" question; but with artisans, labourers, and miners in great demand all over the Colony, and land going begging to boot, there is small chance of this "difficulty" becoming serious.

Literary Institutions.—All over the colonies, and in Western Australia with the rest, there are Mechanics' Institutes, which are allowed a small annual grant for their upkeep by the Government, in all the principal towns. These are well supplied with both books and newspapers. Members who wish to make use of the Circulating Libraries in connection with these Institutes

pay a small annual subscription, but all visitors are allowed free use of the periodical literature. These institutions are the real clubs of the lower classes and the country districts.

OTHER PRINCIPAL TOWNS OF WESTERN AUSTRALIA.

GERALDTON is the outlet, through its port, Champion Bay, for a very large pastoral, agricultural, and mining district, and is the nearest point to the Murchison Goldfield. It has a population of about 1,200, and is about 290 miles from Perth. It is at present reached either by road or sea, the steamers of the Adelaide Steamship Company frequently plying between Fremantle and Champion Bay. It has two excellent hotels, a club, a masonic hall, and some important places of business. It is connected with the Northampton lead and copper mines by railway. The Midland Railway, which is open from Geraldton for some 150 miles southwards, and from the Guildford end to Gingin, a distance of 40 miles, will, when completed, join with the rich and extensive gold-finds on the Murchison in materially increasing the prosperity of the district.

BEVERLEY is a small township on the Avon, about 110 miles from Perth. Here the Eastern (Government) Railway joins the Great Southern Line, belonging to the West Australian Land Company. Round Beverley, says the *Year-book*, there is excellent agricultural land.

BUNBURY is a seaport on the western coast, about 107 miles south of Perth. It is reached by sea, and also by rail from Perth. There is excellent land near Bunbury, and an abundant rainfall. It is the port for the

tinfields, and very fair coal has been discovered about thirty miles distant, on the Collie River.

BUSSELTON, southwards from Bunbury, was, till lately, purely an agricultural and pastoral centre; but during the last four years it has had a growing export trade in tin.

GINGIN is a small agricultural township on the Midland Railway, about 50 miles north of Perth, and the centre of a rich agricultural district.

GUILDFORD is situated in the centre of a thriving agricultural district, at the junction of the Swan and Helena Rivers, about nine miles east from Perth. Here the railway starts for Geraldton.

KATANNING is a new township on the Great Southern Railway, situated half-way between Albany and Beverley. There is excellent agricultural land in its vicinity, which is being largely taken up.

NEWCASTLE is a small agricultural town on the Avon River, about 50 miles east of Perth. Round Newcastle there is some of the finest land in the Colony, especially adapted for the growth of cereals, vegetables, fruit, and wine.

NORTHAM is a thriving little township situated about 18 miles south of Newcastle, on a branch line of the Eastern Railway. It is the centre of an excellent agricultural district, and is the starting-point of the railway to the Yilgarn Goldfields, now under construction. (The first section of 72 miles will probably be opened forthwith.)

ONSLOW, situated at the mouth of the Ashburton River, is the port of a rich and extensive pastoral district. Gold has also been discovered on the Upper Ashburton River.

PINJARRAH is situated about 54 miles south of

Perth, on the banks of the Murray River, on the main road between Perth and Bunbury. The district is admirably adapted for agriculture, and especially fruit growing; and when transport is cheapened and facilitated, as it shortly will be, by the advantage of railway communication with the capital, this industry should prove highly remunerative. There are already in the district several fruit-preserving manufactories, where excellent goods are turned out, and where fish preserving is also carried on.

ROEBOURNE is the chief town of the North District, where a large proportion of the principal sheep stations of the Colony are located. Recently, also, gold discoveries in the neighbourhood, at Pilbarra and Nullagine, have given an impetus to the trade and prosperity of this district, counterbalancing perhaps, to a certain extent, the heavy losses incurred during the terrible drought of 1891.

VASSE is a small seaport town, about 30 miles south from Bunbury. Here also, as throughout the south-western portion of the Colony, there is some very excellent agricultural land, which it only requires the extension of the Bunbury railroad to develop. The climate is cool, the rainfall abundant and regular, and all English fruits, such as apples, pears, cherries, plums, gooseberries, raspberries, etc., thrive luxuriantly.

YORK is at present the largest agricultural centre of the Colony. It is situated in the valley of the Avon, about 60 miles from Perth, where the railway to Albany reaches the extreme easterly point of its bend. Here, at present, is the starting point of the line of coaches for the Yilgarn Goldfields and Coolgardie.

The cost of living in these towns is not expensive, and the taxation by the municipal authorities is moderate; while they are, as a rule, very well kept.

PASTORAL AND AGRICULTURAL.

The Land Regulations, which came into force March 2, 1887, were amended by an Act which passed January 13, 1893. A Homestead Bill, on Canadian lines, is contemplated; but it is impossible at present to foresee its conditions.

The Colony, as we have seen, is divided, for the purposes of the Regulations, into six divisions: the Gascoyne, N.W., Kimberley, Eucla, Eastern, and South-West.

Crown Lands are managed by the Commissioner of Crown Lands. The total area of the Colony is 678,400,000 acres, out of which 5,179,147 acres had been alienated up to the end of 1891, thus leaving 673,220,853 acres available for occupation.

By the terms of their contract with the Government, the West Australian Land Company has a subsidy of 12,000 acres selected east and west of the Great Southern Railway within a belt 40 miles on each side of it; consequently (the distance between Albany and Beverley, the Company's railway terminus, being 242 miles) nearly 300,000 acres are in the hands of this corporation, and are for sale on fairly easy terms. The thriving settlements of Gledhow, Eastwood, Mt. Barker, Tenterden, Cranbrook, Broomehill, Katanning, Wagin, Narrogin, and Pingelly, are all on the Company's line of railway; and an Agricultural Area containing some splendid (Government) land has been thrown open for selection at Katanning.

The concessions granted to the Midland Railway Company amount to 3,360,000 acres; and the property of this Company, also, contains most valuable agricultural, pastoral, and mineral lands.

CROWN LANDS.

The quantity of land held under Conditional Purchase from the Crown at the end of 1891 was 461,224 acres; and for pastoral purposes 105,131,075 acres.

Crops and Stock.—Most of the European grains, fruits, and vegetables can be cultivated and brought to a high state of perfection in the southern part of the Colony. The soil in parts is sandy, but this sand when irrigated is highly productive. There is a large extent of light friable soil suitable for all kinds of crops. The climate, as regards agriculture, is favourable, although at times subject to bad seasons. The shortest day is in June, and midsummer comes in December; with August commences the spring, and the winter begins in April.

Sheep, horses, and cattle thrive well throughout the Colony, more especially in the northern parts, where the pasturage is extensive and very nourishing.

Town and suburban lands are sold by public auction at an upset price fixed by the Governor in Council.

Other lands may be obtained—(1), (for agricultural purposes) by purchase, with deferred or immediate payment; (2), (pastoral lands) by lease.

The following particulars are taken from the Government *Year-book*, and corrected up to 1893.

THE SOUTH-WEST DIVISION.

This Division contains 67,000 square miles, and comprises, as regards climate, the most temperate part of Western Australia. It was the portion of the Colony first settled, and in it about four-fifths out of the whole population reside.

The south-western corner is heavily timbered, and is well watered and capable of supporting a large popula-

tion. It is generally an undulating country, and, with the exception of the Darling Range and a few other small ones, has no extensive mountain ranges.

Numerous rivers enter the coast within this Division, but they are all very short, and merely drain the country within 100 miles of the coast.

The work and expense of clearing the land has proved very laborious and very great; but, when once the ground is properly prepared, a good crop can be depended upon.

In its natural state it takes about ten acres to keep a sheep, but with clearing and improving it will keep a sheep to two acres, and in choice places a sheep to one acre.

The climate is very good, and the rainfall varies from 19 inches in the northern and 15 inches in the eastern, to 43 and 32 inches respectively in the south-western and southern portions of the Division.

The average temperature in the north is about 66°, to the eastward 63°, on the west coast 63°, and on the south coast 58°.

The rent required by the Crown per 1,000 acres is £1 per annum.

There are four modes of obtaining land by conditional purchase in the South-West Division: —

1. By deferred payment with residence, within agricultural areas.
2. By deferred payment with residence, outside agricultural areas.
3. By deferred payment, without residence, either within or outside of agricultural areas.
4. By direct payment, without residence, either within or outside of agricultural areas.

Agricultural areas of not less than 2,000 acres may be

set apart by the Governor in Council—the maximum area to be held by any one person is 1,000 acres, and the minimum 100 acres; the price is fixed by the Governor in Council, at not less than ten shillings an acre, which is the present price, payable in 20 yearly instalments of 6*d.* an acre, or sooner if the occupier choose. Upon the approval of any application, a license is granted for five years. Within six months the licensee must reside on some portion of the land, and fence in the same with a good substantial fence during the term of his license. If these conditions are fulfilled, a lease is granted to him for 15 years. After the lease has expired, or at any time during the currency of the lease, provided the fence is in good order and that improvements have been made equal to the full purchase money, and further provided the full purchase money has been paid, a Crown grant will be given.

Outside agricultural areas land may be purchased on deferred payment with residence, by free selection, otherwise subject to all the conditions required within agricultural areas, as stated in the preceding paragraph.

Under the third mode of purchase, the applicant is subject to all the conditions imposed under No. 1, except residence, but he has to pay double the price, or £1 per acre, in 20 yearly instalments of one shilling per acre.

By the fourth mode, land to the extent of 1,000 acres and not less than 100 within an agricultural area, and not exceeding 5,000 acres outside an agricultural area, may be applied for at a price (at present 10*s.* an acre) to be fixed by the Government. Within three years the land must be fenced, and within five years 5*s.* an acre spent on improvements.

[Improvements are to consist of wells of fresh water, tanks, reservoirs, fences, sheds, buildings erected for farm,

shearing, or station purposes (not being dwelling-houses), cultivation, clearing, grubbing, draining, ring-barking, etc.]

For garden purposes small areas of not less than 5 acres nor more than 20 acres (except in special cases), at 20*s.* per acre, may be purchased on the condition that within three years the land shall be fenced and one-tenth planted with vines, fruit trees, or vegetables.

Pastoral lands are granted on lease, which gives no right to the soil or to the timber, except for fencing or other improvements on the lands leased, and the lands may be reserved, sold, or otherwise disposed of by the Crown during the lease.

The following are the terms of pastoral leases in the several Divisions; all leases expire on the 31st December, 1907. *The rental named is for every thousand acres.*

South-West.—In blocks of not less than 3,000 acres, at 20*s.*

Gascoyne.—Not less than 20,000 acres, 10*s.* per annum.

Eucla.—20,000 acres: 10*s.* for that portion of the Division situated to the west of Point Culver; east of Point Culver, 5*s.* per annum.

North-West and *Kimberley.*—50,000 acres if on a water frontage; otherwise 20,000 acres: 10*s.* per annum.

Eastern Division.—20,000 acres: 2*s.* 6*d.* per thousand acres for first 7 years; 5*s.* for the remainder of lease.

THE GASCOYNE DIVISION.

This Division contains an area of 133,000 square miles.

The country is, in its present state, only suitable for pastoral purposes, and has been proved to be healthy for all kinds of stock. It is fairly well watered, and is capable of much improvement by fencing the land and

conserving and sinking for water. It is generally a very flat country.

Included in this Division is the rich Murchison Goldfield.

The climate is good, though the heat is great in the summer.

The Murchison and Gascoyne Rivers, and their tributaries, drain this important Division.

THE NORTH-WEST DIVISION.

The North-West Division contains 81,000 square miles. It is a rich pastoral Division, consisting of well-grassed plains intersected by bold ranges and hills covered with triodia. It is capable in the best portions of carrying a sheep to two acres.

It is fairly well watered, and stock thrive and increase satisfactorily. The Pilbarra Goldfield is within this Division.

THE KIMBERLEY DIVISION.

The Kimberley Division contains an area of 144,000 square miles.

Sheep and cattle, especially the latter, thrive well in this Division, and in the future it is likely to be a great source of a meat supply for export or otherwise.

The climate is fairly good, though trying, on account of the heat. The land on the alluvial plains is very rich, and, with irrigation, suitable for tropical culture.

Land rents are similar to those in the North-West Division.

THE EUCLA DIVISION.

This Division contains 59,000 square miles, and is almost unoccupied. That portion eastward of Point Culver is very badly watered, and, with the exception of a few places along the coast, it is altogether destitute of permanent water.

The country between the Fitzgerald River and Point Culver is fairly watered and fairly grassed.

The country north of Eucla is an elevated plateau, splendidly grassed and well suited for stock if permanent water could be obtained.

With the exception of a small fringe along the coast this Division is unoccupied, and, unless water is conserved, must remain so.

THE EASTERN DIVISION.

This immense Division contains 576,000 square miles, and comprises the interior of Western Australia.

Very few persons live in the Division, and these are for the most part on the Yilgarn Goldfields.

There are no rivers within this Division.

MISCELLANEOUS.

Holders of 200 acres or less in fee simple may obtain leave to cut down timber on unimproved Crown lands for domestic uses, for buildings, and for fences, etc.

A miner's right, entitling him to mine for gold, costs 20s. a year. For mining leases, etc., see Regulations.

The Land Titles Act, known as the Torrens Act, affords an easy and cheap registration of titles and other facilities for dealing with land. All Crown grants are issued under its provisions.

Report of Lands and Surveys Department for 1892.

Leases and Licenses under the Regulations of 1887.

Conditional Purchases.

"Although there is a falling off under the sub-head of Pastoral Leases, owing principally, no doubt, to the depression in the northern part of the Colony caused by the late drought, the large increase in the area of land taken up under the Conditional Purchase clauses of the Regulations may be looked upon as the most gratifying feature of the past year's business to which I have to draw attention, evidencing, as it does, the increased settlement of the land for Agricultural purposes.

"The total area taken up during 1891 under the several Conditional Purchase clauses of the Regulations was 85,800 acres, and the area held on 31st December, 1891, was 241,763 acres; during 1892 an area of 122,937 acres of fresh land was taken up under 539 separate licenses, and at the end of the year 1,563 licenses, comprising 346,661 acres, were in existence, showing that a very small percentage of those previously held were abandoned during the year.

"The most marked increase was under Clause 46 of the Regulations, the figures being 116 licenses, comprising 32,512 acres, as compared with 32 licenses, comprising 7,050 acres, for 1891.

"All land under Clause 46, as well as some of that under other clauses, is within the different Agricultural Areas that have been declared, so it speaks well for the system of survey before selection.

"The actual quantity of land so selected during the year

was as follows:—Under the Residence Clause, 32,512 acres; and under the Non-Residence Clause, 2,980 acres, or 35,492 acres in all."

Homesteads Bill.—The provisions of the new Homesteads Bill are not yet (August, 1893) settled. But its main feature will be to offer (without superseding the above Lands Regulations) a free gift of 160 acres of land to any *bonâ-fide* settler, under certain conditions, not very onerous, of enclosure and cultivation.

DESCRIPTION OF THE AGRICULTURAL DISTRICTS OF THE COLONY.

In the Final Report of the Commission of Agriculture, published in 1891, there is much information which is of the utmost value to the intending farmer. The country round Beverley, York, Northam, and Newcastle is undulating, and covered alternately with timber, known as raspberry jam, York gum, a little wattle, and mimosa shrubs, having belts of ironstone and granite, with considerable tracts of more or less rich chocolate and clay soils—friable and easy of general farm treatment. As in most countries, the character of the soil changes somewhat on the banks of the water-courses. These districts are watered generally by the Avon, brooks, and by wells at varying depths of 20 ft. to 70 ft. The average rainfall of Beverley is 14·06 in.; York, 17·43 in.; Northam, 15·21 in.; Newcastle, 18·79 in.; and the cost of clearing in these districts is very similar, as their character is somewhat the same, and ranges from 25*s.* per acre up to £3 and £4.

The districts of Guildford, the Swan, and Gingin embrace a belt of country differing materially from the above; the agricultural lands of Guildford and the Swan, including the Canning, consist principally of rich river deposits extending along flats on either side of the river Swan, from below Guildford, until it becomes lost in the Darling Range. The extreme fertility of the flats is apparent to the most casual observer. Back from the river on the banks there is a formation of reddish friable loam, gradually merging, as it extends into the plains, into a yellow clay and sandy grit: the timber on the rivers and lowlands being flooded gum and wattle, on the uplands red gum, jarrah, and wando; in many parts the wando prevails. At Gingin the character alters slightly, having ridges mixed with rich soil, sandy loams, and limestone formations with ti-tree swampy flats, as the country extends towards the Moore River. These districts are watered by the Swan, the Helena, Ellen Brook, Gingin Brook, etc., and water is obtained by sinking at from 25 ft. to 60 ft. The rainfall at Guildford and Swan is 32·37 and 28·20 in. respectively; at Gingin, 30·53 in. The average cost of clearing varies from £2 per acre to £6 and £7.

The districts of Wandering, Murradong, the Williams and the Arthur Rivers contain country in many respects similar to that around and near Northam; more open in its character, and more undulating; at periods of the year heavily grassed with silver grass. The soil is of a reddish chocolate colour and very friable on the ridges, alternating into clayey flats and grit. The timber generally is raspberry jam, wattles, York gum, white gum, and bastard oak; the country round and about Wandering and Murradong being perhaps more thickly wooded than on the Williams and Arthur Rivers, and much richer in character and general

fertility. These districts are watered by the Arthur, Williams, Beaufort, and Bannister; and by sinkings at depths varying from 30 to 50 ft. The rainfall of the Williams is 22·81 in.; of Wandering, 23·56 in.; and the average cost of clearing is from £3 to £5 per acre.

The Upper Blackwood, Jayes, Bridgetown, and Preston River, differ in character in every respect from any of the above enumerated areas. The character of the country and soil are subject to different climatic conditions altogether. The districts named are more or less similar in character, having many features in common, and therefore a general description will embrace features common to each. They consist generally of very hilly country, covered with heavy timber; the agricultural land growing principally the red gum and flooded gum, and more or less covered with a heavy growth of blackboy. The soil varies very materially, at times belts or ridges of reddish chocolate soil are to be met with, and at others strong dark soil deepening into rich black loam as it extends into the valleys below; all yielding, under fencing, clearing and ring-barking, heavy crops of grass. These districts are well watered by brooklets, springs, and shallow sinking. The agricultural country on the banks or the flats of the Preston River differs only in character from the fact of having rather a larger stretch of level country along the banks of the river, and being perhaps more uniform in the general character of its soil. The average rainfall is —Jayes, 26·95 in.; Bridgetown, 35·78; and the average cost of clearing from £3 to £15 per acre.

The districts of Bunbury and Vasse are alike in some respects, but differ materially in others; both are seaport towns, and both the seat of considerable dairying operations. The Vasse may be described as a belt of rich swamp deposit placed behind the sea hills, and running

in a narrow belt along the coast, from 10 to 15 miles on either side of the port, with ridges of limestone formation skirted by clay flats, and with low-lying sand and clay plains, covered generally by shrubs, wattle, and tuart on the poorer land, and on the rich land growing flooded gum, tuart, and ti-tree.

Near Greenough, in the locality of the Upper Irwin, are two distinct belts of almost level formation, which may be classed among the richest agricultural land in all Australia. The existence of these belts, says the Report, is a startling and novel feature in our geography. Water is obtained after cutting through the lower limestone at 40 to 70 ft.; and cost of clearing, £2 to £4 per acre. Rainfall at Northampton, 21·09 in.

The district of Dongara is again different in character, the soil being a rich stiff loam along the banks of the Irwin.

Wheat-growing will be found profitable, says the Commission, in the districts of Greenough, Dongara, and Upper Irwin, in the north; and the Victoria Plains, Newcastle, Northam, York, Beverley, and south along the Great Southern Railway as far as Eticup. This last belt of country, in the opinion of the Commission, has a great future before it. Its large extent, the low cost of clearing, its climatic conditions, and general facilities for export, point to a rapid and extensive settlement.

On the other hand, the Commission strongly opposes a system of wheat or corn growing as an only product. Wheat should be the primary factor in the farmer's business; but the production of oats, barley, and hay should be attended to. Towards the south dairying can be profitably carried on during the whole year, and in the northern areas during at least three or four months. No farm should be without a few sheep; and attention to garden produce should not be lost sight of.

Farmers should pay particular attention, in the districts south of the Irwin, to having a few heavy mares, and so supply the Colony with draught stock. Throughout this belt the climate and soil is entirely in favour of the horse; and with care and attention to young stock, animals can be produced equal to those bred in any part of the world.

Area for Fruits.—All the belt of country known as the Darling Range, say from Bindoon to Bunbury, and thence to the Blackwood, might be described as one vast area for fruit-growing. The hill slopes and valleys of this district, its alternations of soil, its diverse aspects, single it out as specially adapted for wine-making, fruit-preserving and fruit-drying. The variety of fruits includes oranges, lemons, peaches, plums, apricots, pears, quinces, figs, apples, medlars, cherries, English and Cape gooseberries, citrons, currants, guavas, mulberries, nectarines, loquats, limes, nuts, filberts, almonds, raspberries, shaddocks, bananas. "With such a range of fruit, and growing each variety in suitable localities, West Australia will some day compete against the world in these productions."

Wine-making should occupy the attention of a large section of those settling this area of the Colony.

Dairy Area.—"The area over which dairying, as an industry, can be followed out with profit, is all the coast line from the Moore River down south as far as Cape Leeuwin, extending as far back as the Darling Range. Taking the belt more particularly from Wanneroo to the Vasse, the profitable production of butter is simply a matter of attention and intelligence; the area is eminently adapted for it all the year round, combined with the production of such commodities as bacon, hams, eggs, poultry, potatoes, onions, etc.

"The coast system of dairying and farming would differ

in some essential respects from that to be followed out on the stiffer lands below the range. All along the coast, from its general immunity from frost, potatoes should be a staple commodity. This applies more particularly to the large belt of estuary land, and rich formation of vegetable deposit, running more or less all down the line mentioned. The cost of clearing is heavy, ranging from £5 to £20 per acre for heavy ti-tree clearing, but the yield being heavy and fairly certain, the potato crop should at all times be able to compete with importations: there is a very extensive area in every way adapted for this produce, and population on such a rich deposit will cheapen production and increase the supply as well as the demand. The Commission strongly recommend this branch of farming, together with the production of vegetables and dairy produce for the Perth and Fremantle markets, to the attention of intending settlers, the moment a quick and ready means of transit is afforded to the market by a Southern Railway.

"Bunbury, the Vasse, and their surroundings, seem the natural locality for dairy farming, and as the Colony progresses it will, doubtless, form the staple product of these districts. At the present moment individuals are doing as much as individuals can with the means and labour at their command. Something like 1,000 to 1,200 cows are being dairied; but at present the cost of production, including the heavy cost of transit, cripples the industry. It is a hopeful and cheerful tribute to the intelligence of the dairymen of the south, to find how quickly devices in labour-saving machinery are introduced. The De Laval Separator, butter workers, and improved churns are now generally used.

"The mean temperature of the whole area is about 62°. The rainfall is from 28 inches in the districts of Wanneroo,

Perth, Guildford, and Canning; while Bunbury and Vasse has an average rainfall of 33 to 40 inches. The establishment of dairies is only a matter of population, and the Commission can see the germs of a future high-class system for this industry in the intelligence displayed by some of those already engaged in the profitable working of their holdings, in Guildford and in the south. A system of dairying should always be combined with the production of hams, bacon, and eggs; while general farming for the growth of the necessary fodder is absolutely essential to good butter-making."

The Commission also draws attention to the necessity for growing root-crops, and to possible excellences of Colonial cheese.

Guanos.—"Touching the important question of fertilisation comes that of guanos, and the Commission feel it their duty to draw marked attention to the matter. Along the coast at Sharks Bay, the Abrolhos, and surrounding islands," they remark, "we have large deposits of guano. It seems almost as though nature, in a wise adjustment of things, had placed it there for future use on the soils of the mainland; for Western Australia, with her large areas of clay lands in her wet and cold areas, has absolute necessity for the use of this valuable manure on her soils."

Report, giving a Description of the Country between Perth and Bunbury, by the Hon. John Forrest, C.M.G., Commissioner of Crown Lands, May, 1888 (*now Sir John Forrest, Premier of the Colony*).

1. "I have the honour to report," etc. . . .

2 and 3. "One million acres arable; 600,000 fee

simple; 400,000 Crown lands, which, with means of communication, can be turned to account.

4. "The rainfall over the country between Perth and Bunbury averages about 35 inches a year, and rain falls on about 100 days in the year. The months of May, June, July, and August are the wet months, and the average rainfall is about 24 inches, or about 6 inches per month. December, January, February, and March are the dry months, and the average rainfall is about 3 inches, or about ·75 inch per month. April, September, October, and November produce about 8 inches, or an average of 2 inches per month. The average temperature is about 65°, the highest being 76° in January, and the lowest, 55° in July.

5. "A glance at these figures will show that this country is gifted by nature with a magnificent climate and a plentiful rainfall, and having a fairly productive soil it is capable of supporting a large peasant population in the future. I do not mean to say that it is a country in which fortunes are to be easily or quickly made, for I do not believe that such will be the case; but I do mean to say that this is a country in which a large number of people will be able to make a livelihood, will be able to acquire a freehold property, and be able to support in reasonable comfort themselves and their families.

6. "Between Perth and Bunbury about fourteen running streams are crossed, and they may all be termed permanent streams, although some may stop running for a short time in dry seasons. Water is plentiful, and may always be obtained by sinking a few feet.

7. "The soil upon this area is very varied. In the valleys of the numerous water-courses rich alluvium is found, in other places sandy and sandy-gravelly soil is found interspersed with good loamy land. All along the

Darling Range the country is suitable for vines and fruit trees; and apples, pears, apricots, nectarines, peaches, grapes, figs, plums, mulberries, oranges, lemons, citrons, strawberries, loquats, pomegranates, olives, melons, etc., etc., thrive well and bear abundantly. At present the absence of a market, and the damage done to fruit by carriage, renders it unprofitable to grow it, except for personal use.

8. "One of the chief reasons why this country has not been turned to better account in the past is, I think, owing to there being so many outlets for the energies of the people, in the prosecution of the timber industry, pastoral pursuits in the Northern Districts, pearl-shell fisheries, etc., that there have not been sufficient people left to conduct the cultivation of the soil. As a consequence, cultivation and farming employments, being the least tempting and requiring the greatest amount of manual labour, have had the least attention. There has been, too, a laudable ambition in the young men to strike out in a more profitable field, where not a mere living was to be looked for, but a position of affluence; and as such a position was not to be easily attained in cultivating the land, it has been abandoned in favour of other more tempting pursuits.

9. "Until, however, the population of the Colony increases, and consequently a larger local market is established, there is little hope that the country between Perth and Bunbury will be largely utilised. As can, however, be easily understood, a railway running through a country well watered, with many springs and watercourses issuing from the Darling Range, would greatly encourage the occupation and cultivation of the lands along such railway, and it must be borne in mind that occupiers of land in this locality will have great ad-

vantages over those in the portions of the Colony less favoured by nature, inasmuch as they can grow so many things that are necessary for their own use. In the country along the Darling Range everything required by the small farmer, except tea, sugar, and clothing, can easily be grown on the land; and, if it is difficult to make a fortune, it is not difficult to produce wheat, cattle, sheep, fowls, eggs, butter, vegetables, and fruit, all very necessary to ordinary comfort.

10. "In order, however, to enable small farmers to live in reasonable comfort, it will require industry and economy; but with these qualifications I think a respectable livelihood may with certainty be realised.

11. "I have not, in this Report, dealt with the present population, the present production of the District, or with the financial aspect of railway construction, as I do not understand that His Excellency desires me to report on those matters. If, however, I have omitted anything that is required, I will be glad to report further at any time.

"JOHN FORREST,

"*Commissioner of Crown Lands.*"

NOTE.—The railway to Bunbury has, since this Report, been built.

WINE-GROWING.

The Report of the Commission on Agriculture (quoted above) states that all the belt of country known as the Darling Range, from Bindoon and Chittering, down past Narrogen and Pinjarrah, as far as Bunbury, and from thence to the Blackwood, may be described as one huge area for fruit-growing. The slopes of this range, facing

the Indian Ocean, have been often likened to the Pacific slope of California.

Mr. Thomas Hardy, the leading viticulturist of South Australia, and an authority in vine-growing and wine-making of the highest standing, has recently visited West Australia, and has given his views as to the capabilities of the Colony in a letter to the *West Australian*.

"I have had the opportunity," he says, "of seeing a good many vineyards, and vines of all ages up to sixty years, and planted in a great variety of soils and situations. I have also seen and tasted wines made in various localities, and have come to the conclusion that with the fine climate and rainfall you have here, and the great variety of soils and situations available for the vine, there is no reason why West Australia should not become a worthy rival to South Australia, Victoria, and New South Wales in the production of wine for both home consumption and export to England and elsewhere. To bring this about it will require several things to be done. It will require that not every grape-grower should be a wine-maker, but that a few persons in suitable places should purchase the grapes grown by the farmer and make them into wine. These men, in their own interest, would be able to give every information to growers as to the best land to plant, and the kinds best to grow on it." Mr. Hardy also gives other very valuable advice and information on the subject; and on his return to Adelaide, publicly referred to the capabilities of Western Australia as a wine-producing country in the highest terms. "It may with safety be averred," says Mr. Francis Hart, in his *Guide-book to Western Australia* (Perth, 1891), "that there is no industry in the Colony which offers so many openings for a man of small capital and some experience as vine culture."

The following may be taken as a rough estimate of the cost of preparing and planting ten acres. The cost of the land and of clearing it (if any) may be easily arrived at from the particulars given elsewhere.

First Year.—Ploughing, £15; raising cuttings, £7 10*s.*; planting, £10; cultivating and training, £10; total, £42.

Second Year.—Cultivating and training, £15; filling up misses and pruning, £3; total, £18.

Third Year.—£20. Total expenses for three years, £80.

Fourth Year.—A yield of 1,000 lbs. of grapes per acre, at 1½*d.* per lb., gives £62 10*s.*, less expenses, £40 balance, £22 10*s.*

Fifth Year.—2,500 lbs. per acre, at 1½*d.* a lb., less £50 expenses; balance, £106 5*s.*

Sixth Year.—4,500 lbs. per acre, at 1½*d.* a lb., less £65 expenses, gives £216 5*s.* profit.

For the *seventh* and subsequent years the vines should be in full bearing, and should yield 6,000 lbs. per acre, which, merely sold to the wine-maker at a penny-half-penny a pound (less £75 expenses), gives an income of £300 a year.

[The variety of fruit grown in the Colony is stated elsewhere. During last season about £4,000 worth of fruit trees were planted between Albany and Victoria Plains. Trial shipments have been made to England; and a large export trade will ere long, it is hoped, be opened up. Samples of olive oil, manufactured in the Colony, received very favourable notice at the Indian and Colonial Exhibition. Fremantle is five days' steaming nearer London than the eastern colonies.]

Wine to the extent of about 200,000 gallons is at present made in the Colony, the whole of which is locally consumed.

FOREST RESOURCES.

Quite apart from the export of sandalwood, of which Western Australia holds almost a monopoly, timber is fast becoming a source of great wealth to the Colony. "The forest regions of extra-tropic West Australia," writes Baron Sir Ferdinand von Mueller, K.C.M.G., in his *Report on the Forest Resources of Western Australia*, "are equal to the whole territory of Great Britain; and it is singularly fortunate for the Colony that over this vast extent of wooded country, a species of eucalyptus (the jarrah) prevails, which for the durability of its timber is unsurpassed by any kind of tree in any portion of the globe." It is furthermore of particular advantage that this timber is obtainable through at least five degrees of geographic latitude (31° to 35° S.), and within so short a distance of shipping places, as to render it easily accessible to foreign traffic.

"The jarrah, sometimes erroneously called mahogany," wrote the late Sir Frederick Weld, "a tree of the eucalyptus tribe, covers immense tracts of land in the S.W. portion of Western Australia; its timber is extraordinarily durable, and as it resists the white ant and the *Teredo navalis*, it is admirably adapted for railway sleepers, and for piles for bridges and harbour works. This timber, when properly selected and seasoned, has stood the severest tests, and no term has yet been discovered to its durability. It is believed that with increased facilities for transport, the trade in jarrah may be indefinitely increased."

Piles of this wood, which have been driven into the bed of the river Swan, or into the sea-bottom at Fremantle, have been taken up after forty years, and found to be cap-

able of being French polished. It is used in South Australia in preference to iron piles for jetty and bridge building; it is in extensive demand for railway sleepers, fence posts, and all kinds of underground structures, and for shingles; it is capable of being split into great lengths, and tree-nails are made with it; together with karri, it is fast coming into use for ship-building, and in London it is used for paving streets. Among the places to which it has lately been exported are, Port Adelaide, Melbourne (for Harbour Trust works), Natal (harbour works), and London (paving, and bridge, and harbour works).

The chief jarrah stations of the Colony—at Jarrahdale, and the Canning Saw-mills, near Guildford—are connected with the ports of Rockingham and Fremantle by railway; and karri timber is supplied on an extensive scale by the Karridale Timber Mills, the Torbay Mills, and the Quindalup Saw-mills; all of which have their lines of rail or tramway. Widths of timber of 12 feet can be obtained from the karri; the maximum height of which, says Baron von Mueller, is certainly not over-estimated at 400 feet.

The areas occupied by the principal *eucalypti* are—

White gum,	10,000	square	miles.
Jarrah,	14,000	„	„
Karri,	2,300	„	„
Tuart,	500	„	„
Red gum,	800	„	„
York gum,	2,400	„	„

The blackboy, or grass-tree, a very widely dispersed bush shrub, exudes a dark resinous gum in great quantities, which should possess a considerable mercantile value. "The trunks of these grass-trees," says Mr. Hart,

"burn brilliantly, and are valuable for fuel and for making gas of a highly illuminating quality." Charcoal may be found ready for use almost everywhere in the bush; but men employed in burning charcoal make an excellent living.

NATIVE ANIMALS, BIRDS, ETC.

The principal native animals are kangaroos, brush, rock, and red kangaroos, wallabies, tammars, and kangaroo rats. Opossums and dingoes are very numerous. The principal birds are the emu, the wild turkey, leipoas, cockatoos, parrots, bronzewing pigeons, quail, magpies, wattlebirds, laughing jackasses, crows, eagles, ospreys, and various hawks, shrikes, owls, etc., small birds of the finch family, swans (from which the Colony took its original name), duck, wild geese, pelicans, cormorants, and cranes. The export of sealskins from Albany for the twelve months ending June 31st, 1891, amounted to £1,400; for 1892, to £300—as against nearly £28,000 worth of kangaroo-skins.

GEOLOGY, MINES, & MINERAL RESOURCES.

"Very little had been done in the way of a systematic Geological Survey up to 1887," says Mr. Harry Page Woodward, F.G.S., F.R.G.S., the Government Geologist,

in his first Annual Report for 1888–9; "but when the enormous area of the country and the fact that geologists have only been engaged for short periods are taken into consideration, both the quantity as well as the quality of the work done by them is highly creditable."

The first geologist employed was Dr. F. Von Sommer, who, during the years from 1847 to 1851, examined the Victoria, Toodyay, and York Districts, and the country between the latter and Mount Barren. He made geological maps and reports of these districts, but unfortunately they have not been published.

About the same time two very promising and painstaking amateur geologists developed in the Colony itself, viz., Mr. A. T. Gregory, C.M.G., late Surveyor-General, Queensland, and the late Mr. F. T. Gregory, who "lacking all special training and being in those days almost entirely cut off from the scientific world, and taking up geology merely as a secondary consideration to help in the surveying and exploring on which they were employed," "did such good work," says Mr. Woodward, "that no professional geologist would be ashamed to own it." "Indeed, so accurate is their geological map of the Colony," he continues, "that their mapping will be retained provisionally for those portions not yet re-examined." This map was published in London in 1860.

The Surveyor-General of that time, Captain Roe, who seems to have been an enthusiastic geologist, made a good many useful notes on his travels, and to him the preservation of the reports of these early explorers is entirely due.

Mr. H. Y. L. Brown, F.G.S., some time Government Geologist of South Australia, was engaged here in 1870 and 1871. He examined and mapped in detail and re-

ported on a strip of country about 50 miles wide, from the Murchison River to the South Coast. He also issued a special report and map of the lodes of the Champion Bay and Northampton Districts.

In 1882 the late Mr. E. T. Hardman, F.R.G.S.I., was appointed Government Geologist. He examined and reported on the Kimberley District, and published two coloured geological maps.

For a great many years the country has been largely indebted to the Rev. C. G. Nicolay, M.A., for his indefatigable services in testing and reporting on samples for any one who was in the least doubt as to what he had found. He also started the Geological Reference Museum at Fremantle, where after long years of continual hard work he has accumulated a very good typical collection of the rocks and minerals of this country. Moreover, his work has not been confined to the Museum and Laboratory, for on several occasions he made long and tedious journeys to settle important questions as to the value of reported mineral discoveries.

Another enthusiastic worker is Mr. H. E. Victor, C.E., who for years has interested himself in collecting specimens and observing the geological formation of the country. He prepared the collection, drew up the catalogue, and wrote the geological sketch of the country, which were sent to the Paris Exhibition of 1878.

The Department of the Surveyor-General has done much in elucidating the geology of this immense country. The Hon. John Forrest, F.G.S., F.R.G.S., and his staff have developed and carried out the plan, which seems to have been originally started by Captain Roe, of having collections made by the surveyors.

The late Mr. W. Knight made a large and very interesting collection of minerals and rocks, which probably

formed the nucleus of the present collection in the Geological Museum; Messrs. Maitland Brown, Shenton, and others have made collections which have been sent to London at various times; Captain Mitchell, of Northampton, has made collections of the minerals of his neighbourhood; and Messrs. C. Moore, F.G.S., W. H. Huddleston, M.A., F.G.S, A. H. Foord, F.G.S., the Rev. W. B. Clarke, and Dr. H. Woodward, F.R.S., have written valuable papers on the Fossils and Geology of the Colony. But, above all, the Reports of the Government Geologist, Mr. H. P. Woodward, from which the above information has been taken, are, and must remain the chief source of our knowledge of West Australia's mineral wealth.

Extracts from Reports by the Government Geologist.

GEOGRAPHICAL CONFIGURATION.

Report 1888-9.

"Western Australia occupies about one-third of the whole continent of Australia, having an area of 1,060,000 square miles, *i.e.*, nine times the size of England, Scotland, and Ireland together.

"The coast is rising rapidly, which accounts for the low alluvial sandy plains occurring between the sea and the ranges. These plains vary from a few hundred yards to twenty miles in width, and are interspersed with numerous salt inlets, lakes, and swamps.

"The country has only been settled for about 200 miles inland, and from the information gained by explorers the interior appears to be a vast sandy tableland from 1,000 to 2,000 feet above the sea level, with here and there

large areas of depression in which are situated immense salt clay pans, surrounded by low broken ranges of granitic and other crystalline rocks.

"MOUNTAINS.—The mountains are not remarkable for their height, though many of them, rising abruptly from plains little above sea level, present a rather striking appearance. The principal ranges in the south-west are the Darling, Roe, and Blackwood Ranges. The Darling Range is the most important, extending almost due north and south for about 300 miles, at a distance of 18 to 20 miles from the sea, towards which it presents a steep face; and although it has no peaks over 1,500 feet in height, yet it has a more imposing appearance than the Roe Range, which runs parallel to it, but further east, of which the highest peak, Mt. William, reaches 3,000 ft. above sea level. The other range, the Blackwood, has the greatest average elevation, although it does not anywhere attain a greater height than 2,000 ft.

"LAKES.—The maps show a great number of lakes in the interior, which tends to give a very incorrect idea of the country, as, except after heavy rains when they may be covered with a few inches of water, they are perfectly dry. They are in reality immense salt clay pans or marshes.

"CLIMATE.—The climate cannot be spoken of as a whole, owing to the enormous extent of the Colony. In the north there is a true tropical climate. About the Gascoyne and Murchison Rivers there is an intermediate state of things; heavy summer rains, and a good healthy dry climate for the rest of the year; while in the south-west, the settled portion, the seasons may be divided into wet and dry, the former lasting from April to October, and the latter November to March; during this, the summer, thunderstorms may occur, but are most uncertain.

The annual rainfall on the coast, from Fremantle to Albany, is about 40 inches, which 50 miles inland, amongst the ranges, does not exceed 20 inches; whilst in the interior, over 200 miles from the coast, no reliance can be placed upon it, as thunderstorms of a local character are all the squatters have to depend upon.

"The temperature of Perth rarely exceeds 100° in summer or falls below 35° in winter, whilst in the north the temperature is very high in summer before the wet season sets in.

"SOIL.—In this Colony there are as good and as great a variety of soils as in any part of the world. Unfortunately only small portions are as yet under cultivation, for large tracts of the best land are either so heavily timbered or are held by persons who do not cultivate, and these facts have tended to give the place a bad name.

"Cereals are grown as far north at lat. 29°, and on the hills to the east of Perth nothing is thought of a crop of 40 bushels to the acre."

GEOLOGY.

Report 1888-9.

"Hitherto it has generally been imagined that the formations to be found in Western Australia were limited in number, and that the rocks for the most part were either granite or sand; but that this was quite erroneous will be seen by examining the table of strata given below, showing the various formations now known, which will probably be much extended when all the country has been thoroughly examined.

TABLE OF GEOLOGICAL FORMATIONS (*Sedimentary*).

Cainozoic.	*Quaternary.*	*Recent (Holocene).*	Alluvium of lake basins and river valleys, river gravels, estuarine deposits, gypsum and salt beds, sand dunes, sand plains, raised beaches and shell marls and gravels, and brick earth.
		Pleistocene.	Ancient river gravels and lake beds. Lower estuarine deposits, shelly limestones and sandstones of the coast.
	Tertiary.	*Pliocene.*	Ferruginous sandstones and variegated clays.
		Miocene.	Not known.
		Eocene.	Coralline and chalky limestones with flints, calcareous and ferruginous sandstones and grits.
Mesozoic or Secondary.		*Cretaceous.*	Chalky limestones with flints, sand, ferruginous sandstones and limestones, ferruginous nodular claystones, sands, clays and mudstones.
		Jurassic.	*Oolites:*—Oolitic limestone, clay ironstone, ferruginous sandstone, grits and conglomerates. *Lias:*—Ferruginous and variegated limestones, clays and ironstones.
Palæozoic or Primary.		*Carboniferous.*	Sandstones, grits, conglomerates and ironstone, limestones, mudstones, micaceous clays and shales, with iron pyrites, gypsum, and coal seams.
		Devonian.	Shales, indurated slates, limestones, coarse grits, and conglomerates.
		Silurian and Metamorphic.	Clay-slate, limestones, marble, dolomite, sandstones, quartzites, and conglomerates.
Azoic?		*Archæan (Metamorphic).*	Slates, schists, serpentine, quartzite, gneiss, granitoid, and garnet rocks.

IGNEOUS ROCKS.

Volcanic.	Basalt, dolerite.
Plutonic.	Felstone, diorite (greenstone), syenite, granite, porphyry, amygdaloid.

Recent and Tertiary Rocks.

"*Alluvium of Lake Basins.*—All over the interior on the great table-land, there are a series of what are called lakes, though they are in reality nothing more than large salt flats or boggy clay pans, almost on a dead level, which drain into one another, and eventually, if the season has been wet enough, discharge themselves into the upper courses of some of the numerous rivers which cut through and drain the range that forms the western boundary of the great plateau; but this rarely happens, as they present such an enormous area for evaporation. One consequence following this is that these large flats nearly every year receive a fine covering of clay upon which the salts contained in the water crystallize out to be redissolved and added to from time time, till in some places, which may be a little lower than the rest, or where some obstruction occurs to the flow of the water, very large deposits of salt are formed. These lakes are surrounded by red clay flats, which also contain a great deal of salt,—in fact, the whole interior is salt; and although such large quantities of rain have fallen since the last submergence as to destroy all traces of the marine deposits that must have been left, yet as the water does not find any outlet to the sea, but is lost by evaporation from the clay pans, the country remains almost as salt as when first elevated from the sea.

"On the north coast there are some extensive alluvial deposits, not always in the river valleys themselves, but sometimes following the sea coast, and in other places what was once the bed of a river. They are not as a rule of any great thickness, as outcrops of rock are frequent. It was in one of these large plains that the great gold-bearing reefs of Mallina were found.

"*Sand Plains.*—These are the characteristic feature of Western Australia. They extend from one end of the Colony to the other, and though produced in several ways are equally objectionable and useless. The great sand plains of the interior are often twenty to thirty miles across, but containing in places a good deal of clay and iron which cement the grains of sand together, and there being a fair rainfall they are covered with hardy vegetation, and during the two spring months are perfectly gorgeous with flowers—with such a blaze of blossom as could hardly be equalled anywhere in the world. Consequently they are not nearly so bad as the great tracts of sand of the south-west of Queensland and a large portion of the Northern Territory. They result from the disintegration of the desert sandstone, which forms the table-land of the interior of Australia."

MINERAL WEALTH.

"Until quite recently this Colony was considered to be destitute of mineral deposits of any value, with the sole exception of the rich deposits of lead and copper in the Northampton district, that had been found and worked in its early days. Beyond these nothing appeared to exist of sufficient value to be worth working. Now it is known that this is a rich mineral-bearing country from north to south, and every day news of fresh discoveries of gold and other valuable metals is coming in. There are, however, two great obstacles standing in the way of these discoveries being immediately turned to account, viz.:—want of capital, and the construction that has been put on the Mining Regulations. Of these the first will

be removed as soon as the outside mining world is assured of the genuineness of these finds, and that there is really a good field for investment here; and the second as soon as the Government strictly enforces all its regulations, as up to the present it has been too lenient, and of this advantage has been taken, to the detriment of the real interests of the Colony, both in the floating of companies, and by the holding of areas without fulfilling the labour conditions.

"GOLD.—Gold is said to have been first found in this Colony in 1688 by the buccaneer, Dampier, after whom the north-west coast was named. He spent a good deal of time in that year in searching for the precious metal, and that he met with success seems to be confirmed by the fact that on some of the old Dutch charts this coast is marked 'Provincia Aurifera,' and also that in 1888, just 200 years later, rich alluvial fields have been found in the same locality with gold almost on the surface.

"For a considerable time after the foundation of this Colony, it was thought that gold would never be found here, but in 1868 small quantities were discovered in the alluvium by Peterwangy Hill at the head of the Irwin River. This caused a good deal of excitement; but as the gold was in too minute a quantity to pay, this discovery, unfortunately, did more harm than good, for it brought a number of miners from the eastern colonies, who were so bitterly disappointed that, on returning home, they gave this place so bad a name that even at the present day it is difficult to persuade the people in those colonies that there is any gold here at all.

"The gold was found in the alluvium on the north side of the hill, where the spurs are capped with large deposits of red clay, sand, pipe-clay, and nodular ferruginous clay-stones, and judging from its highly water-

worn appearance and the fact that the mineral veins of this locality are not auriferous, it has probably been derived from some old stream bed which passed across this country in a different course and at a higher level than the present rivers. Nothing certain can, however, be stated on this point until the district has been examined in detail and all the old water-courses mapped. The rocks here are mostly granitic with diorite dykes and occasional quartz reefs of a highly crystalline character; but a few miles lower down the river, also further to the eastward, the country assumes a promising aspect for gold, the rocks being schistose and containing many nice-looking quartz and ironstone lodes, though none have been proved to be auriferous.

"At about the same period gold was found by Mr. Hassell, at Kendenup, in a quartz reef that contained much iron pyrites. A company was floated and machinery erected, but as the mine could not be made to pay it was abandoned, and this was due either to the manager not having followed the shoot of gold-bearing stone, or else, and more probably, to his not being able to extract the gold by the ordinary process, for nearly all stone containing so much pyrites requires special treatment; and, moreover, 5 tons sent to Victoria, where a speciality is made of such stone, yielded a very good return; consequently there is not the least doubt that gold does exist in this reef in payable quantities, and now that gold-saving processes have reached such a high state of perfection, it is to be hoped that another trial will be made. The rocks in this neighbourhood are schistose, contain many quartz reefs and diorite dykes, both carrying large quantities of iron pyrites, most of which carries more or less gold.

"The next specimens of gold found were in quartz, at Bindoon, and a company was immediately started which

commenced work on a quartz reef containing a great deal of pyrites, by sinking two shafts, close together, on a reef at the top of a hill, for which it is difficult to assign a reason, as this was not the reef in which the gold had been found, although it was afterwards proved to contain small quantities. The general appearance of this locality is very promising, but it has not had a fair trial, as the reefs near to which the gold was found have never been prospected. The rocks are slate and schistose, with quartz reefs and diorite dykes, both containing large quantities of pyrites which ought to be tested for gold.

"The gullies have not yet been prospected for alluvial gold, but so many rich specimens have from time to time been picked up here, that it is natural to infer that the stream beds would pay for working.

["All along the western face of the Darling Range, south of Perth, there are series of immense quartz reefs carrying large quantities of auriferous pyrites. A sample of some tons sent away by Messrs. Dalgety & Blackwood yielded about 16 dwts. of gold to the ton.

"Taking into consideration the natural facilities for working these reefs, which are situated on the steep face of the hills and often cut through by gullies which flow in gorges 200 ft. and 300 ft. deep, the water supply, timber, fuel, and good road communication, these lodes should be a source of immense profit to any enterprising company that start working them."—From the *West Australian Year-book*, 1891.]

"Then, in spite of the fact that colours of gold have been found nearly all over the Colony, all idea of gold-mining was for some years abandoned, until in 1885, when the late Mr. Hardman published his report on the Kimberley district, stating that he had obtained good prospects, and marking on his map certain tracts of

country, which, from their great similarity to the Victorian gold-bearing country, he believed would prove auriferous. His prognostications proved to be correct, and some rich patches of alluvial gold were struck, which caused a rush of miners from the other colonies; but as these patches, though rich, were of no great extent, and all in shallow ground, they were soon worked out, and many unfortunate men who had come all the way from Victoria, and made the long journey under a tropical sun from Wyndham or Derby to the fields, had to return poorer than they came, and thus another blow was given to the gold-mining industry of this Colony.

"These alluvial diggings, however, led to the discovery of some very rich reefs, which bid fair to become a source of permanent employment in the district, and to pay those who have invested in them well.

THE YILGARN FIELDS.

"At the end of 1887 gold was found by Mr. Anstey on the Yilgarn Hills, about 200 miles east of Perth, which led to that region being largely prospected, and to the discovery of a belt of country, extending for about 80 miles in a southerly direction, rich in gold-bearing quartz reefs. Many companies are now at work in the different divisions of this field; namely, Golden Valley in the north, Southern Cross next, and Parker's Find to the south. The great difficulty at present to successful working is the scarcity of water. The rocks on this line of country are more or less indurated slates and schists, with here and there dykes of granite and other intrusive rocks. The reefs are, as a rule, large, and extend to a great length on the surface, but they are not well defined, and seldom have walls on both sides, one side generally split-

ting up into a large number of leaders, most of which are rich in gold. The stone itself is solid and of a quartzite nature; it contains a little carbonate of iron, both iron and copper pyrites, manganese, and chlorite, but not in sufficient quantities to interfere with the extraction of the gold. The stone, as a rule, is very rich, often containing as much as six ounces of gold to the ton, and the trial crushings that have been made prove that there is, at any rate in one or two claims, a great mass of stone carrying about two ounces to the ton.

"Gold is also found in this field in a great dyke-like mass of a greenish colour—probably a decomposed serpentine.

"Some rich deposits of alluvial gold have also been found; but, owing to the scarcity of water, little of the ground has as yet been tested.

"There cannot be the slightest doubt that this field presents one of the finest surface indications yet met in Australia. Unfortunately at the present time it is almost at a standstill for want of capital to develop it, a difficulty that will be removed as soon as a railway is constructed to the field, for then many persons from the other colonies would visit it, who are now deterred by the two hundred miles of bush travelling.

"Gold has also been found in a small reef in the Wongan Hill, but not in sufficient quantity to pay.

"In 1888 some very rich reefs were found to the eastward of Roebourne Bay, and many of them were opened up; but, owing to the discovery of alluvial diggings in the neighbourhood, only one or two are now being tested, and these are proving to be of great value. The stone is a milky quartz with occasionally a bluish tinge, containing a large quantity of antimony associated with the gold. The reefs run east and west, and are the only known

metalliferous lodes in the Colony running in this direction. The rocks are slates, often calcareous, with hard ridges of banded quartzite and large dyke masses of amygdaloid standing up out of the plain. There are also some very rich deposits of alluvial gold extending over three hundred miles of country, and following the coast to the east and west. Up to the present most of the finds have been in shallow ground, but now richer deposits of gold are being found in the deeper alluvial deposits, and these are often associated with cementing deposits, similar to those occurring in the other colonies.

"Judging from the large quantities of gold already sent away from this district it must be a very rich gold-bearing tract of country, and when the alluvial gold ceases to be the all-absorbing attraction, the reefs will be sure to receive attention.

"Gold has also been found at Mulga Mulga to the north of Austin's Lake, but is not being worked at present, owing to the want of money for that purpose. It also occurs on the Greenough, not far from Yewin Station, and, lately, rich discoveries have been reported on the Ashburton, while all along the face of the Darling Range there are large reefs full of pyrites, most of which carry more or less gold, and some are very rich."

OTHER MINERALS.

"LEAD.—The first discovery of lead in this Colony was made in the Victoria district in 1840, or shortly after that date, and several very rich lodes between Geraldton and the Murchison were worked by English Companies.

"The ores in these lodes consist chiefly of galena (sulphide of lead) and cerussite (carbonate of lead), associated with quartz, calcite barytes, and blende (sulphide of zinc).

The galena occurs massive and crystalline; as a rule it contains very little silver, but when it does it is generally granular in structure. In the mines in which cerussite occurs a great deal of trouble has been experienced through the workmen suffering from lead poisoning, so much so that work often had to be stopped.

"The lodes are most frequently of great size, containing huge masses of galena almost free from gangue, and all of these that were accessible have been worked out; for, when the price of lead fell, the companies found that it did not pay to work the poorer parts, so they simply picked out the eyes and abandoned the mines.

"COPPER.—The earliest discovery of copper occurred in the Northampton district, and many mines were worked with much profit until the great fall that took place in the value of this metal. The ore near the surface consists of malachite and azurite (green and blue carbonates of copper), but in depth it is invariably copper pyrites (sulphide of iron and copper), the 'yellow ore' of the miners. The lodes run in the same direction as the lead, and in fact the latter often changes into copper in depth.

"These lodes have been worked in much the same manner as the lead, and similarly there are many fine lodes as yet unworked, and these would pay well to mine at the present time.

"A little to the south of the Irwin River there are several rich lodes of carbonate of copper, which have not yet been worked, as the expense of cartage was too great; but now that copper is higher in price it is to be hoped that mines will be started in them, especially as they are close to the projected line of railway from Perth to Geraldton.

"To the east of Roebourne there is one of the largest and richest copper lodes in the Colony, but there is not much chance of its being worked while so much gold is

being found in that neighbourhood, and, to the south of that town, there are also several copper lodes that were worked some years ago. In one of these the copper occurs as a brown ore; it is a mixture of carbonate and oxide of copper with oxide of iron, and gold is often visible in it.

"Copper also occurs in the Wongan Hills, the Darling Range, the Glenelg Range, as well as in several other places.

"TIN.—In the latter part of 1888 Mr. Stinton found some stream tin near Bridgetown, on the Blackwood River, which led to the discovery of very rich deposits, extending over an area of about one hundred square miles; but no lodes have been found up to the present, although they cannot be far distant, as some of the samples are very little worn, and so cannot have travelled far. The tin-fields, if properly worked, will produce much wealth; but at present very little is being done, owing to the fact that the land is all taken up in large areas by companies that have been floated without sufficient capital to develop them.

"The lodes will probably prove to be small granitic veins, which may occur as a net-work in the decomposed schistose rocks, with the cassiterite (tin-stone, oxide of tin) running throughout them.

"Stream tin has also been found on the goldfields at Roebourne, but has not as yet been worked.

"IRON.—This is essentially an iron country, for one cannot travel a mile in the parts where the older rocks appear at the surface, without encountering a lode.

"It occurs in many forms, but the chief are magnetite and hematite (black and red oxides), which occur in immense lodes and would be of enormous value if cheap labour were abundant. There is enough to supply the whole world, should the present sources be worked out.

"From the large quantity of iron in this Colony, it is almost impossible to work with any degree of accuracy with a magnetic compass.

"ANTIMONY.—There are some very good lodes of stibnite (sulphide of antimony) in the Roebourne district, and their value in most cases is greatly increased by the quantity of gold they contain. They have not been worked yet, having often been put down as small lead lodes.

"ZINC.—Blende occurs in the Geraldton district, associated with galena, but not in sufficient quantity to be worth working. Lately a large lode has been found a little to the south of Perth, and the samples sent in are very pure.

"MANGANESE.—Manganese has been found in many places in the Colony, and some of the lodes are very good both in size and quality, but none have been worked.

"MICA.—Very good mica has been found at Bindoon and also on the Blackwood River, but though of considerable size and splitting well, the specimens were too much iron-stained to have any market value formerly; but now that a use has been found for discoloured mica, it will pay very well for working, and it is certain to be far less stained, if not quite clear, when quarried below the depth to which it has been weathered.

"ASBESTUS.—Poor specimens of asbestus have been found in several localities, but nothing good enough to be marketable.

"KAOLIN (*China-clay and Pipe-clay*).—Throughout the Darling Range, and in most of the granitic country, large and very pure deposits of kaolin occur, many of which are pure enough to be used as whitewash. These deposits will be of great value for china making, when the population increases.

"Coal.—There are some seams of inferior coal on the Irwin River, and though the seams are from three to six feet in thickness, and the coal is of true Carboniferous age, yet none have at present proved to have a marketable value. This coal would be very useful for many purposes in a populous country; but here, where wood is so abundant and always close at hand, there is no demand for any, except a first-class steam coal.

"The Carboniferous formation certainly extends for three hundred miles to the north of the Irwin, and probably all the way to Kimberley, so that there is a very large district yet untested in which superior coal seams may be found.

"Coal has recently been found at Wyndham; but though the sample sent down was of very fair quality, the size and extent of the seams have not yet been tested. Should it prove to be a good steam coal it will be of great value, as it occurs close to one of the best harbours of the Colony.

"Lignite.—On the Collie River, near Bunbury, there are several seams of a very superior lignite, probably of Mesozoic age. The following are the results of three assays by Mr. Bernard H. Woodward: No. 1 being of the first specimen obtained, which was in the bed of the river itself; No. 2 from a depth of 17 ft. close by, and No. 3 from a similar depth in a shaft five miles distant.

		1	2	3
Volatile	Water	15·20	10·87	11·70
	Gases, etc.	32·46	31·47	21·83
	Sulphur	2·23	2·23	2·99
Coke	Fixed Carbon	45·03	52·87	54·17
	Ash	5·08	2·56	9·31
		100·00	100·00	100·00

"The ash of Nos. 1 and 2 is very pale yellowish white, and of No. 3 red.

"None of the lignites cake, nor do some coals, and, unfortunately, both the Irwin and Wyndham are non-caking, and so lose much of their value, through not being available for gas-making.

"There are several seams of lignite of a highly lustrous character on the Fly Brook, near Augusta, at the south-west corner of the Colony. It contains so much water and is so friable that it will not stand much handling, for in fact it breaks up in drying, and consequently is of little value.

"There is another deposit of lignite near the Vasse; but, up to the present time, the specimens that have been raised are of a very poor quality.

"Brown coals occur all along the south coast, and there are some large deposits near Albany, and on the Fitzgerald River, which have been tested, but proved of too poor a quality to have any practical application.

"GRAPHITE.—Graphite was found in some ferruginous lodes in the Champion Bay district, and was tested some years ago, but proved to contain too much iron to be of any commercial value.

"Some fair deposits also occur between the Warren and the Blackwood Rivers, in the south-west, where several claims have been taken up, though as yet very little work has been done.

"Some years ago a deposit of graphite was worked at Kendenup, and the samples sent away were stated to be of very fair quality; but, owing to the distance from a port, the mine was abandoned. Now that the railway passes so close, another attempt should be made to utilise this deposit, and would most likely meet with success."

Compare the following from the Annual General Report for 1890.

MINERAL RESOURCES OF THE NORTHAMPTON DISTRICT.

"This North and North-west Division of the Colony is very rich in minerals.

"Gold has been found near Austin's Lake at the head of the Murchison, at Yuin, on the Ashburton, the Nicol, at Roebourne, Mallina, Peeawah, the Turner, Egina, Pilbarra, the Coongan, the Nullagine, and the 40-Mile.

"Silver has been found in small quantities associated with the lead ores of the Northampton and Roebourne districts.

"Copper occurs in large quantities in the Northampton district, near Mullewah, near Murgoo, up the Murchison, near Roebourne, and at Whim Well, at which last-mentioned place there is an immense lode.

"Lead occurs in large quantities in the Northampton district, and some small lodes have been found near Roebourne.

"Antimony, rich in gold, occurs at Mallina and Peeawah in the Roebourne district.

"Tin has been found at Pilbarra, the Western Shaw, and small traces throughout the north-west.

"Iron in large quantities, and of good quality, throughout the district.

"Zinc in small quantities in the Northampton district.

"Coal has not yet been found of any commercial value; but as in this portion of the Colony the Carboniferous rocks are so largely developed, it is highly probable that it will be found.

"Granite is found in the Northampton district and on the Gascoyne River.

"Mica has been found near the Shaw and on the Gascoyne.

"Kaolin occurs in large quantities at the Nullagine."

"Sufficient evidence," Mr. Woodward concludes, "has now been brought forward to show that this is decidedly a mineral country, and when we take into consideration the vast size of the Colony and the small number of inhabitants, and consequently the small amount of prospecting that can possibly have been done up to the present, there cannot be any doubt but that many more, and perhaps far richer deposits of valuable minerals may be found; but as we have already discovered more than we can at present use, what is now needed is the incoming of enterprising people with money from other parts of the world to assist in developing this known mineral wealth. It is often asked by persons in other places, why, if we have such wonderfully rich deposits, we do not work them all ourselves instead of offering them to others; and to this the answer is, that as there are not sufficient people here with money to work more than one or two mines efficiently, while at the present time they are trying to develop a hundred, and as a natural consequence failures are occurring on every side."

THE YILGARN HILLS.

The Yilgarn Hills are a low range of hills about 250 miles east of Perth, on the western side of a series of salt lakes, of which Lake Deborah is the southernmost.

They are from two to three miles in width from east to west, whilst the general direction of the range is north and south. The western face is somewhat steeper than the eastern, which gradually descends towards the lakes,

from which it is separated by a plain, from four to six miles in width, of red clay strewn with ironstone and quartz.

["The rocks are mica schist, mica slate, and flaggy quartzites, with many diorite and quartz veins: their general strike is north and south, with an easterly dip. They have been tilted up from the west by a large mass of intrusive granite, which forms a rough western face to the hills in the northern part, while in the southern it is only seen appearing above the surface of the plain in large rounded masses. The quartz reefs follow the strike of the rocks, but vary greatly in character, those of the white quartz not being as a rule in such large masses, nor so well defined as the more ferruginous ones."]

In 1887 Mr. Glass, of Mugakine, while making a tank near his house, found a large speck of gold, which caused him to start prospecting, but although he sank several holes he never had the good fortune to find any more. However, the discovery drew attention to this district, and led to a party being organized and fitted out by the Settlers' Association, with assistance from the Government, to thoroughly prospect the district to the eastward of Newcastle and Northam. This party was placed under the leadership of Mr. Colreavy, who worked over all the country between Newcastle and the Yilgarn Hills, a distance of some 200 miles; and although his first journey was not crowned with success, yet he thought so highly of the country further east that immediately afterwards he set out to prospect it on his own account.

While this latter party was still on the field, a sensation was caused by the sudden return from Yilgarn of Mr. Anstey, with some surprisingly rich specimens of gold, in quartz. This gentleman had gone in the same direction as Mr. Colreavy, with the intention of making an extensive

prospecting and exploring tour. The excitement in consequence of this find was for some time very great. It was soon found, however, that the discovery was not as valuable as had been at first supposed, as further prospecting showed that, although the surface indications were surprisingly rich, the gold at a very slight depth pinched out. Fortunately, just at this time, Mr. Colreavy, who was prospecting Golden Valley, ten miles further south, struck a small reef, which carried gold throughout the stone. This caused a rush, and several small gold-bearing reefs were found. Prospecting was continued still further, and Mr. Riseley, the manager of a prospecting party equipped by a company calling themselves the "Phœnix" Company, was so fortunate as to discover a rich series of reefs about thirty miles to the south of Golden Valley. These he named Southern Cross, from the fact of having made use of that constellation as a guide while travelling by night to the spot.

In December, 1888, a Mr. Parker, guided by a native in the same direction for forty miles further south, discovered other reefs, which are now known as Parker's Range.

The Yilgarn Goldfield, with an area of 13,000 square miles, was proclaimed in November, 1888. Several companies were at once established, and are now at work in the different divisions of the field, at Golden Valley, Southern Cross, and Parker's Find. There is a prosperous township at Southern Cross, and the affairs of the field are administered by a Warden (who, however, has just been transferred to Coolgardie). A telegraph line has been opened, and the railway from Northam, as we shall see, is in course of construction. The Government Geologist, and a large number of mining experts who have visited Southern Cross, prophesy that it will become one of the richest fields in Australia, as the reefs extend in all

directions, all are gold-bearing, and they improve with depth; while the water difficulty has been temporarily solved by conservation and condensation, pending the finding of an artesian well by the Government borers.

The extent of gold-bearing country has now proved to run in a north and south line of over eighty miles, and although the fields are separated by patches where no gold has yet been found, these are gradually getting lessened by intermediate discoveries. The line starts at the north, with Golden Valley, then there is about twenty-five miles of forest and sandstone ridges to Hope's Hill, then five miles to Southern Cross, five miles to Blackburn's, twenty to Jacoletti's, fifteen to Parker's, and five to Uphill's. The forest country between these different finds is mostly very promising, being often strewn with quartz; but as the reefs do not often outcrop, prospecting would be rather expensive; and, besides, in the already-known parts of the district there are a great many more reefs taken up than there is, at present, money to work.

"This belt," wrote Mr. Woodward in 1891, "seems to form the western limit of the gold-bearing country; but how far it extends to the eastward is impossible to say, until that country is examined." North, this belt is met with near Mount Kenneth and Austin's Lake; and south on the south coast at the Phillips and Fitzgerald Rivers.

To judge from the extent of the field, says our authority, and from the appearance of the mines at work, there is every reason to predict that this will be both an extensive, rich, and permanent goldfield. But the bar to the development of the fields is want of capital. "As it is not here," Mr. Woodward very justly remarks, "it must come from outside. And people bred in this Colony do not know the insurmountable obstacle 180 miles of bush travelling is to

a man used to a civilized life, who wants to see the mines himself before putting his money into them."

Fortunately, this insurmountable obstacle is being surmounted. Seventy-two miles of the railway are already open, and in the meantime an excellent line of coaches (fare £5) has been established from York. Up to the end of July, 1892, from the discovery of the field, the four chief Southern Cross mines had made crushings as follows :—

	Ore Milled. tons.	Total Gold Yield. ozs.	dwts.	grs.	Value.
Fraser's . . .	8,458	9,164	6	12	£32,727
Central . . .	7,491	6,542	9	4	£23,716
Fraser's South . .	4,806	5,279	14	0	£19,536
No. 1 Central Extended	507	729	7	11	£2,576

Appended is the latest return for this field obtainable at the Registrar-General's office (August 7, 1893).

Return of Stone crushed and the Yield of Gold for the Yilgarn Goldfield during 1892, *and also to the end of the same year since the Lease or Claim was first worked.*

Number of Stamps.	Year 1892.			Since Claim was first worked to end of 1892.		
	Ore milled.	Total Yield of Gold.	Value of Total Yield of Gold.	Ore milled.	Total Yield of Gold.	Value of Total Yield of Gold.
	tons.	ozs. dwts. grs.	£ *s.* *d.*	tons.	ozs. dwts. grs.	£ *s.* *d.*
145	15,447	31,679 7 20	51,094 17 10	34,114	33,562 3 12	121,266 10 4

From the Government Year-book.

The Southern Cross Township has a population of about 300, and is the head centre of the Government. The

Warden, who also acts as Resident Magistrate, has his office here. There are also police barracks and stables. There is fair hotel accommodation, and the prices at the stores are reasonable. There is a weekly mail service from York. Wagon freights vary from £16 upwards. The coach takes about four days each way between York and Southern Cross. The wagons take twenty-one days to and from Southern Cross, and twenty-four days to and from Parker's Range.

During the year 1890, according to the Warden's Report, over £10,000 was paid for cartage to this gold-field. An enormously greater sum, which at present there are no means of estimating, must have been spent during 1893.

Passenger fares by the several lines of coaches now running to the field are :—

York to Southern Cross . . .	£5
Do. Parker's Range . . .	£6
Southern Cross to York . . .	£4
Parker's Range do. . . .	£5
Return fare, available for one month.	£8

Each passenger is allowed to take between 28 and 32 lbs. of luggage ; over that quantity 4*d.* per lb. is charged.

The cost of cartage to the field of general goods, from York and Northam, the usual starting points, varies considerably, according to the season and state of the roads, from £17 10*s.* to £25 per ton.

(Note.—During the wet weather in July, 1893, the roads having been terribly cut up, haulage reached for a time the enormous price of £47 per ton)

Wages vary on the different mines :—Miners, (dry) from 11*s.* 8*d.* to 11*s.* 10*d.*, (wet) 12*s.* 6*d.* to 13*s.* 4*d.* ; Mullockers, 11*s.* 8*d.* ; Truckers, 10*s.* 10*d.* to 11*s.* 8*d.* ; Horse

Drivers, 8*s.* to 10*s.* 10*d.*; Amalgamators, 16*s.* 8*d.*; Battery Feeders, 10*s.* to 12*s.* 6*d.*; Carpenters, 12*s.* 6*d.* to 13*s.* 4*d.*; Engine Drivers, 12*s.* 6*d.*; Bracemen, 10*s.* 10*d.*; Blacksmiths, 12*s.* to 13*s.* 4*d.*; Surfacemen, 10*s.* 10*d.*

The rainfall at Southern Cross during 1892, from January to the end of August, was 12·30 inches (on ninety-one days); the rainfall in Perth for the same period being 27·44 inches, or only 0·36 over the average for the last fifteen years. 1893 has been a very wet year.

(For the Coolgardie Fields, etc., see the special chapter on Coolgardie.)

THE KIMBERLEY GOLDFIELD.

(*Proclaimed May*, 1886.)

This goldfield, having a proclaimed area of 47,000 square miles, is situated in the north-eastern corner of the Colony. Its principal diggings and mines are near the eastern boundary of the Colony, about 212 miles by the telegraph line from Wyndham on Cambridge Gulf, and 304 miles from Derby on King's Sound, in the broken country at the head of the Elvire and Mary Rivers, the main tributaries of the Ord and Fitzroy Rivers.

This goldfield was discovered in the year 1882 by the late Mr. E. T. Hardman, then Government Geologist, who, in 1884, reported on and issued a map of the district, showing the places where gold was likely to be found. These, in every case, proved to be correct; but as most of the alluvial deposits were very thin, no time was lost in sinking, so that a single miner was able in a short time to work out a large quantity of ground, which, unfortunately, led diggers in other parts of the world to believe that the diggings were much more extensive than they really were, from the large returns of gold that passed through the Customs' hands in a short time.

The official centre on the field is at Hall's Creek, which is connected with Perth, viâ Derby, by a telegraph line. There is also a line to the port of Wyndham, but this is not yet in working order.

The Adelaide S.S. Co.'s steamer *Rob Roy*, which runs between Cossack and Port Darwin, calls at Derby and Wyndham about every three weeks; thus connecting this district with the southern portion of this Colony, the eastern colonies and Singapore, viâ Cossack, and the north-eastern colonies, viâ Port Darwin.

The road is now fairly good between Wyndham and the field, a distance of about 250 miles, and is well watered, the longest dry stage being forty miles; but this can be avoided with pack-horses, whilst water could be easily obtained on the main road at the depth of a few feet, either in the bed of the Bow River, Mistake or Turkey Creek; but no wells have been sunk, as this is the first dry season experienced since this district has been settled.

Considering the extent of this field in length (150 miles), over which gold has been found, the size, well-defined character of the lodes, their richness, and length that they carry gold at the surface, the comparative cheapness with which they can be worked, and the good supply of wood and water, there is every reason to predict that this field will eventually become one of the important reefing districts of Australia. At the present it is suffering from a dreadful reaction, as, being the first goldfield discovered here, it was thought a good deal more of than it was really worth; people with a little money rushed madly into speculations of which they knew nothing, and generally ended by losing all they had. Large numbers of speculators in the other colonies were equally unfortunate, and Kimberley being so far away, reliable

information was very difficult to obtain, and many of the reports were utterly false.

There can be no immediate future for this field, as most of the richest areas are in the hands of working miners, or storekeepers, into whose debt they have run; but to whoever they belong they have the same idea that their fortune is in the particular area in which they are interested, and, therefore, would want much too large a sum to transfer their interest to any one with capital sufficient to work it, as it is quite out of the question for any one to pay fancy prices for untested claims in this far-away field, although they will, probably, be good steady dividend-paying mines if properly worked. As most of the rich reefs on the field are still held, it follows that the field cannot go ahead by the aid of outside capital until all the stone which is rich enough to work as at present is exhausted, or till all those interested are so deeply in debt that they will be glad to take anything to get clear of it.

In conclusion, it is absolutely impossible to estimate the quantity of gold raised from this field, as at the start of the field there was an export duty on gold; most of it was smuggled out of the Colony, but it must have been very large, as all the diggers agree that this field was the richest discovered in this Colony, before Coolgardie.

The Climate.—The climate of this district is hot and unhealthy near the coast, but is very pleasant for the greater part of the year on the higher land of the interior, where the nights are mostly cool; and in winter there are sharp frosts. This district is subject to tropical rains, which, aided by light winter showers, keep the creeks and rivers running most of the year.

Water Supply.—This is a well-watered district, this being the first dry season known; but even now water

can be obtained along the road between Wyndham and Hall's Creek in pools which occur every 15 miles, or at the outside 20 miles; the only exception being one long stage of about 40 miles, but in that water could be obtained in Turkey or Mistake Creek at a shallow depth. Most of the traffic, however, follows the telegraph line, where water can be obtained half-way, but this track is too rough for anything but pack-horses.

This is one of the best-watered districts in Western Australia, and on the field good water in almost any quantity can be obtained anywhere by sinking; so it is not the least use mentioning any particular localities, for the water-level of the country is, roughly, from 25 to 50 ft. below the level of the creek beds; and from this it will be easy to calculate the depth at which water will be obtained on the higher ground.

In the northern portions of this district (near Wyndham) it is very different. The water supply is derived entirely from local sources, which are being severely tried this season, and many so-called springs have failed completely.

In this country the rocks are horizontally bedded, the water supply being obtained either on the top of or a little way into the shale beds, beneath which the whole subterranean drainage from the interior passes. Therefore, if a bore were put through these beds a large supply would be encountered, which would rise to the sea-level, if it did not rise a good height above the surface; in fact, this is an artesian area.

The Soil.—The country that is of any use to pastoralists is where there are large alluvial flats or the large "Pindan" plains, both of which, in a good season, grow grass most luxuriantly, it not being at all uncommon to see it 10 or 15 feet in height; this latter, of course, is of

very little use; but for feed the large alluvial plains, covered with Mitchell and other grasses, are not to be surpassed in any part of the world.

The stone crushed up to the end of last year was as follows:—

McNeil's, 40 tons of stone .	351 ozs. 14 dwts.
Reform, 8 tons 3 cwt. . .	11 ozs.
Jubilee, 8 tons 18 cwt. . .	2 ozs. 2 dwts. 22 grains.
Lady Margaret, 64 tons .	212 ozs. 7 dwts. 19 grains.
Comet, 10 tons 14 cwt. . .	134 ozs.
No. 1 North Lady Broome, 60 tons	4 ozs. 3 dwts.
Mt. Bradley, 414 tons . .	406 ozs. 9 dwts.
Rising Sun, (about) 500 tons	437 ozs.
Golden Crown, (about) 1,000 tons. . . .	900 ozs.
No. 1 North Lady Margaret, 14 tons 10 cwt. .	12 ozs. 3 dwts. 12 grains.
No. 5 North Lady Margaret, 6 tons 10 cwt. .	9 ozs. 6 dwts.
Faugh-a-Ballagh, 6 tons .	6 ozs. 5 dwts.
Gladstone, 6 tons . .	3 ozs. 17 dwts.
Jackson's, 78 tons . .	56 ozs. 18 dwts.
Star of Kimberley, 1 ton .	16 dwts.

But this gold is mostly of a low value, realizing at the Mint in Melbourne about £3 11*s.* 6*d.* per oz. This is partly due to the fact that the copper plates on the tables are scraped down with knives so as not to lose any gold, but mostly to the addition of copper to increase the bulk, as granulated gold is the currency on the field; and as only £3 7*s.* 6*d.* is allowed for it, they reduce the standard, which is really, if properly treated, very high.

These returns, which are mostly authentic, clearly

prove that the reefs worked are payable; and it will be seen at a glance that in only a few instances, where small quantities of stone were crushed, was it picked. The larger crushings, taken as a whole, would return about 1 oz. to the ton of stone, which should pay handsomely.

THE PILBARRA GOLDFIELD.

(*Proclaimed July*, 1889.)

Proclaimed area, 32,000 *Square Miles.*

The Pilbarra Goldfield is situated in that portion of the Colony known as "The North-West," that is, the district lying between the coast on the north, the Fortescue River on the south, and the De Grey River and Warburton's Great Sandy Table-land on the east. It is a most promising mineral area. The general features are a large low alluvial plain which follows the coast, broken here and there by rocky hills, whilst to the south and east rises a high tableland.

Several large rivers have their sources on the northern edge of this plateau, and cutting deep gorges through the upper horizontally bedded rocks, expose the underlying crystalline rocks, across the strike of which they have cut their channels. These water-courses trend towards the north and north-west in deep gorges cut through the limestone and quartzite rocks, then through flats bounded by rough sandstone ranges, and on by deep ravines through rough broken hills of schists, slates, sandstones, quartzites, conglomerates, and amygdaloids, containing trap dykes, into large alluvial plains, with here and there bold massive hills of amygdaloid and small peaks of quartz, granite, and ironstone, around which soft calcareous slates often rise to the surface, but never form hills much above the level of the plain. These plains extend

to the sea-coast, where they are fringed by mangrove swamps, except where trap rocks extrude and form a bold rocky coast. The amygdaloids in many places are split up into rough blocks, which become red or black on the surface, and then present the appearance of a huge heap of stones, without a trace of soil or vegetation. They contain vast numbers of agates, calcite crystals, and other enclosures, so that it would be well worth prospecting the streams running through them for precious stones.

This field is one of the most promising in the Colony. And there is, moreover, no difficulty about water here.

THE MURCHISON GOLDFIELD.

Proclaimed area, 32,000 *Square Miles.*

This field is situated on the Upper Murchison River. The principal auriferous belt is situated at the eastern side of the proclaimed area, about 200 miles from the coast. It runs in a north and south direction from West Mt. Magnet to Austin's Lake, then in a north-easterly direction to Lake Anneen and Yagahong. Other rich patches and belts exist further east, and a few patches have also been discovered nearer the coast.

This field was discovered in the year 1891, by Messrs. Macpherson and Peterkin, who found a very rich patch of stone near Lake Anneen, which is now being worked as the Nannine Mine. (It is true that gold was discovered at two places on this field previous to this, viz. Mulga Mulga and Yuin; but in neither case did it prove to be in payable quantities.) A large number of men at once proceeded there, and many leases were taken up.

The caps of the reefs were worked by the diggers, who crushed the stone by hand, and as it was very rich, made a very handsome thing out of it. The samples of

stone sent to Perth are as rich as anything that has yet been discovered in any part of the world, not in the light of specimens, but for richness of stone throughout, as they can be broken in any direction, when the fresh surface will be seen to be studded with fine gold.

A number of reefs are reported to carry gold, in large quantities, for a considerable distance along their outcrops, which is rather unusual, as these rich patches are generally only local; but how these shoots run in depth is not yet proved, but to judge from the class of stone and the length of the rich outcrops they should be rich in depth.

The richest stone is a granular quartz, containing a good deal of carbonate of iron, with gold all through it; whilst the most showy specimens occur in the white stone when often large pieces of gold are met with. The gold in this stone is all true reef gold, not the semi-alluvial gold often met with in the cracks and faces of the reef caps; therefore, there is every reason to hope that this rich stone will go down, and consequently the reefing field will be very rich.

A quantity of alluvial gold has been found about the surface, but here, as on the other goldfields in this Colony, there are no defined gutters or leaders, and the reefs do not seem to have been denuded to any extent, so have not yet parted with their gold.

This field is on the same line of country as the Yilgarn Goldfield, and in a direct line between it and the Ashburton, so that this belt having been proved auriferous in three places in a distance of about 700 miles, it is highly probable that other rich discoveries will be made.

Geographical Features.—The geographical features of the portion of the field on which gold has been discovered are not very striking, being only the ruined remains of a vast high sandy tableland, presenting to-day

a broken surface consisting of salt marshes or lakes, fringed by salt, sand, clay, gypsum flats, from which rise low rough hills of metamorphic rocks or white cliffs, on the top of which are sandy plains, the remains of the ancient tableland. There are no well-defined rivers, but the few creeks discharge themselves into the salt flats, where the water evaporates, except after excessively heavy rains, when they overflow into the rivers which run towards the coast. The hills are mostly small and low, consisting, for the most part, of ridges of hard metamorphic rocks, near which the rich finds of gold have been made. These are often capped by the same horizontally bedded formation exposed in the cliffs at the edges of the broken tablelands, which are generally covered by dense thickets of low scrub.

Water.—The field, as a whole, is well watered, and, as a rule, the water is good, the only exception being near the salt lakes; but even there, if a well is sunk a short distance away, the water is found to be fresh.

At the island in Austin's Lake there is nothing but salt water, and at the Cue over 100 feet in depth had to be sunk to obtain a not too good water.

In most of the mines good water has been struck at considerably under 100 feet; and if a supply is to be found at all, it will be found along these lines of fissure.

There is no immediate prospect of the water question standing in the way of the development of this field, as it has of so many others in this Colony; but the timber question will be far more serious, particularly at the south end of the field, where there is nothing but mulgar.

Extent.—The gold-bearing belt, as far as at present worked, extends in a north and south direction for a distance of about 100 miles, but it will probably be found to extend in patches all the way south by Boodano and

Mt. Kenneth to the Yilgarn Goldfield, as it is on the same belt which runs south to the Mt. Barren Range on the south coast.

To the north-west it is either suddenly cut off or thrown to the eastward by the change in the strike of the country, which here runs north-east and east; the rocks, too, lose their auriferous character, being replaced by hard crystalline and granite rocks.

It is highly probable that this belt will be found to run in the direction of Windich Springs; but it is difficult to trace, owing to the auriferous rock being mostly covered by the desert sandstone formation.

To the eastward rich patches of auriferous country seem to be met with wherever the more modern formation has been removed; and from Sir John Forrest's description of the country there is every probability of gold being found all the way to the South Australian boundary along the lines of depression where the old rocks outcrop.

To the westward there is little prospect of the field extending, as it lies immediately to the eastward of the main belt of intrusive granite, which is about 100 miles wide, in which, however, there are one or two little patches of likely-looking country. On the western side of this belt, at Yuin, gold has also been found, but this is on the same line of country as Kendinup, the Darling Range, Bindoon, the Wongan Hills, and Peterwangy; and although it may be a very nice little patch, an extent of rich gold-bearing country is not likely to be discovered.

Conclusion.—This field, taken as a whole, is exceedingly rich, and will, in all probability, be found to extend for a great distance to the eastward; but there is no prospect of it extending far to the westward, owing to the belt of granite country.

Water is abundant, and at shallow depths, as the Murchison district is celebrated for this.

Extract from a Report from the Government Geologist to the Honourable the Commissioner of Lands.

1st. Extent of Auriferous Country.—The auriferous country may be said to extend from the Yilgarn Goldfield at the south, being bounded on the west by Mount Churchman, Mounts Farmer and Charles, Telegortherra; on the north-east by the Weld Range, and Mount Leake; whilst to the eastward it probably extends in patches to the boundary of the Colony. The granite belt, about 100 miles wide on the west of the points named, might as well be left out of the goldfield, as small patches like Yuin should be placed under the Government Resident at Geraldton. The auriferous belt probably trends to the north-east round the Robinson Range.

2nd.

(*a*) As an alluvial field, rich patches will be found from time to time over this large area, but a large population are not at all likely to remain stationary, as the ground, being very shallow, is quickly worked over; even if fresh patches are found amongst the old diggings, they would not keep many men long. The only chance of it becoming a more permanent alluvial field, is the discovery of gold in the deep ground; but of this, at present, there is no prospect, as there is not sufficient encouragement under the regulations for men to prospect this class of country.

(*b*) Deep leads probably exist in the made ground along this auriferous belt, and there are some nice patches to the north-east of the Cue, which should be prospected.

(*c*) There is no water, except what is obtained

from shallow wells in the lakes, that can be used for alluvial purposes, except immediately after rain.

(*d*) This field, as a reefing district, is very promising; most of the reefs opened up are true veins, and have every indication of going down carrying the gold. Many reefs are extremely rich, but in every case they are not true veins. These the prospectors should work as long as it pays them, for it is no good prematurely launching too many companies upon the market.

There are many reefs which are not so showy, that are now being worked, but which will probably prove permanent.

Report from the Warden, Murchison Goldfield, to the Under Secretary for Lands.

Herewith I forward, for the Minister's information, a general report on the Murchison Goldfield for 1892.

1. I have endeavoured to convey as much information as possible, but have been handicapped through not having been on the goldfield during the year under review.

2. I trust the Minister will remember I have been only six weeks here, and kindly overlook any shortcomings in my Report.

3. It was in the middle of the year 1891 that the precious metal was discovered on the northern shore of Lake Annean, and it was only in September of that year that the district was proclaimed, under the title of "The Murchison Goldfield," containing an area of 32,000 square miles.

It will therefore be seen at once that it can, as yet, be considered to be only in its veriest infancy, being but some fifteen months in existence. Notwithstanding this,

the extraordinary richness of the alluvial patches, and of the surface stone which have been discovered within its boundaries, soon induced a large number of diggers, and others, to visit the field and try their luck. The number of these during the year cannot have averaged less than 600, and probably reached a total of double that number during the early part of the year. Rich alluvial finds of gold, lying beyond the northern boundaries of the proclaimed area having been discovered, led away a large number of the diggers from this, so that now our population does not exceed some four hundred people, all told.

5. Owing to the *locale* of the first gold discovered, at Lake Annean, the Warden's Court and Office have always been situated there. Subsequent discoveries, however, now make it apparent that this is by no means the most central position. These discoveries have extended along the eastern and southern boundaries. Thus, gold has been discovered, and workings are now being carried on, at Abbot's Find, 45 miles north; at Gardiner's Find (Yagahong), 20 miles east; at Cue, 50 miles south-west; at the Island and the Mainland, in Lake Austin, 70 miles south-west; at Mount Magnet, 100 miles south-west; and at Yalgoo, some 200 miles west-south-west from the working at Lake Annean.

6. At all these centres many properties, containing rich gold-bearing stone, are being worked, which in every case appears to be payable, and, in some instances, to be exceptionally rich. No reasonable doubt can be entertained as to the permanency of many of these reefs for, at all events, several years to come.

Crushings on the Murchison Goldfield.

Says the *Murchison Miner* of the 14th July, 1893:—"The following are the crushings reported for the past

half-year. Through an inadvertency, the tonnage of the Consolidated Company has not been supplied, but will be furnished our readers in a future issue. With the exception of the Nannine and the Day Dawn properties, the yields have all been obtained by the dolly, the best only of the stone being culled, and the balance left religiously until a public crusher is on the fields. For the quarter ending March:—

Nannine Company's Battery.

	ozs.	dwts.	grs.
Caledonian Extended	61	1	17
Nannine	346	4	0
Mount Hall	127	6	0
Robinson Royalist	456	0	0

Consolidated Company's Battery.

	ozs.	dwts.	grs.
Queen of the Lake	145	0	0
Caledonian	194	0	0
The Victory	50	0	0

Dollied.

	ozs.	dwts.	grs.
Chicago	100	0	0
Lady Mary P. C.	41	0	0
Harp of Erin	3	4	0
Thompson's Reef	19	17	0
Emperor Lease	27	0	0
Daly's Reef	794	2	0
Last Chance	380	0	0
Gilbert's Mainland	1,112	18	0
Mount Vranzan	17	0	0
Just in Time	20	14	0

For the quarter ending June 30th, the following returns are now in:—

Nannine Company's Battery.

	tons	cwts.	qrs.	ozs.	dwts.	grs.
Caledonian Extended	13	10	0	71	3	10

Consolidated Company's Battery.

	ozs.	dwts.	grs.
Queen of the Lake	363	0	0
Caledonian	20	0	0
Robinson-Murchison	5	0	0
Connelly-Murchison	55	0	0
Brilliant	48	6	0

Day Dawn Battery.

		ozs.	dwts.	grs.
Day Dawn	256 tons	375	0	0

Dollied Stone.

	ozs.	dwts.	grs.
The Lily	40	0	0
Lady Mary P. C.	18	0	0
Harp of Erin	6	2	0
Golden Gate	24	0	0
Emperor	84	0	0
Thompson's Reef	18	18	0
Just in Time	5	0	0
Last Chance	125	0	0
Mainland Reef	75	0	0
Daly's Reef	31	0	0
Golconda	300	0	0
Golconda Extended	20	0	0
Evening Star	80	0	0

THE ASHBURTON GOLDFIELD.

(*Proclaimed December*, 1890.)

This field embraces an area of 8,200 square miles.

Top Camp.

About 15 miles east of the eastern end of the Capricorn Range, gold was first found at a place called the "Top Camp," in some deep creeks on the southern side of the river Ashburton. The wash was of no great depth, and the gold was highly water-worn, and in large, flat, bar-shaped pieces, found in the ledges of the clay slate bottom; the largest of these weighed about six pounds. Over 10,000 ounces have been taken from these workings. No reefs carrying gold have, as yet, been discovered in this locality.

Ashburton Fields Annual General Report, 1890.

The gold on this field is very pure, and free from quartz and ironstone. All the larger pieces were of a flat bar shape, owing to their having been formed between the slate ledges by the slow accumulation of fine gold, which, by the gradual accretion, due to the deposition of the minute quantities of gold held in solution by the water, has formed into one piece, taking the shape of the cavity or ledge. The largest nugget yet found weighed about 6 lbs., and it is estimated that from 9,000 to 10,000 ozs. have been taken from these diggings. The run of gold in the main gully extended for over one mile in length; but most of the gullies, north and south, for a distance of about five miles along this line have proved rich.

Whence this gold was derived it is impossible to say,

without duly mapping and prospecting the area, but it is highly probable that it results from slow accumulation from poor quartz and ironstone reefs, though in some cases it may have been washed from older "leads," and conglomerate beds, which, if they existed, must have followed the present courses of the creeks, for no traces of such beds are now to be seen. The deepest sinkings on this field are from two to three feet.

All these gullies will pay to work again and again after each heavy shower of rain, as their beds are so small and deep that they will act as ground sluices, re-sorting all the dirt which has been imperfectly treated by the process of dry blowing.

In the large plains of the Ashburton there are sure to be some very rich deposits of gold found; but as the prospecting will be most expensive work, no one will undertake it, unless he be granted a protection area, until the course of the leads has been ascertained.

Taken as a whole, this is a most promising tract of country, and will, without doubt, prove a rich and lasting goldfield; but it is highly probable that before this is proved, that every one may leave the field under the impression that all the gold is worked out when they have scratched all they can from the slate-bars of the small gullies in the ranges, but there will still remain that which will yield the best returns, viz., the deep ground as yet untouched.

This field, as far as it has been worked, has produced the most gold in the shortest time of any field in the Colony, for about 15,000 ounces have been raised in about six months.

The total export of gold from Western Australia has risen, owing chiefly to the development of the Murchison and the Yilgarn Fields, from 3,000 ounces in 1888, to 30,000

ounces (or £115,000) in 1891. In 1893, 3,000 ounces, more or less, have been coming down from the Yilgarn Goldfield by every gold-escort. (For latest returns procurable, *vide infra.*)

THE GREENBUSHES TINFIELD.

Area, 50 Square Miles.

In the latter part of the year 1888, Mr. Stinton, whilst kangaroo hunting, found a small quantity of stream tin in a gully near the Blackwood River, not far from the main road, about nine miles from Bridgetown, and fifty-three from Bunbury. A large number of leases were at once taken up; but as the old regulations did not contain any labour clauses, very little work was done.

The field is situated at the highest part of the range, on the north-east side of the Blackwood River, between two of its branches. From the high peak in the middle of the field the leads and gutters radiate; but, as a rule, they are better formed on the southern and western sides.

Although there is very little surface water on the field, except immediately after rain, there is no scarcity of it, as springs break out in several places, and it can always be obtained by sinking at a slight depth. This is very remarkable, as the country is so high, and it seems to indicate that the deposits of drift are much more extensive than is at present believed. There is a good rainfall here (36 inches), which, falling on the swamps, is held for a long time, only gradually sinking away into the solid rocks below, and if the trees were killed, the water supply would be considerably increased. The deepest shafts sunk on high ground have always struck water at from 50 ft. to 70 ft. During the greater part of the year,

the want of water is the great obstacle in the way of working; but if properly worked, dirt should be raised during the dry season, and washed during the wet.

The formation of the district is crystalline schist, gneissic, and granite rock, with numerous dykes of diorite, granite, and veins of tourmaline, the surface being mostly covered with nodular clay-stones (gravel), sand, and ferruginous sandstones, the ferruginous sandstones capping all the ridges, whilst the sand is found in all the swampy hollows often associated with a poor, earthy brown coal of recent formation. All the rocks strike in a north and south direction.

The tin wash of the field varies greatly in thickness, richness, and quantity, running from 3 oz. to 15 lbs. to the dish, and in thickness from 6 inches to 20 feet; the low percentage washes being in larger quantities, and, as a rule, much freer than those of the higher percentage. Most of the areas are now worked on the tribute system, the dirt being stacked during the summer, and washed in the winter. The whole of the surface of this field is covered with a modern formation, beneath which the leads run, so considerable prospecting will be necessary. No lodes have yet been found, but, from the crystalline and unwater-worn character of the tin, they must exist. These will probably be in the form of *stock-works*, or, in the way tin occurs in some of the principal continental mines, where they are found as a network of thin veins or strings of crystals interlacing through a decomposed granitic dyke, all of which are usually found sufficiently rich to work. The field is as yet only in its infancy, and is comparatively undeveloped, but will, probably, when more leads are opened up, support a large mining population, especially if worked in claims, as it is undoubtedly what is called "a poor man's field." At the present time

only about twelve areas are being worked, and, up to the end of 1891, over 576 tons of tin had been exported.

The nearest port is Bunbury, which is connected by rail with the capital, and from which a railway runs 18 miles to the foot of the range, when a good, but hilly, road connects it with the field. The field has telegraph communication, and a mail coach calls twice a week.

Areas on this field should be worked by their owners, as companies will never pay. There is a handsome thing for any one who will work his own claim. This is proved beyond a doubt by all the companies closing up whilst private individuals are doing well, even when they have to pay a large tribute to the lessee of the area. One working miner is said at the present time (August, 1893) to be clearing £30 a week from his claim.

The total value of the tin produced in Australia, up to the end of 1891, was £20,000,000. It is only during the past two years that Western Australia has begun to contribute her share to the annual export.

THE COLLIE RIVER COAL.

About the end of the year 1889, when coal was attracting considerable attention in this Colony, Mr. David Hay, of Bunbury, became possessed of information which led him to believe that coal existed in the bed of the Collie River, at no great distance from Bunbury; for this, he set out to prospect with a party of men, and was rewarded by the discovery of some fragments of coal on the rocky bars, at the lower end of a pool: as no sign of an outcrop occurred above, it was naturally inferred that the seam was to be found in the bed of the water-hole, and as a dark patch could be seen from the bank, some men were sent into the water to dive, who brought up

good samples of coal. Mr. Hay and his whole party then went in and collected coal in this way, until some hundred-weight or so was raised. This was the first sample taken into Bunbury, which was burnt publicly on the occasion of the visit of His Excellency Sir Frederick Broome.

There is not the least doubt but that this will be an extensive and important field in the future, but its present development is hindered by many things—1st, the great lack in this Colony of capital, and secondly, a market for the coal when raised, as the quantity that will be used in the Colony for many years to come will be too small to make a mine pay.

THE WELD RANGE.

Wilgie Myah.—In the Weld Range, in the Murchison district, is situated the celebrated Wilgie Myah, which is certainly, says the Government Geologist, one of the most striking things that is to be seen in this Colony.

It is probably one of the largest iron lodes in the world, consisting almost entirely of hæmatite, which at the surface and in the cavities assumes the botryoidal form, which has given rise to the idea that it is a lava flood.

It is situated on the east side of the Weld Range, and runs east and west, dipping north, following the main strike of the rock.

In these lodes there are soft bands, often clayey. These the kangaroos scratch out, forming caves, and it is probably in this way that the natives first made the discovery that this lode could be easily worked by following these beds.

It has now been opened up, as a huge pit or quarry, to

a depth of about 100 feet. This is entered near the top of a hill (about 70 or 80 feet above the plain) by a hole about 50 feet across; then a steep descent commences over the talus in a south-easterly direction. At the bottom it spreads out to about 50 yards wide, with the roof some 50 feet above, and numerous cave-like galleries running into the face in all directions.

The Wilgie is worked by cutting round a mass of it, then wedging it off. This work, although very primitive, is very interesting, as these natives work with their wooden tools much in the same way that the ancient miners did in Great Britain with stone hammers. There are also rude attempts at staging, to allow the miners to work up into the roof, when veins of sufficiently good quality run that way.

In contemplating this pit, one is struck by the vastness of the work, and when we consider the small quantity of Wilgie that can be required, it must have been worked for centuries. Of course it was worked on a much larger scale before the white invasion of Western Australia, and was probably traded great distances.

As far as the lode itself is concerned, it is most magnificent iron ore, and, considering its size, will, without doubt, be of great value in the future.

It has been generally supposed that cinnabar existed here, associated with volcanic rocks; but there is nothing of the sort, the Wilgie itself being red hæmatite and red and yellow ochre.

GOLD OUTPUT.

The total export of gold from Western Australia increased from £13,000 in 1888 to nearly £60,000 in 1889, and £115,000 in 1891. The return of gold, the produce of the Colony, entered for export to Melbourne during the

quarter ending June 30, 1893, gave 23,121 ozs., value £87,860. Of this, 12,003 ozs. (value £45,614) came from Yilgarn, and 6,153 ozs. (£23,383) from the Murchison.

Extract from the Lands and Surveys Report for 1892.

"Gold-mining has made satisfactory progress during the year. The total revenue received from this source was £5,402, being an increase of £1,281 on the receipts of 1891.

"The quantity of gold entered at the Customs for export during the year was 59,548 ozs., valued at £215,862, being 29,237 ozs., valued at £102,196, more than the exports of 1891 (*see* Return No. 21). As stated in my last Report, there is no doubt a considerable quantity of gold leaves the Colony without passing through the Customs' books."

Return XXI.—Output of Gold for the Year 1892.

	ozs.	dwts.	grs.
Kimberley	1,088	16	22
Pilbarra	12,893	10	0
Murchison	24,356	9	12
Yilgarn	21,209	9	18
Total	59,548	6	4

Return of Gold exported from West Australia.

	Ozs.	Value.		Ozs.	Valu
		£	Jan., 1892, to		
1886		1,207	June, 1892		£
1887	4,873	19,492	(6 months)	29,053	110,161
1888	3,493	13,098	1892	—	—
1889	15,492	58,871	April 1, 1893, to		
1890	22,806	86,664	June 30, 1893		
1891	30,311	115,182	(3 months)	23,121	87,860

COOLGARDIE.

On September 17, 1892, two prospectors, Messrs. Bayley and Ford, reported to the Warden of the Yilgarn Fields their discovery of payable gold at Coolgardie, a place situated about one hundred miles east from Southern Cross and about sixteen miles N.E. from a place, marked on Hunts track to Hampton Plains, called Gnarlbine.

Bayley offered his reward claim to a Perth syndicate; but while their agent was attempting, by chaffering with Bayley, to secure for himself some part of the sum which he was commissioned to pay, Mr. Sylvester Browne, a well-known mining expert (and a brother of the novelist, "Rolf Boldrewood"), arrived, and forthwith bought the mine for £6,000 and a one-fourth share. Mr. Browne is said to have had no more than £100 in his possession at the time of the purchase, and to have recovered the balance of the £6,000 from the mine itself. At all events, he at once set to work, and with a modest equipment of tools, valued at £1, which mainly consisted of two hammers and an improvised mortar, "dollied" out the gold. From one heap of quartz, the height of a table, he is said to have taken in this way 3,000 ounces, and a second crushing of nearly equal value came from 4½ tons of stone. The first consignment of gold and specimens, which reached Perth in the early months of 1893, and was exhibited in the Union Bank, was followed by another 3,000 ounces, which Mr. Browne brought down himself, and took to Melbourne in July. The exhibition of these last specimens in a jeweller's window in Collins Street was followed by a great rush from the eastern colonies to Western Australia.

Some 15,000 ounces have, so far, been taken from Bayley's Reef, which only seems to improve in appearance

the deeper it gets. And by August, 1893, there were about 3,000 men at and about Coolgardie; perhaps 500 on the road, and new arrivals reaching the Colony at the rate of several hundreds a week. Alluvial gold was found in various parts of the district; but much difficulty was experienced from the outset in obtaining water even for drinking, and for washing earth none was obtainable. Consequently, the gold obtained was all got by specking, dry-blowing, or in nuggets out of the reefs. Many men, even under these difficulties, obtained large amounts of gold in a short time. Several fresh rushes broke out, notably a very rich one, called Hannen's Find, some sixty miles to the north-eastward; and before the end of August, 1893, it became necessary to transfer the Warden from Southern Cross to Coolgardie. Heavy rains began to fall before the winter (the English summer) months were over; and though several new routes to the fields were at once blazed out—men finding their way from Northam, from Broomehill, and other points on the railway between Perth and Albany, and even direct from Espérance Bay (a small port far east of Albany, and almost due south from Coolgardie itself)—yet on all of these roads the travelling became heavy, and teams were bogged in all directions. The pressure was relieved to some extent by the use of bullock-teams, camels, and pack-horses; but nevertheless the price of provisions naturally rose. Flour sold at from 50*s.* to 60*s.* the 50-lb. bag, and other things in proportion. However, 72 miles of the railway from Northam towards Southern Cross is now available, and the construction of the remainder will be hurried on by the Government. Boring parties are at work, and the construction of capacious dams and reservoirs will, it is hoped, render it unnecessary to suspend operations during the dry weather. Prospecting parties—some of them

equipped for nine months' stay in the wilds—are out exploring the country in all directions, and it is believed that the whole district between Coolgardie and the Murchison will prove to be auriferous, containing, probably, many Bayley's Finds.

"There are several well-formed reefs, showing gold, about five miles further south," says the Government Geologist, "and another patch twenty-five miles to the northward. The available land for prospecting in the immediate neighbourhood of Coolgardie is limited, as this belt lies between the granite country and the freehold land of the Hampton Plains Company; but during the winter we shall probably hear of new discoveries to the north-east and south-eastward, as there are some hundreds of men out prospecting. When we consider the quantity of gold taken from Coolgardie, it is highly probable that some of these reefs will make very good payable mines."

The output of gold from the Colony, as will be seen from the statistics I give elsewhere, has been doubling itself continually of late; and this last discovery has had the effect of making the returns from West Australia (a Colony, it must be remembered, in which gold was, till recently, not believed to exist) twice as large as were the returns from South Africa seven years after the gold fever first set in there. Full particulars as to the route from York (the fare to which from Perth is only a few shillings) to Coolgardie are appended. It now only remains to hope—first, that the efforts of the Government to provide a safe water-supply for the multitudes which in a few months' time will be congregated round Mount Burgess, will be vigorous and successful; and, secondly, that a fair proportion of the adventurers who come to dig will remain to settle in the Colony, and to prosper on its lands.

So shall another fair province be added to the Empire.

[NOTE.—It will be a serious check to the at present bright prospects of the Colony if work in the interior is stopped, owing to the miners being forced to come down for want of water. Diggers in most parts of Australia, it is true, are accustomed to "knock off" for six weeks at Christmas, but last year the operations beyond Yilgarn were suspended for months. And it is about Christmas time that the rush should naturally be in full swing. However, the exertions of the Government in pushing on the railway and in building tanks will probably avert this evil.]

THE WESTERN INTERIOR OF AUSTRALIA.

The Eastern Division of Western Australia, or what is known as the Great Victoria Desert, had till recently a very bad name. Southwards from the upper waters of the Fitzroy River, it is still practically unexplored; and Col. Warburton's report, in 1873, stigmatized the whole country as desert. The middle of the Colony, between parallels 24° and 27° South, was explored to some extent by J. Forrest in 1874, and by Ernest Giles in 1876. Much of this portion of the interior was found to consist of plains covered with spinifex, and very indifferently watered. Further south, and extending to the seaboard of the Great Australian Bight, "desert country is seen on every side"; and Giles's report of 1875 described this district as being totally destitute of water for a distance of over 300 miles.

But explorers, especially in dry districts, are compelled to push on as fast as possible, and to keep to one direct track. Moreover, they are necessarily chosen rather for their capacities as bushmen than for any special mining,

agricultural, or pastoral knowledge. Consequently, there is generally another side to their reports. The country where Burke and Wills perished of thirst and starvation is now covered with prosperous stations, and the very districts which, a few years back, Sir John Forrest (with his brother) and Mr. Giles were travelling half-famished and hard put to it for water, are now filled with a teeming population of miners.

"The question of the future habitability of the western interior, or what is known as the Australian Desert, is (wrote the *Sydney Morning Herald* in 1892) one which scarcely seems worth debating during this generation, there being so much land awaiting reclamation nearer to civilized settlement. Still, when the constant dispersal of the world's pioneers in search of new fields to conquer keeps increasing, it may not be amiss to consider what possible future lies in store for what is generally, and with some show of reason, looked upon as hopelessly unavailable territory. The subjugation of the terrible Sahara, first commenced by the Romans, has now been steadily proceeding for some years, and in America the transformation of tracts of desert country into fruit-producing areas is a well-known fact, the deserts in both these continents differing in characteristics from each other as much as they do from the Australian interior. But in both cases water has been the factor which has wrought the change, and it is on the continuance of the artesian water across the continent that the practicability of reclaiming the Australian desert depends. The distinctive and peculiar feature of the Australian desert is well known. The parts which have received this unenviable title are covered with a growth of resinous, prickly grass, called spinifex (*Triodia irritans*). Sometimes the country is treeless, but generally sparsely timbered with a few

stunted trees. Where there is scrub it is nearly always mulga. Spinifex is of many kinds; a less formidable variety is often found growing in company with edible vines and bushes, and both cattle and sheep find pasturage there. But the spinifex of the Western desert is, as a rule, uncompromisingly hostile, and the country it grows on otherwise unproductive. The worst description affects the stony, rocky ridges, and this country, save for mineral working, is not likely ever to be wanted for centuries to come. But the average of unavailable land thus outcast would not amount to more than unavailable land does, as a rule, in any other part of Australia. On the flats, plains and downs the spinifex is smaller and softer. At a hasty glance the first opinion would naturally be that soil which in its natural state is only capable of growing spinifex could not be relied on to produce useful or edible plants. In truth, however, it is the climate more than the soil which is responsible for the presence of the objectionable plant. Spinifex is the only growth which can live through one rainless year after another, and still thrive. It can grow on a thin coating of soil on a bare rock, and the fiercer the drought the more it seems to prosper. Hence it has occupied the interior, not because like many other noxious weeds it spreads and encroaches, but simply because it is the only vegetable life possible under the circumstances. The proof of this is, that where the conditions are less unfavourable a more generous growth at once takes its place; where the surface formation induces a concentration of what little soakage exists, good grass is found. Nor is spinifex a tenacious plant; its roots are but little below the surface, and a common rake will uproot it. On the flats and level country a considerable depth of soil is often to be found covered with a layer of red sand, and in many parts there

is loose brown earth, similar to the western downs of Queensland. Should the future march of the drill still continue steadily west, and the water prove suitable for irrigation, as great a transformation will in time be worked as has been done in Africa and America.

"Another question then arises. The surface of the Western interior is covered with natural reservoirs. Shallow lake-beds, blind creeks, and huge clay pans are everywhere to be met with; needless to say, as a rule dry and cracked with heat. Would the filling up of these, and the establishment of their permanency, have any effect on the climate, if even only to the extent of rendering the nights dewy and moist, instead of sultry and dry? Take that vast mud-flat which is so misleadingly portrayed on the maps as 'Lake Amadeus'; would not the presence of water there exert some influence on the atmosphere, even though it became—as it certainly would—salt after a short period? The unfailing regularity of the climate, which now is the bane of the place, would under the circumstances, induced by a copious supply of artesian water, become a benefit. The monotony of almost eternal sunshine, instead of being, as now, a destructive agent, would then be a fostering influence. When the ways of tillage most suitable to the country were understood, the interior desert might in time surpass the coast districts in the production of certain crops. Already the attempt to introduce the date palm has been fairly successful, and it is found that it will thrive as well on the margin of a salt or brackish lake as on the shore of a fresh one. In regarding the Western interior, then, as given over to spinifex and desolation for ever, we are probably making a mistake. The spinifex is there simply because the extreme aridity of the climate denies moisture and sustenance to any other form of life. It is as

the cactus of the American desert. The soil is there, and wherever the transition from sandstone to limestone takes place, or the brown granite predominates, the earth, in any other part of Australia, would teem with vegetation. The fate of scrub land has been determined now for many years, and in due course the mulga thickets of the desert will fall before the advance of settlement and the demand for new country. The accomplishment of this work belongs to the coming century; but the rush and hurry of events is now so swift that the time may come sooner than expected. Slowly, but surely, the advance guard of gold prospectors is working up from the south-west corner of the continent, and it seems highly probable that the gold-fields in the interior may one day be of a startling nature. From the camp of the wandering miner to the permanent habitation of the settler is but a natural sequence. To any one who has confronted the solitude and gaunt sterility of the interior desert as it now is, the prospect of a transformation to fertility may seem but a dream of the imagination; but it has been done in other countries in the past and in the present, and there is no reason why it should not take place in due course in Australia."

Such was the tone in which an Australian paper was able to write of the "West Australian Desert," including, of course, this very district of Coolgardie, but a few months ago.

"Slowly, but surely," the prospectors were working up; and fertility was a "dream of the imagination."

Let us now read the Report of Mr. Renon, the Inspector of Water Supply, to the Under Secretary for Lands, presented July 10th, 1893 (which should be compared, by the bye, with the itinerary of the route to Coolgardie, given elsewhere).

"Although the goldfield at Coolgardie has not yet been discovered twelve months, the population now there must be fully 2,000 people, and steadily increasing; and as every week brings us fresh reports of good discoveries, it is self-evident that the field will be permanent, and that before long the traffic on this road will be so great that the conservation of water on a much larger scale than the present system of small wells will be an absolute necessity. It is encouraging to think that while we have such a rich field in the heart of the Colony, it is surrounded by land *quite capable (if cultivated) of supplying a large population with the necessaries of life without depending entirely upon importation.* It is a matter to be deeply regretted that almost the whole of the supplies now used in this field are obtained from other colonies; but, of course, at the beginning of these rushes it could hardly be otherwise, as the country was comparatively unknown, and supposed to be a barren wilderness; instead of which there is a large quantity of good agricultural and pastoral land now lying idle, which, if brought under cultivation, would compare favourably with the soil in one of *the best wheat-growing districts in Victoria; viz., the Goulburn Valley.* This, combined with what will most probably be one of the richest goldfields in Australia, convinces me that to cope with the population and traffic which is bound to follow the discovery of such a combination of rich auriferous and agricultural land, it will be absolutely necessary to do more than sink shafts and bore holes around the granite rocks, with only a remote possibility of striking water. Too much of that kind of work has already been done, and a considerable amount of money wasted which might have been saved, or turned to more profitable use, had more judgment been exercised in selecting places for sinking shafts where water would

be likely to exist. The supplies obtained are from wells sunk in pockets, or immense namma holes around the main rocks, filled with an alluvium of decomposed granite. When the supply in these pockets is exhausted, the wells naturally give out, and are useless until the pocket is refilled by the rains. These wells are also very expensive to make, as they have to be steined up from top to bottom to keep the walls standing. In dealing with the question of water supply in this district, it will be necessary for the Government to consider not only the wants of miners seeking their fortune, but to grasp the opportunity that is offered by a large influx of population, to enhance the value of and promote permanent settlement on the soil, by making a systematic search for natural water-courses, basins, and depressions which (if found) will not only facilitate the conservation of water and reduce the expenditure necessary for that conservation, but will induce the people to settle on a land which offers such splendid opportunities to capital and labour alike. There is not the slightest doubt that settlement cannot be permanently successful without an assured supply of water sufficient for the domestic requirements of selectors and their stock. As the district, as far as our limited knowledge goes, is destitute of natural water-courses, this can only be done by artificial means. I should recommend a proper system of tanks and dams being started along the road to Coolgardie, at distances of about every fifteen miles apart. Their aggregate dimensions should be sufficiently large to ensure the storing of a supply somewhat in excess of that necessary to cover the maximum period in which rain does not fall. In the selection of these sites advantage should be taken, where possible, of local surroundings, such as lakes, lagoons, and other natural depressions; care should also be taken in choosing sites where the

ground holds well and is not liable to loss by percolation; in many instances sites could no doubt be obtained where tanks could be filled by draining from local catchments, and it should be distinctly borne in mind 'that none of the local rainfall that can be saved, should be allowed to go to waste.' As the Land Settlement Bill is certainly one that will affect the natural welfare of the Colony, I cannot resist saying that a guaranteed water supply in connection with the new Bill would be one of the greatest incentives to settlers to occupy the land. Furthermore, it is the intention of the Government to alienate the land, and as there is an insufficient supply of water, not only for domestic requirements, but for stock, it could hardly be expected that agriculturists and others would risk their capital in a district where climatic influences are only moderately favourable, and even if each settler spent, say £100, in conserving water for his own use, it is very doubtful whether the supply would last. But if tanks and dams were constructed on the areas proposed to be so alienated at such distances apart that would ensure a settler being within two or three miles from water, a substantial inducement would be offered to, and I am sure would be gladly availed of by, *bonâ fide* farmers, who no doubt would be willing to pay a small tax to defray interest on the outlay, maintenance, etc., of the necessary works. As the Water Supply Department here is purely in its infancy, it would be impossible, without further surveys and examinations on the ground, to suggest the best means to develop the agricultural interests of the Colony. The supply of water necessary to keep open the various roads in the Colony is in itself a very important matter; but once that is done, the ultimate settlement on the soil, which naturally follows the influx of a large population, and which can only be

done in the drier districts by an assured water supply, is a matter to which the Government should give the earliest consideration. In conclusion, I would recommend tenders being called for excavating tanks at the following places along the road, with capacities of from 22,000 to 30,000 cubic yards:—12,000 yards, Yellowdine Rock, 19⅞ miles from Cross; 12,000 yards, Karalee, 31⅞ miles from Cross; 12,000 yards, Koorarawalyee, 42¾ miles from Cross; 12,000 yards, Borrabbin, 60¼ miles from Cross 12,000 yards, Woolgangee, 76¼ miles from Cross; 12,000 yards, Cane Swamp, half-way between Woolgangee and Bullabulling Rock, on new deviation; 12,000 yards, Bullabulling Rock, about 15 miles from Coolgardie; 30,000 yards, Coolgardie township. By this means an ample supply of water will be conserved when the tanks are filled, which will keep the road open for traffic during the driest summer. I strongly recommend these works being started as soon as possible.

"I have the honour to be, your obedient servant, etc.,

"PERTH, *July 10th*, 1893."

So much for the alleged desert.

Finally, compare with this Report the following letter to the Perth Daily News *of August 12th*, 1893.

THE EASTERN GOLDFIELDS IN RELATION TO AGRICULTURE.

(*By our Coolgardie Correspondent.*)

There is no more pleasing prospect, no greater aid to permanence, and no better factor towards the endurance of the gold-bearing country lying to the east, than the rich nature of the soil that surrounds it. In whatever direction you travel, the same good-looking chocolate soil meets

the eye—soil that would produce with the smallest amount of trouble almost anything it is possible to grow in a climate such as this; and that would seem merely requires tickling with the hoe to make it laugh with the harvest. At this early season of the year there is abundance of feed in the vicinity, but only the most convenient patches are taken advantage of. Every one agrees that it is splendid agricultural land, but its value is minimised, and its worth entirely condemned by a great many, on account of the absence of permanent water, and the fear from the constantly reiterated, if somewhat groundless opinion, that this tract of country is subject to periodical and severe droughts. On all hands and at every point we are met with the water difficulty, and what Nature has made comparatively easy in some respects she has counteracted with this very serious drawback. One thing is certain, however, if this land is taken up for agricultural purposes there are few other hardships in store for the selector. The land, unlike most land of equal richness, is generally very easy to clear, and what might be saved in comparison with other places in this respect could go towards the conservation of water. To conserve water we must, of course, have a rainfall adequate for the purpose, and since the country has been opened up, no one can say that sufficient has not been forthcoming for this purpose. The huge masses of granite which so frequently and extensively outcrop form splendid natural watersheds, surrounding which water is obtainable with very little difficulty, and for many months of the year is found in abundance on the surface. I am not alone referring to the country in the vicinity of the fields, but to the extensive belts of forest lands to be met with on the tracts leading to them. The great waste and barren areas which are encountered during the early days of the trip along these tracks grow

less and less as you push on to the east, and the soil becomes better and more extensive as the field is approached. From Coolgardie to Hannan's Rush the soil along the track maintains its rich aspect, and is pronounced fine wheat-growing country. Bordering on both the above places are the rolling plains of Hampton, and it is to the syndicate owning this vast tract of country that we may look, rather than to the Government of the Colony for a movement in the direction of settlement upon the land. Years ago thousands of acres of the syndicate's land were taken up by a number of our southern farmers for the purpose of sheep-raising. These formed themselves into a party and visited the plains, and were so highly pleased, after this long and tedious journey, with the aspect of the country, that they, in the height of their enthusiasm, took up large blocks, paying the first year's instalment in advance; but on more mature reflection, taking into consideration the extreme remoteness of the place and the difficulties of transit and communication between centres of population, they never took possession of their holdings, and allowed their claims to lapse. Now, however, the outlook is different. A centre of population is at hand, and is constantly increasing, and, moreover, is sure to be permanent. We may therefore hope that the Hampton Plains syndicate will move in the direction of settlement, notwithstanding their disheartening experience of years ago. I met a representative of the company on my way to Hannan's Rush, when the field first broke out, and he seemed quite cheerful at the prospects in store for his employers. Syndicates with their head-quarters so far removed from the base of their operations are slow to move, or appear to be so to those on the spot; but it is only too much to be feared that they will beat the local Government in offering inducements to settlers. The first to commence

operations in agriculture or stock-raising in the neighbourhood of the fields will have a splendid market for their produce at hand, and one successful crop would repay their outlay, with prices so high, and the probability of their remaining so for some time to come.

THE ROUTE TO COOLGARDIE.

The railway survey shows the distance from Northam to Southern Cross as 160 miles. The first section, to Nalyoring (72 miles), is already open for light traffic; and the lately-found track from Northam, which passengers by train would pick up at this point, is being largely used this month by drays, which thus escape the heavy ruts of the route further south.

The coaches (the fare by which is £5 for the trip to Southern Cross, and 4*d.* a lb. for luggage) start from York, a flourishing agricultural township on the Great Southern Railway, about 15 miles south of Northam. The road from York, which has been cut by the Government at a cost of, say, £25 per mile, is 40 feet wide, and, as the country is remarkably level all the way, and there are no creeks, was at first very practicable. Unfortunately the trees, instead of being cut down, were torn up, roots and all, by machinery—a practice very common in Australia. This exposed the light soil to being cut up by drays, and particularly by sandal-wood teams, travelling, as is their custom, in single file. The heavy rains have ended by making the track almost impassable, and it is now proposed to remedy the evil by laying down ti-tree or other scrub.

The first stopping-place is Youndegin, 38 miles east of York The country up to here is a fertile chocolate soil, covered with raspberry-jam trees, silver grass, and

cockspur. Here and there is a clearing which gives pasturage to a few sheep. Onwards to Tamin (52 miles from York), where there is a water-catchment excavated at the foot of a granite rise, is sandy, forest country, covered with eucalypts and black-boys, or grass-trees. At Mooranopping (70 miles), beside a splendid well, between two high granite *kopjes*, is an orchard of three acres, containing grapes, peaches, figs, and apples — the last cultivated spot, by the bye, to be found on the track. The proprietor of this orchard, who exhibited a sample of currants at the Colinderies, has also 100 acres under wheat, which yields him 14 bushels per acre. The average rainfall is 13 inches. One of the wheat-paddocks is enclosed by a dog-leg fence of sandal-wood, which is being kept, waiting for a rise. Chaff grown here fetches £9 a ton from the passing teamsters.

At Tootagin (104 miles from York), at the foot of another, but higher, hill of granite, is a capacious tank excavated by the Government. Forest country from here on to Merredin, the Carrying Company's Depôt, where is a dam (built by the explorer Hunt when opening up the Hampton Plains pastoral country east of Coolgardie) and McAlister's Well, still at the foot of the same immensity of granite which overshadows Tootagin.

Shortly after the next station, Burracoppin (130 miles), begins the Boodelin Forest, rich soil of pulverized loam covered with the ash of burnt morral trees and their roots. Near Boodelin is some water, at Yorkrakine, and an attempted clearance of 100 acres. The rest of the road is sandy and unwatered, and a salt-pan is crossed just before reaching the township of Southern Cross.

The whole route is watered by the soakages at the foot of the granite rises, and the natural place for sinking is always indicated by a growth of wattles. The natural

rock-bed catchments, which will one day give a permanent supply, must be bored for. There is a great deal of forest timber in patches: jam trees, stunted and full-grown; the gimlet gum (named after the gimlet twist of its upper branches), with its red, smooth bark streamers flaunting in the wind; and, more common than either, the everlasting morral, the roots of which, if they had not been dragged out by the Government, would never have been cut by the tires of coach or waggon. When at last these trees fall from age or in a bush fire, they burn out to a white ash from the topmost branches to the furthest root tips, and fertilize the soil. The larger tree-trunks beside the road have been decorated by the natives with drawings of their weapons, and with figures of animals, birds, and lizards, cut in the bark. There are a few kangaroos to be seen on the way, and many parrots, magpies, and bronze-wing pigeons near the soakages.

Leaving the township, the track runs still eastwards, bending to the north-east only at Woolgangie, when three-quarters of the journey is finished.

Under Morlining Rock, 29 miles from Southern Cross, is one well. The country, for 10 miles before reaching this rock, is good agricultural and grass land, covered with open morral and salmon-gum forest. At Karalee Rock (32 miles from the Cross) are two wells, one of 6 feet diameter, sunk 49 feet, and a small dam in the bed of a creek. There are many patches of good soil between here and Koorarawalyee, the next station, 10 miles on. Here several trial sinkings have been made, and water struck at 39 feet. Onwards to Boorabbin Rock (60¼ miles from S. C.) the track runs over a large sand plain, covered with low scrub and spinifex. This is the worst stage of the road to Coolgardie, being totally destitute of both grass and water. Hunt's Well, at Boorabbin, has 4¾ feet

of water. From here the soil is poor for 5 miles, after which forest country is entered, and the soil is generally good, sometimes very fertile. Water on the way is found in three wells, at 17, 15, and 10 feet. The travelling is heavy through the rich forest country, but relieved by occasional sand plains. At Woolgangee Dams (76¼ miles from S. Cross) there is water in many shafts at 10 feet. The soil on from here is good. Yerdi (81½ miles); Hunt's old well here has a fair amount of water, besides what is held in four trial shafts. Fair country on for 10 miles, and then good soil to Gnarlbine Rock (101 miles from S. C.), where there are five permanent wells. From Gnarlbine, N.E. to Coolgardie, is 16 miles; but by a new track from Woolgangee straight to Coolgardie, the whole distance from Southern Cross is reduced to 121 miles. At Coolgardie there are tanks to hold 525,000 gallons. A bore ¾ mile S.W. of the township has so far only reached 130 feet, and, of course, is not yet successful. Mount Burgess, in sight to the northward, is an isolated hill rising gradually till its summit, a mile from its base, is 600 feet from the plain. It was described by Lefroy and Hunt in their expedition of 1863. 22 miles S.E. from Coolgardie is a well at the Horse Rocks, which are reached through some rich forest country, splendidly grassed. "The grass in this country," says Mr. Surveyor Noel Brazier in his Report (Feb. 23rd, 1893), "is certainly the best I have seen in the Colony. We were several days looking for Slate Well (30 miles to the eastward), which ultimately was found, completely surrounded by scrub, in the bed of a small creek flowing through a wide samphire flat into Lake Lefroy." The latitude of Slate Well is about 31° 6′ 37″ S., and longitude 121° 41′ E. "Splendid stations," says Mr. Brazier, "could be made out here, as the creek seems naturally adapted to the formation of tanks. The

creek traverses a wide samphire flat, bounded on either side by rich forest land, with an abundance of succulent grass."

It is worth remembering that A. C. Gregory, the explorer, turned back in 1846 not far from Southern Cross; even as Captain Sturt, in the forties, gave up a little short of Broken Hill.

The coach takes four days to reach Southern Cross. Swags are carried either by dray or by camel for about £1.

IMPORTS AND EXPORTS OF THE COLONY.

For the past five years these are as follows :—

Years.	1888.	1889.	1890.	1891.	1892.	Total for five years.
	£	£	£	£	£	£
Imports .	786,250	818,127	874,447	1,280,093	1,391,109	5,150,026
Exports .	680,345	761,391	671,813	799,466	882,148	3,795,163
Grand Totals	1,466,595	1,579,518	1,546,260	2,079,559	2,273,257	8,945,189

This is an interesting table, showing at a glance the progress made in the Colony. The external trade for the past five years is £8,945,198. For the year under review the total is £193,698, giving an increase to imports of £111,086 over the figures for 1891, and to exports an increase of £82,000.

The Colony's chief export is wool; and although the wool-clip for 1892 was affected considerably by losses in sheep sustained during the drought in 1891, yet its value figures at the very respectable amount of £326,703.

Timber was exported to the value of £78,419, showing a

decrease of nearly £10,000. But the falling off here is due to increased demand for local requirements. "The demands on the timber companies during the year for railways and other works in the Colony," says the Collector of Customs, "were very heavy."

GOLD.—A comparison of these exports for the past five years will be of unmistakable interest to those concerned in the mining future of Western Australia. Dating from 1888, these exports are as follows :—

Years.	1888.	1889.	1890.	1891.	1892.	Total for five years.
Weight in ozs. .	3,493	15,492	22,806	30,311	59,548	131,650
Value .	£13,099	£58,871	£86,664	£115,182	£226,284	£500,100

The increase for 1892 is £111,102.

(*For the* 1893 *returns see elsewhere.*)

"This increase," says the Customs' Report, "is pre-eminently satisfactory, as, only a few years back, the existence of gold deposits in this Colony was a matter of pure speculation. Now there can be little doubt as to the bright future in store for this country, when, in the infancy of mining, she is enabled to win from her goldfields, in five years, over half a million in value. The country is being prospected throughout its length and breadth, and important discoveries are continually being added to those already made ; and it is reasonable to suppose that the increase in gold exported next year (provided it is all entered at the Customs) will be at least a hundred per cent., and within two years this export should alone reach half a million sterling value per annum. It will be noticed that even now it is nearly a quarter of a

million. All that appears necessary to develop the hidden wealth of the Colony is a combination of capital and labour, with an abundant water supply."

The export of pearl shell is valued at £79,259, and of pearls at £40,000; of sandalwood at £42,870; of skins at £36,657; and of guano at £4,389.

Horses to the value of £2,450 were sent to Singapore, Java, and Mauritius. No systematic attempt has yet been made to breed suitable re-mounts for the Indian market. The other exports of the Colony are inconsiderable.

The import list is a complete revelation of that want of enterprise, or want of ordinary industry, which has so far been the curse of West Australia.

	With a population of	The imports stood at
In 1890	46,290 . . .	£874,447
„ 1891	53,285 . . .	£1,280,093
„ 1892	58,674 . . .	£1,391,109

[*The population in June*, 1893, *was* 62,000. *In August*, 1893, *it is estimated at* 65,000. *The imports at this date are, of course, not yet to be ascertained.*]

Of this sum, £75,661 was for agricultural produce (grain, hay, chaff, potatoes, onions, and fruit); as against £45,951 for 1891. And £46,045 for dairy produce (butter, cheese, eggs, and preserved milk); as against £37,568 for 1891.

"No doubt in the past," says the Customs' Report for 1893, "agriculturists have been labouring under great disadvantages in being inadequately provided with railway communication to market centres, and have thus been considerably handicapped in competing with foreign markets in raising crops for consumption in the Colony, owing chiefly to the then heavy cost of transit from their farms; and, under the circumstances, the poor encourage-

ment afforded them in clearing and fencing the areas necessary for the same. Lately, however, a vigorous railway policy has brought many of the outlying districts of the Colony within touch of populated centres, and has encouraged farmers and agriculturists to bring larger areas under cultivation and introduce capital into the working and improvements of their properties. The connection of Fremantle with Albany by the 'iron horse' has resulted in the settlement of an industrial class along the line, and large tracts of land which a few years ago were unproductive areas are now either smiling cornfields or evidencing in one way or another the agency of the plough, the spade, and the hoe.

"Notwithstanding the improved outlook in this direction, the agriculturists during the year have been unsuccessful in reducing the importation of grain, fruit, and vegetables into the Colony. [No doubt the large influx of new settlers has had its effect in this respect—and the work of the new-comers upon the land has not yet had time to make itself felt.] Reports, however, continually arriving from the country predict in an unmistakable manner the bright outlook in store for those engaged in the cultivation of the soil. At no period in the history of Western Australia have agricultural interests been more closely studied than at the present time, and efforts are being made everywhere to encourage them and promote settlement.

"As regards dairy and domestic produce, it may be especially noted how excessive the items enumerated in the foregoing table appear. It is to be hoped that the time is not far distant when these items will be found figuring in the export trade of the Colony. Dairy and poultry farms along the railway lines, within easy distance of markets, should be a source of much profit to those expending capital in this direction. Locally pro-

duced butter has always found preferential sales in the Colony, but the supply is by no means equal to the demand. With dairies established for a sufficient length of time in the manner indicated, there appears no doubt that the foreign article will be gradually eliminated from our markets, and a healthy trade established in this local line of produce."

The following table refers solely to such items of trade as have increased in a specially marked manner, in addition to the agricultural, dairy, and domestic produce already enumerated:—

Articles.	1891.	1892.
	£	£
Agricultural Machinery	8,480	11,519
Apparel and Drapery	165,521	186,080
Apothecaries' Wares	14,286	19,802
Bacon, Hams, and Tongues, Salt Beef, and Preserved Meat	18,918	31,488
Beer, Wines, and Spirits	92,104	115,805
Books (printed)	7,457	8 446
Boots and Shoes	26,414	34,719
Bran and Pollard	7,014	14,135
Cigars, Cigarettes, and Snuff	6,958	14,533
Coal	12,078	13,840
Earthen and China Ware	4,627	7,505
Flour	19,113	48,323
Furniture	9,196	11,000
Government Stores, Stationery, etc.	13,752	26,652
Horses	29,750	55,680
Jams, Jellies, and Preserves	9,874	11,755
Lard	423	921
Leather and Skins	2,293	3,160
Matches	2,720	3,619
Oils	12,636	13,972
Plants, Seeds, and Bulbs	2,385	3,278
Soap (all kinds)	1,793	2,793
Stationery	5,952	7,731
Steam Engines	6,209	9,457
Tallow	366	1,816
Timber	15,877	22,373
Tobacco Pipes	1,283	2,298
Tools	5,577	8,143

Flour.—For the past three years the value of importations has been as follows:—

1890.	1891.	1892.
£27,846.	£19,113.	£48,323.

The erection of several roller flour mills in different parts of the Colony considerably reduced the importation during 1891, and there was every reason to anticipate a still further reduction in 1892. But the reverse has been the case, as the increase was 2,921 tons, valued at £29,210. This extraordinary increase is again due to the unexpected growth of the population. The new consumers have not yet had time to join the ranks of producers.

Horses.—A remarkable increase, principally due to the importation of draught horses, for which there is a great demand—the natural outcome of the prosecution of public works, the discovery of goldfields, greater activity at the timber-mills, and improvements to properties in the agricultural districts.

Plants, Seeds, and Bulbs.—These importations are steadily on the increase, and large quantities of imported fruit trees and vine cuttings have been planted throughout the Colony. This is a satisfactory evidence of the interest now being taken in agricultural pursuits. As a fruit-growing country, Western Australia has a great future.

Timber.—There has been a healthy demand for all kinds of soft wood, in consequence of the many works and buildings projected. The increase here is not excessive, considering that this description is not grown.

Potatoes.—The importation of potatoes, for the time at all events, has now ceased.

There are six breweries at present in the Colony. The beer, however, produced, though its quality is steadily

improving, is scarcely yet able to hold its own with that imported. At present beer is imported at the rate of about 6 gallons per head of population.

Excellent saddlery is now locally manufactured.

POPULATION AND VITAL STATISTICS.

The estimated population of the Colony, on 31st March, 1893, was 59,718; and on 30th June, 1893, 61,210.

Throughout July and August arrivals were at the rate of many hundreds weekly, the gold rush to Coolgardie from the eastern colonies having set in. About the middle of August the population was estimated at 66,000; and if the present rate of increase is only maintained, the Colony will contain a hundred thousand persons by the end of the year, and perhaps double that number within fifteen months.

There were 554 births and 236 deaths registered during the quarter ending June 30, 1893.

Of the total population, about 9,000 reside in Perth; about 7,000 in Fremantle; and the other towns with a population of over 500 are Albany, Geraldton, York, Newcastle, Guildford, and Bunbury. There are about 3,000 miners in the Coolgardie district; perhaps 500 at Southern Cross; and say 1,500 on or around the Murchison; but these numbers, it will be understood, are only approximate, and are increasing daily. Some 600 men, for instance, are reported, at the time of writing (August, 1893), to be on the road between Southern Cross and Coolgardie.

The proportion of males to females in Western Australia was, at the census of 1891, as three to two. In the West Kimberley district there were only 14·38 females to every hundred males.

Among the 49,782 inhabitants at the time of the census, nearly 28,000 were native-born, 3,250 from the other colonies, 9,634 English, 3,499 Irish, and 1,211 Scotch.

The highest temperature recorded during the June quarter, 1893, at the Perth Observatory, was 81°, and the lowest 35°. The rainfall for the quarter was 14·53 inches.

The maximum temperature for 1892 was 109°, the minimum 35°; the total rainfall for the year 31·23 inches; and the total number of rainy days, 122.

The difference of time between Perth and London is 7 h. 44 m. Thus, when the clock at Perth shows 10.15 a.m., the clock in London would point to 2.31 a.m.

WORK AND WAGES, COST OF LIVING, ETC.

The cost of living in the towns is moderate for those who rent houses and employ servants. Board and lodging at the best hotels may be arranged for at 30*s.* per week; at the cheap coffee-houses, for about £1, or 1*s.* a meal. The average rent of a three-roomed house in town is 7*s.* to 10*s.*, in the country 5*s.* per week; of a five-roomed house in town 12*s.*, and in the country 9*s.* Single persons in boarding-houses pay anything from say 15*s.* to 25*s.* a week, and up to 30*s.* in northern towns or on the Yilgarn Goldfields.

At the fields, however, it is usual to live in tents. Life at Coolgardie under canvas may be estimated to cost for each man, without indulgence in the luxury of a cook, from 40*s.* to 50*s.* per week.

Farm labourers are usually boarded and lodged, and single men are preferred to married men with families. Farm hands work from sunrise to sunset in the season.

Navvies work 8 hours a day; printers' work-hours vary; most other tradesmen work 9 hours, at present.

The retail price of provisions at Perth is roughly as follows:—

Potatoes	per stone	£0	1 0
Wheaten Flour	per bag of 200 lbs.	£1 4*s.* to 1	6 0
Wheat	per imperial bushel	5*s.* to 0	6 0
Wheaten Bread	per lb.	2*d.* to 0	0 3
Horned Cattle	„	3½*d.* to 0	0 4½
Horses	each	£8 to 30	0 0
Sheep	„	10*s.* to 0	15 0
Goats	„	1	0 0
Swine	per lb.	0	0 6
Milk	per gall.	0	2 0
Butter, Fresh	per lb.	0	2 0
„ Salt	„	1*s.* to 0	1 3
Cheese	„	9*d.* to 0	1 0
Beef	„	6*d.* to 0	0 7
Bacon	„	1*s.* to 0	1 4
Mutton	„	4*d.* to 0	0 5
Pork	„	0	0 9
Rice	„	2½*d.* to 0	0 3
Coffee	„	0	1 6
Tea	„	1*s.* 6*d.* to 0	2 6
Salt	„	0	0 1
Sugar	„	2½*d.* to 0	0 3¼
Wine, Imported	per gall.	£1 and upward	
„ Colonial	„	4*s.* and	„
Brandy	„	£1 10*s.* to 1	16 0
Beer, Imported	„	draught, 4*s.*; bottled 0	6 6
„ Colonial	„	0	3 0
Tobacco	per lb.	0	4 6

At the goldfields, prices of course are higher. Tea (very bad tea), for instance, is 3*s.*; flour, 50*s.* to 60*s.* per 50-lb. bag, at Coolgardie; beef and mutton, 9*d.* to 1*s.*; and sugar, rice, oatmeal, and stores in general, 1*s.* per pound. Water has also often to be paid for by those who have not been

wise enough, or long enough on the spot, to construct their own tanks.

Clothing is from 10 to 20 per cent. dearer than in England, but for the labourer and average working man less is required; owing to the climate, light clothing being worn in the summer months.

The following are the average rates of wages for labour:—

	Per day.
Bakers	8*s.* to 10*s.*
Blacksmiths	8*s.* to 10*s.*
Boat-builders	8*s.* to 10*s.*
Brewers	6*s.* to 8*s.*
Carpenters	8*s.* to 10*s.*
Coach-builders	7*s.* to 10*s.*
Gardeners	5*s.* 6*d.* to 6*s.* 6*d.*
General labourers	6*s.* to 7*s.*
Masons and Bricklayers	8*s.* to 11*s.*
Miners	10*s.* to 12*s.*
Navvies	7*s.* to 9*s.*
Painters	7*s.* to 10*s.*
Plasterers	9*s.* to 13*s.*
Plumbers	8*s.* to 10*s.*
Printers	6*s.* to 10*s.*
Saddlers	7*s.* to 10*s.*
Sawyers and Lumbermen	6*s.* to 10*s.*
Stevedores and Wharf-labourers	6*s.* to 10*s.*
Shipwrights	10*s.*
Shoemakers (by the piece) say	6*s.* to 9*s.*
Tailors (piece)	6*s.* to 9*s.*
Tanners	6*s.*
Tinsmiths	8*s.*
Wheelwrights	7*s.*
Watch-makers	9*s.* to 10*s.*

Farm labourers (according to *Government Yearbook*), £18 to £50 *per annum*, 5*s.* to 7*s.* per day; domestic servants, £16 to £50 *per annum*. Or (by the report of an independent observer): *Per month*—Housemaids, etc., 30*s.* to 40*s.*; cooks, 30*s.* to 50*s.*; farm labourers, ploughmen, and station hands, 40*s.* to 80*s.* *Per year*—Shepherds, stock-riders, generally useful men on stations, £30 to £45; married couples, servants on farms and stations, £50 to £70.

Clerks, accountants, and shop-assistants find employment at fair wages.

At the northern goldfields, which have been largely deserted for the Yilgarn and Coolgardie, miners are in demand at £4 a week, and labourers and artisans at from £4 to £6; engineers, £8.

There is a particularly good opening for market-gardeners, fruit-growers, and farmers with a capital of £150 and upwards; but they will be wise to begin by banking their money, and to gain some acquaintance with Colonial habits before taking up land. In a few agricultural districts there is a growing demand for handy farm hands, who are willing to put up with bush-life, at from £2 to £4 a month and board.

Navvies.—There is at present a considerable demand for navvies, owing to the pressure on the Government to complete the railway to the Yilgarn Goldfields and the re-commencement of the construction of the Midland Railway.

To sum up, wages are good, the cost of living is moderate, and work is plentiful. No colony offers greater advantages to the miner, the industrious farm hand, or the small capitalist, who is not afraid to rough it at the outset.

SHIPPING FACILITIES.

The following are the principal European Companies connected with the Colony, and their present passage rates, given as accurately as possible.

P. & O. Company,—mail steamers,—calling fortnightly at Albany. *Between Albany (King George's Sound) and London:* First saloon, £60 to £70; second saloon, £30 to £37; return tickets, £65 to £115.

Orient S.S. Co. (alternate weeks to P. & O.): First saloon to Albany, £55, £63, £70; second saloon to Albany, £30 to £37.

Messageries Maritimes, monthly, from Marseilles to Albany: single, £20 to £65 (*vin compris*); return, £34 to £115.

West Australian S.N. Co., and Ocean Steamship Co. These Companies' vessels carry on a monthly service between Fremantle and Singapore, where they connect with Holt's Ocean Line, which leaves there for London twice a week (Fremantle to Singapore, 20 days; Singapore to London, 35 days). Fare, 40 guineas saloon; 24 guineas second cabin.

Direct line of steamers, London to Fremantle. (Six cargo steamers despatched each year by C. Bethell & Co., and Trinder, Anderson & Co., *via* the Cape. 42 to 50 days.) Saloon, 35 guineas; steerage, 14 to 16 guineas.

Direct sailing line (same firms), about 90 days. Sail monthly.

[The sailing run from New York to Fremantle takes about 100 days. There are no regular traders.]

IMMIGRATION.

Immigration is controlled by a Board at Perth, and by the Agent General's office at 15, Queen Victoria Street, Westminster, London.

Free Passages are only granted to female servants. For information apply to the Agent General.

Assisted Passages are at present granted to such persons (farmers, etc.) as are likely to be useful in the country districts. They must be possessed of some small capital (about £100 for single men, £150 for married couples, and £50 for each child over twelve), which must be deposited with the Agent General, to be repaid immediately after their arrival in the Colony. On these conditions, each adult is granted £10 towards his passage money, with £5 for each child under twelve.

Nominated Passages.—Assisted passages are granted to emigrants nominated to the Immigration Board in Perth by persons residing in the Colony, provided that they belong to the classes of—

(1) Farmers, agricultural labourers, vine-dressers, or gardeners (and are under forty-five); or,
(2) Single female domestic servants, or widows, under thirty-five.

Nominated passengers or emigrants pay £7 10*s.* for their fare by sailing ship, and half-price for children under twelve.

[The lowest railway fare from Albany to Fremantle is £2 2*s.*]

Note.—The fifty female servants who arrived last March were all hired at once.

NEWSPAPERS.

There are fourteen newspapers in the Colony, including the *Government Gazette*. Perth has a morning (the *West Australian*) and an evening (the *Daily News*) newspaper; one bi-weekly, the *Inquirer;* and one weekly publication, the *Western Mail.*

FACTORIES.

The following list gives the names and numbers of the principal factories in the Colony:—Aërated water, 9; boot, 5; breweries, 6; brick, 6; coach, 11; fish preserving, 3; flour mills (steam), 26; flour mills (water), 3; foundries, 7; furniture, 8; gas works, 3; salt factory, 1; soap factories, 2; saw mills (steam), 29; tanneries, 4; tobacco, 1; biscuit, 1; confectionery, 3; sandalwood and eucalyptus oil, 1. There are also 12 printing offices in the Colony.

EDUCATION.

1. Establishment of System.—The statute in force relating to Public Instruction in Western Australia is the *Elementary Education Act of* 1871.

2. General Features.—The system is compulsory. The school fees are fixed upon a sliding scale, varying from one shilling to twopence per week, according to the means of the parents. Children whose parents are unable to pay the prescribed fees are admitted upon the "free list."

The teaching in the Government Schools is strictly secular. Half an hour before the commencement of secular instruction is, however, devoted to the reading of the Bible (without comment) to those children whose parents do not object to their attendance.

The Assisted Schools are sectarian, and in them the tenets of the religious denominations to which they belong are taught during this half-hour. With this exception, the same regulations as to secular instruction prevail equally in both.

HIGHER EDUCATION.—Western Australia has no University. Under a special Act in 1876 a High School was endowed out of the general revenue by the grant of an annual sum equal to double the amount of the school fees, provided such contribution does not exceed £500. The fees for day boys are about £12 *per annum*, and for boarders about £60 without extras. The High School is fast taking its place as one of the leading public schools in Australia.

RELIGION.

The general revenue of the Colony contributed in 1892 the sum of £3,543 for the maintenance of ministers of religion, which was apportioned to each denomination according to the numbers at the census of 1891, the proportion received by each having been as follows:—Church of England, £2,004; Church of Rome, £1,008; Wesleyans, £368; and Presbyterians, £161.

Statement showing the Number of Churches and other Buildings used for Public Worship, Clergy, and Attendance:—

Denomination.	Total number of Churches and buildings used for divine worship.	Number of Ministers.	Approximate Average Attendance.
Church of England . .	83	26	4,850
Church of Rome . . .	25	16	3,020
Wesleyans	42	9	3,860
Congregationalists . .	10	4	900
Presbyterians	4	3	550

There is, perhaps, little more to be said. It will have been seen, from the above heterogeneous collection of notes, that the Colony offers to the intending emigrant at least as bright prospects as any other part of the world. The recent gold discoveries are prodigious, but not so prodigious as those which may be confidently expected in the near future. The increase of population which is following them reminds one of the early days of Victoria; and if one tithe of that population remains with us, to settle on the land, we may expect as rapid a growth of prosperity as the neighbouring colony experienced after 1852, with the difference that we shall have profited by Victoria's mistakes. The soil of Western Australia is fertile, her climate superb, her territory vast, and her resources, perhaps, scarcely to be equalled in the world. All that is needed now is population, and capital, to develop them. The old settler here looks with some distrust on this uncontrolled influx of new citizens, many of whom may be expected to arrive insufficiently provided with means; and many, again—especially those from Adelaide and the eastward colonies—are instinct with New Australian, or subversive and socialistic, ideas. He is afraid, in a word, that he will not only be outvoted by the new-comers, but will also have to support them. He may take courage. The contingent which is expected from England will supply the necessary political stability, and even our Victorians and South Australians have learned something from the experience of the last few years. No population is so energetic as that which follows a gold-rush; for the new arrivals are prepared, not for agitation, but for work.

Never was there a better illustration of the virtues of strong government. Sir John Forrest has been in power, under the newly granted Constitution, only for a few years. He, with his colleagues, has been allowed un-

challenged control of affairs. As a consequence, railways have been built, land thrown open for settlement, a new spirit of hope and energy gradually instilled into the people, and the long-forgotten and stranded Crown Colony finds—not only gold (that was bound to be discovered the moment any one woke up enough to look for it), but—her self-confidence, and becomes a country with a great future.

All things work together for him that refuses to wait. Mr. Rhodes has done a great deal for South Africa, but Mr. Rhodes' methods have only to be followed by the present Administration, and Western Australia, without a Kaffir difficulty, without a Boer difficulty, and without the dead weight of an unfortunate past, will do as much better than South Africa as, let us say, Coolgardie is better than Mashonaland. Happy the country that has no history! The deep slumbers of Western Australia have not been broken by even an incident; but now she is awake. Australia's depression is "Westralia's" opportunity; and the pick of Victoria, of New South Wales, and of Queensland, disgusted at the miseries into which the too great haste to be rich of the elder colonies has plunged them, is hurrying round, not only to gather up the nuggets of the new Eldorado, but to stock her stations and to till her fields.

The race, after all, has not been to those who started first; and the visionary terrors of the supposed desert, which have so long been a moral, as well as a physical, barrier between this Colony and the rest of the continent, have only saved her for better things.

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