David Scott Mitchell.

07. 2

FROM

SYDNEY

TO

SILVERTON.

An account of the recent Ministerial Tour in the West,

—BY—

PERCY R. MEGGY,

(Special Reporter of the S. M. Herald).

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H. Solomon, Caxton 247 George-street.—11652

FROM SYDNEY TO SILVERTON.

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FROM

SYDNEY TO SILVERTON.

CHAPTER I.

"WESTWARD HO!"

On the evening of the 1st of May the Hon. J. P. Abbott, the Minister of Mines, made his second attempt to carry out his long-promised tour of inspection of the Western districts. It may be remembered that only six weeks previously the hon. gentleman started on a similar tour, but was obliged to return after getting as far as Balranald, in order to be present at the special meeting of Parliament, called to ratify the action of the Government in despatching the troops. He was accompanied on leaving Sydney by his brother (Mr. W. E. Abbott), Messrs. Quin and Wilkinson (the members for the Wentworth and Balranald electorates respectively), by a few prominent squatters, and by a representative of the *Herald*. Among the party, too, was the Engineer-in-Chief for Railways (Mr. Whitton), who went as far as Narrandera, where he parted company with us in order to go down to Jerilderie for the purpose of testing the railway bridge over the Murrumbidgee. The party was considerably thinned on arriving at Hay, where also it was strengthened by the addition of the new Bishop of Riverina. The official part of the journey, however, did not commence till later on, the business of receiving addresses, deputations, and banquets having been gone through, as far as Balranald, on the previous visit. Since then, however, the whole face of the country has undergone a radical change, which will be duly noted later on.

The modern mode of travelling in a sleeping-car is to my mind, and always has been, since my first experience of Pullman's ingenuity between St. Louis and Chicago, one of the greatest luxuries of life On an American train you can sleep all night

in a palatial bedroom, warmed at both ends with stoves in the winter, and with your boots carefully blacked in the morning, for a dollar over the ordinary fare, while you can breakfast or dine in a gorgeously-fitted hotel-car, and smoke in an elegant saloon for another dollar. We have not attained to quite such perfection yet, as a Yankee doctor, who happened to be one of the passengers, vehemently reminded me: a railway-managing Government charging just 2½ time the American amount, and that over and above not an ordinary but a first-class fare, besides charging in addition more than half the American price for the whole accommodation if you wish to indulge in the luxury of a lower berth. But while in America you can be sure of a berth, on the Government-managed railways of this colony you must engage it beforehand, as only one car is run, and unless you can guarantee to half fill another, you have to sit up all night if the only one attached happens to be full. But this rarely happens to be the case. The prohibitive prices prevent the average passenger from using the sleeping-cars, so that what might be a very great boon to the travelling public is practically useless so far as the general run of travellers is concerned. After breakfast in the splendid dining-hall recently erected at Junee, the point of junction for the Southern and South-western lines, we changed trains, and about noon arrived at Narrandera, one of the numerous spots where gold has been found, and where the line meets the Murrumbidgee as it flows from the heights above Nimitabel to combine with the Lachlan near Nap Nap, and to join the Murray a little lower down. Narrandera is in the heart of a fertile agricultural country, which only lacks a regular rainfall to make it all that the selector could desire. For the last three years, as everyone knows, it has been suffering, in common with the whole of the Western districts, from continued drought; but the soil is good, the land is comparatively cheap, and the construction of the railway has already transformed a part of it from wild uncultivated bush to productive land, and is destined to transform the rest at no very distant date. For miles and miles the line passes through small forests of gums, thinly scattered to be sure, and not costing much to remove; broken here and there with level tracts of cultivated ground, and relieved at intervals by small townships and stations, or more frequently a siding erected by the Government for the conveyance of the produce from fertile districts. Halfway between Narrandera and Hay the scene changes. The gums are left behind, except where they serve to mark the course of the river to the left, and only a few stragglers remain here and there to break the monotony of the immense pastoral plains which stretch out on either side for many a weary mile. Six weeks ago, when Mr. Abbott passed on his first visit to Hay, the whole of

this country was absolutely bare. Not a blade of grass covered the face of the earth, nor had one been seen for months past ; and vast flocks of sheep, with numbers considerably thinned by the drought, were huddled together in small paddocks strewn with hay, stored for the purpose in long wooden sheds, erected near the sidings in order to be as near as possible to the rail by which the food was brought down from town at ruinous expense. But now the whole face of the country is changed. The unprecedented fall of rain in January has fallen upon a soil which was so parched for want of it that it almost despaired of ever being able to quench its thirst again, and which was only too ready to show its gratitude to Heaven for the long-delayed blessing, when at length it was vouchsafed. The long stretch of level land was covered with a carpet of the tenderest green ; the ditch which at intervals fringes the side of the line, is adorned with velvet, as pleasing to the eye as it must surely be to the touch ; while from above the waters rise mounds of grass as verdant as any that ever waved by the banks of the Hooghly, or adorned the American plains. The sheds are deserted, and feeding on the tender shoots which have sprung up with such marvellous rapidity under their feet are thousands of sheep, which bask in the glow of the evening sun, or browse on the sweet young grass, as their fancy directs. Before reaching Hay we passed the runs of some of the most noted sheep-breeders in this part of the country. The largest of all is that in Gronngal—300,000 acres of purchased land—owned by Messrs. Learmonth Brothers, who contributed £2000 to the Patriotic Fund. Then come the runs of North Yanko and Gogeldrie, covering about 100,000 acres apiece, owned by Messrs. Douglas and Hebdon respectively. Last, but not least, is the famous Coonong run, owned by Mr. M'Caughey. All these are good breeders, who have done much to improve the breed of sheep in the Western plains. The smallest run of those named above is the Coonong run, containing about 43,000 acres. Mr. M'Caughey accompanied the Ministerial party as far as Narrandera, and gave some interesting information on matters connected with the breeding of sheep. He is well known as a first-class breeder and able judge of sheep, of which he owns about a million in good seasons. He lives on his station, and the experiments in the sheep-breeding he has conducted on his farm have been neither few nor unimportant. As this gentleman's farm may be regarded as a stud farm, it will be interesting, at any rate to sheep breeders, to give the weights of the fleeces of a number of Coonong sheep shorn last year. I give the following table, which Mr. M'Caughey was good enough to lend me at my request, in order to show what can be got from sheep when handled by a thorough expert :—

Weight of Coonong Sheep Shorn 1884.

RAMS.

Age.	Weight of Fleece.	Age.	Weight of Fleece.
	lb. oz.		lb. oz.
Two-tooth, shorn as lambs...	*15 12	Four-tooth and over...	18 8
Ditto	*15 8	Ditto	17 2
Ditto	*15 8	Ditto	16 13
Ditto	*15 2	Ditto	16 11
Ditto	*14 15	Ditto	16 4
Ditto	*14 8	Ditto	16 7
Ditto	*14 8	Ditto	16 0
Ditto	*14 8	Ditto	15 12
Ditto	14 8	Ditto	15 11
Ditto	14 4	Ditto	15 11
Ditto	14 4	Ditto	15 4
Ditto .. : ..	14 4	Ditto	15 2
Ditto	14 3	Ditto	16 0
Ditto	14 3	Also. 16 ditto over .	14 0
Also, 20 ditto over ..	13 0		
		The 29 averaging ...	15 4½
The 33 two-tooths averaging	13 15$\frac{21}{33}$		

EWES.

Two-tooth, shorn as lambs	*15 12	Two-tooth, shorn as lambs...	*12 14
Ditto	*13 10	Ditto	*12 10
Ditto	*13 10	Ditto	*12 8
Diito	*13 14	Ditto	12 4
Ditto	*13 4	Ditto (2)	12 9
Ditto	*13 4	Ditto (3)	12 2
Ditto	§13 0	Also, 32 ditto, over ...	11 0
Ditto	*13 0		
Ditto	*12 14	Tne 37 averaging ...	12 0¼

Four-tooth and over, from 15lb. downwards.

* Show sheep.

The great question with sheep breeders, as indeed with all dwellers in the land, is how to get a regular supply of water. Every now and then a mound obstructs the otherwise perfectly level character of the plain in this part of the country, and marks the locality of some tank, which provides a certain supply of water fresh from heaven during an ordinary season, but is equally certain to be of no avail whenever there is a drought. The runs support about half a sheep to the acre, and for an ordinary sized run of about 15,000 or 16,000 acres a single tank if placed in

the centre of the run would be sufficient to meet the requirements of the stock, always provided enough rain fell to fill it; but the selection of a suitable locality for a tank depends not on the boundaries of the run, but on the nature of the ground, which must have a proper escapement, and be firm enough to retain the water. A couple of tanks to the run of the size named would, therefore, generally be found necessary for the purpose. The soil on this side of Hay holds well together, and is therefore favourable for tank-building; but on the other side I understand the soil is very much lighter, and retains the water with difficulty. The sinking of wells is a matter of such great expense and such excessive uncertainty, that it is but seldom attempted, the selectors generally going in for tanks, the cost of which they can calculate to a fraction, and the utility of which is undeniably great up to a certain point. The glorious uncertainty of well-sinking may be imagined from a statement made by Mr. W. E. Abbott, to the effect that although in 99 cases out of a 100 you would probably strike water by digging on these plains, yet in only one case out of ten would the water be fresh. The exact percentage of this in favour of the finding of fresh water is a problem I will leave my readers to make out for themselves. A great deal can, of course, be done, and is in fact being done, in the way of water conservation by private enterprise, but it has long been the dream of theorisers that some vast scheme of conservation and irrigation should be undertaken by the Government for the benefit of the whole country. In the course of an interesting discussion on the subject with a prominent squatter, Mr. John Evans, of Cono ble, who accompanied the party as far as Hay, allusion was made to the suggestion that the whole of the vast tract of plains lying between the Murray and the Darling could be supplied with constant water, and the value of the country increased eight or ten fold by the construction of a network of canals, which besides supplying water, would at the same time provide a route for the carriage of the wool, an immense amount of which is now delayed at the Darling for lack of water to send it on. The gentleman referred to was of course ready to acknowledge that such a proposal would involve a vast outlay in the carrying out, but he was sanguine that if the scheme were properly attempted it would be easy to meet the interest on the capital, and that although a work of tremendous magnitude, and one not likely to be thought favourably of for many years, it would, if properly carried out, prove of immeasurable utility and meet with corresponding success. The scheme is somewhat similar to that of the "Great Western Canal," so vehemently advocated for years back in Victoria by the late well-known member for Mandurang (Mr. Hugh M'Coll). Mr. M'Coll's scheme, if I am rightly informed, was one

of surface canals only, but that proposed above would, by means of a system of locks, &c., provide for the transit of the wool, a want which the surface canal system was not designed to meet.

As the sun neared the horizon we approached a small siding, not far from Hay, which was formerly called Policeman's Point, from the fact that police protection extended no further, but is now known as Waradgery, from the name of the tribe which at one time occupied the district. On either side extended level plains, to the right as far as the sky-line itself, and to the left for a short distance to where the long line of lofty gums indicated the course of the Murrumbidgee. Here and there a straggling eucalyptus, or a solitary mimosa, broke the level character of the ground ; while a polygonum swamp, on the tender leaves of which shrub the camel loves to feed, lent an additional attraction to the scene. For a moment the buzz of conversation was hushed, and a silence as of death pervaded all nature as the train broke in upon the solitude of the plains, and dashed on towards the setting sun. At the end of the far-reaching level stretch, and seemingly at rest upon the ground, the sun's face shone like a ball of burnished gold, and it seemed as if the fable of the Greeks were true, and that after traversing the heavenly vault in a chariot of fire, the great sun-god was about to descend to the ancestral halls, there to enjoy a luxurious repose after the toils of the day. Across plain and swamp, gilding in his way the crest of wandering emu, and the wings of a " native companion," the sun's parting ray rested at last, as we approached the siding, on what appeared to be the last of the Waradgery tribe. He was standing alone in the middle of the platform as we drew up, and as the smoke curled lazily from his wooden pipe and wreathed itself in and out among the fly-netting which hung over the peak of his cap, he seemed to be gazing with feelings of mingled envy and remorse on the adventurous palefaces by whom his race had been supplanted, and to whose civilising gifts of beer and brandy they had fallen an easy prey. As the train stopped in front of him he turned his head and gazed at the great council man of the palefaces with a stolid and imperturbable visage. But, alas ! the charm was dispelled. His oval eyes and olive skin betrayed him. It was not the last of the Waradgeries nourishing a little recollection of the glories of his race which, like the setting sun, was fast disappearing from view, but a descendant of the Mongols, equally despised as though far more useful than the most approved warrior of the Waradgeries, and by a singular chance destined to supply the natural races in Australia as the African has sapplanted noble red man in the far West. A ride of a few more miles, and by 6 o'clock the party reached Hay, where we were met by the new Bishop of Riverina (Rev. Dr. Linton), who

is to be our companion for the next few weeks.

Hay is an interesting town which deserves a word of notice. With a population of about 2000, a spacious main street shaded with an avenue of gums, a handsome post office, and a few well-furnished stores, and coaches leaving for all parts as soon as the train comes in, Hay is one of the most important, as it assuredly is one of the most central towns in the district of Riverina. Notwithstanding the fact that it forms a terminus of the railway connecting it with Sydney, Hay is as distinctly a Victorian town as if it had nothing to do with New South Wales. Its inhabitants are mostly Victorians, and its trade is at least as much in the hands of Melbourne as in those of Sydney merchants. Six years ago, before the railway was formed, it was the custom of many commercial houses to buy their goods in Sydney and ship them round via Melbourne and Deniliquin, the consignors paying the freight to Melbourne, whence they were carried by rail as far as Deniliquin, and by teams the rest of the way. At that time there were 50 teams on the road between Deniliquin and Hay for one that may be seen now; the opening of the railway three years ago between Sydney and Hay having entirely closed the team traffic between Hay and Deniliquin, the teams now only start for the back country. Since the opening of the railway the Melbourne merchants—who are credited with a far keener eye to business than their confrères in Sydney—have gone in for cutting the Sydney prices very close, so that, notwithstanding a protective policy, goods can be obtained even cheaper from Melbourne than from Sydney, Melbourne merchants preferring to sell at a loss rather than not sell at all. Indeed, I heard a Hay merchant seriously discussing the advisability of going on exactly the opposite track to that previously pursued, namely, buying in Melbourne and shipping via Sydney, instead of buying in Sydney and shipping via Melbourne. In the meantime all the leading Melbourne houses have branch offices in Sydney, so that of whatever trade there is going on they stand a chance of getting a fair share. One of the many industries which have sprung up of late years in Hay is that of coach and buggy building, owing to the demand caused by the number of coaches running in all directions. The buggies turned out by Messrs. Cobb and Co.'s coach factory, which has been established about 10 years, are now esteemed second to none made anywhere else, and as buggy riding is universal throughout the district—horses being unable to carry the luggage required for travelling over such immense tracts—as a great deal of business is done in this way. Leather springs are used so prevent jolting, and the baggage is neatly packed in a receptacle behind. Some idea of the distances to be traversed in this district may be gathered from the fact that the Burton Coach

Company run coaches over upwards of a thousand miles of territory, and cover a distance of 3400 miles every week. Fortunately for the traveller the ground is not rough, and Hay itself is so deficient in stones that the gutters are paved with inverted logs. Indeed, the largest quarry here is said to be found in a rockery attached to the Bishop's new residence, and the stones of which, formed of Sandhurst quartz, were imported at considerable expense some time ago by the last occupier. One of the sights of Hay is the Chinese Camp, and the practical ability displayed by the Celestial gardeners is a standing reproach here as elsewhere nearer home, to the ignorance in matters of gardening displayed by their Western neighbours. The principal gardens are located on the banks of the Murrumbidgee, a Chinaman's first care to secure a water frontage. John gravely informed me, with a shake of the head, that cabbage-growing "no makee pay;" but if one might judge from the carefully kept and still more carefully-watered beds, crowded with all sorts of vegetable produce, and the ready market there is for all that the Chinaman can grow, I should think twice before accepting the dictum of Ah John on the subject. The water was drawn from a well on the river bank by means of an endless chain, fitted at intervals with small buckets, the contents of which were distributed in trenches cut by the sides of the beds over the entire garden. One of the problems with which the Government have to deal in relation to Hay is the expenditure on account of the new railway. So far, the railway has been run at annual loss of £10,000, and the only way of reducing this loss while the traffic is as unremunerative as it is likely to be for some time to come, is by running three trains a week instead of seven as at present. This, at any rate, is the statement made by those who know more about the subject than I do, and they point to the recent action of the New Zealand Government in adopting a similar policy on many of the non-paying lines as a proof of the wisdom of such a procedure. This course has been adopted by our Government on the newly-opened line between Narrandera and Jerilderie. Saturday night is a very favourable time for a visit to Hay, as the streets are thronged with residents and settlers from the back country, who come in to make their week's purchases and have a general look round.

On Monday morning we started early on a journey which was to last five weeks. The mail coaches by which the traffic is served frequently keep on the road all night, very much to the discomfort of the passengers, who must feel anything but refreshed after a night or two passed in such a cramped up position. It was fortunate for us, therefore, that we had a Minister in our midst, or we might have had to share a similar fate. As it was

we proceeded by easy stages of from 50 or 60 to 80 miles a day, stopping at our own sweet will whenever hunger or the sight of some friendly squatter's house tempted us to alight. Our party consisted of six besides the driver, viz., the hon. Minister himself, the new and justly popular Bishop of Riverina (Dr, Linton), the Minister's brother (Mr. W. E. Abbott, of Wingen)—whose able essay on "Water Supply in the Interior," read before the Royal Society a few months ago, should be studied by all who wish to make themselves thoroughly conversant with the difficulties besetting pastoral life on these western plains—the Minister's secretary, and a representative of the *Herald*. Our first day's journey was from Hay to Nap Nap, a distance of 45 miles. This is the country of salt-bush, of which there are many varieties, in the district, some edible and some inedible, and some, such as the blue-bush, which may be called doubtful, inasmuch as the sheep will not apparently touch it here, but further on in the desert country they would only be too glad to get it. The plains on either side are fairly covered with this not very pleasant-tasting bush—common salt-bush, old man's salt-bush, bastard blue-bush, and cotton-bush, of the last named of which the sheep are apparently very fond. We passed one paddock fenced in for cattle, over which the salt-bush grew luxuriantly, and the appearance presented to the eye at this particular spot was extremely agreeable. Such, it was said, was the appearance of the whole country when the squatters settled down, and they naturally thought they had got hold of a splendid piece of country, and that they were going to make a "big pile" very soon. Some of them did not know, however, in those days—what very few people who have not had actual experience of the fact know even now—that the average rainfall is barely nine inches a year, that salt-bush is very soon eaten down, that droughts are rather common than otherwise, and that a single drought may carry away with it the profits of years. On the adjoining paddock might be seen the startling difference between what was probably the original appearance of the whole country and its present barren condition. Outside of the reserve paddock a few scattered bits of brush showed where the sheep had been, but generally the country looked as arid and bare as, in my inexperience, I thought it was possible for a country to look. But this was paradise itself compared to the country we reached before the week was out. Here it only takes about four or five acres to support a single sheep, whereas we were very soon to pass through a country where a solitary specimen of the mutton species would require 15 or 22 acres, and, in some cases, it was said, even as much as 30 acres to support him, and even he could barely find enough to keep skin and bone together. The Wooloondool run (leased by Messrs. Stewart and

Magee), through which we were being driven, is a block of about 100 square miles (70,000 acres), with an eight-mile frontage, on the Murrumbidgee. After crossing Wooloondool, we entered on the Benduck run (leased by Mr. Ayre), which covers an area of 32,341 acres, and has a river frontage of about 10 miles. The former run has or had, at the time of the latest return, 8,700 sheep, about 30 head of horses and cattle, and the latter 23,189 sheep, 55 head of cattle, and 24 horses. Here we stopped for a brief while, and admired the neat little garden surrounding the station. We then drove on to the Canoon run (leased by Messrs. Austin and Millear), which, with Pimpampa, embraces an area of 150 square miles, with 18 miles of nominal river frontage, although the winding of the river would make it actually more than that. Canoon proper is credited with 117,000 acres, on which were grazing 13,000 sheep, 70 cattle and 40 horses. On the opposite side of the river, to which it has a frontage of about 16 miles, is the Toogambie run (leased by Messrs. Dill and Parsons), which covers an area of 176,000 acres, and gives sustenance to 24,000 sheep, 58 horses, and 29 cattle. We crossed the Murrumbidgee at this point in a prahm—a flat boat with prow shaped like the stern to facilitate hauling up the banks, which are pretty steep just now, the river being very low. Here we were welcomed by Mr. and Mrs. Dill, with whom we had lunch, after which were shown over the nice garden, with which most of the stations are provided, Chinese gardeners being in great request for this purpose. Mr. Dill had a great deal to tell about the windy plains, across which the gusts blow without a break, and cover everything with sand. It was related as a curious peculiarity of sheep that, instead of following our fashion of travelling with the wind whenever we get the chance, they invariably travel against it, a peculiarity which was said to be made the subject of a humorous illustration some time ago in a comic sheet. "Why don't your sheep come this side?" queried a raw-boned Irishman, who was sheltering himself from the storm behind a hill on some Scottish moor. "Eh, mon," replied Donald, who was patiently watching his flock ensconed on the weather side of the hill, "It's because they ha'e more sense." The canny Scotchman, for aught I know, may have had the laugh on his side, but I must candidly confess I fail to see it. After a brief rest we again descended the steep banks and crossed over to the Pimpampa run, the pet of the establishment—a little girl with golden ringlets—alternately waving us a kindly farewell and patting the head of a favourite dog until she was lost to view amid the trunks of the gums and foliage of a yellow flowering shrub which grew half way up the eastern bank. For the next few hours, as indeed for the whole of the day's route, our way lay through long stretches of arid

dusty plains, thinly covered with salt or cotton bush, occasionally relieved by a polygonum swamp, a solitary eucalyptus or clump of friendly gums, but with little to gratify the eye, except here and there at long intervals a glimpse of a billabong, or a stretch of river bank, as the tortuous course of the Murrumbidgee intersected our path. My first sight of a billabong I shall never forget. I had often seen billabongs in pictures or read of them in books, but I first saw one at Hay ; it was during my visit to the Chinaman's ground, near this spot. The river had apparently overflowed, and carved out a path which wound round a piece of land, and, after hesitating awhile, suddenly stopped. It was the Sabbath morn, and seated on the trunk of a stately gum, but recently felled to the ground, a bushman was emptying the contents of his billy, while his companion performed his ablutions by his side. The sun glistened through the drooping foliage of the gums, and lit up the face of a faithful hound tethered to a stake near by. It was an ideal scene in the bush, common enough, perhaps, in these parts, but by no means an everyday sight for a dweller in towns. But to return to our trip. The little township of Maude, which has the honour of a place on the map, but which scarcely boasts more than a solitary public-house, did not detain us very long, and by 6 o'clock we arrived opposite our halting-place for the night—the station of Nap Nap. As we approached the river banks, over which we had again to cross, we noticed a little railed-in mound, which marked a bushman's grave. Troops of pink-breasted galahs—a species of parrot—screeched over our heads : a few wild pigs—once a favourite object of sport, but now rapidly dying out—poked their noses in and out among the dead leaves ; and from their nests in a clump of gums cawed a number of ominous-looking rooks. The last rays of the setting sun illumined the bushman's grave, as we took our seats in the prahm, and, under the guidance of Mr. Ronald, crossed over to Nap Nap, where we were right royally received. The Nap Nap run (leased by Messrs. Macqueen and Ronald) was the largest we had visited, although small in comparison with others we were to see. It has an area of 262,420 acres, and a river frontage of 24 miles ; but owing to the dry character of the country, the rainfall at Nap Nap being less than at Hay, the land only carries about one sheep to eight acres, and a great deal of stock has been lost in the drought. At the end of 1884, according to the stock report, on which all these figures are based, it carried 39,000 sheep, 115 horses, and 45 cattle. Here we spent a pleasant evening, and stayed the night. The difficulties with which the squatters had to contend were gravely discussed, and the importance of irrigation, the faults of the Land Act, the low rainfall, and the best means of exterminating the rabbits, were successively brought

under review. Luxury and refinement are found in these remote homes of the squatter kings. Their lot is indeed a singular one. Surrounded by a territory frequently larger than that owned by many a northern prince, but without any subjects save a few thousand head of sheep, and separated by vast tracts of scrub or bush from any other human habitation, they struggle on against inconveniences and hardships of every kind, content—if only they can provide a comfortable home for those they love—to endure the smiles of fortune or the buffets of adversity with an even mind.

On Tuesday morning, May 5, we crossed the Murrumbidgee from Nap Nap, and started for Balranald via Oxley. The day was perfect, and had the journey not been so long, and through such uninteresting country, it would have been delightful. The distance to Balranald on the eastern side of the river is only 45 miles, while from the other side it is nearly 80. There being some difficulty about changing horses, however, we took the longer route, and, after driving 15 miles, found we were just 15 miles further from our destination than when we started. But there was no help for it, and we submitted to our fate as best we could. The Oxley run, named after the explorer, extends from a little past Maude to the junction of the Lachlan and Murrumbidgee rivers. It has a river frontage of about 16 miles, and an area of 78,000 acres, on which were supported 16,000 sheep, 645 head of horses and cattle. The northern portion consists of reed beds and polyganum swamps, or lignum swamps, as they are locally called: but the plains through which we passed consisted generally of the usual variety of salt bush, very much eaten down: a succulent herb called "pig's face," of the tender shoots of which the sheep are rather fond; scattered gums; and a patch of lignum swamp. We rested a brief space at the station, where the manager (Mr. Fritz Darchy) has a very nice garden, in which grow the orange, the almond, the vine, and the fig, notwithstanding the alleged poorness of the soil. Water is easily obtained from the river, so that the irrigation is perfect. At Nap Nap we lost over an hour, owing to one of the horses breaking loose, and at Oxley we were doomed to a similar fate. However, we did manage at last to get away, and soon entered the famous Juanbung cattle station (leased by the Hon. James Tyson), which includes Jupa, Juanbung, and Glen-Emu, and has an area of 200,000 acres, and at the end of last year supported 2500 cattle, and 120 horses. The Glen-Emu run, also leased by Mr. Tyson, covers 172,000 acres, and supports, or did support, 50,000 sheep. On the way we noticed that the ground here and there was full of little hollows, which reminded one of the burrows on some of the American plains, except in the absence of prairie dogs. After

driving a few miles we came across two lakes. On one side a small paddock was fenced in, apparently for cattle, on which grew a quantity of gums, the greenest of gum saplings, a little trefoil, and plenty of blue bush. The country all round presented a tremendous contrast to the paddock reserve, the long dusty plains thinly clothed with diminutive salt-bush, not being a very inviting prospect to the eye. The squatters here appeared to have bestowed considerable pains on the improvement of their land by the construction of fences and tanks, and it was said by those who are well acquainted with the work that the squatters there, with much greater advantages in the shape of a heavier rainfall and good soil, are far behind their confreres on these Western plains. We came across a very good instance of the enterprise of the latter. It was one of the lakes already alluded to. A canal about 6 feet in width had been cut out, taking the waters of the Lachlan 8 miles on to the plains. We drove past the canal which had been dug up for some time, but it remains a standing proof of the energy of the wealthy lessee of the Juanbung run. The whole of the country between Balranald and Hay is leased by squatters, who are liable to lose the bulk, and frequently the whole of their property in a big drought. The old Land Act granted only a short lease, and selectors could take up any part of it they liked at a week's notice, a state of things which, it will be readily seen, was unfavourable to the improvement of the land. Under the new Act, however, a fifteen years' tenure is granted over half of the holdings, selectors only being able to take up the remainder, so that improvements are, as a general rule, centred on the half that is secure. The squatters, however, get over a great deal of this difficulty by buying up the river frontage, each one securing a strip of from 10 to 20 or 30 miles in length, and from two to five miles in depth, They thus make sure of the command of the water, and get the remainder of the run on lease. In many cases this practically gives security of tenure, as the selector does not care for land so far back from the river, where it is often impossible for him to obtain water for his stock except at great expense. The whole of the frontages of the Murrumbidgee and the Lachlan—excepting only the Government reserves —have, I am told, been bought up with this end in view. The Murrumbidgee is bought up in large blocks, extending back several miles, whereas in the case of the Darling, the freehold, where there is one, is only a very narrow slip, extending back a couple of miles. The feed along the Murrumbidgee frontages has long been eaten up; the sheep have to go further back for a meal, and in consequence of the drought, which has extended over a large portion of the Western plains for about three years, they are lucky to find any at all. Under the old Act squatters paid a

minimum rent of £1 a square mile for their land, but under the new Act the rent has been raised to such an extent that squatters talk of throwing up the land, as the Victorians did some years ago. The result of legislation over the border was that millions of acres were thrown up, and a large amount of land deserted for 12 years, till the Government were obliged to pass a special Act, and offered the land for a peppercorn rent, glad if they could find anyone to take a holding and diminish the rabbits, by which, in the meantime, the country had been eaten up. A good illustration of the difference of land tenure in the several colonies is to be found in the case of Mr. W. Crozier, a wealthy squatter, whose territory is said to extend over 4000 square miles, partly in this colony, partly in South Australia, partly in Victoria, and partly in Queensland. In South Australia he has to pay only 2s. per square mile, with 28 years' tenure, water improvements to be repaid up to 1888, and all other improvements to be repaid after that year. In Victoria, under the recent Mallee Act, he has to pay 2s. 6d. per square mile, with a 21 years' tenure, on the condition that he clears the land of rabbits. In Queensland he gets his land at 10s, per square mile, on a tenure of 15 years, with all improvements repaid. In this favoured colony he has to pay, under the new Act just coming into force, no less than £2 13s. 4d. per square mile for a 15 years' tenure, and all improvements revert to the Government. Also his lease is subject to a rise of 25 per cent. every five years after the first five, so that when he has been 10 or 11 years on the land he will be called upon to pay £4 per square mile for worse land, perhaps, than in an adjoining colony he would only be paying 2s., and with the certainty that every penny he may have sunk on his land, in the meantime, in the shape of wells, tanks, and fences, goes to swell the value of the country's estate. It is true that this rental may, upon appeal, be reduced below the amount stated ; but should the land board have fixed a higher rent on his land than the minimum sum named, the lessee has no power even of appeal.

But to leave the Land Act, and to pursue our jonrney through the salt-bush plains to Balranald. While still in the Juanbung run, we passed what appeared to be a chain of dry lakes. Two or three of these lay on our track as we passed through. The description of one—perhaps the prettiest of the lot—will convey an idea of them all. Leaving the arid plain behind us, we surmounted a somewhat precipitous bank, and entered on a circular plain, surrounded with thickly planted gums, and covered with a luxuriant growth of grass, lignum, and herbaceous plants. A troop of galahs rose up from the bed of the lakes as we drove through, and flew into the distant trees, where they were lost to view. A solitary rabbiter—almost the only human being we had

seen along our route—was wending his way home across the dried-up bed, his dogs barking around him, and numerous trophies in the shape of skins slung over his back. The scene was perfectly Australian. Leaving the bed of the lake we passed through more dry plain, after which the appearance of the country underwent a sudden change. The trees, which had been scattered at great distances from one another, closed in ; mallee scrub, interspersed with pine, took the place of the monotonous gums, and as we dashed through the labyrinth of branches our faces were frequently swept by the leaves. Tall broom, and occasionally lignum, grew up on either side, and here and there the bastard blue-bush peeped up through the sand. To the squatter's eye the prospect was even more dreary than that of the plains we had temporarily quitted, as the sheep cannot feed on the mallee, broom doesn't suit their constitution, the lignum they cannot reach, the particular variety of salt-bush was inedible, and the red sand which composed the soil bore not a blade of grass. To the unprejudiced visitor, however, who was seeking for the picturesque, as Peter Schmidt in the fairy tale sought for the shadow he had left behind, the scene was gratifying—far more pleasing and attractive to the eye than the wide stretches of arid plain through which we had just passed, But the plains again intervened, and were followed in due course by more mallee scrub, till at last we arrived at a small lake, on which swam leisurely a number of black swans, while on the centre of the plain to our left a solitary emu stalked along the ground. More dry lakes, similar to the one already described, succeeded, one in particular which extended for some distance on our right, presenting the appearance of a fine English meadow, luxuriantly covered with grass. At 6 o'clock we arrived at an out-station on the Juanbung run (held by Mr. Cameron), where we were most hospitably entertained by Mrs. Cameron. After a brief rest we took coach again for Balranald, a distance of about 30 miles. Our way lay through the Paika run (leased by Messrs. P. Macpherson and Co., which covers 400,000 acres, and feeds over 73,000 sheep, 200 cattle and 110 horses. At Balranald we again saw the Murrumbidgee, whose course we had followed due west from Narrandera, but which we were not to see again during the rest of the trip. The early settlers were much puzzled by the apparent inland course of the rivers, as the mouth of the Murray had not then been seen, and the Murrumbidgee and Lachlan appeared to flow on without any outlet to the sea. Two convict crews, under Captain Stuart, sailed down the Murrumbidgee to resolve the difficulty, and when they discovered the junction with the Murray, a little below Balranald, they soon traced the latter river to the sea.

CHAPTER II.

ACROSS THE DESERT.

From Hay to Balranald, skirting the banks of the Murrumbidgee and the Lachlan, we had passed over plains thinly covered with salt-bush, interspersed with billabongs and dry lakes, and with a carrying capacity ranging from four and five to nine and ten acres to a single sheep, but between Balranald and Wentworth we were to traverse a desert land, on which scarcely a drop of rain had fallen for nearly three years, and was even worse at the time of our visit than the district we had already traversed, poor as that undoubtedly was. The size of the runs seemed to depend on the holding the poorer land, and it was soon evident that the larger the holding the poorer the land. In Balranald—a town of about 500 or 600 inhabitants—we stayed the night, and started the next morning in an open trap for Euston, a small township on the northern bank of the Murray, about one-third of the way to Wentworth. The distance was about 50 miles, 43 of which are on the Canally and Mellman runs, leased by Messrs. James Dawrenee and Sons. These runs cover 648,628 acres between them. the former covering 416,343 acres, and have frontages to the Murrumbidgee, the Murray, the Edward and the Billabong, flowing into the Murray, and the Wakool, the latter stream, formed by the junction of the Edward and the Billabong, flowing into the Murray about 25 miles below Balranald. Large though the run is, the carrying capacity at present is only 60,000 sheep, but where even this number found their food it was difficult to imagine, for mallee scrub and pine trees, hops and inedible shrubs appeared to comprise the whole bill of fare along the dreary road. In the stock report just issued, from which the other figures have been taken, Canally is credited with 68.750 sheep, and Meilman with none, while 197 horses and about 70 cattle are spread over the two. The drive from Balranald to Euston was delightful. The country was altogether different from that through which we had passed the previous day. The road, fringed with thick mallee scrub, was as perfect as a road could be, and we bowled along at a splendid pace. The transcontinental telegraph wire ran along one side of the road along the entire route. Once we passed through a small gypsum plain, a kind of pipe-clay of which, it was said, a splendid house had been built, in some corner of the earth. Here and there along the road bits of limestone were scattered about, which it was thought gave evidence of fresh water springs, the lime being deposited as a sediment as soon as the water from below got warmed by the sun.

We drove through one short plain, a mile and half in length, which was said to be the best on the run. There was a plentiful supply of a light variety of myall, the lower branches of which had been cut to feed the sheep, and a tussocky kind of grass was said to abound when the season was good. In this small piece of country three acres would feed a sheep, but the average carrying capacity of the run was far inferior to this, and nineteen acres instead of nine would be near the mark. Great efforts had been made to exterminate rabbits, and poison yards and traps could be seen at intervals along the road. The former were small enclosures within which the poisoned grain was placed so as to be easily accessible to the rabbits, but not to the sheep. The traps were of a peculiar kind- Once I noticed what appeared to be the mark of man's foot in the sand, and, unaccustomed as I was becoming to see the trace of human beings in these western wilds, I gazed on it as Robinson Crusoe might have gazed on the footprint of his man Friday. It turned out, however, that the seeming footprint was only a ruse to attract the rabbits, who were attracted to the spot by the sight of the newly scratched soil, and were caught in the trap concealed underneath. Occasionally a descent was made to examine the burrows, of which there were a large number scattered about, mostly under the shelter of the mallee scrub. Whilst picnicing on the sand we witnessed the dying agonies of a dog which had accidentally taken poison intended for the rabbits and lost his life in consequence. A noble spe5imen of the aboriginal race, named Jack, whose long black and grey beard swept in patriarchial fashion over his breast, tried all the arts in his power to save the animal's life, but in vain. Among the plants we noticed on the way were the camomile shrub ; the so-called "opium" plant, bearing small, heart shaped, succulent leaves of vivid green ; the porcupine grass, so named from the porcupine like bristles springing from a mound resembling a porcupine's back, and another succulent shrub known as the "dillon" bush, the last being the only one of the four which the sheep will eat. The country was so worthless for the purpose of sheep pasture that one of the party said he would not change an acre of lucerne on his northern run for a thousand acres of western scrub !

The whole vast extent of country stretching from Balranald to the western limits of the colony is comprised within the single electorate of Wentworth. The Parliamentary representative of the electorate (Mr. Quin) was a member of the party. The enormous electorate which he represents returns only one member to the House, although the pastoral and mining interests within the borders frequently clash. The Government, however, propose to divide the electorate into three portions, of which Silverton, Wil-

cannia and Wentworth will be the respective centres. Mr. Quin made a very happy suggestion, which will probably be taken up by the Bishop of the diocese. who is a great natural student and fond of botany and other kindred pursuits. The suggestion was that the clergymen throughout the diocese, aided by the members of the young men's improvement societies wherever such were formed, should assist the Bishop in making a collection of the flora of the different districts in which they reside, classifying the trees and plants and showing sections of the former, both with the bark and planed. Such a collection would be exceedingly useful in time, and the formation of it would certainly tend to promote habits of careful observation, which would be extremely valuable when acquired. Our journey now lay through the mallee scrub. After a while this was succeeded by pines and wild hops. The variety of pine which grew round about was the Frenella robusta, about which a humorous anecdote was told. Some time ago a member of the Assembly, the irrepressible Dan. O'Connor, made a long speech in the House about the leasing of scrub lands, to which the Minister for Mines replied by observing that the hon. member knew as little about squatting as he did about anything else, and that if he were to be suddenly transplanted into the western bush he would be unable to tell the difference between a Frenella robusta and a Frenella endlicheri. But the pine and the hops did not last for ever. They were speedily succeeded by a long plain, fringed by handsome she-oaks, and dotted here and there on the right by mallee bush. Then we passed a beautiful tree bordered and duck-covered lake, which the continued drought had made very low, the water being at some distance from the trees. The soil on some of the plains was very sandy, and liable to be blown about by every gust of wind, so that the mere eating off of the diminutive bush deteriorated the land, which the bush would have held together. Exactly at 6 o'clock we arrived at the Euston station—nine miles from the township itself—where we were hospitably entertained by Mr. Bertram, the manager of the famous Euston run, of which the Hon. William Taylor and Co. are the lessees.

On the following morning a deputation waited on the Minister at Euston and pointed out that the district wanted a Government punt at the Murray crossing. They stated that there was only one punt on the Murray between Echuca and the South Australian border, and 50,000 sheep had been compelled to cross by special steamers, thus putting the owners to great expense ; besides which, a greater number would have crossed had there been accommodation. During one month, in 1884, 14 waggons, 280 head of cattle and horses were floated and swam across, besides numerous buggies and other conveyances, many of which

would have crossed here, but were driven to the only punt available, namely, at Swan Hill. Mr. Abbott agreed that the punt was necessary. The second want of the district was four tanks placed on the stock route, between Pooncarie and Euston, thereby making the route practicable and lessening the distance by 90 miles. During a good season the number of cattle estimated to travel hy this route would be between 12,000 and 14,000 if the necessary accommodation were afforded. If such tanks were constructed, the route would be used even in a dry season, when others were not available, Mr. Abbott promised to send an officer, who, with a local man, should inspect the road between Euston and Pooncarie, and report upon the advisability of placing the tanks as requested. He admitted that great injustice had been done to the district in compelling the people to send their stock round by Balranald or Swan Hill instead of being able to across the Murray at Euston; and he promised to call the attention of the Minister of Public Works to the absolute necessity of having a punt placed at Euston as requested.

Since crossing the Lachlan at Oxley, the Ministerial party have been travelling in the Western division of the colony. It would have been difficult for us to have realised the present comparative worthlessness of the land between that point and Euston —where we arrived the day after we left Oxley—had we not seen it with our own eyes; but the country between Euston and Wentworth proved to be, if possible, even more worthless still. That the Government have at least pareially recognised the difference between the land in the Western portion of the colony and that in the Central and Eastern portions, is evident from the fact that special legislation has been considered necessary in order to place the different parts of the colony on an equitable footing. As few people have yet mastered the new Land Act, and as an acquaintance with its main provisions is essential to a right understanding of the very difficult problems with which the Government of a colony possessing such an enormous area have to deal, I shall make no apology for attempting to give a brief resume of the Act, more particularly as it refers to the portion of the colony embraced by the Ministerial tour. Certain features are common to all three divisions. In the first place, all runholders are required under the new Act of 1884 to lodge with the Minister within 120 days after the commencement of the Act a written application for a pastoral lease of one-half of the land held by them under pastoral lease at the time of the passing of the Act. Every information with regard to improvements, natural features, and carrying capacity of the land is to be given with the application. The applicant is also required to divide the whole of the land leased by him at the time of the passing of the Act into two

portions as nearly equal as possible. The division of the run, as mapped out by the runholder, is subject to the approval of the Minister, with whom rests the decision which half of the run shall be leased by the runholder, and which half, under the name of the "resumed area," shall be liable to be taken up by outside applicants as homestead leases, on the same terms and conditions as the original runholder, except that the homestead lessee has to fence his land, and reside on it for six months every year for five years. In the Central and Eastern divisions the resumed area is also open to conditional purchase, as will be subsequently explained. Under the old Act all leases were for the short period of five years, In the new Act a tenure of ten years is given for the Central division, of 15 for the Western division, the tenure for the Eastern division remaining same as before. In the Western division every lease is to commence at the date of the determining of the lease, which was in existence at the passing of the Act; or if more than one lease is held by the same person, then it is to determine at a date calculated with due regard to the mean date of the termination of all the leases combined. The rent for these runs commences from the date of the division of the pastoral holding, and is to be determined by the Minister after appraisement by the local land board. The minimum rent in the Eastern and Western divisions is fixed at 1d. per acre, and in the Central division at 1½d. After the expiration of the first period of five years, the minimum rent for the Western and Central divisions is to be increased by one-fourth, and in the Western division this sum is to be still further increased after the expiration of the second period of five years by another fourth, so that the runholder will be required to pay just 50 per cent. more for the third period of five years than what he was paying for the first five, the climax being reached in the further provision—common to each of the three divisions—that all improvements revert to the Government. Should the Land Board fix a minimum rent on the Western division the lessee can appeal to the Minister for a reduction, as the mere fact of the board appraising the land at the minimum value is an indication that possibly a still lower value might have been given had they had the power. On the other hand, should the board fix a higher than the minimum rent, the lessee has no right of appeal, as the board is considered the best able to judge of the land. Should there be no application for a lease of the resumed area in the Western division, the runholder may hold it under an occupation license, at a rental of £2 per square mile, subject to reduction on appeal; although for this portion of his run he gets no tenure, as it is always open for selection by a homestead lessee, who can apply for an area of from 5760 acres to 10,240 acres, on the terms already mentioned above. As, how-

ever, considerable injury might be done to the runholder by a homestead lessee taking up choice spots on the resumed area, commanding access to river frontage or valuable water improvements, without access to which the back portions of the country might be rendered unworkable and valueless to the original lessee or any other homestead lessee, power is given to the Minister to change the position of the boundaries of the proposed homestead lease, which will prevent the eyes of the resumed area from being picked out. The Government have further shown their recognition of the fact that land in the Western division cannot be successfully worked except in large areas by prohibiting the conditional purchase of land in this division, except within special areas to be hereafter proclaimed, and which it is anticipated will exist generally around towns, and the area of which must not exceed 160 acres. In the Eastern and Central divisions, the case is different. There any person over 16 years of age may conditionally purchase land on resumed areas not necessary for the profitable occupation of leasehold land, and on any other land which is not leasehold or reserved for town and suburban sites, or for mining and other purposes, the minimum of land to be purchased by the selector being fixed at 40 acres, and the maximum at 640 acres for the Eastern, and at 2560 for the Central divisions respectively, the conditional purchaser having in each of these divisions the right to a conditional lease, which he may ultimately convert into a conditional purchase within a period of five years. The condition affixed to these time-payment purchases is that the purchaser shall, within two years, or such further time as the Board may allow, substantially fence his land, and reside on it continuously for five years. It is important to note that under the old Act, when leases were only for five years, squatters endeavoured to obtain security of tenure by purchasing their improvements, a system which is no longer allowed. The very opposite principle indeed, is now the rule, and the right of the squatters to their improvements, in which they may have expended thousands and thousands of pounds, is no longer recognised. Prior to the new Act coming into force the number of applications for leave to purchase the land round their improvements was increased several fold, and this will be found to have introduced unexpected difficulties into the working of the Act. As a result, the original lessee will be able to render the whole of the Crown land previously held by him utterly valueless to the incoming tenant, unless he purchases the improvements, as it would be idle for the new man to attempt to start afresh on Crown land on which the improvements belonged to another on the high rental now charged, it being remembered that the land was only taken originally on account of the extreme lowness of

the rent—£10 a section, and on the understanding that the rent would not be put up, and that the squatter would not be disturbed in the possession of the land. Another important thing to note is that the colony has been separated into three divisions for the first time under the new Act, and—what should not be forgotten by legislators—that one division can be treated by Parliament irrespective of the other two, and that the errors of the Act for, say, the Western division can be amended in the forthcoming session, should the Government choose, without touching the other divisions. Before concluding this brief resume of the Act, it will be well to remember the two main objections which the squatters in the Western division at any rate—if not in the other two divisions as well—have against the Act of '84—first, that the minimum rent is far too high: and secondly, and even more important still, that the improvements, on which they have expended a small fortune apiece, revert entirely to the Crown. So long as such provisions exist, how, they ask, can the squatters continue to occupy the land?

The Euston run, where the party arrived on May 6, is a very fair specimen of the land leased in the Western division. It is over 1400 square miles (911,370 acres) in extent, and has a frontage of 130 miles on the Murray, from which it goes back 145 miles. Comprised within the general name of Euston are several other runs, named Mundona, Garnpang, and Manfred. These combined runs are, and have been managed for the last 20 years by Mr. Bertram, for the Hon. W. Taylor and Co. Mr. Bertram made us heartily welcome, and treated us to the very best he had.

The Euston clip is famous, and its superior quality may be inferred from the manager's statement, that it gives the best average of scoured wool in the colonies, and is quoted in the London Market. The Euston run proper—excluding the other runs leased by the same company—commences at the Bennenee lake, seven miles below the station, and extends 15 miles down the river, not reckoning the township itself, which is, of course not included in the run. The area of this single run is 63,000 acres, 15,000 acres of which are freehold. There are 1500 sheep on it at present, although double that number were carried on the leasehold land before the drought. The average carrying capacity for the holding—iucluding all the runs named—is estimated at from seven to eight acres per sheep. The whole of the wool is scoured on the run, and has been for the last fifteen years. The amount produced during the past season was nearly 2000 bales, The great drawback here, as in most of the runs visited by the party during their tour, is the low annual rainfall, which scarcely averages nine inches in the Darling district, and in the Barrier region goes as low as six and seven. About 30 tanks, with an

average capacity of 10,000 cubic yards, have been constructed on the Euston runs, while several wells have been sunk. The number of sheep returned for the combined runs at the close of last year was 104,000, together with 150 horses and 200 head of cattle. It has been found impossible to irrigate the land, as the rise and fall of the river is so great that enormous expenditure would have to be incurred in raising the water, the only practical way of irrigation here being by damming the billabongs, or conserving the overflow in lakes. Severe losses have been sustained on the Euston runs through the drought, and £1000 worth of bullocks died on the road last year in conveying the wool from Manfred to the head station. Indeed, last year's wool from that run, which is situated away back from the river is only just coming in. 1800 bales were obtained, and 400 were left in the shed, the manager being unable to get in owing to the drought, working bullocks by the score dying on the way up for want of a drop of water to drink ; and yet over £60,000 has been spent in water and other improvements by the lessees during the past few years. The Manfred woolshed has been cleared this year for the first time since the commencement of the drought three years ago. The state of things on this back block has been so bad for five years or more that the manager has even had to boil many of the carcases for tallow sooner than trust to the uncertainty of starting the poor animals across the arid waste to the river. The necessity for holding such enormous areas as are so commonly found in the Western division, in order to make the business of sheep-farming a profitable one, is not apparent to the superficial observer : but it becomes obvious enough when the whole difficulties surrounding the occupation of the pastoral lands in this district are duly considered. Owing apparently to a special dispensation of Providence, we have had the opportunity during our present tour of seeing the country in two exactly opposite conditions, for both of which the squatter has to provide. In the first half of our journey—from Hay to Menindie—we saw the country as it appears during a lengthened drought ; while from Menindie to Wilcannia we have seen it smiling from the effects of more or less exceptionally heavy rainfall. For both of these contingencies—especially for the former—the squatter in the Western division has to provide. In the good season he has not only to make up for the heavy losses which he is bound to have incurred during the drought, but also to provide sufficient to compensate him for the hardships, anxieties—anxieties such as a squatter in more favoured districts knows little or nothing about—as well as the isolation to which he has to submit during the time which his tenure lasts. The squatter, indeed, is the pioneer of civilisation in this remote part of the colony, which, but for him, would lie

barren and waste. In a district so notoriously lacking in regular rainfall as the Western division generally is, the difficulties with which the squatter has to contend are increased a thousandfold.

Nature has kindly provided special vegetation for the arid districts of the West, and very soon after a rainfall of only a single inch, the sandy soil is covered, in some seasons of the year, with a multifarious growth, which might even puzzle the botanist to classify, but which, under the scorching beams of the sun, wither away almost as rapidly as it springs up. But there is never more than one real spring of grass or herbage in the year on the back blocks, and when once thoroughly eaten down, as is frequently the case when the land happens to be over-stocked, the salt-bush on which the sheep mainly depend rarely grows again. It is therefore impracticable to feed a flock of sheep for very long at a time on what is temporarily a most luxuriant plant, especially if the sheep have to travel over it much on their way to the river or tanks, as in that case they destroy in their march even more than they eat. It is therefore absolutely necessary to use just double the amount of land to feed stock as is required in more favoured parts, as half of the run must be allowed a spell, in which to renew its strength while the other half is being eaten down. Many and many a paddock has been permanently destroyed by the sheep being allowed to remain on it till the salt-bush had been eaten down to the roots, which, if only allowed a rest, would have grown salt-bush for generations to come. The result of this is that the area of the runs must be very large, and the value of otherwise worthless mallee country and scrub lands lies simply in this, that when sufficiently improved by the construction of wells and tanks for providing the stock with water the sheep can be shifted on them during the winter months while the better land is being allowed a rest. Sheep will do on much less water in winter than in summer, and if they had plenty of green, succelent food—such as they rarely get on the backs —they might even pull through two or three months at a stretch without any water at all. It is related of a Scotch rustic, who dwelt on a plain where the sheep lived for months on the herbage around them and quenched their thirst on the rich juice which the plants contained, that on seeing a picture of an Australian flock rushing to a tank, he exclaimed, "The artist could na' ha' known mickle about sheep for they dinna drink!" But in order to make these back blocks capable of carrying sheep at all in any season, a large amount of money has to be spent in excavating tanks, sinking wells, and fencing in the land. Wire fencing, which is rendered donbly necessary to keep out the rabbits, is the least expensive item, and yet it would hardly be above the mark to say that over half a million sterling has been already spent east

and west on the Darling River in wire fencing alone. The paddocks are large, ranging in size from the tiny horse paddock—about the size of an English one of that name—up to the paddock of 200 square miles, such as we passed on the Kinchega run, and which is truly of Australian dimensions. But the greatest outlay occurs in providing these paddocks with tanks and wells, &c., for without a tank, a paddock would be of little use for depasturing sheep. The question of water improvements is one by itself, not to be dealt with at the tail end of a letter like this, but some estimate may be gained of the enormous expenditure entailed by the significant word "improvements"—all of which, it must be remembered, the new Act provides shall revert to the Government—from the mere statement that the amount spent up to date in improvements to increase the grazing capabilities on 35 stations—a large number of which we have passed through during our present tour—reached the enormous figure of £1,227,680. When it is considered that, on a low average, from eight to ten acres are required in this part of the colony to carry a single sheep—which, at the rate of a 1d. an acre, means from 8d. to 10d. per head per year; that, owing to the frequently scanty herbage, want of water, and frightful wool-spoiling dust, the fleeces are generally both light and poor; that the improvements required to carry any sheep at all entail extraordinary expense, and the carriage of the wool to the market, even when obtained is both laborious, uncertain, and expensive, the conclusion forces itself upon the mind of the candid inquirer that the minimum rental fixed by the new Act is in many cases ruinously high in proportion to the yield from the produce of the sheep, and that the provision which takes away from the squatter any right in the improvements on which he has lavished so much of his means is scarcely calculated to forward the only end which the country can have in view—namely the settlement of an energetic, revenue-making race upon that vast extent of the country which must otherwise remain a barren and useless waste.

CHAPTER III.

THE RABBIT ACT.

In the last chapter I gave a brief *resumé* of the Land Act, and of the difficulties with which the squatters have to contend in occupying the country. One of the greatest of these difficulties is of course the want of water, to provide which enormous sums have been spent all along the line. A considerable amount

of information has been given in these columns during the progress of the tour on this important point. I will pass to yet one other difficulty with the squatters in the western division have to contend, and which they are beginning to find it almost equally difficult to meet. To illustrate this difficulty, let us take a single run- Between Euston and Wentworth there stretches some 40 miles along the Murray banks an immense run, or rather a trio of runs, 1400 square miles in extent, leased by the Tapalin Pastoral Company. Three separate runs are worked by the company, namely—Ki, Tapalin, and Mallee Cliffs. Four-fifths of this immense tract of country is said to be composed of mallee scrub—desolate, useless bush, which covers an enormous area of New South Wales, amounting between the Darling and the Lachlan to at least 10,000 square miles, and embracing on the Victorian side of the Murray another considerable extent of land. This is the home of the rabbit, and once established in this frightful scrub it is extremely difficult to hunt him out. The portion comprised in the Tapalin runs is a fair sample of the whole, and from the description of the drive out in the back blocks on the Moorara run those who have never seen a mallee bush may obtain a tolerably realistic idea of what mallee scrub really means. The value of this scrub for pastoral purposes may be inferred from the statement of the manager of the Tapalin runs (Mr, W. E. Patterson), who estimates the carrying capacity of the runs leased by his company from 15 to 20 acres in the best of seasons, and at about double that number when the season is bad ! The meaning of this is simply that when the season is very bad, as it has been in that district for three years past, no amount of land is able to keep the sheep alive. When the company took the run the land was carrying 120,000 sheep, most of which were lost as soon as the drought set in, and only 38,000 now rémain. These are rapidly dying, and the poor emaciated specimens, we saw looked as if they would hardly maintain themselves alive another day. The feed on the runs at present is simply execrable, if feed it could he called, that remained along the frontage route, and what might have been left to sustain the sheep during the lengthened drought, had been eaten down by the rabbits. The same state of things is said to prevail on the opposite side of the Murray, where the company have also an extensive holding covering an area of about 500 square miles. This large tract of country only carries at present 20,000 sheep, and no more than 6000 ewes were shorn last year. Two-thirds of this land is also said to be mallee scrub, and the rest salt-bush, or all that the rabbits have left of it ; the one difficulty with which the company have to contend on either side of the Murray being the same, namely, rabbits. Salt-bush used to grow in the district, although very sparsely in the mallee

portion, as a great deal of the nourishment which ought to go to the salt-bush is appropriated by the useless scrub ; but there is now little left of anything, the rabbits and stock together having succeeded in eating it pretty nearly all down. The manager thinks the Government ought to offer an inducement to tenants of mallee land to ringbark the timber, in order to allow the grass to grow on the flats. There is a slight difference in the way in which the mallee is distributed along the Murray frontage. On the Sydney side it extends right from the river banks for about 15 miles back, while on the Victorian side it only commences, where on the Sydney side it temporarily leaves off. No wells have been sunk by the Tapalin Company on the Victorian side, although five big tanks, ranging from 3000 to 7000 cubic yards, have been excavated. Twelve attempts have been made at well-sinking on the runs we traversed, salt water being struck on each occasion between 50 feet and 150 feet in depth. Whether fresh water would have been found had the shafts been carried deeper is an open question, the company not apparently having cared to risk a further outlay in experiments. Water supply here is obtained almost entirely by tanks, of which there are 23, ranging in capacity from 2000 to 15,000 cubic yards, and averaging 7000 apiece. The great problem which the Tapalin Company have to solve—or lose in the attempt—is how to exterminate the rabbits. At least £20,000 has been spent by the company during three years in getting rid of the pest. On the Victorian side they have put up many miles of wire fencing, at a cost of £75 per mile, in the hope of confining the rabbits within certain easily-dealt-with limits. On the Mildura frontage the rabbits have eaten down to the water's edge, and then disappeared, probably to some happier land, where feed is more plentiful and rabbits more scarce.

That the rabbit pest is an entirely new and unexpected difficulty with which the squatters have to cope may be inferred from the report furnished to Government in 1880 by Mr. Commissioner Lockhart, on the "Grazing capabilities of the Darling districts," in which he stated that rabbits were appearing in some localities in considerable numbers, chiefly spreading out from the town of Balranald, where a few pairs were turned out some years ago. The extent of this animal pest had not then (1880) become pressing enough to excite the energies of the pastoral lessees ; but there can be no doubt, said the Commissioner, that in a few years rabbits will materially affect the grazing capabilities of the runs. The Commissioner predicted, moreover, that delay in the prevention of the pest would lead to very costly measures for suppression. The Commissioner evidently foresaw in the cloud no bigger than a man's hand just then appearing above the horizon, the full dimensions of the storm which was soon to burst over the colony

His prediction has been partially fulfilled already, and before very long will be amply fulfilled in every respect. To the thousand and one difficulties which the squatter in the Western Division has to encounter, and which handicap him severely in the race against other portions of the colony, is now added the expense of keeping down this horrid pest. It is related of a well-known member of the Reform Club that the night on which the Minister for Mines left Sydney on his western tour the conversation turned on rabbits, and the gentleman in question, who had suffered severely from the pest, endeavoured to impress upon the member for Wentworth the importance of keeping this question prominently before the Minister's mind. "When he talks about the loveliness of the climate," said the member of the Reform Club, "whisper in his ear 'rabbits.' When he dilates on the invaluable properties of salt-bush, just mutter 'rabbits.' When he grows eloquent on security of tenure, shout aloud 'rabbits'; and when he goes into ecstasies over a patch of waving grass, scream in a higher key—'rabbits!'" The irascible member of the Reform Club was only right. The great question with a squatter in a large portion of the Western Division is rabbits, and even in those districts where the pest has hardly as yet appeared their one fear is that in a few months they, too, may be suffering from the same evil. As a number of lessees in the division recently pointed out, what was only a nominal evil four years ago has since become one of the greatest calamities that could possibly befall the industries of any country, extending as it does over hundreds of thousands of square miles in one devastating sweep.

To cope with this new difficulty the Government in 1883 were obliged to pass a special Act dealing with the whole question. During the present year the working of the Act has undergone an essential change, and it was one of the primary objects of Mr. Abbott's tour to give the framer of the bill an opportunity of seeing with his own eyes the real extent of the evil. The Rabbit Act is so important, and confers on the Minister administering it such arbitrary powers, that a few words concerning it will not be out af place. The department charged with the carrying out of the provisions of the Act, has working under it 44 rabbit inspectors: 20 officers, commanding 100 labourers; an office staff of 14 clerks; two superintendent inspectors, headed by a chief named Mr. T. H. Myring, a very smart young fellow of about 30 years of age, whose experience for the work was gained under Mr. Bruce, chief inspector of stock, who had formerly charge of the rabbit department in addition to his other multifarious duties. Under the Act as at first administered the rabbiters were paid wages, and the squatters were refunded three-fourths of their expenditure; but under the new regulations the

wages system has been entirely discarded : rabbiters are paid a bonus of sixpence per scalp, and the squatters are only refunded three-fourths of this authorised bonus. The squatter can of course pay as much more per scalp as he likes, or rather as he thinks the scarcity of rabbits justifies, but he does so at his own expense, as he obtains no refund from the Government of any portion of such additional expenditure. In either case the expense of working the Rabbit Act comes partly from the squatters, who are assessed in proportion to the extent of their holding, and partly from the general revenue, on the ground apparently that the destruction of the rabbits is not only essential from a private, but also from a national point of view. The idea pretty generally entertained by squatters is that the whole expense of the department is borne by them, but this is very far from being the case. The wages system first adopted was found to work very badly. It was impossible to properly supervise the men, owing to the immense extent of the country over which they had to work. As a man drew just the same money at the end of the week whether he brought in scalps or not, it will be readily seen that the idle man stood in the same position as the industrious one, and the latter had no encouragement to do his duty properly. It was, too, to the interest of these men that rabbits should abound, and that squatters should be obliged to give them such an easy job as drawing a salary without necessarily doing any work. The old regulations had another disadvantage, in that they rendered necessary the keeping of very complicated accounts, and squatters had to maintain, in addition to a lot of rabbiters, a clerical staff, for which they got no remuneration. Allowances were made by the Government for horses, poisons, plant, and for all mediums of extermination, in addition to wages, the consequence being that very great delay arose in the remission of the subsidies, owing to the claims sent in by the squatters having to be thoroughly checked in the head office. Under such a system as this, cheating was encouraged in every possible way. Not only did rabbiters constantly receive wages for work which they frequently not so much as even atttempted to do, but the squatters themselves were tempted to put the ordinary work on their holdings down to rabbit extermination, and thus get the country at large to help to work their runs. All this has been done away with under the new regulations. So far as can be seen at present, the expenditure will be less than half what it has been hitherto, but no definite calculations can be made until after the payment of the first qnarter's subsidy for scalps. The authorised price for a scalp now is 6d., of which the squatter is refunded three-fourths, although of course he can pay as much more as he likes out of his own pocket, and in the districts where

rabbits are extremely scarce, half-a-crown a scalp is commonly paid. This is about the price in the Barrier Range country, where rabbits have not yet become a pest, although on some of the runs the squatters are now only paying 2s. per scalp, the vermin being on the increase, and 5s. for a pair of bunnies being considered rather too high. But in the Wilcannia district, and on the runs fronting the Darling, between Wilcannia and Bourke, where rabbits are few and far between, extra inducements have to be offered to men to catch the rabbits ; and the squatters there want a return to the old system, by which wages were paid, and they were refunded three-fourths of their outlay. The present system has the advantage of making the men work, for unless they get the scalps they are paid nothing. It has also the advantage of attracting the best labour to the most thickly infested districts. Previously a lessee with a million rabbits had as much difficulty in getting men to work at the traps as a lessee with only a few, but the reverse is now the case, and the department hope by the means adopted to equalise the pest. The expenditure under the old system was such a drain on the country that it could not have been long maintained, but the Government hope the new regulations will work so well as to give them some money to spare, and enable them to offer a higher rate per scalp than they are at present doing. Now that the new Land Act has come into operation, and owners have a secure tenure for 15 years, for at any rate one-half of their holdings, in the Western division, the department hope they will see their way to rabbit-fence their country, and I understand that the Minister has some intention of introducing legislation to that effect. Wire fencing has been found to be the most successful means yet devised for keeping down the pest. The wire netting should be a mesh of $1\frac{1}{4}$ or $1\frac{1}{2}$ inch, anything larger being insufficient to prevent the rabbits from getting through. Various methods of fencing have been adopted in different parts of Victoria for this purpose, but the most popular method is to sink the wire about six inches under ground, and to carry it from two to three feet above. The department have in view the desirability of running connecting fences between the fenced sections of the runs, and those portions which under the new Act are to be resumed by the Government. A considerable amount of ill-feeling has arisen between the department and the squatters, owing to the injudicious conduct of some of the officers of the department; but steps have been taken to have the objectionable officers removed after a full investigation into the charges against them, and it is hoped that this will have the effect in future of producing a better feeling between the two.

Of all the various means of getting rid of poor bunny, by far

the most popular and efiective is by trapping. When rabbits were first introduced for private shooting, a man with a rifle could keep down all there were, and in some parts of the Western division they are still so few in number that the wild cats and dingos are quite sufficient for the purpose. But bunnies are rather deceptive beings, and they spread with the rapidity of bad news. They begin to breed when only six months old, and think nothing of having seven families in a year, each of the seven families perhaps consisting of seven members—or, including the mother, just 50 rabbits per annum ! It is somewhat singular that hares and rabbits, though so nearly allied, have no sympathy with each other ; and it only rarely happens that a hybrid progeny of the two species is produced, in which case with only one or two exceptions, the father of the hybrid is said to be invariably a rabbit, and the mother a hare. One reason for the extraordinary spread of rabbits is said to be that in order to preserve her progeny from the paternal caress, which is regarded as a fatal one, the mother rabbit forms a sort of advance guard at time of delivery, and introduces her young ones to the world a little ahead of the rest of the tribe. The result is said to be that the rabbits advance by a series of leaps, and make their first appearance in a district like the first wave of a devastating storm, the balance soon to follow. A season of drought keeps them somewhat in check, and in the mallee scrub back of Pooncarie, where the vermin abound, I was informed that owing to the scarcity of feed the rabbits were not nearly so prolific as usual, and the appearance of the country in that direction was certainly not over-inviting. We travelled for over 70 miles in the mallee blocks, and hardly saw enough feed to choke a fly, let alone a rabbit, although a rabbit would live in clover where a sheep would starve. But in the country on the other side of Menindie, where the heavy rainfall of January about commenced, the rabbits are beginning to make rapid headway : and before long, unless energetic steps are taken for their suppression, will probably be in full possession of the land. It is said that rivers form no impediment to their progress, and several trustworthy squatters have assured me that they have seen rabbits take to water as readily as dogs, and cross streams with ease. Mr. Myring, chief of the department, does not credit this, and states that one of his officers has seen rabbits chased by dogs along a narrow promontory to the water's edge, and turn round on their pursuers, and face certain death sooner than enter the river ; he thinks that the rabbit that deliberately takes to water may be looked upon as a *lusus naturæ*, as it is altogether against the nature of the animal to do so, and he calls attention to the densely infested condition of some of the runs on the Victorian

side, and the almost non-infested condition of the land on the New South Wales side of the Murray—even in cases where the feed is better on this side—to support his view of the matter; he thinks that the majority of the rabbits which came from Victoria were either washed over by floods or were carried over; but the balance of evidence seems to be against him, and the very origin of the pest in this colony is attributed by many experienced hands in the West to the rabbits crossing the Murray to get at the feed on the other side. Among the numerous devices to which rabbiters have resorted in order to make a good thing out of the pest, it is related that not very long ago five of the fraternity used to drive a very profitable trade by selling vermin caught over the Victorian border to a squatter on the New South Wales side. In a scrub on the other side of the Murray the rabbits abounded to a fearful extent, but as only 1½d. was paid per scalp, two men used to trap on that side and send over their captures to two others stationed on the Sydney side, a fifth man, who was ostensibly employed as a fisherman during the day, shunting the skins across the stream.

Rabbiters, as a rule, have a pretty hard time of it. They set their traps before dark, and in the early morning go round to collect their game. They then re-set their traps, and spend the rest of the day in hunting the vermin with dogs, or in looking after their traps, or in skinning their prey. In order to obtain payment for his work the trapper has to produce the whole skin of the rabbit, with the scalp attached. These are kept at the station till the inspector makes his round, which he is required to do at least once a month. The inspector either destroys the whole skin and the ears, or else cancels the skin by simply cutting off the ears. The skins can then be sold, and as they fetch a price ranging from 1s. to 2s. 6d. a dozen in Melbourne, something is made out them. After the inspector has treated all the skins in the manner noted above, he gives the squatter a certificate of the number of rabbits so destroyed. This certificate, together with the voucher of the rabbiter that he has received such an amount for so many scalps, entitles the squatter to the return of three-fourths of the amount expended from the Government. The simplicity and yet complete method of the check used speaks for itself. It has been thought by the Government that something more was needed besides subsidising the squatters for the work done, and they have accordingly organised some twenty camps, each comprising a working officer, four men, and a cook. These camps are moved about from run to run on the recommendation of the inspectors, endorsed by the department. Every known means is used for rabbit extermination by these camps. Burrows are carbonised, warrens are dug out,

poison is laid, and coverts are destroyed. The cost of these camps amounts to about £8000 per annum, and the Minister has the power, in cases where lessees have shown any neglect or apathy in exterminating the rabbits, to place camps on such runs and charge the cost of their maintenance on the lessee. The stringent nature of the Act will be seen when it is stated that the cost of these camps, when placed on the run of a neglectful lessee, will form the first cost upon the estate, taking the precedence of mortgages or any other lien there may be on the land at the time. Of course there are vast tracts of country on which it is impossible to put men to work during the dry seasons, in consequence of their great distance from any available water, and it will readily be seen that no system of extermination can be complete till such areas are fenced off from the rest of the country.

It need hardly be said that the new regulations by which rabbiters are only allowed a bonus on the number of scalps they obtain is not nearly so popular among them as the previous system, under which they could, and commonly did, draw a comfortable salary without bothering about the work. Complaints are by no means, therefore, uncommon, as the present system permits of no idleness, and in the worst districts the most industrious man hardly expects to make a fortune. In fact, at the present time the best of rabbiters is hardly making a enough to keep him. In some of the large stations where under the old regulations, the men received on an average £2 per week for rabbiting, including rations, wages, and bonus, they are now only making about 15s. per week, and in some places even less than that. Of course there are patches of country where rabbiters even at the present low rates, can make fair wages, but they have to work exceedingly hard if they do, and they must be men of the best kind. As, however, the breeding season will soon commence, no doubt a much greater number of rabbits will be obtained, and better wages will be made. On most stations the rabbiter is paid 6d. per scalp, irrespective of size and age, and the Government recognize and the inspector certifies for anything recognizable as a rabbit. The method of preserving small unfurred rabbits for the inspection of officer is peculiar. They—that is, the rabbits, not the officers—are pickled in brine. In consequence of the rabbits being much more numerous on the Victorian side of the Murray. it is feared that attempts will be made, similar to the one narrated above, to smuggle skins across the border. This would be only natural when it is remembered that only 10s. 6d. per hundred is given by the Victorians for skins as against £2 10s. paid by New South Wales. With a view of presenting any fraud of this kind, the Government offer a reward of £50 for any

information leading to a conviction, while the offender will be liable to a fine of £100 or imprisonment for six months. The inspectors report every fortnight to the Department, and from the information thus obtained the Department regulute their conduct, and take measures as deemed advisable for the extermination of the rabbits on the blocks reported upon. It will be seen from the foregoing sketch of the work of the Department that the Government are not altogether idle in the matter, but that energetic steps are being taken to get as speedy a control as possible over this horrible pest.

CHAPTER IV.

RECEPTION AT WENTWORTH.

Great preparations were made at Wentworth to receive the Ministerial party, but owing to the splendid driving of Mr. Charles McMahon, manager of Burton's Coach Company, who took the reins to show honour to the Minister, the party arrived in the town at 8 o'clock, or two hours before we were expected, and before the townspeople had time to set a light to the Chinese lanterns with which the triumphal arch had been adorned. However, McMahon drove us through the latter in fine style' and set us down at Simpson's Hotel, where the Minister received a cordial welcome from the Mayor (Mr. William Bowring), and several prominent squatters from the surrounding district. The Mayor delivered a brief address to which Mr. Abbott suitably replied, then, tired out with our 80 miles journey across the desert, we sought our couches and were soon sound asleep. The next morning the Minister was driven to the School of Arts, where the Mayor presented a formal address of welcome.

Mr. Abbott, in reply, thanked the Mayor for giving him the opportunity of addressing the citzens publicly. He deprecated the custom of only addressing people at banquets, at which the number of hearers was necessarily limited, the majority of people being thus unable to hear the views of the Minister on the political questions of the day. He praised the Wentworth Municipality for providing the town with wide streets and beautifying them with avenues of trees, and observed that the western towns of Hay and Wentworth were far ahead of the Northern towns in this particular, although the latter had many advantages which the former did not possess. The impression in Sydney was that on the Murray and Murrumbidgee were some of the most magnificent flats in the world, but he had seen with his own eyes that

the impression was entirely wrong, and the land was so bad that he would not care to take it at a gift, He had seen nothing like the rich land in the Northern districts here, and if Sydney people would come here their illusion would disappear. The country must always be pastoral. Referring to the Soudan Contingent—for the despatch of which great praise was accorded to the Governmeut in the address—the Minister said he did not think the Government was worthy of the name that could not gauge public feeling, and act promptly on it. Notwithstanding the unconstitutional procedure, the action of the Government had already been followed by immense benefit, and he referred as an instance to the sum to be expended by the Admiralty in fitting out cruisers, &c., in Sydney harbour. The Government had been twitted for not proclaiming a land office day, but he said it was in the interests of the general public that the delay should occur, so that they should have an opportunity of knowing what land could be taken up and prevent the squatters from obtaining any undue advantage from their previous knowledge of the locality. The Government hoped, however, to proclaim a land office day very soon.

On the motion of the Mayor (Mr. Bowring), a vote of thanks was accorded to the Minister for Works, for granting a supply of water to the town, with a request that no time should be lost in carrying it into immediate execution. The mayor then stated the wants of the district. and complained of the neglected state of the cemetery. Trustees from the various denominations had been appointed, but had done nothing. The municipality had no power to take the matter into their own hands, and he asked the Minister's assistance. He also asked for the construction of a bridge ever the Darling. and claimed that the vast amount of traffic would warrant the expenditure. A large extent of Crown lands would be sold, and buildings erected thereon, thus bringing revenue to the Government. He drew attention to the immense area of the Wentworth electorate, which was the largest in the colony. It contained 4500 electors, and the interests of the mining section clashed with the interests of the pastoral section, yet the electorate returned only one member. He suggested that Wentworth, Silverton, and Wilcannia should each form an electorate. The Municipal Council asked for a special vote for the hospital, and a subsidy for the Mechanics' Institute.

In reply, the Minister said the bridge would cost £30,000, the yearly interest being £1200. If the traffic warranted the expenditure the bridge would not be refused, but he expressed grave doubt. He thought they were entitled to a punt, and promised to place a sum on the estimates. Referring to the common, he observed it was formerly laid down by the Attorney-

General that municipal councils under the Act might become trustees of commons. Recently a case in point arose at Bourke, and the matter was fought out in the Supreme Court, which decided that the councils had no power under any Act to interfere with the commons. The Minister had since prepared a bill dealing with commons generally, and proposed that all commons, whether within municipal towns or not, if adjacent to the municipalities, should be vested in the municipalities. The bill would be introduced at the earliest opportunity, and he hoped to see it soon passed. The Government had already had under their consideration the Wentworth electorate, and proposed to divide this electorate and part of the Bourke electorate with due regard to the pastoral and mining interests, and it was unfair that the mining interests should overrule all the rest of this enormous pastoral electorate. He promised assistance to the hospital, and pledged his colleagues to place £1000 on the estimates for the institution. He had always been interested in hospitals, which, he considered were worthy of much more assistance in these scattered towns than in large centres. His very first bill had been to compel hospital patients to contribute towards their support, and he was, perhaps, a life-member of more hospitals than any man in the country. He thought it disgraceful that the labouring classes in the colony contributed so little to hospitals. They were those who received most benefit, and yet they contributed least in proportion to their means. This proceeded less from unwillingness to give than from the want of thought. If every labouring man would contribute 5s. yearly to the local hospital an enormous income would be the result, as the hospital would get 5s. more from the Government. Although unconditional grants had been freely given to hospitals, he did not think such had been the case of mechanics' institutes, and unless there was a precedent he could not recommend the grant for the Wentworth institute.

The Minister then visited the Public School, and the children presented an address, to which the Minister made a suitable reply. A holiday was given to the children in honour of the event. The leading stores were closed during the day to allow the people to hear the Minister speak. The party subsequently visited the gaol, which has been used as a hospital for years. There were only two inmates in the gaol at present, one of whom was an hospital patient. The Minister expressed his surprise at a gaol being put to such a use, and he promised to bring the matter under the notice of his colleagues.

In the afternoon the Minister was driven to the Cemetery, and he promised to consult the Commissioner with reference to ubmerged road leading to the cemetery, which is impassable

during flood time. He also inspected the wharf and punt, and afterwards visited the junction of the Darling and Murray, at the back of the town. Eight steamers were waiting on the Darling for the water to rise.

THR BANQUET.

In the evening (Friday, May 8), a banquet was tended to the Minister and party at Simpson's Hotel. After the usual loyal toasts had been honoured, the Mayor (Mr. William Bowring) proposed "The Ministry," in complimentary terms.

In reply to the toast Mr. ABBOTT said that no Ministry ought to be judged by what it had done for a particular district, although the chairman had eulogised the Ministry for the good they had done to this district. He thought that they had had too much talk about federation of late. More was to be gained by the other colonies by federation than by New South Wales, and it appeared to him that they could never have true federation till they had free trade. He complimented Mr. Quin on being a good and discreet representate of the district. Mr. Quin had been a consistent supporter of the Government, and had enabled the Government to form a better estimate of this extensive district than any other member in Parliament, and it was entirely owing to his representations that he had made this visit. Of all the good that the district had obtained at the hands of Parliament, they owed more to their representative than to anyone else.

The Rev. R. J. Smith proposed "The Parliament," to which Mr. Quin, the member for the electorate, responded. He said the Parliament had lacked a knowledge of the district, and had framed legislation which would have to be very considerably modified before the district was satisfied.

The Hon. T. CUMMING proposed "Our Guest."

Mr. ABBOTT, in reply, said that his visit to this district had been of a gratifying nature, because it afforded him instruction which he had never had opportunity of acquiring before. He hoped that his visit would be instructive to the colony at large, and if he remained in public life he would lose no opportunity of placing before Parliament the result of his visit to this remote part of the colony. He promised, if he remained a Minister, to visit them again. No one could charge the Government with having hastily dealt with the Land Bill, and he hoped that good results would be attained by the administration of the measure. He understood that men were being thrown out of employment

by the squatters refusing to improve their land, owing to what they consider defects in the land legislation. The Government had, however, taken great pains to appoint men of intelligence on the land boards, and two better men than Messrs. Lockhart & Park could not have been found. The former had been a Commissioner for 40 years on the Murrumbidgee and Murray, while the latter was a man of the very highest intelligence, who had been located here many years ago. He thought the intelligence of the board and their knowledge of the district would be a sufficient guarantee of the results. The Government and the Parliament had no desire whatever to crush an industry which was the backbone of the colony, and it would be a most unwise policy to try and extort from any class of the community what they could not pay. He would not personally be a party to any policy which would have the effect of injuring a class which was so beneficial to the country. The squatters were frequently spoken of as very wealthy ; but they must not judge them by their extra good seasons, but by their average ones. Referring to homestead leases, he said that he never expected that the squatter would like them. If the squatters had been more moderate in their demands in the past, they would never have had the Land Bill of 1861. They would have had a much fairer bill if they had not made demands which could not be tolerated in the interests of the community. If the squatter had had one half his run secured to him and the other half thrown open to conditional purchase, the feuds between classes would not have resulted. The clauses providing for homestead leases might not be of much benefit to this part of the country, but there were other parts of the country where these homesteads would be taken up. Special provision had been made in the Land Bill for reserving special areas all round the towns, which would prevent people from buying land right up to the court house, as had been done at Euston under the previous Act. His information of the district arose through his administration of the Rabbit Act, for valuable hints with reference to which he had been very much indebted to their vice-chairman, the Hon. T. Cumming and other gentlemen. He had the Act spoken of as very severe; but it was a very severe disease with which they had to deal, and it required a very severe remedy. He admitted that in the early stages of the administration of that Act the wisest course had not been pursued, but after experience he had adopted another system, which he was assured was working very well, and had had the effect of making those who were oppressed by rabbits feel far more satisfied. He hoped if anything went wrong complaints would be made to him, and he would endeavour so remedy them. He had stringently carried out the provisions of the Act, and he was afraid he would have to carry it out still more stringently

in future. Some of the runs in this locality had given him more trouble than any in the whole district. He was satisfied very little had been done on some of these runs. It was very unjust to compel some owners to keep down rabbits, and at the same time to allow owners on the adjoining runs to go on the same as ever. If it was necessary to put 400 or 500 men in charge of a station, in order to put down the nuisance, he would do so. The Government had the power to do this as against the owner and mortgagee—to take possession of a run where one owner had been found neglecting to do his work. He had taken great pains in selecting officers to carry out the provisions of the Act, al though he was sorry to say that many persons had been recommended to him by testimonials who were found to be undeserving of recommendation. He promised, however, to stringently administer the Act, not only against owners, but also against officers who did not behave themselves. In alluding to the travelling stock reserves, which he had issued instructions to guard, the Minister said these were the highways to the market for stock, and he hoped the provisions of the Act would be administered so as to keep these as the highways. The next great question which this or any succeeding Government had to look to was that of water supply. The scheme must be one of great magnitude. There was no use in supplying water as they had been hitherto doing it The great problem was how to bring water into the interior of the country which should be beneficial to the country at large. Parliament had not hesitated at any time to vote large sums of money for railways, and they had never found it difficult to obtain the money from capitalists for the purpose of constructing them; but it appeared to him that no more reproductive works could be made in the colony than those which would water the interior of the country. If any Government was justified in borrowing money for public works, he thought it would be for the purpose indicated. The question was fairly forcing itself upon the country and some Government would have to deal with it. Millions and millions would have yet to be spent in the conservation of water, and the country would not hesitate, he thought, if the Government put a scheme before them, in supporting it. The Government would have to have surveys made throughout the colony before anything could be done, and when Mr. Deakin and the other Victorian gentlemen returned from their visit to America we should have the benefit of their experience, which would be equally valuable to this colony as to Victoria. He felt sure that he Government would have to carry out a water scheme some day, and he sincerely hoped at no distant date. In conclusion, he said that the Government had almost promised a Local Government Bill, and

the Wentworth people would then have opportunity of dealing with their own wants themselves. If they had a local system of self-government they could do what they desired at a much cheaper rate than the Government could do. Mr. Abbott resumed his seat amid much applause.

In response to the toast of "Our Member," proposed by Mr. Brooke, Mr. QUIN said that unless the Land Act were very carefully administered and the 100th clause made use of, millions of acres would be thrown up. He had suggested that rates should be assessed according to carrying capabilities, in which case inferior country would only have to pay what it was worth, and then justice would be done. He spoke at length on the question, and compared the favourable terms afforded by the Victorian land law with the high rent charged in this colony, although he admitted that the rabbits had been allowed to increase to such an extent in Victoria that the land was only worth a nominal rent. He expressed his pleasure at having represented the electorate, but he questioned whether he would be able to represent them any more. Subsequently, on several gentlemen requesting him to reconsider his determination, he intimated his willingness to continue to hold his present position.

The remaining toasts on the list were—"Prosperity to the town and district of Wentworth," proposed by the Minister, and responded to by Mr. Upton; "The Pastoral and Agricultural Interests," proposed by Dr. Breton, and responded to by Mr. Cudmore. "Our Visitors," was proposed by Mr. Price, and responded to by Mr. W. E. Abbott. "The Bishop and Clergy" was proposed by Mr. Love, to which the Bishop of Riverina responded in genial terms.

The banquet terminated with the company singing the National Anthem.

CHAPTER V.

THE MEETING OF THE RIVERS.

During the five weeks that the Ministerial tour in the West lasted we skirted for hundreds of miles or crossed all the principal rivers in the colony, namely—the Murrumbidgee, the Lachlan, the Murray, the Darling, the Macquarie, and the Bogan. We met the Murrumbidgee at Narrandera, and followed its course by rail and coach to its junction with the Lachlan near Oxley, the two streams flowing together into the Murray below Balranald.

We followed the course of the Lachlan for some little distance on our way to the latter place, and from thence we skirted the Murray till we arrived at Wentworth, at which spot the Murray receives the muddy waters of the Darling, and with it flows down to the sea. From Wentworth we followed the Darling as far as Menindie, and, after a divergence to the Barrier Ranges, returned to it at Wilcannia, never leaving it till we got to Bourke. At Nyngan and Dubbo we crossed the Darling's tributaries, the Bogan and Macquarie, and thus completed the list. Most people outside of Australia, and perhaps not a few in it, would be surprised to hear that, measured by its navigable length, the Darling stands third among the rivers of the world. From Walgett, its most northern navigable point, to its junction with the Murray at Wentworth, is 1758 miles, and from thence to the sea by the stream formed by the union of the two rivers is 587 miles, making a total of 2345 miles, from one end to the other of which steamers ply whenever there is sufficient water in the stream. For the last five years this has not often been the case ; but during the five years preceding that it was frequently navigable for the entire length. The Darling appears to have been a finer river formerly than it is now, and to have been fed by very large tributaries from tropical Queensland,the courses of which, as the Government Astronomer points out, can still be traced, although they are now, except in great floods, mere waterless tracks. At that time, too, it must have been much more subject to floods than now, as, to quote from the same authority, its banks are higher than the back country, and have evidently been made so by alluvial deposits, where floods now-a-days never reach. However insignificant the stream may be in a dry season, it drains about 250,000 square miles, and is second only in importance to the Murray among Australian streams. The latter slightly exceeds it in area of drainage—270,000 square miles as against 250,000—bnt in navigable length it falls short of the Darling by 58 miles, the distance from Albury to the sea being 1700, as against 1758 from Walgett to Wentworth—1116 miles of the navigable Murray being in this colony, and the balauce in South Australia. The course of both rivers is extremely circuitous, that of the Darling extraordinarily so. Both the Murray and the Darling, and in fact all the rivers flowing west of the Great Dividing Range on to the immense plain beyond which constitutes the bulk of the colony, are noted for the large number of billabongs which may be seen at almost every turn, and which may be regarded as so many hesitating attempts on the part of the rivers to form channels, the level character of the country tempting the water to spread out in various directions in time of flood. About 100 steamers, with at

least one barge apiece, are employed in the river trade, the average carrying capacity of each steamer and barge being about 200 tons, although occasionally over 500 tons have been taken up the Darling as far as Bourke by a steamer and one barge, while it is no very uncommon thing to see a boat with two barges bringing down as much as 3000 bales of wool at a time.

Let us for a moment compare some of the most noted rivers in the world with these two streams, remembering that the navigable length of the Darling and Murray combined is 2345 miles. The rapid desolating torrent of the famous Mississippi rises from a pretty little lake embosomed in the Minnesota Hills, and flows 3160 miles to the sea, drains with its numerous tributaries, including the magnificent Missouri, an area of nearly one and a half million square miles, but is only navigable for about 2240 miles. Its breadth during the greater part of its navigable course is half a mile, on which ply 1500 steamers, besides a large fleet of flat-bottomed boats. The Missouri, from its rise in the Rocky Mountains, is 2500 miles in length. For the first 500 miles it presents scenes of almost unequalled grandeur—somewhat different, by-the-way, from the Darling—forcing its way through narrow gorges, which rise perpendicular from the water's edge, and foaming over stupendous cataracts, but for the remaining 2000 miles there is no serious impediment to its free and uninterrupted navigation. Taken in conjunction with this lordly affluent the whole navigable course of the Mississipppi-Missouri is about 3200 miles in length. The junction of these two mighty rivers above St. Louis presents a somewhat similar scene, although on a far grander scale to that of of the junction of the Murray and Darling at Wentworth. In both cases the muddy waters of the affluent flow side by side with the main river for some distance without mingling. I am much better acquainted with St. Louis than with Wentworth, and have steamed over many more hundred miles on the Mississippi than I probably ever shall on the Darling, but it is not difficult to foresee, notwithstanding the great dissimilarity in many respects of the two river basins, that some measure of the prosperity attained by St. Louis, owing to its commanding position at the junction of the Mississippi and Missouri, will in a not very remote future fall to the lot of the smart little township situated at the junction of the Murray and Darling. Before dropping comparisons let us glance at the Amazon, the largest river in the world, which rises in the Andes—the great dividing range which skirts the western coast of South America as the Rocky Mountain range does that of North America, and as our own range skirts our Eastern coast—and, after flowing 3590 miles right across the immense territory of Brazil, flows into the sea under the equator by a mouth 200 miles

in width. It is navigable for the largest vessels right up to its junction with the Ucayle, 2325 miles from the sea, or within exactly 20 miles of the navigable length of the Darling from Walgett to the coast. In great contrast to the Darling tributaries —the longest of which, the Macquarie, is only 750 miles in length—the Amazon is fed by 17 streams from 1000 to over 2000 miles in length, and by an immense number of smaller ones, 100 of which are navigable. The whole Amazonian system, indeed, affords some 50,000 miles of river suitable for navigation, which is carried on in the Amazon itself by three steamship companies, besides steamers and other craft belonging to private firms. In still greater contrast, too, is the speed of its current, which ranges from one mile to over four miles an hour, and averages two and three-quarters, while that of the Darling seldom attains as much as two. The territory drained by the Amazon is over two million square miles, or about seven times the area drained the Australian stream. Another river, possessing an area of drainage second only to the Amazon itself, is the Paranà, which measures about 2500 miles from its sources to the immense estuary of La Plata, but which, owing to the peculiar formation of the country, cannot compare with the Darling as a navigable stream, it being only navigable a distance of 500 miles from its junction with the Paraguay, which is itself superior to the greatest of European rivers, but which the mighty Paranà surpasses 10 times in volume, current and breadth. The only streams to compare with those named in area of drainage are the Obi and Yenesei, which flow 2700 and 3700 miles respectively, and in their course through Siberia to the Arctic Ocean drain an area of over a million square miles apiece.

There is one very strong resemblance between the country watered by the Darling and that drained by another South American stream—the lordly Orinoco—namely, in its perfectly level character and its appearance during dry seasons of extreme regularity. Along the whole course of this immense river there stretch vast plains' called Llanos, which, in the winter months, when the waters have submerged, the rain has dried up, and the luxuriant spring grass has withered, are as arid as Sahara, and only to be beaten for desolation by the vast desert of Patagonia, the most barren portion of South America, where nought is to be seen over thousands of square miles all the year round but sandy, sterile dunes, prickly bushes, and brackish lakes. Just such an appearance as this was presented by the Darling plains during the last two or three years, and is still presented between Menindie and Wentworth, where the drought as yet shows no signs of breaking up. Residents in Sydney will obtain some slight idea of the state of things periodically prevalent on the Darling when

it is remembered that more rain has fallen here since January, during this season of drought unparalleled for 35 years, than falls on an average during the whole year round on the Lower Darling, and for three years past the fall has been in such minute quantities as to be almost useless for practical purposes. The shortest shower I ever saw in my life was at Gol Gol, on the Murray, a few miles below the junction of the Darling at Wentworth. We had just disengaged our cramped-up limbs from the coach, and were seated round the homely spread at the inn, after a fatiguing ride of 40 miles over most deplorable-looking country, when we heard the sound of rain pattering on the sand outside. It was the first drop of rain that had fallen in our progress from Sydney, and we could hardly believe our ears. We made a general rush for the door, but, alas, before we could reach it the shower had stopped, and like the "pale blue flash," which marked the path of the Destroying Angel on the eventful night, a few thousand years ago,—

"It passed so swift,
The eye scarce could say that such a thing had been."

But to return to Wentworth, the future St. Louis of Australia. As has already been remarked, the position of the of this neat and busy little town—destined to eclipse every other town on the Darling as soon as it is connected by rail with the rest of the world—is most advantageous. It is rapidly growing in importance, owing the fact that is the first port of call and the last of departure for the immense district watered by the two principal rivers of Australia, the annual trade of which amounts, roughly speaking, to over £5,000,000. If Hay belongs by right to Victoria, Wentworth belongs by even great right to South Australia, since it is only 300 miles from Adelaide, with which it has direct river communication, whereas it is 400 miles from Melbourne and 500 from Sydney. A decade ago its trade was much more equally distributed between Adelaide and Melbourne than it is now, but since then Melbourne has gone down, while Adelaide has gone up, its trade with the latter place being eight times as great as that with Victoria, without taking into account the wool sent to the former colony via Terowie, which also forms a considerable item. At the period named—a decade ago—the monetary value of the goods exported from this colony to South Australia, via Wentworth, was exactly double that exported to Victoria—£564,213 as against £280,606—the goods being carried in that year by 98 vessels for South Australia, and by 22 for Victoria, the number being much increased in each case since then, the preponderance of tonnage being still more decisive in favour of South Australia. The number of bales of wool consigned in that year from Wentworth to the two Colonies was 13,000 to South Australia and

11,000 to Victoria, whereas now the returns show five or six times the amount in favour of South Australia and very little difference in favour of the other colony. The import trade naturally follows the export, and it is not surprising, therefore, to find that the value of the goods imported from South Australia via Wentworth also shows a very considerable increase, viz., from £265,622 ten years ago to more than double that sum now ; while the value of the goods imported from Victoria, which amounted at the same period to £73,555 shows very little increase. As almost all the goods sent from South Australia to this colony pass through Wentworth a fair idea can be obtained from this point of the trade relations between, at any rate, these two colonies. The importance of securing the Riverina trade is fully recognized by Victoria, which colony has long had in contemplation the construction of a railway to a township opposite Wentworth, to be named Yelti and which has been surveyed for some time past. South Australia also talks about constructing a line to the border, which is 60 miles from Wentworth, and by that means securing a portion of the Murrumbidgee trade as well, which is now for the most part in the hands of Victoria. As Wentworth is only 150 miles by river from the junction of the Murrumbidgee and the Murray the construction of a line to the border, especi cially if connected by private enterprise or otherwise, with Went worth, would, in all probability, result in the end being obtained, as was pointed out three years ago by a writer in the Adelaide *Register*, from whose able articles dealing with this part of the subject I have taken the liberty to borrow a few figures. It is certain, too, as the same writer pointed out, that whichever colony is the first to connect Wentworth with the sea will profit considerably by the venture. Victoria's first dash for the trade was made by the construction of the line to Echuca—distant 156 miles from Melbourne—with which private enterprise in this colony has since run a line to Deniliquin, distant 45 miles from the Murray town. In 1873 Victoria tapped the Murray higher up at Wodonga, opposite Albury, 187 miles from Mel bourne, and thus secured practically the whole of the trade of the rich district enclosed between the Murrumbidgee and the Murray. It was not, in fact, till 1881 that Albury was connected with the metropolis (from which it is distant 380 miles), by which time Melbourne had come to be regarded by the squatters as the true commercial centre of the district. The two tributaries of the Murray with which Victoria thus early established commercial relations are no unimportant streams, the Murrumbidgee being 1350 miles in length, over 500 of which are navigable, while the Lachlan is 700, the former draining about a quarter of a million square miles and the latter 27,000.

The stranger accustomed to the solitudes of the bush, or to such tiny little townships as Euston or Pooncarie, would be considerably surprised and delighted as well by the smart, business-like appearance of Wentworth, with spacious streets and shady avenues of almost every species of tree. At the time we were there, the townspeople were in high jubilee at the visit of the first Minister of the Crown who had ever thought it worth his while to see it for himself. They were highly delighted, too, with the compliments which the Minister liberally showered upon them for the enterprise they had shown in improving their town, while the comparison he drew between it and the towns of the north, very much to the advantage of Wentworth, flattered them not a little. Judging from such a hasty visit as we were able to pay, the inhabitants are extremely social, extremely sensible and—not a bad trait—extremely fond of music. There seems to be plenty of local talent, and if we had stayed a few days longer we should have had the opportunity of hearing some of it displayed. We were more fortunate at Wilcannia, where a concert was given in honour of the Bishop, and some quartettes were sung in a style which would have been called admirable anywhere.

One of the objects shown the visitor at Wentworth is the obelisk—no relation, by the way, to the one in Egypt—used by Mr. C. Todd, the Postmaster-General of South Australia, for taking the only successful observation in this colony of the transit of Venus. This was pointed out to me by Mr. William Camper, the local postmaster, who was exceedingly kind in supplying me with information, and among other items of interest he gave me the Wentworth rainfall, taken by himself for the last 16 years, which I append —

WENTWORTH RAIFFALL, FROM 1868.

Year.	Inches.	Year.	Inches
1868 ...	8·54	1887 ...	8·38
1869 ...	10·59	1878 ...	9·40
1870 ...	27·76	1879 ...	12·87
1871 ...	15·24	1880 ...	7·99
1872 ...	17·65	1881 ...	13·87
1873 ...	9·09	1883 ...	7·96
1874 ...	9·13	1884 ...	8·43
1875 ...	11 84	1885 (up to May 6)	2·92
1876 ...	8·92		

Mr. Camper stated that the rain fell in such minute quantities—one point and two points being frequently recorded—that it was of less value than appeared at first sight. In January of this year 22 points were spread over four days; in February 1·28 fell in half-an.hour, and 57 points were spread

over two days, 76 points fell in March, and 9 points in three days in April. Counting the phenomenal rainfall of 1870—27·76—the mean for the 16 years would be about 11½ inches; but, excluding the single year, the mean for the 15 years remaining would be only a little over 9.

Wentworth's two great wants are a railway and a permanently navigable river. On both these points I touched in my last letter, but the latter requires a word or two in addition. Although it is rather gratifying to our colonial pride to be able to boast of the possession of the third largest navigable stream in world, yet it is at the same time extremely mortifying to have to confess that not the slightest dependence can be placed on the Darling's navigability. It would, perhaps, be less gratifying to our pride, but it would be far more commercially useful, if it took a much lower rank among the streams of the world so far as its length were concerned, if only a little more reliance could be placed on the navigability of the portion which remained. As the case stands at present, it is frequently only a delusion and a snare, and the tales that are told about the losses incurred by the squatters and merchants, owing to the delay in getting their wool to market or their stores from town, are almost incredible. The town depends almost entirely on the river for supplies, and it not unfrequently happens, when the river has been down for several months, as it unfortunately but too commonly is, the tradesmen run quite out of stock, and such necessary articles as tallow candles and kerosene mount up in price as the chance of obtaining them from town diminishes, till as fabulous sums are paid for the former as if the Russians had invaded the country and wanted a feast, and at last—as happened at Wentworth only recently—not a farthing dip or a kerosene can remains. This unpleasant state of things induces a considerable amount of speculation in the trade, and goods that are urgently required by the residents are frequently dispatched up country when famine prices have been touched in order to command a still heavier profit.

A more realistic idea of the difficulties attending the navigation of the Murray and the Darling may be obtained from the experience of one river skipper than from any amount of figures, and the following account of an interview with one of the smartest of the lot may be both interesting and instructive. During our stay at Wentworth there were eight steamers stuck in the stream below the town, unable to move either way. The largest of them all, and the second largest boat on the river, was the Rodney, a fine freight boat of 170 tons, and 40-h. p., drawing 5½ feet when loaded, and with accommodation on board for 16 passengers. She carries a barge and plies between Wilcannia and Echuca, the round trip lasting about a month when the season is favourable.

The skipper, whose name is Dorward, stated that his longest trip was made in 1880-82. Starting from Echuca in December of the former year, he arrived at Wentworth on the last day of the month, and soon after fetched Wilcannia, where he had to stop two months for want of water to go on with. The Darling rose on February 28, and he managed to get as far as Acres Rock, 180 miles above Wilcannia, on his way to the woolshed of Bourke. At Acres Rock the boat stuck from February to November, and at last he had to make a dam across the river to keep enough water in to float the barge. In November there was a rise which took the Rodney as far as Louth, 80 miles below Bourke by land or 240 by water, the Darling winding exactly three to one at this part of her course. In fact in some places it winds to such an extent that it takes five miles by river to reach a spot only distant about a hundred yards by land. At Louth the unfortunate skipper had to wait till February, 1882, when he left with another rise and reached Bourke in the same month, delivering a general cargo and taking 2000 bales of wool, with which he arrived in Wentworth in March, the round trip actually taking a year and three months. From Wentworth the Rodney conveyed the wool to Goolwa, a distance of about 600 miles, which was reached in April, 1882, a general cargo being shipped there for Wilcannia. Half-way between Goolwa and Wentworth—a few miles below Morgan—the Rodney got stuck again, waited till the Murray rose in June, and reached Wentworth in the following month. There a fresh halt had to be made till December 1882, for sufficient water to take him to Wilcannia, where the general cargo was at last delivered, and a load of wool was shipped for Wentworth, which was reach on New Year's Day 1883. The skipper proceeded thence with his wool to Echuca, where arrived on January 8, and got an order to deliver 400 tons of red gum in two trips to Netley, a distance of 811 miles—551 up to Wentworth, and 260 up the Darling. Netley, by the way, is famous for its wells, for the construction of which the timber was doubtless intended. Greater success has been probably achieved on this run in the matter of well-sinking than on any other station on the Darling. Over £50,000 has been expended on it in improvements, by means of which the lessees have been able to carry their stock right through the drought without, as yet, any serious loss. Netley is situated on the western bank of the Darling, between Pooncarie and Menindie, and some mutton, fed on the run, which I tasted by chance at the fine little bush hotel at Pooncarie was far superior to anything to be obtained in Sydney, and only excelled by a joint set before us at Wanaminta.

For six long weary months the Rodney had to stay at Echuca waiting for the Murray to rise, which it did at last in June, 1883.

While the skipper is waiting for the long delayed event we may as well take a glance at Echuca. This rising little Victorian township adorns the southernmost bend of the Murray opposite Moama, the latter place being connected by private line, as previously noted, with Deniliquin, and Echuca itself with Melbourne, distant 156 miles. Echuca is famous for its timber, and six sawmills are engaged in the neighbourhood of it and Moama in cutting up the red gums, which are generally employed in the construction of the river boats, almost all being made of timber, iron entering into the composition of comparatively few. Of the hundred steamers employed on the river, ranging from 20 to 120 tons—not including barges, of which there are at least a hundred more—those employed by Victoria are built at Echuca, and those by South Australia at Goolwa and Moama. The residents in the latter place are agitating for on extension of the Jerilderie line right through to Deniliquin in order to obtain direct access to Sydney, in which case they say a considerable amount of wheat grown on the Victorian side of the Murray would find its way to Sydney, and thus be a source of revenue for our railway department. About 20,000 bags of wheat, I am informed, were grown last season, which was a bad one, along the river between Swan Hill and Echuca, 9000 of which were taken by steamer to Echuca, and the balance by teams to Quiraing, thence over the Victorian line to Melbourne, and by sea to Sydney. One-half of the boats on the river ply between Echuca, Wilcannia, and Bourke, and the other half from South Australian ports—Goolwa, Manum, and Morgan —to the same towns. Some of the Echuca boats ply on the Murrumbidgee as well, but the traffic on the river has greatly declined since the opening of the line to Hay.

After six months the Murray at last rose, and the skipper managed to get his craft as far as Wentworth, but the Darling was so low that he landed his timber at Avoca cutting, 40 miles up the river, as high as he could then get, and in the meantime took wool from the Avoca and Tapio stations—a description of which I wired some weeks ago—to Morgan, where the Adelaide line strikes the river. The skipper then returned to Avoca, reloaded a quarter of the timber, and upon the next rise of the river delivered that portion of it at Netley, and returned to Avoca for the balance. He managed to get 30 miles, as far as Para, where he had to wait for water, On one occasion while at Louth waiting, as usual, for a rise, this enterprising skipper ferried 80,000 sheep across the stream, making a bridge with his barge. He states that he has carried as much 1550 bales of wool on the barge and boat at one time, while he has managed to stow away 320 tons of wood on the two together, the boat carrying 100 tons and the barge the remainder. Tired of waiting at Para for a rise

which never seemed to come, and when it did come never seemed to last, the skipper went for a holiday to Gippsland. While there he heard of the Cootamundra accident, and of the phenomenal rise of 20 feet in the Darling at Wilcannia. At the end of a week he was back at Para—a week after the fall—the river rising a sufficient height (about 12 or 15 feet) at Para to enable him to start for Netley, which he reached safely, and returned immediately to Wentworth, where he arrived on the 25th of February last, and where, in a bed, he was still stuck at the time of our visit.

CHAPTER VI

ALONG THE DARLING.

After a stay of nearly three days at Wentworth we started for Menindie, where we had arranged to arrive by the 10th inst. The party left Wentworth on Sunday afternoon (May 10), and arrived shortly after sundown at Messrs. Cudmore Brothers' home station, on the Avoca run, 16 miles frem Wentworth, on the western bank of the Darling, where they were hospitably entertained. The Avoca run stretches 23 miles along the Darling, and includes Popiltah. It comprises 724,523 acres, and the sum of £48,000 has been spent on it in improvements, fencing, and tanks. The carrying capacity of the run in a fair season is about one sheep to ten acres. It has carried 100,000 sheep, but at the time of our visit there was only 80,000 sheep on the run, and a considerable expenditure had been incurred to keep these alive. The number returned at the close of '84, was 84,170 sheep, 264 horses, and 87 head of cattle. Over a score of tanks have been constructed on the run, and numerous attempts have been made to sink wells, but no fresh water has been found. A running sand drift blocked up the pipes at the depth of about 100 feet, and a clay bed succeeded which it was difficult to pierce, while another layer of drift below the clay bed prevented further progress. Dams and other works have been constructed to conserve the water on the run, and everything has been done to give water to the stock, The average rainfall on the Avoca run during the past two years has been 7·12 inches, and on Popiltah run only 5·07 inches. The rain falls in such small quantities that it is often rendered useless. Last year no rain fell for five months on Popiltah run, and on the other five months less than an inch a piece fell. The country is composed of mallee scrub, sand hills, salt bush, wild hops, prickly acacia, and box flats.

On Monday the Ministerial party visited Tapio run, leased to Messrs. Ormond and Brooke Brothers. This run has a frontage to the Murray and to the eastern bank of the Darling, opposite to the Avoca run. Its total area, I was informed, is 830,000 acres, including 20,000 acres of freehold: and it carries 60,000 sheep, but it is stated in the Stock Report, the information in which is carried up the end of 1884, to be a little less, namely, 58,666 acres, with 42,252 sheep, 138 horses, and 58 cattle. The carrying capacity of the run is about one sheep to 15 acres. Fifty tanks each averaging 10,000 cubic yards, are spread over the area, and double tanks are now being put down, so that as soon as one is half empty the water is pumped into it from the other to save loss by evaporation. Numerous attempts have been made to sink wells, but the water always proves salt. One last attempt is being made 40 miles back from the Darling, where a depth has been attained of 120 feet, with 80 feet of drift already. The country is very sandy, with ridges of mallee and other scrub between. The box scrub along the river frontage is ringbarked for miles, in order to clear the land. An attempt has been made to irrigate an area of 40 acres along the bank of the Darling with an engine of 10-horse power. Messrs. Brooke Brothers drove the Ministerial party round the paddock on which the experiment was commenced six months ago, but so far it has not been successful, as the lucerne is not growing well. Perhaps this is owing to overstocking, as 1200 sheep were fed on it for some time, although that number is now reduced to 200. Trenches are dug round the beds, one of which is filled with water at a time, the water then being let into the adjoining bed. The soil will probably be analysed to discover the cause of the failure. An acre and a-half paddock has been sown with lucerne at the station, where the soil is richer, with pronounced success. A further illustration of the enterprise of the lessees are the two billabongs which have been filled with water from the Darling for watering the stock, the engine used for pumping being the same as that employed for the irrigation of the lucerne paddock. The party drove past one of these billabongs over a mile long and six feet deep. The billabongs are necessary here owing to the low state of the river, where the sheep would frequently be bogged, and the wool spoiled if they went for a drink. The rabits and kangaroos, which formerly infested the run, are now completely got under, the lessees having spent a very large sum in the work of extermination. Fifteen thousand kangaroos were killed on Tapio run in about two years, and double that number on the Avoca run, so that now a marsupial is rarely seen. The most interesting feature of the day was a visit of inspection paid to the Tapio stud farm, where about 40 merino sheep are artificially fed for show purposes.

They were all in splendid condition, the wool being very fine and well laid on. Rupert and Wentworth, two of the noblest rams in the stud, will probably be heard of before long at the Melbourne and Deniliquin shows. Skoboloff and the Grand Old Man, four and five years old respectively, took third prize at Deniliquin show, the latter ranking fifth in the race for the championship.

On leaving Tapio the Ministerial party entered Burtundy run—leased by the Hon. T. F. Cumming—which covers 130,000 acres, extending along 30 miles of the western bank of the Darling. Ten thousand sheep are at present on the run, which caries 15,000 in a fair season. The rainfall on this run has has only been 2·33 inches up to date, spread over six days. No tanks are necessary on this run, which only extends eight miles back from the Darling, but numerous tanks are constructed on it. Arumpo run, near by, comprising an area of 170,000 acres, and extending 30 miles back from the Darling, is also leased by the Hon. T. F. Cumming, but the run does not adjoin the Burtundy property. The country along the latter is very poor, little or no feed being visible along the line of route. It was said that the soil was not bad, and that with a good rainfall it was fairly productive. These two runs appear to be lumped together in the Stock Report, under the name of Burtundy, as the area of the latter is given at 252,000, and the number of sheep on it at 27,157.

Tarcoola run was next reached. The area of the holding which includes Tarcoola and Panban, is 460,000 acres, only about 2000 acres of which are freehold, the remainder being leased under the Land Act of 1861. Three years ago 87,000 sheep were shorn on this station, but now they only muster 30,000, and 15 acres are required to keep a sheep in good condition. Besides sheep there were 100 head of cattle and 80 horses on the run at the close of '84. The rainfall on the run this year was 2½ inches. The Tarcoola run is managed by Mr. Michael Darchy, brother of Mr. Fitz Darchy, manager of the Oxley run, which was passed on the way to Balranald. The Ministerial party slept at the station on Monday night, and the following morning were driven into Pooncarie, where Mr. Abbott was waited on by the residents, who asked that a school might be provided. It was stated that if a Public school were established families now residing at a distance would come to Pooncarie for the purpose of educating their children, who were now growing up without any education whatever. The Minister said that if the inhabitants could guarantee 16 children to start with the Government would assist to open a provisional school.

Tuesday and Wednesday were memorable days in the history of the Ministerial tour, for on those two days (May 12 and

13), we were first formally introduced to the dreaded back blocks, We left the sandy ridge, on which the insignificant little township of Pooncarie is built, at 11 o'clock on the Tuesday morning, after a stay of but a few minutes, and struck right into the heart of the mallee country, scarcely stopping to take breath till we had placed a solid stretch of 30 miles between us and the Darling. If it were not for the very pretty glimpse which it has of this muddy stream, and from the diabolical underground cells in which drunkards, and other offenders used till very recently to be incarcerated and thereby deprived of the little wit they originally possessed, Pooncairie would be absolutely nothing to detain the reader for a moment. We were not going to leave it even though it were to camp out in the bush. When we started on our memorable journey we were distributed in three traps, one of which was a four-in-hand. For the first ten miles the course lay through thick red sand, which covered the carriage and the occupants with dust, then over Kopai Plains, where these semi-transparent gypsum strewed the ground and glistened in the sun ; over tracts of saltbush, which had been completely eaten down ; and past long troughs fixed by the side of the tanks for the use of stock. For nearly a fortnight the party had driven over more or less even ground along the mail coach route ; but that was to be a memory of the past. From this point we were driven through an almost trackless scrub, and into the very heart of the Australian bush. For the greater number this was a novel experience. Dead trunks strewed the path at every other step, and sometimes we had to jump out to clear the track. Dead mallee branches swept right across our facial line, or projected ominously in the direction of our eyes, and we had to be constantly ducking our heads to keep ourselves from being struck. Once a huge mallee trunk got jammed between the spokes of the wheels and nearly upset the trap ; but whether jolting over trunks, scrunching along in the scrub, smashing through the emu bush, or whizzing through the yielding sand, the party managed to survive without accident. and to arrive at their destination in due time. Sometimes the trap struck a knoll and careened over so as almost to throw the occupants out ; sometimes we nearly lost our way ; and sometimes the drivers had to stand up and walk the horses at less tahn asnail's pace in order to get through the almost impenetrable scrub. Here and there patches of inferior though edible "blue-bush" could be seen, but these were so far from water that they were practicably inaccessible to sheep. The native mistletoe hung in golden clusters from the tops of the loftiest mallee and tallest box. Many a skeleton along the route told a tale of sheep lost in the bush. For over 20 miles we were driven through this almost trackless mallee scrub, relieved only at intervals by small patches of she-oak

and other bush, when towards sunset we reached the end of the stony ridge which pierces the verdant plain beyond like a wedge. As far as one could see on either side rose the mallee scrub, interspersed with she-oak, broom and a litle cabbage bush, but not a blade of grass, and the scene, though so pleasing to the eye, contained but little of value for sheep. On descending to the plain the track was comparatively easy, but the camp still lay 6 mi es beyond. At last the cheery light of the camp fire broke upon the party, and we were soon seated around a well-set table. Over blazing logs several billies were "slung," and three snug little tents served for sleeping accommodation. Here we stayed till 6 o'clock next morning, when the party set out again; a young Englishman named Morris, who accompanied the party from Pooncarie, had not then turned up, having apparently been lost all night in the bush. The journey back from the camp was even worse than the trip to it. Mr. Wreford, one of the lessees of this run, which covers more than a million acres, took the party an entirely different and a much longer route back, in order to show the state of the country. Mallee scrub and porcupine grass extended over the whole way, excepting only seven miles in front of Moorara homestead. For several miles the mallee scrub and porcupine grass had been burned some time back, and our route lay through a region of blackened and withered branches, but the mallee was thicker than ever, having sprung up in the meantime around the roots. The squatters burn the country to clear it temporarily for the use of the stock. The party passed through a long strip of bush burning on either side, which they found very difficult to get through, as the bush flared up under the the haunches of the horses, singed their tails, and made them extremely restive. The party lunched and dined at places where small tanks had been placed for stock purposes which were filled with a delectable compound of slush and slime, apparently the back-block's substitute for half-and-half. We were heartily sick of mallee scrub, and only longing to get back to something a little less like a desert land. At last we emerged on to a country where box trees abounded, and where, for a wonder, mallee was unknown. The shades of eveuing were falling fast as we left the last halting place and made a dash for the Moorara homestead, about 20 miles above Pooncarie. The night was fairly bright, and we could just see that we were driving across a flat country, sometimes sweeping over an open sandy plain, sometimes through bush composed of stnnted box, with the light friable white soil, which strangely enough they term black, glistening in the moonlight like a sheet of snow. All the drivers were extremely skilful. Indeed the squatters out west seem to have a perfect gift for handling the reins. The driver of the trap I was in was

Mr. D. T. Power, the manager of the Polia and Cuthero runs (leased by Mr. James Pile), which cover an area of 1050 square miles (539,000 acres, and 642,500 acres) respectively, and conjointly have a frontage of 55 miles along the western bank of the river, opposite to the Moorara and Tolarno runs. Mr. Power had only once driven on the track before, and that was in the middle of the day. To those of the party who had never had any experience of bush-driving, it was a continual wonder how on earth the driver managed to keep the track—if track it could be called—which to most of us was perfectly invisible, and which even the driver himself occasionally confessed to be unable to see. But, track or no track, bush or no bush, it seemed all one to the apparently unerring instinct of the driver, who took us along frequently at full speed over a country which to our inexperienced eyes seemed fraught with the direst peril. One moment we were apparently dashing right on to a grove of trees, and the total upset of the trap and all it contained seemed only a matter of a few seconds. The next moment the trees swept by on either side, the long drooping branches almost whipping off our caps; and with redoubled speed we rushed at another clump, apparently equally obstructive, the driver, meanwhile, keeping up an uninterrupted colloquy, first with his neighbour and then with his team, the pet names of the horses being continually on his lips. However, the welcome lights of the Moorara homestead at last hove in sight, and, by 9 p.m., we arrived at our destination, thoroughly tired and covered with dust. Here we were hospitably entertained by Mr. and Mrs. Wreford, and the first thing the next morning again started on our journey to Menindie, a distance of 70 miles along the coach road.

One of our companions, at any rate a portion of the way, was Mr. Power, the hero of the moonlight drive to Moorara. He is the manager of Polia and Cuthero runs, which have maintained over 150,000 sheep in good seasons, the estimated capacity being about 170,000. At the close of '84 they carried 128,896 sheep, 330 horses and 250 head of cattle, while Moorara, which is about the same size as Polia and Cuthero, only carried 60,490 sheep, and 150 horses, although Moorara was ahead in the matter of cattle by just 200. The estimated capacity of Moorara, in a good season, is estimated at 80,000 and 100,000 sheep, but half of those on it at the time of our visit were said to be dying of starvation. Cuthero run has only just changed hands, Mr. Power's area of management being more than doubled thereby. Saltbush plains, interspersed with mallee scrub, are the rule on both runs, over one-fourth, it is said, being composed of mallee; and more than one-half, so I was informed, being very inferior land. Severe losses have been sustained during the drought, owing both to

want of water and want of feed. The Ana branch runs from about 12 miles above Cuthero down through Polia into the Murray below Wentworth. Last summer it was completely dried up, but the many floods at Wilcannia caused it to run down as far as Cuthero, which obtained a considerable supply of water as a result.

While on the way to Menindie we made the acquaintance of "Cuthero Jack," a sturdy aboriginal, who formed himself into a deputation, and waited on the Minister of Mines, whom he appropriately enough addressed as the great "boss of the rabbits." Cuthero Jack suggested as the best means for getting rid of the rabbit pest, at once and for ever, that the Government should pay the blackfellows a shilling per scalp, besides supplying them with something like a sheep per head a day, as a sort of bonus: not to mention sundry other little perquisites, which would doubtless conduce to the comfort and well-being of the one-time possessors of the country. The Minister received the deputation with becoming gravity, and informed the delighted aboriginal, in the most orthodox style, that the Government would give the proposal all due consideration. Cuthero Jack was inordinately pleased at the gracious reception accorded him by the representative of the Government, and proceeded forthwith to celebrate the event by a corroboree, in which a gaily-dressed lubra and several of Cuthero's male acquaintances joined, and by their extraordinary feats of dancing contributed not a little to the amusement of the party. There was one thing which the blacks, both at this point and elsewhere, seemed to share in common, and that was magnificent sets of shining teeth, in which respects the aboriginals of Australia are second to no race in the world.

Before reaching Menindie we passed through a portion of the Tolarno run—leased by Messrs. Ross, Reid, and Co.—which has a river frontage of 50 miles, extends back in some parts as much as 80 miles, and covers over a million acres. This immense run maintaining about 200,000 sheep before the drought set in, but last year only 70,000 were shorn. In addition to the sheep, the run maintains 172 horses, and 190 head of cattle. Between 700 and 800 square miles of it is composed of mallee and porcupine grass, of very little use fot grazing purposes. Very great difficulty has beeo with at Tolarno in obtaining fresh water. About a dozen trial shafts have been sunk, salt water being obtained in each case. A very large extent of the Darling country, indeed, seems to have somewhat a similar characteristic as the visionary pleasute ground of Khubla Khan,

> "Where Alph, the sacred river, ran
> Through caverns measureless to man
> Down to a sunless sea."

Wherever a shaft is sunk salt watet is almost sure to be obtained. owing, possibly, to the saline deposits left in the bed of what is surmised to have been at no very remote date an immense marine lake, similar in its main outlines to the Caspian Sea.

Only four successful attempts have been made at Tolarno in well-sinking, the water obtained being good enough for stock, but hardly good enough for human thirst. Twenty tanks, ranging from 7000 to 16,000 cubic yards, have also been excavated. The most recently constructed tanks are raised about eight feet above the surface, according to the most approved system. Few, if any, of the tanks on this run are fitted with troughing; but the economy of such a course is fully recognised by the lessees, and it is proposed to add troughing and pumping machinery to all the new ones. On the adjoining Moorara run, of which mention has already been made, there are four wells, three of which are fitted with engines, besides about 50 tanks. A very large number of unsuccessful attempts at well-sinking have been made at Moorara, owing to the same reason as at Tolarno, viz., the presence of salt and a considerable amount of money has been spent in improvements, particularly in tanks and wells, while the amount sunk in vainly searching for fresh water has been very large.

At Tolarno we met Mr. Burns, the officer charged by the Government with the superintendence of the work of clearing the Darling, and who appears to have performed the work entrusted to him in a satisfactory manner. I was informed that on an average about £5000 is spent annually in improving the navigation of the Darling, and that it is a much better navigable stteam now than it was a few years ago. A great deal more, however, remains to be done if we are to have a permanently navigable tream ; and I think that the report of Mr. G. Gordon. C.E., on the practicability and probable cost of rendering the Darling permanently navigable between Wilcannia & Wentworth, deserves a little more consideration than it appears to have had. Indeed, the whole question of improving the navigation of the two principal Australian rivers deserves very careful consideration at the present moment. A telegram was recently published in which it was stated that one colony would not attempt the improvement of the Murray unless the other colonies interested joined in the undertaking. Leaving the Murray, however, to look after itself, it will not be out of place to remind those who may have forgotten it of the gist of Mr. Gordon's report, which was to the effect that at an estimated capital cost of £310,000, and an annual charge of £7000, the Darling could be rendered permanently navigable between the points named by the construction of 22 locks with weirs and navigable passes, the capital outlay to include the expense of constructing the locks, deepening the shal-

lows, clearing the banks of trees and snags, erection of wharfs and cranes, and works to backwaters and billabongs, while the annual charge would include the cost of repairs maintenance, management and general work.

The Ministerial party arrived at Menindie on Thursday night, where they drove through an arch adorned with evergreens and Chinese lanterns, under which the Minister for Mines was presented with an address of welcome. Mr. Abbott, in reply, promised to recommend the Minister for Works to improve the approaches to the town—the party had just been ferried across the river, and the awkward and dangerous nature of the passage was only too apparent.

This morning several of the leading residents, headed by Mr. S. M'Kenzie, chairman of the progress committee, waited on the Minister, and first drew his attention to the wretched state of the ferry, which Mr. Abbott had already—before being asked—promised to rectify, They next asked that a landing stage and a good crane should be erected, no provision having hitherto been made for the landing of cargo from the river steamers. Mr. Abbott said that it would not be possible to do this till the money had been voted by Parliament, but he considered that the work was very necessary, and promised to recommend it to the Minister for Works. The deputation next drew attention to the fact that no provision had as yet been made for water conservation anywhere along the main road, which was recently opened between Silverton and Hay. Mr. Abbott said that if there were favourable sites, he would recommend that tanks should be placed there, but the money had not yet been appropriated by Parliament for that purpose. The deputation asked for further school accommodation, to which Mr. Abbott replied that he had already inspected the school, and had asked the teacher to report to him on the subject. He complimented the town on the good condition of the school. Mr. Abbott promised, in reference to a request for the extension of the Menindie common, to grant it if there were no other objections ; and he also promised to call the attention of tht Lands Department to the state of the cemetery.

The little township of Menindie, where we stayed one brief night, is indelibly associated with the history of Australia. It was from this spot that, a little of over forty years ago, the adventurous Sturt, with a few more congenial spirits such as Stuart and Poole, started on his famous expedition which terminated so disastrously at the stony desert—journeys made memorable by the death of Poole, by the total blindness of the explorer himself, and by the wide-spread belief current for a long time afterwards that the interior of Australia was nothing but an immense barren waste. It was from Menindie, too, that sixteen years later Bourke and

Wills commenced their still more memorable trip to the Gulf, which resulted in the frightful sufferings and miserable death of the two explorers, after having experienced bitter disappoinments,, and living or rather barely existing on nardoo. It is related by Major Serpa Pinto, the celebrated Portuguese explorer, who started on his famous journey across Africa from west to east the same day that Stanley reached the mouth of the Congo after traversing it from east to west, that the natives in the heart of the Continent are very partial to a kind of canary seed, on which he and his band of blacks lived fairly well for some time. The Australian natives are also very fond of the seeds of a low-growing grass, which they roast and eat with a relish. In Sutherland's recently published and model history of Australia a most pathetic account is given of the sufferings of the two Australian explorers when trying to live on nardoo. By working from morning till night they could only gather sufficient for two meals in a day, in addition to which they had to clean, roast, and grind it, and then found that it made them sick and gave them no strength. At Burtundy—a run leased by the Hon. William Cumming, below Pooncarie—we were shown a stone basin or mortar, very similar to that used by chemists, in which the blacks used to grind their nardoo, but we had no opportunity and fortunately there was no necessity for tasting the nardoo itself. Mr. Cumming has another run in the neighbourhood which we did not visit, but which is noteworthy from the fact that a ram may be seen there which is said to have cost the enormous sum of 3150 guineas, the largest sum, I believe, ever paid for a stud sheep in the world. It is reported to be doing good work, and the owner hopes to be able to recoup himself for his enormous outlay before very long, but there are probably few squatters who will care to follow his example and pay such an extraordinary price for an animal whom an accident might deprive of life immediately after changing hands.

CHAPTER VII.

A VISIT TO SILVERTON.

One of the principal objects of the recent Ministerial tour in the West was to enable the chief of the Mining Department to make a personal inspection of the wonderful district in the Barrier Ranges, about which such extraordinary rumours were current, and to see with his own eyes what amount of truth there was in the seemingly fabulous tales that had been told. A very short

time ago nothing was known of the wonderful richness of this field, and the only sight to be seen was that of a few stray sheep, quietly browsing on the salt-bush and shrubs which grew alongside some of the finest lodes in the world. It is, indeed, only a matter of 40 years since the first white man, in the person of the adventurous Captain Sturt, ascended to the summit of one of the numerous hills scattered about the district, and named the range after Lord Stanley, the then Colonial Secretary, who had accepted the explorer's offer to conduct an expedition into the heart of the Australian continent. Little did the brave explorer suspect, as he gazed on the dreary prospect around, that he was treading on a soil which was at no distant date to rival the most famous mines in the world. Yet there are strong grounds for believing that such will be the case, and that the ranges on the borders of Sonth Australia and New South Wales will prove as rich in mineral wealth as any of the El Dorados in the New World which attracted the cupidity of Spanish marauders and of Europeans in general for hundreds of years. The formation of the ground throughout the whole distict is so peculiar that when the country was once settled for pastoral purposes it could not be very long before indications of mineral wealth, so abundant on every hand, were discovered. After awhile the mica schisti, so plentifully occurring among the network of granite dykes, were found to be rich in silver ore, and the porous brown oxide of iron, or "gossan," and occasional quartz, with which the irregular fissures in the rocks are more or less filled, were found to contain carbonates of copper and lead, galena and the richer chlorides of silver, formed by the decomposition of the respective sulphides of which the lodes are generally composed below the level to which oxidation by atmospheric influence from the surface has reached. Curiosity once thoroughly awakened, a number of prospectors were attracted to the spot, who searched in every direction, and in every direction stumbled on indications of mineral wealth. The hands engaged on the sheep stations on which the mines are located soon participated in the general excitement, which in some instances they were the first to set in a blaze, and every now and then added to the discoveries already made, some of the richest mines in the district—including the famous Broken Hill—having been dropped on in this way. Everywhere around may be seen rocky ranges, varying from 100 to 500 feet in height, in which lodes of irregular thickness and length occur at all levels, the valleys between the hills, and huge overlying portions of the hills themselves, having in the course of ages been washed away, and leaving their mineral wealth exposed.

The original native name of the district was Umberum

berka, the signification of which I have been unable to learn, and that was the name borne till about 18 months ago by the busy little township which soon sprang up on the field as soon as the real character of the ground was made known. But about 18 months ago a number of the leading spirits gathered together at the little shanty which has since grown into the stately proportions of De Baun's hotel, and, after a carousal at which 80 bottles of champagne are said to have changed hands, the name of Silverton was unanimously given to the now rapidly rising town. I do not, of course, guarantee the accuracy of the story. I only tell the tale as it was told to me. It is, however, stated—perhaps as a proof of the thorough sobriety of the sponsors on the occasion—that when the champagne had been duly disposed of two of the choicest spirits started to drive home by the light of a rising moon. Before they had proceeded far on their way the occupants were thrown out—one on one side, and his companion on the other. The younger of the two thereupon challenged the other to fight, an honour which his comrade declined on the ground that they hadn't been formally introduced! But, whatever the precise details of the day's proceedings may be, certain it is that a more appropriate name could not have been chosen for the capital of the Barrier fields. At present there are in the town itself, or within a radius of a few miles, about 4000 people, most of whom are connected in some way or other with the working of the mines. The town presents a very singular appearance, as, owing to the fact that, with very few exceptions, titles to the land have not yet been formally made out, the residents generally have not cared to put up many substantial structures, the majority of the dwellings and shops being nothing more than galvanised huts. The effect in some cases is rather comical, especially when on the outside of a wretched little shed resembling a pigstye more than anything else, one sees painted in glaring characters a pretentious business name, such, for example, as "Mr. Theophrastus Adolphus Fitzwilliam James, advocate barrister, attorney-at-law, and supervisor of deeds," perhaps with the information underneath to the effect that the occupant has gone out for a drink, but will be back in a trice. There is, however, one substantial building in Silverton, but, I think, only one, and that is the splendidly furnished and spacious hotel which Mr. De Baun has added to the little shanty in which he originally catered for the public health.

Then there is a neat little stone building just put up for a courthouse, and which Mr. Warden Brown is only too anxious to occupy, as the place in which he has hitherto administered justice is a miserable apology for a court, and the atmosphere in the summer months, when the room is filled

with offenders and spectators of all descriptions, must be simply appalling. The room in which the Warden was carrying on the extensive business appertaining to his office at the time of our visit was equally unworthy of the occasion. It was originally intended for the sitting-room of a four-roomed cottage, and yet the business transacted within its narrow limits is said to exceed the combined business of all similar offices in the colony, That this is not far from being the case may be judged from the fact that during the year ending March, 1885, in his dual capacity of police magistrate and warden, Mr. Brown adjudicated upon 660 court cases, heard 20 objections, passed through his hands 700 mineral lease applications, reported upon some 200 improvement purchases; and (not including deed and stamp fees) the receipts of his office were £12,977 7s. 9d. It is said, indeed, that no two officers in the Civil Service of the colony have a larger share of hard work than the Warden of Silverton and his assistant, the mining registrar, Mr. Saunders. That their work is rapidly increasing may be inferred from the following comparative return of receipts for the first four months of the years 1884 and 1885:—1884: January, £281 10s.; February, £445 12s. 6d.: March, £269 12s. 6d.; April, £418 12s. 6d. 1885: January, £486 12s. 6d.: February, £289 10s.: March, £766 5s. 6d.; April, £1091.

It is high time, too, that a new post-office was erected, as the present building (if building it can be called), in which the business is transacted, is even a more miserable structure, if possible, than the old courthouse itself. That the gaol accommodation is on a par with the rest of the public edifices may be gathered from the following incident which occurred during our visit: "Please your Honor," said a seedy-looking old man to the Minister as he was gazing abstractedly at the noble proportions of the post-office; "please your Honor may I be let out?" "Let out of what?" queried the Minister, rather taken aback at the incomprehensible nature of the petition. "Let out of gaol, your Honor," replied the old man, as he twisted his cap apologetically in his attempt to create a favourable impression in the Minister's breast. "Let out of gaol," retorted the Minister, considerably puzzled; "why, you're not in it. What do you mean?" "Well, you see," explained the old man, "I'm supposed to be serving a 14 days sentence for a bit of a spree, but one of the bobbies is gone to Mount Gipps, and the other ain't awake, and so I came out for a stroll. I have contributed so much to the revenue already," added the hardened old sinner, "that I think your Honor might let me off this time!" On examining the record the Minister found the man was a very old offender, and had been sentenced for his last break-out to two terms of seven days each for misdemeanours;

but as it was not stated that they were to be served "successively," as required by law, the Minister allowed his petitioner to profit by the mistake, and to continue his stroll without molestation till he again gets into trouble by a too free indulgence in his somewhat perverted tastes.

However all this is rather anticipatory, as the arrival of the party at Silverton has not yet been recorded. This occurred according to programme arrangements on Saturday afternoon, the 16th. We were met three miles out of the town by a large number of the leading residents, who formed a procession and escorted the party to De Baun's hotel. The party were driven through from Menindie by Mr. Phillips, manager of the Kinchega run. This station which is leased by Mr. H. B. Hughes, covers 1,222,880 acres, or nearly 2000 square miles, and extends from Menindie to within 10 miles of Silverton, This immense run has 45 miles frontage to the Darling, and carries at present 71,572 sheep, less by 8000 or 9000 than it carried three years ago, besides 332 horses and 100 head of cattle 47,000 sheep were lost during the drought. Nearly four inches of rain fell since January 23, but owing to the extraordinary fall of nearly 11 inches which occurred at Wilcannia, the country from Menindie is looking fairly well, and in great contrast to that previously passed through. Rabbits are coming over the border and increasing very rapidly. The party slept at an out station of Kinchega, 55 miles from Menindie, on Friday night, and thence were driven to the Pinnacle, three tent-like hills, rich in mineral ore, where they were entertained by Mr. Moore, manager of the Pinnacle Silver Mining Company, of which Mr. Trevor Jones, city engineer, is chairman. The Minister was presented with an address of welcome by the miners, of whom there are about 100 employed on this mine. The Minister, in reply, said he had come to this remote part of the colony to learn the wants of the district, and to see what the Government could and ought to do to promote its welfare. Many people thought it would be well for the other colonies to assist the Barrier district, but he thought it was the duty of the Government to look after the remote parts of the colony more than those parts more centrally situated. He fully recognised their want of water, and the necessity for providing it if possible. They all knew how difficult it would be to provide the Barrier district with water ; but he hoped, with the conjunction of other departments, to be able to assist them in this matter.

After inspecting the mine and partaking of lunch, the party were driven to Silverton, where the Minister was presented with an address of welcome. In reply the Minister said he had travelled 954 miles since leaving Sydney, not for pleasure, but because he thought this part of the colony had not had proper justice done

to it in Sydney. If the place was likely to be permanently prosperous there was much to be done, and he would urge upon his colleagues that much more should be done in the future than had been done in the past. But they must remember that they were a long way from Sydney. and it was difficult for them to make known the wants of the district.

THE BANQUET.

A banquet was tendered to the Minister and party in the evening, at which a large number sat down. After the Chairman (Mr, R. Wilson) had proposed the loyal toasts, the Vice-Chairman (Mr. Evans) proposed the Parliament," and commended the Government for their action in sending troops to the Soudan. Mr. Quin replied, and expressed his gratification that his constituents supported him in his vote in favour of the despatch of troops. The Chairman then proposed " The Ministry," coupled with the name of " Our Guest." Mr. Abbott replied. He stated that the cordial receiption he had received from his entry into the western parts had been most gratifying, because it showed that the people of these distant districts appreciated the efforts to serve them. As he would discuss their local wants on Monday, he would not refer to them now. He had purposely come out here to ascertain what was required at the various places he had visited *en route*, and to gain a knowledge of the pastoral and mining industries, so that he might be better able to discharge his duty as Minister. Although he represented a pastoral district in the northern part of the colony, he confessed, after seeing these enormous districts, he knew very little about the pastoral districts of the colony. An impression prevailed that the people here held enormous territories, and that they were not turning these holdings to a proper and beneficial use. After travelling over their country and seeing the difficulties with which the runholders had no contend, and the enormous sums which they had to spend before they could get any return for their expenditure, he thought they deserved every consideration. (Applause.) These men were truly the pioneers of the colony, and so long as these waste lands could be developed, and be made remunerative to the person who developed them, and to the State, so long should the people be encouraged in devolping these lands, whether for pastoral, agricultural, or mining purposes. There was a latent feeling abroad that the squatters were in danger, but he assured them that the Government had no

wish to dispossess one tenant in favour of perhaps a worse one. It would be a foolish policy to make such exorbitant charges that the lessees would be obliged to throw up the land. The Land Bill had been passed, after due consideration, with the object of providing a measure which would do away with all class and ill-feeling. It was not the fault of Parliament if they had failed, but he hoped that the bickerings which existed in the past between the small and large holders would cease, Referring to the mining industry, he said that his great aim was to amend the Mining Act with a view to decentralise its administration. The Government had endeavoured to decentralise the administration of the land laws, but there would always be a difficulty in decentralising the administration of the Mining Act, owing to the necessity for constant reference to the Land office; but he hoped to devise some scheme by which this difficulty would be surmounted. One thing required altering, and that was the manner in which the warden's office was curtailed. At present the warden could inquire into a dispute, but he could not give a decision then and there. (Applause.) A magistrate in an ordinary case, or a Judge in the Supreme Court, or even the Land Court, could give decisions involving thousands of pounds; but a warden could only report to the Minister. He thought that it would be better to give the warden the power of immediate decision and the party the right of appeal. He would endeavour to have the law amended on his return to Sydney. He had heard bitter complaints with regard to the surveys in Silverton; but they must remember that places occasionally sprang up so rapidly as to make a strain on the staff of officers employed in the Survey Department. The Government could not afford to keep a staff of men sufficient to survey places which sprang up so rapidly as Silverton, as they would have no employment for them as soon as the extra work entailed by extraordinary growth had been done. When the necessity arose the Government would endeavour to meet the requirements as rapidly as possible. He had tried to meet the local want by sending up as many men as he could get; but men did not willingly volunteer to go so far away, as they could obtain more remunerative work nearer home. Referring to the pastoral interest, Mr. Abbott hoped that it would not come into conflict with the mining interest in this part of the colony. It was hard for the pastoralists to see their paddocks invaded by the miners; but the pastoralists must recognise that if there was something to be got out of the earth more valuable than feed for stock the miners should be encouraged and not interferred with in their attempt to develop its resources. He hoped that no ill-feeling would spring up between the pastoralists and the miners. No such bad feeling had hitherto existed, and he hoped that none would

now arise. The pastoralists and miners could be disagreeable to one another if they chose. but each should study the interest of the other, and endeavour to work together for the common good. Clearly the patoral interest must yield to a resident population, and nobody could expect to be allowed to keep the lands locked up when the people wished to settle down and develop the resources of the land. The pastoralists must recede as settlement advanced. The pastoral interest was of great importance to the colony, and next to it came the mining interst. It was instructivc to note the rapid increase made in the development of mining industries in this colony, in proof of which Mr. Abbott quoted statistics referring to the subject, which were fully reported in his speech made at Hay, on his previous visit. For a long time past Victoria stood the head of the other colonies in population and industries, but last year this colony had approached within 40,000 of the population of Victoria. New South Wales had increased 52,000 last year, while Victoria had only increased 22,000. He felt sure that this colony would be the premier one, as it was the mother of the Australian colonies by reason of its pastoral and mining industries, which prevented them from being dependent on one particular industry for the wealth of the colony. The Government had not entirely neglected the remote districts. They would soon have constructed one of the longest railway lines in the colony, that from Forbes to Wilcannia, which might be considered necessary owing to the want of more markets for the produce of the eastern districts, and it wonld be also necessary perhaps to assist these dry districts to get their produce away. He hoped the day was not far distant when the Government would feel justified in connecting Silverton with our own railway system, and if the progress of Silverton was as great as predicted, he had little doubt that the Government would feel that it was their duty to make the connection very soon. He had come across from Menindie, and felt that much of the traffic of this district would be done from that point when steamers could come up the river. Some time ago, at the instance of their member, Mr. Quin, stock routes were opened up from Silverton to Menindie, and from thence to Hay, and he would at once give instructions that water should be provided on the route from Silverton to Menindie. (Cheers.) Although they were far away, they would see that the Government did not forget them. He had been twitted, and their member had been twitted, with having neglected the interests of this field ; but they must remember that the field was only eighteen months old, and that two years ago there were not 200 people on it. The Government had accepted a contract for the construction of a telegraph line to Silverton, one of the greatest works they would require for a considerable time

next to water. (Cheers.) He had heard that the Government had been condemned for having introduced the clause relating to contractors, but it was most difficult to get contractors to tender for work in this dry country if they were tied down to time. On the suggestion of Mr. Quin, the Postmaster-General had made a regulation to the effect that the contract should only date from the time the river was navigable, and this had the effect of getting many people to tender and of enabling the Goverment to get the work done at a far cheaper rate than they otherwise could have done. He believed there was a good future for Silverton, and he hoped that his visit would enable them to develop the field, and to send it far to the front. He had never made a trip in his life with which he was so well pleased, because it had certainly opened his eyes to the character of the country over which he was called upon for a time to assist in ruling. He believed it to be the duty of public men, and especially of Ministers of the Crown, to make themselves acquainted with all parts of the colony, but a Minister could not very frequently have the time at his disposal which he had spent in his tour. He had travelled nearly a thousand miles during the past fortnight, he had inspected the back country as well as the river frontage, and he hoped that the trip would result in benefit to the colony generally. Silverton had apparently a great career before it, and he wished it every success. Mr. Abbott resumed his seat amid cheers.

In reply to the toast of "The Bishop and Clergy," proposed by Mr. Port, Dr. Linton expressed his pleasure at the action taken by the ministers of the other denominations resident in Silverton, who had decided not to hold service on Sunday, so that he might have a united congregation on his first visit to this remote part of his diocese. The new clergyman, the Rev. Mr. Le Barte, had a large district to serve, and they would find him a great addition to the district. In response to the toast of "The Health of our Member," proposed by the Hon. T. F. Cumming, Mr. Quin said that, although he was known to very few in Silverton, this was not his first visit to the district, as 20 years ago he had lost money by sinking a shaft in that very place. He had not neglected the district, but had promoted its welfare whenever possible. Referring to a construction of a telegraph to Silverton, he pointed out that the telegraph system was carried out at an annual loss of £70,000, and it was necessary, therefore, to be sure before opening new telegraph offices that no fresh loss would be sustained. He had been specially interested in the passage of the Land Bill, and alluded to his efforts in getting favourable terms for the squatters. As a runholder, he was quite certain that the land would not be taken up so long as the

improvements reverted to the Government at the termination of the leases. Tanks might be made several years without any rain to fill them, and money was thus expended without return. The Government had recognised the necessity of tanks by constructing them all over Crown lands. It was only fair, therefore, that water, with other improvements, should be paid for by the Government at the expiration of the lease. Mr. Abbott proposed "The Pastoral and Mining Interests," which Messrs. Brodribb and Moore replied to. The latter hoped that restrictions would be removed from the importation of dynamite, as these restrictions had operated as much as anything to discourage silver mining on the Barrier field.

Mr. Quin proposed "The Trade and Prosperity of Silverton," and in reply Mr. Chapple quoted statistics to show the present condition of Silverton. During the past year £141,175 worth of general merchandise had been imported from South Australia, and £34.744 worth of live stock from Queensland, making the total of the imports from those two colonies of £175,919. During the same period the exports had amounted to £260,106, the excess of the exports being £84,187. The amount of silver ore exported had been far in advance of anything else, being £118,766. During the present quarter £35,939 worth of general merchandise had been imported from South Australia, while £38,037 had been exported, the balance in favour of the exports being £2098. The exports would have been larger had not a large amount of silver ore been stacked for smelting. The revenue for the first four months of this year amounted to £4,134 being more than double that of the corresponding period of last year. The revenue for the past year amounted to £17,152, which was only exceeded by that of Sydney, Newcastle, and Albury. If Silverton continued to grow at a similar ratio in future, it would far exceed any other place in the colony, excepting only Sydney and Newcastle.

The Hon. T. F. Cumming proposed "The Prospectors and Miners of the District," to which Mr. Silvester Brown replied, and suggested that a resident mining engineer or draughtsman should be appointed to remove the difficulty under which the miners laboured at present in getting titles to their land. Mr. Sully proposed "The Warden," to which Mr John Brown replied. Mr. Pell proposed "The Visitors," to which Dr. Linton and Mr, Hanna, the road superintendent, responded. Mr. Julian proposed "The Ladies," and commented in feeling terms on the scarcity of the fair sex in Silverton. The Rev. Le Barte responded. The Rev. Mr. Riddle proposed "The Press," for which the representatives of the *S. M. Herald* and the local press responded. The Chairman proposed "The Secretary," to which

Mr. Pell replied. Mr. King proposed "The Chairman," and Mr. Armstrong proposed "The Vice-Chairman," and after suitable replies had been given, the banquet terminated. Some capital songs were sung by Messrs. Laurence and Basham between the speeches.

DEPUTATIONS TO THE MINISTER.

On Monday a deputation of the leading residents of Silverton waited on the Minister and presented an address, in which they asked that adequate provision might be made for the storage of water; that permission might be afforded to South Australia to continue the Petersburgh railway extension across the border to Silverton; that premises commensurate with the growing importance of the field might be erected at Silverton for post and telegraph offices; that the miscarriage of justice occasioned by the absence of a District Court and Court of Quarter Sessions might be removed by the establishment of those courts at Silverton; that the commonage area might be increased, a Public school building erected, and the prohibition against the importation of dynamite be removed or restricted. The deputation quoted the statistics already given at the banquet showing the importance of Silverton, and added that there were over 900 applications for mineral leases in the Silverton district—nine-tenths of them being within the past 12 months—the first year's rent upon which alone amounted to over £9000. They submitted, that the statistics quoted, combined with the daily improving prospects of the mines and the stimulus that would undoubtedly be given to their development by the establishment of local smelting works, were such as to justify the reasonable expenditure required in order to supply the more pressing wants. In reply, Mr. Abbott said he had given instructions to Mr. Hanna to select a site for a tank in a convenient locality, and had also authorised him to let the work as quickly as possible, but he thought the computation of seven million gallons for a town population of only 2000 exceedingly extravagant. The representations which occasionally reached Government in reference to the water supply at Silverton appeared to him of a most exaggerated character, judging from personal inspection and tasting of the water, as also from the report of his most trusted officers. In reference to the tank asked for on the stock routes between Silverton and Mount Gipps, he would get a report from Mr. Hanna. Referring to the railway

over the border, Mr. Abbott said that it was rather early for the Government to be asked to construct railways for the purpose of carrying the produce of the colony into a neighbouring colony, and he held out no hopes, whatevever, that the Government would adopt such a course. It was quite sufficient that the trade should be lost to the colony, without the Government taking means to further it. Should the Barrier Field prove a success, he had little doubt but that the Government would regard it as their duty to connect Silverton with the railway system of the colony. With regard to postal accommodation, he would recommend that steps be taken to provide a sum for a suitable post and telegraph office. Mr. Abbott fully recognised the hardships in which the Silverton people were placed in having to attend the District Court at Menindie and the Quarter Sessions at Wilcannia. These were difficulties which other towns, perhaps of equal importance, had had to labour under for a much longer period than Silverton. It appeared desirable that a District Court should be established in Silverton; but the question of establishing a Quarter Sessions Court required greater consideration. With regard to the inconvenience suffered by the police magistrate having to go to Menindie, he would recommend the appointment of suitable gentlemen in Silverton as Js.P., to perform the necessary duties during the absence of the police magistrate. It would not, therefore, be necessary to relieve the Warden of his Menindie duties. He would bring their request for a town common under the notice of the Secretary for Lands, and would point out to him the necessity for a large common on account of the large acreage required in this district for the grazing of stock. Mr. Abbott also fully recognised the necessity for the immediate erection of a Public school, and promised to bring the matter under the notice of Mr. Trickett, and he would recommend that suitable accommodation be provided. He had already made representations to the Colonial Treasurer about the prohibition of explosives. His recommendations, based on the representations made to the Unde-Secretary for Mines, had not been given effect to, but on his return he would see Mr. Dibbs, and would do all he could to relieve the miners of many of the difficulties under which they laboured at the present time owing to the proclamation against importation of dynamite and lithofracteur. It appeared to him that the prohibition had a most damaging effect on the industry of the Barrier field, and more especially militated against the prospectors.

Another deputation then waited on Mr. Abbott to beg his attention to some defects in the mining law. In reply, he said that the necessity for a reform of the mining laws had frequently been brought under his notice, and he fully recognised that at a

very early date a radical reform would have to made in the Act. Up to the present time, however, the Government had not had at their disposal the leisure which the consideration of a matter of so great importance required. The next session of Parliament was not likely to be a long one, but in the session following he would introduce a bill dealing with the question. It was his intention on his return to Sydney to take steps which would place at the disposal of the public of Silverton and the district, locality maps posted up to the very latest date of application and of approval. With regard to their mining conditional purchases titles, it appeared to him that no good could result from obtaining any further opinions from the Crown law officers as to the validity of these titles, and that no opinion by these officers could be accepted as authoritative with regard to these titles, as more than one Attorney-General had held that the titles were good, but only the Supreme Court could decide on the matter.

Mr. Abbott was also waited on by the Hospital Committee, who asked for a special grant to the building fund of £500, and £300 to the maintenance fund. Mr. Abbott said that he fully recognised the necessity for giving an increase of hospital accommodation, and he promised to recommend the Colonial Secretary to place the sum of £1000 on the Estimates as an unconditional vote towards the building of the hospital.

During the same day the Minister was also waited on by a deputation of pastoralists who drew his attention to several points connected with the working of the Rabbit Act of which they disapproved. They asked that the working of the Act might be entrusted to the districts ; but Mr. Abbott pointed out that this had been found to work so badly under the old Act that the system had been done away with. He was, however, inclined to ask Parliament to amend the Act so as to give Government power to establish Boards within the districts, reserving power to Government to cancel these if they failed in doing the work satisfactorily. The deputation also asked for an amendment in favour of differential bonus rates being paid for scalps, to meet certain difficulties in the present working of the Act; but Mr. Abbott pointed out that this would lead to dishonesty, as persons would obtain scalps from one place and dispose of them in another, as had frequently been done when such encouragement was given in the past. It was further asked that squatters might be allowed to place their own men over the Government rabiting camps ; but Mr. Abbott said that this would not do. He stated this, however, that during the tour he had noticed the expense to which the squatters were often put in carting water for rabbiters and for which they were not allowed anything by Government. He had no idea previous to his tour that the difficulty of providing water

was so great. He proposed recouping the expense incurred in carting water out, provided that the inspector reported it was necessary, and that water was being carted properly. Mr. Phillips, manager of the Kinchega run, who acted as spokesman for the deputation, said this would be a great relief.

On Tuesday, Mr. Abbott, was waited on by another deputation, making the fifth in number, who asked that a common reserve might be granted for Mount Gipps: that the promised telegraph line from Menindie to Silverton might be continued to Mount Gipps, where offices would be provided gratis; and that a forest reserve might be granted for mining purposes in the same neighbourhood. Mr. Abbott promised to reserve four miles square for the common, to recommend the continuation of the telegraph line, and to see what could be done for the forest reserve,

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THE QUESTION OF WATER SUPPLY.

One of the questions of the day at Silverton, as indeed in almost every township in the interior, is that of water supply. Even here in Sydney, where we have an average annual fall of 50 inches, the inconveniences attending a deficient water supply are not—to put it mildly—altogether unknown; but in the country along the Lower Darling, where the average fall is only about nine inches, the difficulty of obtaining a sufficient supply is very much greater, and in the Barrier Ranges, where the rainfall is lower still, the difficulty is still further enhanced. The average rainfall for ten years past at Mount Gipps station—on which the principal mines are located—is 8·46 inches. Mr. M'Culloch, manager of the station in question, has kindly forwarded me the results of his observations for the past ten years. I append them for the information of those whom it may concern, merely observing that no official record has yet been taken at Silverton itself, and that Mount Gipps is the nearest point in the neighbourhood where a register has been kept:—

RAINFALL REGISTERED AT MOUNT GIPPS STATION FROM 22ND APRIL 1875, TO 21ST APRIL 1885.

—	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.
January ...		0·13	0·10	0·00	0·00	0·00	2·98	0·00	0·00	0 11	2·53
February ...		0·10	0·30	0·85	0·00	3·49	0·25	0·00	0·02	0·38	0·99
March ...		0·90	0·40	9·80	0·00	0·00	0·56	0·00	0·22	0·12	0·87
April ...	0·30	0·00	0·00	0·30	1·67	1·14	0·15	3·14	0·44	0·09	0·52
May ...	0·53	0·61	0·79	0·22	0·42	0·22	3·26	0·47	2·00	2·21	
June ...	2·41	0·30	0·90	0·00	0·16	0·00	0·92	1·00	0·09	0·86	
July ...	0·52	0·10	0·18	1·11	0·85	0·00	0·00	0·28	0·19	0·10	
August ...	0·50	0·12	0·00	0·00	0·21	0·30	0·18	1·81	0·92	0·48	
September..	0·19	0·36	1·37	0 90	0·85	0·79	1·68	0·00	0·00	0·95	
October ...	0·26	0·00	0·23	2·07	2·21	0·93	0·00	1·59	1·45	1·37	
November...	0·00	0·56	0·00	0·00	3·52	0·00	0·00	1·64	0·49	0·67	
December ...	0·21	0·15	0·06	0·25	0·15	0·18	0·73	0·55	0·08	0·13	
Total ...	4·92	3·33	4·33	15·50	10·04	7·05	10·71	10·48	5·90	7·47	4·91

SUMMARY.

		Inches.			Inches
From 22nd April to 31st December	1875 ...	4·92		1883 ...	5·90
	1876 ...	3·33		1884 ...	7·47
	1877 ...	4·33	From 1st January to 21st April	1885 ...	4·91
	1878 ...	15·50			
	1879 ...	10·04	Total	...	84·64
	1880 ...	7·05			
	1881 ...	10·71	Average rainfall	...	8·46
	1882 ...	10·48			

So far as the storage of water is concerned the residents in the town are being looked after fairly well. One well is being sunk which is expected to yield 2000 gallons per day. As the depth increased the quality of the water was found to deteriorate. Sinking was, therefore, stopped, and a drive was put in at a higher level where the strongest supply and best quality was struck. Some delay was caused by the difficulty of procuring timber, which has to be imported from elsewhere; but work has been lately recommenced. A tank to contain 22,000 cubic yards has also been authorised, and will be commenced with the least possible delay. A tank has also been recently completed with a storage capacity of 28,000 cubic yards, at the junction of the Mount Brown and Wilcannia stock routes, and about three miles from the town itself. In addition to these works there are four other wells in Silverton containing good water. One is being worked and the public are supplied at very fair rates. A rather humorous incident occurred at the little Barrier township of Purnamoota,

where we stayed for lunch on our way to Mount Gipps and as it illustrates the feeling existing between the pastoralists and the miners, it is worth relating. During the course of the lunch, a miner, somewhat elated with the good cheer provided, commenced talking in a very high key about the preferential right of the miner to possess the land. While he was railing against the squatters in no measured terms, someone, who knew what the squatters had done for the district, asked where the miners obtained their water supply. "Oh, from a well a little way off, to be sure," answered the miner, little suspecting the trap that was being laid for him. "And who sank the well?" queried the other. "Oh, the squatter, to be sure," was the reply. "And if that were to give way, where would you go?" enquired the persistent interlocutor. "Oh, to the well further off," replied the other. "And who sank that?" "Oh, the squatter, to be sure," again replied the miner, in no way abashed, and apparently thinking that the squatter's whole duty in life was to furnish the miners with all they required for nothing. On the other side of Silverton we saw a peculiar instance of this. It was on the Kinchega run. A miner, with the unwilling permission of the squatter. was driving a team of bullocks into a tank to obtain a supply of water for a private tank of his own. The whole team, of half-a-dozen bullocks, stood in the water while the miner leisurely proceeded to obtain his supply, after which he as leisurely proceeded to drive the animals out. The men on the run had to drink this water, and how nice it would taste after these bullocks had been standing in it and puddling it about, the reader, who has never seen the like, can hardly conceive.

CHAPTER VIII.

A PRELIMINARY GEOLOGICAL SKETCH.

The visit of the chief of the Mining Department to the silver mines of the Barrier Range was one of immense importance to the district, as it gave the Government the opportunity of testifiying to the world at large, by the mouth of the Minister for Mines himself the existence of a silver field of extraordinary richness, and one which may one day perhaps rival in richness the most famous mines of Nevada, Mexico, and Peru. Before giving an account of the mines visited by the party, it will be well to

get a clear idea of the manner in which the precious metal is deposited in other parts of the world, and of the causes which led to the deposition taking place, as without such a preliminary knowledge it will be impossible to understand the existing characteristics, or to estimate the probable richness of the deposits in the Barrier Range. Even professional miners themselves, let alone the general outside public, would probably be rather taken aback if suddenly called upon to define the nature and origin of lodes, to describe the general characteristics of the strata in which the various metals are usually found, or to point out on the map the precise situations of the leading silver mines of the world. There is, however, no subject which is of greater interest to the general student, and perhaps none of which the ordinary reader knows so little, owing to the abstruse way in which the subject is frequently treated, and to the fact that a great deal of reading has to be gone through before the root of the matter can be reached. I shall make no apology, therefore, for giving a brief, though as comprehensive an outline as possible of the information bearing on the above points, gleaned from various sources, that portion dealing with the mines principally from an excellent little treatise on "Metalliferous Minerals and Mining," by Mr. D. C. Davies, F.G.S., who has dealt with the subject in a very able way.

In the first place, then, it will be well to remember that all the varying materials of which the earth's surface is composed may be reduced to 63 or 64 simple elements, distinguished by their specific gravity, by their degrees of hardness, by their opaqueness or transparency, solubility, and, among other things, by their method of crystallisation. It will be well further to remember, that of these simple elements, 48 are metals, and 15 non-metals, five of the latter being gasses; and that the bulk of the earth's surface is composed of the gasses and the non-metallic minerals—oxygen and silicon being the preponderating substances —metals being only of very rare occurrence in comparison with the other elements. Secondly, it is important to note that the metals are found distributed over the earth's surface, either native, *i.e.*, pure, or more or less ready for use, or associated with other minerals, and in combination with the gasses or earthy admixtures, in which case they are known as ores—as oxides when mixed chiefly with oxygen, as sulphides with sulphur, and chlorides when mixed chiefly with chlorine. This last element, by the way, discovered just a century ago, and so named from its peculiar yellowish-green colour, is a gas possessing the most insupportably suffocating odour, which has never yet been solidified, although it can be condensed into a mobile yellow liquid. It is death to inhale it, and even many of the elements

themselves catch fire when immersed in it, while combined with nitrogen it is the most explosive substance known. Next to the oxides, the chlorides, *i.e.*, compounds of chlorine with the other elements, are the most abundant and widely distributed substances in the earth, the most plentiful of all being common salt, the chloride of sodium ; while as the combustible element in lucifer matches, as the universally used bleacher, from its power of decomposing water by combining with the hydrogen and liberating the oxygen, and thus converting the colouring matter into colourless compounds, and, above all, as the most powerful of disinfectants, from the facility with which it decomposes the different compound gasses constituting noxious effluvia, it is of immense importance to mankind. In the next place it is important to note that the metals, either native or in ores, are principally found distributed among the palæozoic or primary rocks, embracing the Laurentian—the oldest known formation in the world, and which contains a foraminiferous fossil called Eozoon canadenst, the most ancient organism hitherto detected ; the Cambrian and Silurian—so-called respectively from the ancient name of Wales and of a tribe which at one time inhabited a part of England and Wales, these formations abound ; the Devonian, named after Devonshire, a great locality for these primary strata ; the Carboniferous series overlying them, and, lastly, the Permian rocks, which owe their title to the district of Perm, in European Russia, where they abound. Permian strata, consisting of red marls, sandstone, and calcareous conglomerates, overlie the coal measures of Warwickshire ; and so completely does the whole deposit resemble the Post-pliocene boulder clay—about the most recent formation of the earth's crust—that the belief is entertained that a similar glacier episode prevailed during the Permian epoch. The fact that, with the single exception of the magnesian limestone, all the Permian rocks are red—due, like the mud of the old red sandstone of the preceding Devonian era, to the precipitation of peroxide of iron in inland waters, where all the Permian rocks appear to have been deposited—has led to to the conjecture that from the commencement of the Devonian era down to the end of the deposition of the new red marl—an immense period stretching from the central epoch in the infancy well into the commencement of the childhood of the globe—there existed in Northern Europe and in other regions where these sandstone and coal formations occur a great continental epoch, the main feature of which was the abundance of reptilian and principally of amphibian life. That part of it occupied by the deposition of the Permian and new red strata has been compared to the great area of inland drainage of Central Asia in which from the Caspian 3000 miles to the east almost all the lakes are salt

in a comparatively rainless district—similar, in fact, to what is believed to have been the condition of the interior of this colony at no very remote epoch, when the exact characteristics of the Caspian Sea are said to have prevailed all over the country now watered by the Darling. Thr rocks in the order named—the Laurentian, the Cambrian, the Silurian, the Carboniferous, and the Permian—are supposed to have been the first to be consolidated, or deposited, by the action of water or fire, during the numberless ages which constitutcd the first of the three mighty periods into which the age of the world has been divided. Throughout the huge masses of granite which form the backbone of the mountain ranges of the world, and in the valleys and plains which lie at their base, and in the vast accumulations of slates and schists, porphyry and limestone, formed during the infancy of the globe are to be found the gold and the tin, the copper, the silver and the lead, and the various other metals, precious or useful, so highly esteemed by the human race. With the many other varied formations of the secondary and tertiary periods of the world's history—corresponding to its childhood and youth, as the advent of the man makes the attainment of its majority—we have nothing to do, the metals being chiefly distributed in the primary rocks.

Now, let us take a brief glance at the composition of the rocks themselves. The three oldest and most abundant rocks on the surface of the globe are granite, gneiss and mica slate, composed in varying quantities of the three minerals—felspar, mica and quartz—of which the first contains the most felspar and the third the most mica, while all three abound in quartz. These three rocks appear to pass by gradation into each other, and by some are regarded more as varieties of the same rock than as different species. Gneiss, in fact, is a schistose or slaty granite in which mica abounds, and which, by the way, is much less prolific in disseminated minerals than either of the two primary rocks named, although it contains some remarkable metallic veins, such as gold and silver, copper and lead, cobalt, antimony and iron ore. Gneiss is the predominating rock in the north of Europe and in parts of America, where it is much used by architects. It forms the declivities of immense mountain chains, abounds in the Alps and Pyrenees, and forms the loftiest chains of the Andes of Quito. Granite is often regarded as the foundation rock of the globe, or that upon which the secondary rocks repose. From its great relative depth compared with succeeding formations it is seldom met with, and then presents the appearance of having broken through the strata by which it is surrounded. The singular fact has been ascertained that any rocks, no matter of what geological age, can be altered into gneiss or

mica slate, provided only they contain the necessary ingredients; while granite may be intruded into rocks of the most recent formation. The central part of the Alps, Pyrenees and Carpathian Mountains in Europe is of granite, while it forms a considerable part of the Uralian and Altaic mountains in Asia, and of the principal chains examined in Afsica, India, Canada and Labrador. The mineral quartz, which forms so large an ingredient of these three primary rocks, surpasses all other minerals in the extent of its distribution, and in the number of the varieties of which it is composed, including such extremes as jasper and flint. Its useful application in the arts depends upon the presence of silica, a compound of oxygen and silicon, one of the most frequently occurring substances in the materials of which the globe is composed, and forming the principal ingredient in nearly all the earthy minerals. Next in point of abundance and width of distribution to the minerals named—felspar, mica, and quartz—and the only one we need at present consider, is hornblende, which almost rivals quartz in the endless numbers of its varieties. It enters largely into the constitution of syenite, one of the primitive rocks, which differs from granite chiefly in the substitution of hornblende for mica, felspar being its most abundant ingredient, one of the finest varieties of this primitive rock being the much-esteemed porphyry. Syenite is very prolific in minerals, as will be seen later on. In the island of Cyprus it affords much copper, in Hungary silver and gold, and in the forests of Thuringia it is prolific in iron. It abounds in the city of Syene, in Upper Egypt, whence the Romans imported it for architectural purposes, and from whence it derived its name. As a sort of concluding remark to the above paragraph, it may be observed generally that when the surface rocks are chiefly granites, overlaid and associated with schistose rocks, lodes of tin, copper lead, etc., may be expected. When they are composed chiefly of the lower Silurian system—the third oldest rocks in the world—then gold, in addition to copper and lead, may be looked for. Copper and lead also appear, together with zinc and iron ore, in the limestones of the Carboniferous system. Silver, however, occurs at two distinct and separate geological horizons—first, in slates and calcareous strata at the junction of the Cambrian and Cambro-Silurian groups, and, secondly, in the Carboniferous limestones.

In illustration of the way in which the mountain ranges have been formed and the metalliferous strata deposited, let us take a glance at the Erzgebirge, or silver cliffs that divide Saxony from Bohemia, still the chief mining centre of Europe, and the Sierra Nevada, the central ridge of the Rocky Mountains, so enormously rich in silver that it has given to Nevada the name of the Silver State, and which presents similar geological features

to the mountains of Mexico and Peru. The central and highest ridge of the Erzgebirge Range is composed of granite, which passes on both sides into gneiss, the gneiss being succeeded by a series of clay slates, after which come the carboniferous measures, and, finally, the Permian rocks, each in the order named on both the Bohemian and Saxon side of the great central ridge, at Nreiberg, near Dresden, where the celebrated geologist Werner lived and taught, are pierced by about 900 lodes, the silver occurring both native and as ore, the average proportion of the silver in the galena being in the Pyritic Lead Group, about 49 ozs. to the ton, ranging from 10 to 60 ounces. Galena, by the way, is the name for sulphide of lead, which is found more or less in every country, and is very abundant in England, and especially in the United States, where it is widely dispersed, the deposits in the mines of Illinois being the most extensive and important hitherto discovered. Galena usually contains a little silver in addition to sulphur and lead, the latter having an extraordinary partiality for the precious metal. When the sulphide is rich in silver it is called argentiferous galena, and worked as a silver ore. When the sulphide occurs in primitive and transition rocks it is frequently associated with silver, but it is more frequently found in rocks of a later age, in which case it is generally worked as a lead ore. A rich and curious deposit being met with in Silesia, between the muschel-chalk, one of the lowest beds in the secondary period, and a bed of dolomitic, or magnesian limestone, the uppermost rock in the palæozoic epoch, the deposit being noteworthy from the fact that it is one of the highest known in the geological series. The mineral dolomite, by the way, appears to have much the same partiality for lead and tin that lead has for silver. Dolomitic, or magnesian limestone, massive beds of which occur in the Tyrol and Apennines, is frequently employed as marble both in Europe and America, and from it the Parliamentary Houses at Westminster are built. It will be well to make the acquaintenance of the galena, which suggested the reference to the dolomite, as it is the chief silver-bearing ore in the Pinnacles mine at Silverton, one of the most promising mines in the whole district, where it occurs in very large and exceedingly rich lodes, as may be inferred from the statement made by the managers that twelve ordinary samples gave from over 16 ounces to as much as 583 ounces to the ton, or the extraordinary average of 137 ounces, while an assay of a chance sample taken from near the surface by the Government geologist yielded at the rate of over 53 ounces per ton, and 41·12 per cent. of lead, with traces of gold.

The central rocks of Sierra Nevada, like those of the Erzgebirge, are granitic and gneissic, probably of the lower Cambrian

age. Next we come to the overlying slates and sandstones, much changed and hardened by pressure in the lapse of time, and making on the surface a series of ridges parallel to the main axis of the great chain, and both they and the older rocks traversed by numerous quartz lodes, throughout which gold and iron are unequally distributed. Following and flanking the central chain on either side, from British Columbia to Mexico, is a vast series of crystalline and metamorphic rocks, gneiss quartzite, and slates of various colours, throughout the whole of which gold is sparingly disseminated, while at several great centres of disburance in Colorado, Oregon, and California, are numerous gash, or surface veins. containing the purest kinds of gold. On the eastern sides of the chain in Nevada and Utah we have the Devionian, and, on a higher level, the carboniferous limestones, with their interstratified sandstones and shales, and bearing within them the great silver deposits which have made the Rocky Mountains among the most valuable in the world. This forms the uppermost limit of the metal bearing strata of the region, excepting only the iron ores and driftal deposits of gold derived from the older strata, the last named metal being profitably worked at Summit Rio Grande, in Colorado, at an elevation of 12,000 feet above the sea, this being the highest hydraulic and underground mine in the world. In the same way as the Erzgebirge and the Sierra Nevada, all the great mountain chains in the world are composed of the primary rocks deposited during the incalculable period comprised in the single word palæozoic; the Lauraentian, or the Cambrian, the two earliest in point of time, usually forming the central or basement mass of rock and the groups reposing in their proper sequence on either side. "It is on these mountains," says Mr. Davis in the interesting part of his treatise dealing with structure of the mountain chains, "and in the valleys and ravines by which they are traversed, as well as in the detritus which, during long ages, has accumulated in the hollows that furrow their sides, and in the plains that stretch along their feet, that we shall find all the great deposits of metallic minerals in the world,"

Having gained a tolerably clear idea of the nature of the formations in which the silver deposits all over the world principally occur, the next point is to obtain an equally clear idea of the manner of the occurrence of the deposits themselves. These deposits occur in various ways, but principally in lodes or veins, in segregated masses, in drift, or disseminated through the rocks. First in importance is the lode. A lode is a term for a crack or fissure in the rocks, frequently filled with metal ores in various combinations, which generally extends to an unknown depth through the whole series of the strata in the primary rocks. but

which seldom reaches higher than the base of the coal measures. These fissures appear to have been originally caused by the shrinkage of the strata in the process of hardening, or of cooling down from a heated condition, just as the muddy bottom of a pool or the surface of clay lands cracks when drying and hardening quickly under a hot sun. On each side of the main fissure there are usually smaller veins which enter and cross it at all angles. It is evident that when a mighty mass of diverse strata, differing in compactness, in density, in power of conducting electricity, and in other ways, is rent by convulsions or shrinkage, the crack would also differ too—wide in one stratum, narrow and stringy in another—while the fissures, being the weakest part, would be the first to give way or open out should any subsequent disturbance occur. The character of the materials deposited in the fissures in the course of ages—either shot up from the seething, molten mass below, or deposited by the trickling through of the water from above—would also differ, the various strata traversed by the cracks also giving a certain tone, by the detritus from their own sides, to the stuff with which the fissures would gradually get filled. Sometimea the cracks are filled with hard spar or quartz, in which case they are called quartz lodes ; others are filled with sand and clay, and are called pryan lodes, from the Cornish term for clay ; while others again contain friable quartz mixed with earths, in which case they are called gossan lodes. Metallic ores occur in these lodes, either sprinkled in the mass of the solid quartz, or filling up as a solid body the whole of the crack, or forming nests or pockets connected by strings or irregularly dotted over the whole width of the lode. Lodes in the hard slaty rocks that contain a large proportion of silica, and in the harder granites are frequently charged with quartz, and it is in the numerous quartz lodes that traverse the granite rocks that gold is usually found.

A good description of the various ways in which the metallic minerals were originally deposited in lodes and other ways is given by Mr. D. C. Davies, F.G.S., in the treatise previously quoted. Starting with the assumption that the metals, along with all other simple elements, formed part of the original mass of the globe when in a molten state, it first began its revolving course through space, he points out that "As the outer surface cooled and hardened, the metals contained at various points would be enclosed within the outer crust in both collected and disseminated forms. The disseminated metals would be those distributed and quickly fixed through the whole mass. The collected metals would be those which, in a fluid or semi-fluid state, gravitated towards cracks, cavities, and shrinkages of the containing rock. Especially would this retention of the mettalic constituents near the surface be

most complete where the cooling was rapid. Where on the other hand, the cooling was slow, the metals, by their greater weight, density, and fluid nature, would sink down with the inner molten matter, leaving such parts of the surface barren of metals. When, in the course of time, an atmosphere encircled the earth, and moisture descended in rain and accumulated in hollows on the surface, a wearing-down process began, by which portions of the original crust began to be abraded and washed into watery hollows, there to be deposited in a new form as sedimentary strata. The contained metals would be washed away along with their enclosing rock, and would be disseminated throughout the newly forming strata. They would form deposits in hollows of the sea-bottom, interstratified layers, fill up cracks, and altogether the strata in the neighbourhood of an original metalliferous mass would be highly charged with metallic minerals in various states of combination and form. As these sedimentary strata became cracked and fissured by subsequent elevation, drying and disturbance, the water flowing through them would take up the metallic particles, and meeting partial stoppages and interuptions as it passed through cracks and cavities, would deposit its heavy mineral burden on the floors and sides of the same. The power of the water to dissolve the metals out of the enclosing strata would be assisted by its associated chemical agents—acids, salts, and the like—as well as by the high temperature which it is likely prevailed in the earliest period of the earth's history. The power of the agents being spent, the temperature cooled by any cause, and the flow of the water interrupted, the mineral matter held in solution would be deposited. Thus, by means of infiltration, we have one, and perhaps the principal explanation, of the deposition of the metallic mineral in lodes. Further, we may suppose that portions of the water would find their way down cracks to the molten masses lying within the fiery chambers underneath the cooling crust; and how, reascending in vapours, mineralised by contact, with liquid metals and other molten matter, they would permeate cracks of chambers, penetrating every opening where they could unhindered find their way; and how, condensed by contact with the cooler surfaces of hardened rocks, the contained minerals would be deposited on the surfaces of these as far as the vapours reached; just as mineral matter is deposited and accumulates on the sides of boilers and within steam pipes. Thus, in a second way, by means of condensation, we can conceive how mineral matter may have been deposited in lodes. Again, we may imagine how, in the intense fusion and combination of molten substances going on amidst the heat of the earth's great laboratory, gases would be driven off and forced upwards through every fissure and chink along the course of which the contained

mettalic matter would be deposited ; just as the lead, sulphur, arsenic, and other minerals, that escape in fumes from reduction furnaces, are now intercepted and deposited in the long flues and great chimneys of our chief mines and smelting houses ; and thus, in a third way, by sublimation, we see how the earth's cracks may have become lined and charged with metalliferous ores."

The subject is so extremely interesting, the points it embraces are so numerous. and the description of the causes which produced the results are so neatly and lucidly written, that, long though the quotation is, it is well worth remembering. A very good instance of the way in which a silver bed may be formed may been seen any day off the coasts of Chili and Peru, where the sea is so strongly charged with the precious metal washed down from the silver cliffs by the rivers and streams that the copper sheeting of the vessels anchored there is plated with it. In course of time the ocean floor, with the deposited silver bed, would be elevated above the water, and the seeming anomaly would occur of a stratified bed of silver among rocks of the most recent formation, but which had been really washed from the rocks of a palæozoic age. Strata formed in this manner, and afterwards lifted into dry land, become petrified in the course of ages by the very weight of their own pressure, which, in a large bed, would be enormous, and still more by the contraction of the earth's crust, due to the radiation of heat into space, while chemical dccomposition and recomposition would be going on at the same time, and contribute towards the result. The part played by the volcanoes in the distribution of metals is also very important. The vent-holes and escape-valves, so to speak, of the earth, they are continually vomiting forth the seething, molten, more or less mineralised matter from the mighty furnace eternally working below, while the strata through which they belch out their fiery flames frequently undergo a complete metamorphosis during the process. It is supposed by some that the action of volcanoes is due to the percolation of water deep into the earth, by which masses of unoxidised materials become oxidised, heat is evolved, steam formed, and the molten matter raised to the surface by pressure. The heat of the interior is currently supposed to increase in ratio with the depth, but the very reverse of this is the case, at any rate in the Dolcoath tin mine, the deepest in Cornwall, where the increase is one degree in every 50 feet for the first 100 fathoms, while in the succeeding 100 fathoms it is only one degree in every 70 feet, and from 200 fathoms downwards it is only about one degree for every 85 feet, so that there at any rate the heat of the interior diminishes instead of increases in a ratio with the depth. The Dolcoath mine also affords a remarkable, in fact an extraordinary, illustration of the way in which lodes occasionally vary

when passing through different strata. For one hundred years the mine was worked for tin, when the lode suddenly changed to a copper one, and was worked as such for a considerable period. At last the copper gave out and the mine was abandoned. Through some fortunate chance the managers determined to pump the abandoned mine dry and try the lode lower down, when it turned out a second time rich in tin, and is now the most important tin mine in the world, unless the famous one recently discovered in Tasmania has beaten it.

Geologists appear to entertain very different opinions as to the actnal condition of the interior of the earth, some surmising that it is all in a state of fusion, and that the earth's crust only extends down a few miles, while others again are of opinion that the crust is nearly a thousand miles thick, and even that the whole of the interior is more or less solidified, with the exception of a few internal lakes of molten matter, to which they attribute the action of volcanoes. A curious circumstance in connection with them is that they occur mostly in a series of continuous lines, as if marking on the surface the course of some monstrous molten stream away down in the bowels of the earth, and with three or for exceptions, they patronise the sea coast. From Chili to the north of Mexico there is an uninterrupted line of volcanoes and earthquakes, the former rising up from the granite mountains which there abound. Another continuous line of volcanic action is that which commences on the north of the Aleutian Islands, passes over to North-eastern Asia, then proceeds southward over nearly 70° of latitude to the Moluccas, where it sends off branches to the east and west. In the old world the volcanic region extends from east to west for about 1000 miles, from the Caspian Sea to the Azores, while from south to north it stretches through about 10 degrees of latitude from the Caucasus to the Pyrennees, appearing again in North Africa and Arabia. Such a vast network of communication with the furnace below, by which the molten matter is continually being cast up, must be a very powerful factor in the deposition of mineral beds and in other ways. Overhead, on the summits of the loftiest mountains, and down below, on the very ocean floor, the work of belching out the fiery contents from the internal laboratory is for ever going on, and to this cause must be traced some of the most peculiar modes in which minerals occur. Great, however, as is the part played by igneous rocks in the formation of the earth's crust, the area occupied by them is small in comparison with that of rocks of sedimentary origin, and it is to these latter that we must chiefly look for the deposits of mineral ore.

CHAPTER IX.

A GLANCE AT THE SILVER MINES OF THE WORLD.

Before describing the principal localities all over the world where silver is successfully worked, let me point out a few remarkable characteristics of the precious metal. We are so much in the habit of handling silver, that most of us probably fancy we know all about it. Would you therefore be surprised to hear, as Dr. Kennedy would say, that its malleability is such that it can be beaten out into leaves one hundred and sixty thousandth part of an inch in thickness, that a single grain of it can be extended about 400 feet in length, that a thread of it only ·078 in diameter will support a weight of nearly 190 lb. without breaking, and that its conductivity for electricity is greater than any other metal. Put a half-crown in the fire and it will melt, expose it to sufficient heat and it will volatise and disappear all together. Softer than copper it is harder than gold, and in malleability is second only to the more precious metal, which can be beaten into leaves only 1-280,000th part of an inch in thickness, while a single grain may be made to cover a space of 56¾ square inches. Its most common and valuable ore is the sulphide, composed of about 87 parts of silver, and the balance of sulphur, popularly known as silver glance. When silver ornaments are long exposed to the air they acquire a violet covering, which deprives them of their lustre and malleability. This coating is sulphide of silver, which may readily be obtained by melting thin plates of silver and sulphur laid alternately above each other in a crucible. Black silver is another ore composed like the sulphide of silver and sulphur, but with the addition of antimony in about equal parts with the silver. Red silver, again, another valuable ore, differs from the last only in the proportion of antimony, which is double that of the silver. The second most valuable silver ore is the chloride, popularly known as luna cornea, or horn silver, from its resemblance to horn. It is composed of three-fourths silver and one-quarter chlorine. It is the common ore of the Mexican and South American mines, and abounds in several of the mines at the Barrier Range, such as the famous Broken Hill and the Germannia mine. I have a fine specimen in my possession from the latter mine, which gives 11,300oz. to the ton. Horn silver, greenish in colour, is frequently scattered in the lode in particles or grains, and it is so waxy that it can be readily cut or scratched with a knife. Chloride of silver may be obtained by dissolving silver in nitric acid, and mixing the solution with a

solution of common salt, which is the chloride of sodium. A copious precipitate falls, which, when crushed and dried, constitutes pure silver chloride. When exposed to the air it changes from white to a purple or blackish colour, hence its great use in photography. Pure silver is extracted from the chloride by mixing it with about four times its weight of fixed alkali, formed into a ball with a little water, and melting it rapidly in a crucible well lined with alkali.

After having glanced at the characteristics of silver-bearing rocks, and considered the nature of lodes and the composition of the different ores, it is high time to take a look round at the leading silver mines in the world, and see what is their estimated output, so as to be able to form some idea of the future prospects of rival fields. The leading features of the Erzgebirge, or silver mountains that divide Saxony from Bohemia, have already been described. Their value was first discovered about the year 1170, by a Bohemian labourer travelling near Freiberg, then covered with a vast forest, who picked up a lump of galena, which reminded him of the silver stones of the Hartz, and which proved on examination to be rich in silver ore. From that moment the hills near Frieberg have heen thoroughly searched for their mineral contents, and the greater proportion of the silver from Saxony and Bohemia is still obtained from this source. The lodes have been worked to an average depth of about 1500 feet, and they are still persistently rich in ore. The average annnal production from the Saxon or richest side of the range has been 60,000lb. for a great number of years. The production of the whole Russian empire is estimated at exactly the same amount, obtained from the mines of the Nirchchinsk, on the east of Lake Baikal, in the southern part of Central Siberia, the ore being argentiferous galena, occurring in crystalline limestone, as also from the Kolivan Mines on the Altai Mountains, where silver ores, assoeiated with those of copper, gold, and lead, are obtained from Cambro-Silurian schists, interstratified and intersected with porphyritic rocks. The annual production of Hanover and Brunswick, from the Hartz Mountains—another great centre of German mining industry, the lead ores of which are among the richest in Europe for Silver—is just half that obtained from either of the two sources named above, it being estimated at 30,000lb. The metalliferous portion of the Hartz extends a length of sixty miles, with an average breadth of about 18. It is the most northerly chain of Germany, and from it their stretches an extensive plain to the North Sea and the Baltic. The range is divided into two parts by the Brocken, which forms the loftiest summit of the chain, being 3791 feet above the level of the sea. The Upper Hartz, west of the Brocken, is described as the most

elevated, extensive, and rich in minerals, while the Lower Hartz, lying east of the Brocken, is the most picturesque. The Brocken is one of the most classic spots in Europe. From time immemorial the fairies and elves of Germany and the water-sprites of the Rhine are supposed to have held a great annual corroboree on its summit, while in the numerous caves that line the mountain's side the wild huntsman of the Hartz, celebrated in many a legendary tale, is supposed to dwell. Neither the fairies nor the wild huntsman permit strangers to gaze at them and live; but as some sort of recompense for their churlishness they occasionally favour a visitor who ascends the summit at break of day with a vision of a monstrous spectre, which from an opposite cloud mimics the action of the spectator, and which some people will have it is only the distorted reflection of the spectator himself. The structure of the range is similar to that of the Erzgebirge, previously described, with which, indeed, it is connected by what Mr. Davies very happily describes as "a succession of little, intervening, palæozoic isles." If the reader refers back to the description of the Erzgebirge, and imagines the central granitic mass to be the Brocken, he will have a fair idea of the structure of the country on either side that mountain, except that the strata are very much contorted, broken, and inverted.

Austria, too, has long been a great silver-producing country. The mining region of Hungary is usually divided into four districts, that of Schemnitz in lower Hungary and the Banat being the best known. The lodes in the former neighbourhood traverse a boss of greenstone porphyry, in which they are productive, but cease to be so when they enter the trachyte that overlies and surrounds it. The principal lode, known as the Spitalberg, extends a known distance of three miles, with a depth in parts of 330 yards, and a width of from 10 to 12 feet, while the Biebergang lode is equally long, 1300 feet deep in places, and has yielded an immense amount of silver. The mining district of the Banat forms an irregular oval area, based on granite and gneiss, on which rest felspathic and porphyritic rocks, with ridges of limestone interspersed. Here are found gold, silver, copper, lead, zinc, and iron, most of which seem to have been originally deposited as sulphides, but near the surface, where they are richest, they have become oxidised from contact with the atmosphere. The little duchy of Nassau, in the centre of Europe, is also highly mineralised, the value of the annual production of silver, chiefly obtained from lead ores, being estimated at £30,000. In France nearly all the lead-producing mines give silver, the total annual production amounting to over 150,000lb. troy. The principal silver district is in the department of Isere, in the south-east, where silver was accidentally found in 1767 by a goatherd,

in a spur of the great Alpine chain. The foundation of this part of the Alps is a coarse granite, that changes occasionally into gneiss, overlaid by hornblende slates, the whole of the rocks being traversed by lodes, of which their are eight principal ones, varying in width from 6 inches to 2½ feet, and filled up largely with the materials of the rocks through which the lodes pass. Silver is found in these lodes in a variety of forms—native, mixed with antimony, with antimony and sulphur, and with sulphur and salt. Other metallic and earthy minerals are also found associated with the silver ore. Another old silver-producing country is Spain, the annual production of which, chiefly obtained from lead ores, is estimated at 120,000lb. According eo Strabo, 40,000 men were formerly employed at the Carthagena mines in groping for silver, but notwithstanding their number they left something for future generations, as a lode of argentiferous galena, which has yielded as much as 20 tons of lead ore per day, was discovered in the neighbourhood as late as 1839. The galena of the Jerosa vein of the Sierra de Almagrera, between Carthagena and Almeria, is described as exceedingly rich in silver, the yield being as high as 130 to 180 ounces to the ton ; but this doesn't come up to some of the lodes in the Barrier Range, wfiere the galena is in places of extraordinary richness. The most celebrated silver mine in Europe, however, has yet to be described. It is that of Kongsberg, in the south of Norway, which was diseovered in the year 1623, and has been workod ever since. The ore occurs at this mine not so much in true lodes as in a succession of bands of partly decomposed rock interstra ified with gnessic and slaty rocks. Both these and the adjacent strata are traversed by true veins, also containing silver ore, but the profitable ore deposits are found at the junction of the veins with the bands, of which there are seven, extending several miles in length, and with a breadth of about 1000 feet, productive of silver throughout. The annual production of Norway, obtained from this mine, as also from lead ores, is estimated at 20,000lb. troy. In Great Britain silver is obtained from lead ores, the highest yield having come from a mine in the Isle of Man, where 2500 tons gave 40 ounces to the ton. The average yield, however, in the whole kingdom appears to be less than seven ounces to the ton, although the value of the produce in a single year has been over £70,000. From the above summary of the silver mines in Europe, it will be seen that while the richest mine is in Norway, the greatest producing country is Germany, the silver being obtained chiefly from the Erzgebirge and the Hartz, the average value of her annual production being estimated at £600,000.

But the production of Europe is insignificant compared with that of South America, while that of South America itself pales

before the yield of the United States. The annual production of Peru is estimated at £800,000, or £200,000 more than that of the leading silver-producing country in Europe, while the annual yield at Chili is placed at £1,000,000. The average annual production of Mexico of late years has been four times even that of Chili, while the annual yield from Nevada has been half as much again as that of Mexico. One of the largest veins of silver hitherto discovered is at Guanaxuato, in the latter State, its length being upwards of eight miles and its width in some places as much as 150 feet. It is in western North America, however, that silver-mining has of late years attained a magnitude and importance unprecedented in the history of mining, the quantity of silver raised in one year alone representing a money value of £9,000,000, of which Nevada contributed two-thirds and California about a ninth. These two States are also the greatest gold-bearers in the world, the output in a single year from Nevada and California alone having reached the enormous sum of considerably over £6,500,000, of which Nevada produced the lion's share. It was, in fact, the discovery of gold in the running stream, as it rushed through the newly-formed mill-race of Colonel Sutter, near Sacramento, not 40 years ago, that led to the subsequent discovery of the immense deposits of silver in the Western States, Following the golden sands to their sources in the quartz beds and dykes amid the peaks of the Rocky Mountains, the miners were for a long time intent on finding the auriferous metal alone, and that their efforts were rewarded with extraordinary success is known to all the world, and may be guaged from the fact that from the year 1848, when Sutter's mill was set geing, to 1874, the total production of gold in the United States amounted to no less than £250,000,000, of which about three-fourths were produced by California alone. The discovery, however, was at last made that silver was as prolificly distributed among the mountain chains as the more precious metal, and from that moment a new era has sprung up in the history of silver mines.

Three of the most famous deposits in the Western States are the Great Comstock lode of Nevada, the Eureka deposits at Eastern Nevada, and the Emma Mine of Utah, each of which may be taken as representative of the various ways in which silver ores are found in the Western States. The possession of the Great Comstock lode, the richest silver mine in the world, and of the Eureka deposits, has placed Nevada far away ahead of all rival silver-producing countries in the world. The Great Comstock lode stretches for over four miles along the eastern slope of a range of hills to the east of the great Sierra Nevada range. About 35 mines have been opened up over the course of the lode, which is from 100 to 200 feet in width, all of which are drained to a depth

of over 2000 feet by a tunnel which has been in course of construction for over ten years. The Comstock lode has yielded an average of £3,500,000 sterling for years, and its total yield since its discovery in 1859 to the end of last year must be considerably over £80,000,000. The most successful of the mines tapping the lode are the great "Bonanza" mines, the Potosi chimney. which has yielded about £,3000,000 alone, its rich ores being extracted at the rate of 650 tons a day, at a value ranging from £17 to £25 a ton. It is over 2000 feet in length, and 1000 feet in depth. It ultimately ran out into a quartzose rock, six feet wide, mixed with clay. Some of the mines at the Barrier Range are named from their America rivals. The Comstock lode lies between syenite below, and talcose and metamorphic slaty rock above, the latter containing felpathic dykes and being interstratified by helopathic beds, the overlying strata, with their volcanic dykes and lavas, being apparently of tertiary age. The lode is not uniformly rich throughout, the ore being segregated into masses. The adjacent country is reticulated with lodes and veins, some of which yield a fine profit. Indeed, several chains of hills, similar to that in which the Comstock lode occurs, and many of which are highly mineralised, traverse the country parallel to the Sierra Nevada range from Mount Davidson, situated between the salt lakes Bigler and Carson, where the Comstock lode crops out, to the Nahsatch Range, in Utah, the home of the famous Emma mine. Between these two points—Mount Davidson and the Nahsatch Range—are to be found the Eureka deposits of the Eastern Nevada. The fabulous wealth of the Ruby Hill, west of Eureka town, was accidentally discovered 20 years ago by a party of the miners travelling west, and in this and neighbouring hills —such as Prospect Mountain and Silver Hill—there are now about sixty silver mines. The structure of Ruby Hill, in which these great mines are situated, is peculiar. Covering the floors of huge caverns which the trickling of water has carved out of the vast limestone beds previously scattered by some natural convulsions are masses of silver and other metallic ores which have apparently been carried into the caves by water from the overlying or adjacent older strata. Tho belt of shattered limestone in which these caves with wonderful deposits occur is 300 feet in thickness, and, from the fossils it contains, is believed to be of Cambro-Silurian age. The centre of the hill consists of granites. quartzose slates, and metamorphic rocks of great thickness, while overlying the limestone belt are calcareous shales, and overlying these is a very rich belt of later limestones, possibly of the Carboniferous age. In one of these huge limestone caverns, both sides and roof are lined with stalactite and crystals of every hue, an immense mass of quartz, rich in silver and gold, was found, 90

feet long, 45 feet wide, and 25 feet thick, probably formed in situ by the filtration of water charged with silica.

The Western States, and more particularly Colorado, are famous for their canons, or mighty mountain chasms, with abrupt and frequently perpendicular sides, formed generally of sandstone, through which, in vast periods of time, desolating torrents, tearing down the mountain slope, have carved their frightful ways. In one of the deep canons that furrow the sides of the Wahsatch Range, down which come leaping and tumbling numerous streams on their way to the Great Salt Lake, is situated the Emma Mine, which has gained such an unenviable notoriety by litigators, and the English shareholders of which are, or were till lately, still wrangling with one another in the courts. Still the original American owners are reaping the spoil. Near the mouth of the Little Cottonwood Creek, where the Emma and other mines are located, there rise on either side great snow-covered granite peaks of a light grey colour, composed of white felspar quartz and black mica, of which the Mormon Temple of Utah is built. The granite ascends at the rate of 500 feet per mile for five or six miles, when it is seen overlaid by reddish quartzites, which in their turn are succeeded by a series of slates, supporting thick beds of white limestone believed to be of Cambro-Silurian age. From this early period in the geological history of the globe the spectator is taken by a sudden bound into the Carboniferous age, between which and the older strata there intervened an immense period of time which no mortal can grasp, although both of the periods named are merely middle groups in the palæozoic epoch, or infancy of the globe. It is in the massive dolomitic limestone of the Carboniferous age that are found the great segregations of metallic ores for which the Utah mines are frmous. The ore deposits occur on the upper and lower sides of a mineralised zone 250 feet thick, situated in the centre of the dolomiti-limestone, and which contains lumps of argentiferous galena, and patches of soft earthy ore. Mineral deposits of a similar character to one of the three representative kinds described above occur throughout the mountainous region, which strikes, in a south-easterly direction, across the Western States. In Arizona, in the rich mineral deposits, which have only recently been worked, the lodes extend for miles, those of the Globe district corrcsponding to the class to which the Comstock lode belongs. In Mexico there are two distinct classes of deposits ; first, those of the old rich mines of Pachuca, Real del Monte and Moran, which occur, like the Comstock, between porphyritic and slaty rocks ; and, secondly, those of the Real de Calorce, of the mines near Zimpan, that occur in limestone, like those of the Wahsatch Range, the lodes running up into even higher limestones. In

both Arizona and Mexico large quantities of native silver are met with, which are believed to have been naturally smelted by volcanic heat. The rocky ranges of Central America, Venezuela and New Granada are also rich in silver ore, and are being gradually opened up. The principal silver mines at Peru are grouped about Yauricocha or Pasco, about half way down Peru, and were accidentally discovered in 1630. There are two principal horizones of silver-bearing strata which cross each other under the market-place of the town of Pasco. One is 400 feet thick and at least two miles long. There are also a series of argentiferous beds in the same district, the geological details of which are not yet clearly made out. From the Aquique hill a number of vertical lodes, crossed by smaller silver-bearing veins, radiate from a common centre at the top of the hill, which is composed of a conglomerate of stones, set in calcareous matter, the prevailing ore of which is chloride, changing lower down to sulphides. Peru and Bolivia, taken together, contain about 400 abandoned mines, many of which, it is believed, might with proper appliances be profitably worked.

But it is the Bolivian Republic—known for centuries under the name of Peru—from which has been drawn so much of the mineral wealth of South America, and which, in the celebrated mines of Potosi, located in the isolated and lofty mountains of the Potocchi, could at one time boast of the richest silver district in the world. Many of these famous mines are now exhausted, the average annual yield being now under half a million sterling: but from the time of the discovery of the Potosi field, in 1545, no less than £300,000,000 worth of silver is estimated to have been obtained from this source alone. The lofty hill, rising 16,000 feet above the level of the sea, is traversed by 32 principal lodes, as well as by a number of smaller veins, which form a network in the older rocks of which the mountain is composed. The mines have been worked to a depth of 1000 feet, and 1oz. of fine silver is reckoned to have been the yield from 1lb. of ore. By recent treaties the boundaries of this splendid republic have been accurately determined; the area of modern Bolivia is estimated at half-a-million square miles. while the population is supposed to amount to two millions. With magnificent mountain ranges, numerous valleys, fine rivers, mighty lakes, an annually deluged plain exceeding in size the whole of Great Britain, three distinct climates, and vast mineral wealth, the future of the new republic ought to be great, were its destinies only in the hands of men possessed of a tithe of the genius of the great patriot and commander whose once-dreaded name the republic bears. The neighbouring republic of Chili is also rich in silver ore. The Chilian silver mines have been divided into three districts. Those

north of the valley Huasco are richest in silver, and also contain copper and gold. Between Arqueros and Arquamaya are numerous veins of chloride of silver, while native silver is also pretty abundant. South of Aconcagua is a district where silver and argentiferous copper mines are worked in the stratified rocks overlying gold-bearing granites along the summits of the Andes. The Chanarocillo mine, in the neighbourhood of Copiapo, one of the first groups named, may be taken as illustrative of the usual mode of the occurrence of silver ore in true fissure lodes in older limestone. The upper strata are composed of beds of different-coloured cellular limestone, in which occur thin veins of sulphuret of silver, with flakes of native silver and chloride of silver in joints and crevices of the limestone near the vein. At a lower depth the limestone hardens, and porphyritic and hornblendic rocks, traversed by quartz veins, succeed, from which no silver was obtained. Then follows another limestone bed, the lode being very productive of silver above an underlying layer of barren greenstone rock, the lowest bed hitherto worked being still limestone, with irregular deposits of calcareous spar. The limestone is believed to be of the same age as the silver-bearing limestone of Nevada. The Chanaracille lode was discovered in 1831, and yielded in 22 years over two millions pounds of silver. In the foregoing summary will be found the most noteworthy features of all the great silver-producing districts hitherto discovered in the world.

CHAPTER X.

THE MINES ON THE BARRIER FIELD.

In this chapter I propose to give a sketch of the principal mines at the Barrier Ranges visited by the party during a stay which lasted scarcely three days, the greater portion of which time was taken up in banquets and deputations, and moving to and from the various mines. It was imposible under the circumstances to take veryelaborate notes, and owing to the carriage accident by which Mr. W. R. Wilson, the popular manager of the Barrier Ranges Mining Assnciation, was within an ace of losing his life, the difficulty of obtaining information was at the last moment still further enhanced. However, what with my own notes and the information contained in ths able report furnished last year by the Government Geologist, Mr. C. S, Wilkinson, to

whose courtesy, indeed, I am indebted for some further facts concerning the geological characteristics of the leading mines, I hope to be able to give a tolerably faithful accouut of this truly wonderful field. The Pinnacles mine was the first one visited. It is situated about 15 miles from Silverton, and is the first prominent indication of mineral wealth to catch the eye on the road from Menindie. It is located in one of three remarkable conical hills rising about 250 feet above the level of the plain, and which are believed to be a continuation of the Broken Hill. Mr, Moore, the manager, has had great experience in silver-mining in South America and elsewhere, and on arriving at the field he at once noticed the similarity in character between the mica schists in which the galena occurs in the Pinnacles mine and the chloritic schists in which he had been accustomed to see the silver ore occur. The chief silver-bearing ore here is the galena, patches of which are contained in the ferruginous crystalline quartzite, of which the lodes principally consist, but the richer chlorides have also been found at a depth of 6 feet in a lode 27 feet wide, yielding assays up to 2006 ounces to the ton, or an average of 83 ozs., with what appears to be a fine and permanent body of ore. As much as a thousand tons of ore have been taken out of one cutting, measuring 35 feet deep, 450 feet long, and 6 feet wide. The Pinnacles mine is said to be only one in the district where arsenical chlorides had been found in any quantity. The assays for these chlorides were said to reach 1500 ounces to the ton ; while another lode, running right up the hill, with any amount of ore, yielded 80 ounces to the ton. There are two main lodes and several minor ones, the most famous, though not the richest of all, being the Minnie Moore—named, I believed after the manager's wife. This lode has a great strike to the north-west for about 10 chains. At a depth of about 7 feet it is from 3½ feet to 4 feet wide, dipping W. 30° S., 75° in talcose mica-schists, an average sample yielding at the rate of 78 ounces 8 dwts. of silver per ton, and 32·40 per cent. of lead. The lode winds about, and in one place suddenly widens to 30 feet, while in two places it divides for a few yards and unites again, and in others sends off brunches which thin out entirely. Two other smaller lodes crop out near by on the north-east, while at about the same distonce —five chains—to thc south-west is a mass of ironstone 12 feet wide in the middle, then thinning out within a length of 50 feet. Of a similar character is the Charlotte Greenway lode, which runs to the south-west from this point for about 10 chains, and varies in width from 2 feet to 36 feet, A branch lode, 25 feet long, and 4 reet wide, shoots on from the south-east side, while nearly parallel with it, at a distance of 50 feet, is another lode about 8 chains leng, and varying in thicknoss up to 20 feet. In

all these lodes galena is irregularly distributed, and a dozen sample assays are said to have averaged 137 ounces of silver per ton. One of the features common to most of the leading mines on the field is the very defined and well-marked character of the hanging wall. That of the Minnie Moore lode is ferruginous chlorite rock. The hanging wall is simply the term for the side of the lode, bnt it is not often that the sides are so clearly marked and clean cut as is the case with many of the most lucrative lodes on the Barrier field. This result is attributed to the supposed formation of the lodes along an original joint in the strata; and if this is the case, it is believed that the lodes will continue to great depths, though varying in thickness, and that the supply of ore will be practically inexhaustible. Some one connected with the Ballarat School of Mines visited the Pinnacles mine a ehort while ago, and reported that there was not an ounce of payable ore in the mine; but he reckoned without his host, as the mine he so unsparingly condemned now occupies a leading position among its numberless rivals in the Barrier field.

A great difficulty with miners here is the smelting of the ore. Shortly before our arrival the manager of the Pinnacles mine had completed a minature smelter, designed by Mr. Moore for the "rich ores and poor miners" of the Barrier field. It can be worked by the men themselves with a little instruction. The capacity is half a ton of rough ore in 24 hours, aud the outside cost of the apparatus, it is stated, will not exceed £100. The smelter was started on Pinnacles ore for the nrst time on the very same week we left Sydney for the Barrier field. "Two hours," says the report of the local sheet, "were required to bring the furnace to a proper heat' and then the first silver-lead bullion that ever flowed on the Barrier commenced to run; and thereafter, until the supply of fluxes was exhausted, 20lb, charges were reduced every half-hour to fine clean bullion. Altogether 460lbs. of ore was reduced to bullion containing 280 ounces of silver to the ton, a proportioe equalling 97½ ounces to the ton of rough ore. Having been thus reduced, the simple process of cupellation is alone necessary to separate the silver from the lead. The introduction of this inexpensive furnace, should its future working be equally successful, which Mr. Moore thinks there is not the slightest reason to doubt, must prove of the highest value in the future development of the mines, as with its aid there would be nothing to prevent the mine-owner from extracting his silver on the ground." A specimen of this silver-lead bullion was presented to each member of the party, and the fact that it was the first bullion ever turned out on the Barrier field gives the specimens an interest altogether apart from their value. Since then a full-sized smelter has been started at the Pinnacles mine, which

is reported to be working very satisfactorily. The example set by Mr. Moore has been followed by Mr. Wilson, the manager of the Barrier Ranges Association, which embraces some of the leading mines on the field, and I hear that a public company had also been recently formed for smelting the ores from the various mines. Fuel, however, is so scarce in the district that the orcs will probably be treated elsewhere. A great deal of it is at present, or at any rate was, carried to Adelaide, a distance of 300 miles, at a cost of £5 per ton, for shipment abroad ; but this is a very expensive way of settling the difficulty. The Government Geologist is of opinion that Menindie is the natural smelting place for the Barrier Ranges. It is only 76 miles distant, and timber and water abound in the neighbourhood. Two proposals have only recently been sent in by private parties for constructing a railway between Menindie and Silverton, and if the Government sanction one of the schemes, as it may be to their interest to do, a great and reciprocal boon will bo conferred on both Silverton and Menindie. The future of Menindie will be assured should such a scheme be carried out. "The reduced lead and silver," says Mr. Wilkinson in his report, "could then either be sent to Sydney, or via the Darling to South Australia or Victoria. But, whichever way the production of the metals be transmitted to market, it is evident that the construction of a light line of railway from Silverton to Menindie would not only be one of the chief means of promoting the development of this field, by lessening the cost of treatment of the ore and affording facilities for quick returns by the smelting being carried out so near to the mines, but also the improvements which would consequently be made in the locality would materially increase its value, and the new industry which would arise would be retained in the district, to the great advantage of the colony. Should coal or coke at any time be required, it could probably be supplied from Dubbo, for I am of opinion that workable seams of coal will be found near Dubbo, and when the proposed line of railway is constructed to Wilcannia coal could be conveyed there by rail, and thence shipped down the Darling to Menindie."

The next mine visited by the party was the Umberumberka, situated about two miles west of Silverton. It is noteworthy for having the deepest shaft on the field, and for bearing the name which once was applied by the natives to the whole district, and which still marks on the map the position of the silver ttown. The mineral wealth of the Umberumberka mine was first discovered 1882 by a prospector named Stokey, who had been for 20 years in the district, but who is said to have fallen a victim to a very prevalent malady in mining districts, especially where water is not a very common commodity. A company was floated on

the strength of a hole only three feet deep, and £20,000 capital a fifth of which was paid up, was soon obtained. A leading spirit in the floating of the company was the Hon. J. B. Spence, of South Australia. and the shareholders are mostly from that colony. Six months after the discovery of the mihe, the company had only £370 to its credit, and only 10,000 shares had been applied for, about half of which had been sold at 2s. each. Mr. E. P. Evans was then engaged from Adelaide as manager, and the prospects of the mine have been steadily improving ever since. Abeut £18,000 worth of ore has been despatched from the mine since then, and the mine is now paying for itself. The lode occurs in mica-schists, and dips S. 25° at an angle of 75°. It varies in width from 4 to 10 feet, and consists of crumpled mica-schists traversed by veins and lenticular branches of brown iron ore, or gossan, carbonate of lead. galena, and baryta. The ore is chiefly finely crystaliised galena distributed in irregular masses throughout the lode. With the exception of the common galena the character of the ores is different to that of any other mine in the field, it being the only one which, so I am informed, has been found to contain sulphide of silver, or silver glance, the most valuable ore of all. It occurs in the form of stephanite. Three shafts have been sunk to a depth cf 131 feet touching, or nearly touching, water level. At this depth one of the patches of ore, mixed with baryta, was 17 feet long, and 4 feet wide, in which was a solid mass of galena 2 feet thick. Drives in the course of the water-level have been made 400 feet, carrying ore all the way. Two winzes have been sunk belew the water-level, also carrying ore all the way down. A drive has been made since our visit, connecting the two winzes, and the manager expects to be able to turn out 500 tons of ore within the next four months from the stope so formed. As in the Pinnacles mine, the hanging wall is evceedingly well defined, the Umberumberka being coated with a black, glossy clay. A down right shaft to strike the level at a depth of 400 feet is down 210 feet, and no water of any consequence has been met with. A drive will be put in at 250 feet to cut the lode, and pumping and winding plant, with an engine of 22 horse power, is being erected, and will be completed in about three months. The cost of sinking the main shaft amounts to £6 per foot at the level now reached ; the cost of sinking for the first 50 feet was £2 10s. per foot, double that for the second hundred, and the third hundred an additional pound. The work is done by contract, timber being included in each case. The rock is as hard as bell-metal, and is got out by blasting. The timber usued is gum, which is brought from a creek seven milcs away. Several of the party went down the shaft and examined the lode. While myself and another were being hauled back to daylight

and were in the middle of the shaft, about 100 feet below the surface, suddenly we heard a deep ominous booming which seemed to come from the very bowels of the earth. Unaccustomed as I was to such underground explorations, I got rather scared, and was expecting momentarily to be shot up into the upper sphere at a very much quicker pace than I had gone down, although that had been quite fast enough for a novice. However, nothing particular occurred; the bucket, with its human occupants, arrived at the top without any accident, and we were informed that the mysterious noise was nothing—only the blaster at work underneath! About 300 tons of second-class ore were on the ground at the time of our visit, waiting for transmission. The total amount of the ore sent away from the mine up to that date was 800 tons, of the value of about £18,000. There are about 30 or 40 men employed on the mine, who make £2 10s to £3 a week. Formerly the expense of shipping the ore to London was greater than it is now, as much as £6 a ton being occasionally charged to Terowie, the present charge for that distance being only half the amount named. Indeed, the estimated cost of delivering ore in London, including insurance and everything, is only between £7 and £8 per ton, being little more than was formerly charged to Terowie a short while ago. When it is stated that the value of the Umbernmberka ore is estimated to average about £50 per ton, some idea of the prospects of the shareholders may be gained.

One of the best views of Silverton is that obtained from this mine. It is situated in and around a gorge running east and west between two lofty ridges, which form the western edge of the Barrier Range. The range itself trends in a northerly direction, in a series of parallel ridges, plentifully clothed after a comparatively good rainfall with herbs and stunted bush. Most of the mining work is done on a ridge situated to the south of the gorge, and it is here that mineral ore, ranging in colour from copper green to the richest brown, may be seen cropping out of the surface of the earth. In the gorge below are a few sheds constructed of galvanised iron, such as form the bulk of the homes at present used by the residents on the field, and even in the town itself. On every side but one the landscape is broken up by hills of varying heights. To the west the plains stretch out as far as the eye can see away towards the Gulf of Carpentaria, only a slight rise at Cooper's Creek relieving the monotony of the landscape from the Barrier Ranges to the sea. The stock route from Mount Browne skirts the western side of the Barrier Range, and crossing the border touches Thackeringa on the South Australian side. About a mile from the gorge, in the open plain, is a small mound, where stands a tank holding 3,000,000 gallons,

which has been placed there for the use of the stock travelling along the route. To the south-west the horizon across the border is broken by a small but picturesque chain of hills, while that to the north-west is relieved by a few trees, which mark the course ef the creek as it flows from Broken Hill, 20 miles south-east of the town, to lose itself on the western plain, or in times of heavy flood to form lakes on the South Australian side. About a dozen miles off, on the open plain due west of the Gorge, with which it would form a continuous line, the terminus station of the proposed new railway from Adelaide will be erected in less than a couple of years, and here it is proposed to start a townshlp in opposition to Silverton, a danger which the Silverton folks desire to avoid by asking the Government to continue the line from the Border terminus across the Gorge into the town. When this takes place, as they hope in time it will, and Silverton is also connected with the proposed line from Forbes to Wilcannia, the transcontinental line from Adelaide to Sydney will be complete, and the people of Silverton will have realised their fondest dreams.

A little over a year ago a prospector named Morris, while searching for indications of silver ore between Silverton and the neighbouring township of Purnamoota, accidentally stumbled upon a mass of ironstone measuring 42 feet by 2 feet, weighing 7 cwt., and containing veins and patches of chloride of silver from $\frac{1}{4}$ to $1\frac{1}{2}$ inches thick, and yielding 3100 oz. of silver to the ton. Morris forthwith pitched his tent over his newly-discovered wealth, christened the place Morris' Blow, and has been working away at it ever since. He is said to have been offered £8000 for for his claim ; but he will probably make a good many more thousands than that before he nominates a successor. Four other detached thin lenticular veins of ironstone were seen at the surface close at hand. The mica-schists in the vicinity strike N. 35· E., and are traversed by numerous dyke masses of pegmatite, granite, and quartz reefs. The iranstone mass was believed to form part of a lode, and two small shafts were accordingly sunk at a distance of 16 feet apart. One of these was 17 feet from the spot where the ironstone was found. We were let down with one foot in a twist of the rope and the other hanging loose. We swung about from side to side, knocking off bits of skin as we struck against one side or the other of the shaft, and altogether faring rather badly. The means for making the descent were certainly rather primitive ; but as the shaft was only about 17 feet deep we were still alive when we reached the bottom. We then crawled along on our hands and knees to the further end of the drive, which was about 20 feet in length, and, having satisfied ourselves of the richness of the lode, were only too glad to return

to the surface. A somewhat similar remarkable outcrop of ore, called Meech's Blow, after the name of the discoverer, occurs on the summit of a small hill of mica-schists and altered sandstone, traversed by granite dykes and quartz reefs. It crops out for a distance of 90 feet, varying in thickness from 2 to 8 feet. The lode-stuff in this case is composed of porous gossan and coarsely crystalline specular iron, stained with carbonate of copper and irregular masses, up to 2 feet thick, of an earthy carbonate of lead, passing into patches of undecomposed galena a foot in thickness. There is a simaller outcrop of similar lode-stuff near by. Mr. Wilkinson thinks the lode was a large fissure, originally filled with sulphides of iron, lead, silver, and copper.

One of the largest and most promising companies on the field is that which goes by the name of Apollyon, the Day Dawn, and the Hen and Chickens. This company paid in wages during the last three months of the present year the sum of £10,000, of which the Day Dream paid £3719, the Apollyon £2468, the Hen and Chickens £1230, Gipsy Girl £1096, and the Day Dream New Company £893, the balance being distributed over 11 smaller mines. The Apollyon, the Day Dream, and the Hen and Chickens were visited on the afternoon of the day we inspected the Umberumberka. The Apollyon is situated about 12 miles east from Silverton. The lode occurs in mica-schists, associated with dykes of coarsely crystalline granite. The lode stuff consists of veins of brown iron ore, quartz veins, and ferruginous mica-schist, with patches of carbonate of lead and chlorides of silver. The silver ore is irregularly distributed through the lode. and is chiefly contained in the carbonate of lead (which was originally galena), and in the joints and cavities of the iron stone. The lode varies in thickness from 18 inches to 5 feet, and dips E. 50° to 20° S. at 50° to 60°. It pinches out entirely in places on the surface, but all along its line of strike for a mile and a-half so many different outcrops of similar lode-stuff occur that Mr. Wilkinson is of pinion these are but widened portions of the same lode fissure, nd that some of them may possibly be found connected at greater depths. The nip was on the surface, and has been followed down for 137 feet at an angle of 31°. The main shaft is now being sunk to strike the lode at 300 feet. At a depth of 200 feet an independent lode was met with, and at 220 feet a drive was put in to strike the main lode. In point of the value of the ore raised from this mine, I may mention that two tons were said to to have realised some time ago, in London, the extraordinary price of £670! This seems almost too good to be true. The ordinary sales, however, do not fetch anything like so high a figure. By the last sales per Orient, news of which was received at the time of our visit, the sum of over £24 per ton was realised

in Hamburg and Swansea for Day Dream ore, and £90 per ton in Hamburg, and within a few shillings of £100 per ton in Swansea for ore from the Hen and Chickens. The Minister for Mines (Hon. J. P. Abbbott) and the Bishop of Riverina were the first to descend the Apollyon shaft, and soon we were all groping about in the bowels of the earth, knocking off bits of rich ore from the lode to be treasured up as mementoes of our visit, and and perhaps to be handed down as heirlooms to our families, if we ever get any. Taken altogether, the Apollyon country exactly resembles that of the Umberumberka, and, says a local expert, "No better could be wished for a lode to live in." As in the other mines visited during our brief stay the Apollyon lodes possess clearly-defined hanging walls, resembling clean cuts through the very bowels of the rocks. It is this characteristic of the Barrier field—with its augury of untold mineral wealth deposited in untold bygone ages at untold depths—which makes experts so sanguine as to the future prospects of silver-mining in this colony, and down below the water level they expect to find the ore, which is decomposed near the surface by atmospheric action, pass into the richest of all mineral combinatiens—the sulphides of gold and silver—for gold also occasionally occurs—of iron and copper, and perhaps, for this mineral is by no means altogether absent, that rarest combination of all—sulphide of tin.

On leaving the Apollyon mine we paid a visit to the Day Dream near by, the geological features of which are somewhat similar to those of the mine just described. The weekly output of the Day Dream is about 90 tons. Some very fine ore has been met with here. A new lode exposing a nice seam of rich ore a foot thick was cut just previous to our visit. A heavy shoot of galena was also met with about the same time. It changed to grey and yellow ore, not so thich as but richer than the galena. The main underlie shaft and No. 1 vertical have been connected, and the contractors were sinking on the lode 100ft. from latter shaft. Stoping was going on on a strong formation, carrying a nice seam, eight inches thick, of very rich ore. Our next visit was paid to the Hen and Chickens ; not, however, before drinking "Success to the Apollyon Company" in a bumper of champagne, and to its popular and energetic manager Mr. W. R. Wilson. Along with the champagne we also imbibed a certain proportion of instruction, tin, biscuits, and specimens of ore from the company's various mines being mixed up together. The richest specimen on exhibit yielded an assay of over 15,000oz. of silver to the ton, but higher assays than that have been recorded since. The Hen and Chickens mine is one of the sights of the field. Instead of running in a more or less vertical direction right into the bowels of the earth, as most of the lodes do, this

ones lies in a nearly horizontal position along the side of the road, and was, I understood, discovered by accident while a road was being cut past the hill, where it occurs. The hill, or rather eminence, for it is hardly high enough for a hill, is composed of granite with chlorite and dark mica-schist. This chlorite, by the way is an abundant mineral, very soft and greasy to the touch, and so named, like chlorine, from its greenish hue. Chloritic, micaceous, and talcose schists are nearly related to one another, and the first-named is a favourable resort of silver in many of the South American mines. There are two lodes at the Hen and Chickens, $2\frac{1}{2}$ feet apart, separated by granite. The upper one is from two inches to two feet thick, and is composed of gossan and quartz, stained with green and blue carbonate of copper, and contains chloride of silver and patches of grey carbonate of lead, galena, and specular iron. It has a well-defined hanging wall, upon which is a gossan vein up to two feet thick, sending off ironstone and quartz veins for six feet upwards into the altered micaceous sandstone. The lower lode consists also of argentiferous gossan of variable thickness up to 12 inches, and a net-work of ironstone veins. Both lodes join and thin out, but make again on the surface. Mr. W. H. Tremanach, who had only recently returned from an extended tour through the silver regions of California, reported that the Barrier field exactly resembled in some of its leading characteristics the Arizona mines, the lodes pinching and bunching in a similar manner in both places. He states that the practice in Arizona is to follow the lodes on the underlie, and that these sometimes pinch so small as to be almost undistinguishable, necessitating the utmost care to follow. But when followed up the trace invariably leads to another bunch of ore that will give good recompense for the dead work. Mr. Tremenach's experience strengthened the growing opinion that the Barrier field would prove quite equal to any of its American rivals. Three new and vaiuable lodes were found in the vicinity of the Hen and Chickens hill just previous to our visit. One was unexpectly cut at 60 feet, in a straight shaft started to cut the Day Dream lode at a depth. The second was met with in a road excavation which was being cut about the smelter in the Hen and Chickens ground. A third lode, said to be even more valuable than the last two, and equally unexpected, was touched in a straight shaft that was being put down to the east of the hill on the Hen and Chickens ground. On being cut through, a strong vein of dark ore of good quality, four feet thick, was exposed.

But the most extraordinary silver formations, not only on the Barrier field, but perhaps in the whole world, has yet to be described. Only one of these had been even discevered at the

time of our visit, but since then even the famous Broken Hill itself appears to have been thrown into the shade by a lode of such dimensions that, if the first reports are corroborated, New South Wales is destined to become before very long the richest silver field in the world. A description of the Broken Hill had, I believe, been published in this paper before the date of our visit to the Barrier Ranges, so I contented myself at the time with telegraphing a bird's-eye view of its general appearance, together with a tolerably full account of its history since its accidental discovery by a station hand. Broken Hill is about 20 miles distant from Silverton, and is altogether one of the most extraordinary sights on the field. For over two miles extends a series of lofty silver cliffs, with rich ores cropping out of the surface, and which yield wonderful assays at a depth of 100 feet. The loftiest pinnacle of Broken Hill stands 150 feet above the plain, and caps the huge boulders beneath like an iron helmet, Tho main shaft has been sunk 150 feet, and at a depth of 100 feet a lode of extraordiuary richness was met, 14 feet in width, which at the lower level has broadened to 20 feet, and the side wall is not yet reached. The lode apparently extends from the north-east to south-west, right through the entire hill. A full account of this wonderful mine has only recently been published in the *Herald*, so a further description of it may be dispensed with for the present. Among those present during the visit was Mr. Charles Rasp, formerly a station hand on Mr. M'Culloch's run, on which the mine is situated. Mr. Rasp was the first to take out a lease of the mine, suspecting that there was something good, from peculiar appearance of the ground. That was in September, 1883. Most of Mr. Rasp's mates, including the overseers, manager, and contractors, took shares in the company, which was immediately formed, and Mr. M'Culloch himself became chairman of the board of directors. There are only fourteen shareholders in the company, and the shares are rising with extraordinary rapidity. One gentleman who bought a share from Mr. Jamieson, the manager of the Broken Hill Company, for £200, a short time ago, sold out two months afterwards for £2100, and the last share sold fetched £4500. Mr. Abbot expressed his astonishment at the extraordinary character of the hill, and bumpers of champagne were emptied in honour of the guest and the mine, as indeed had been the case at the visit on the previous afternoon to the other mines.

The most extraordinary feature about the Broken Hill lode, apart altogether from its wenderful richness, is its apparently unparalleled length. The Broken Hill is the "highest point on a narrow ridge which runs N.E. and S.W. for several miles, and forms a conspicuous feature in the district, rising for about 150

feet above the general level of the undulating plain country on each side. The crest of the ridge is formed by the outcropping of a huge lode. The lode varies in width from 10 to 120 feet, and in places rises above the surface in large craggy black masses It changes in character every few feet, and consists of the ferruginous quartzite, quartz, griesen, felspar, porous brown iron ore, or gossan, and oxide of manganese, with patches and veins of crystalllsed carbonate of lead, the occasional black colour of the mass being due to the maganese oxide." So far the Government Geologist. The hill extends about three miles along the plain, and the Broken Hil Company have taken up about two miles of it, but the lode has been opened up sufficiently to connect it through various claims for a distance of 14 miles, and the first connecting link in a further extension, believed to extend to the Pinnacles, a further distance of nine miles, has already been exposed, and if the surmise should eventually prove correct, the Broken Hill lode, under various names. will extend the extraordinary length of 23 miles. The lode follows the course of the hill, and the broken, disjointed appearance of the crest, from which the hill derives its name, is owing to the continual outcropping of the lode. It is only within the last few months that the lode was found to carry chlorides. This important discovery appears to have been made by Mr. Thos. Low, a recent shareholder, who made a careful examination of the enormous outcrop running through the ground, and found that a great portion of it carried chlorides freely. Immediately on making this discovery he is stated by a writer in the local sheet to have made the sensational offer that he was prepared to guarantee that with the assistance of one man he could knock out £4000 worth of ore in a fortnight, and, adds the writer, the general belief of experts is that he could have accomplished his task. The chlorides appear to have been first observed by Mr. Low in a chip knocked off a large block of cross-grained ironstone, immense deposits of which may be seen running parallel on both sides of the gossany ironstone which forms the outcrop of the lode. Chlorides are reported showing freely, not only through these deposits, but through the lode proper. The first assays varied from 78oz. to 110oz. of silver to the ton, being reckoned equivalent to a money value of from £156 to £220 a ton. The same rich ore is said to have been since found to exist through the whole length of the company's ground, a distance of 156 chains, or nearly two miles, "in which case," exclaims a local enthusiast, "it may be regarded as the most valuable mining property that has ever been opened in Australia, if not indeed in the world." 38 bags, averaging 518oz. to the ton—truly a remarkable average —have been raised at the spot where those chlorides were originally found, and a vertical shaft has been sunk 36 feet,

passing through several small chloride veins. At another spot of extraordinary richness a shaft has been sunk 26 feet, and assays ranging from 1117oz. to as high as 17,800oz. have been obtained. Nearly seven tons of ore are reported to have been raised here in ten days, the bulk of which found its way to Melbourne. A bulk assay of 15 bags at the richest spot on the hill went 274oz to the ton. At a third locality, where the lode consists of ironstone and quartz, a bulk assay went 670oz. to the ton; and of this ore there are now, it is reported, five tons ready for bagging. About three weeks ago the Broken Hill Company, under the new name of the Broken Hill Proprietary Company, has been incorporated under the Victorian Companies Statute of 1864, and a Melbourne and local board of directors appointed. The former consists of Messrs. W. P. M'Gregor, Harvey Patterson, and Arthur Blackwood, and the latter of Messrs. E. R. Brodribb, W. R. Wilson, Bowes, Kelly, and George M'Culloch. The last-named gentleman is the manager of Mount Gipps station, on which the hill is situated, and was chairman of tho original company. Mr. Wilson is manager of the Barrier Ranges Mining Association. Messrs. Brodribb and Harvey Patterson are lessees of Poolamacca and Corona stations respectively.

The country leased for sheep-farming by the two last-named gentlemen is extraordinarily rich in minerals. It is on the Corona station, indeed, that there has been discovered within the last few weeks what sounds like the most wonderful lode in the world. A few brief particulars contained in the warden's report to the Mining Department were published on Tuesday last, but they were enough to whet one's curiosity to an extraordinary degree. How rich the ore is does not appear from the warden's brief report, except that surface assays gave from 24gr. to 2oz. per ton. The main point, however, is the discovery of an immense ironstone lode at least twelve miles in length, and in parts of the unprecedented width of 400 yards. A comparison of the length and width of this lode, as also of the reef at Broken Hill, with other more famous lodes, may be interesting at this point. I gave them in a former article, when dealing with the silver mines of the world, but the information, which was scattered through the article, will bear focussing. The principal lode at Pasco, in Peru, has a length of at least two miles, and a breadth of 400 feet. The Spitalberg and Biebergang lodes, in Lower Hungary, extend a known distance of three miles each, the former having a width of from 10 to 12 feet. The great Comstock lode of Nevada is over four miles in length, and has a width of 200 feet None of these, it will be seen, compare with the lodes at the Barrier Ranges, with which comparison is being drawn for length, and if the newly-discovered lode has really, as

the warden claims, a width of 400 yards, it is three times as wide as the widest of those named. The "rotten bands" in the Kongsberg mine, in Norway, the most celebrated silver mine in Europe, had been found productive of silver for a length of "several" miles—a rather vague term—and over a breadth of about a thousand feet, but the Kongsberg mine can hardly be brought into court as a comparison, as the "rotten bands" in which the precious metal is so richly distributed are not lodes, but rather layers of decomposed rock. The Corona station is about 70 miles north of Silverton, and the Corona lode is therefore at a considerable distance from the rest of the field. The metalliferous formations, indeed, cover a very large area in and around the Barrier Ranges. As early as August last year, when the Government geologist wrote his report, several iron and manganese lodes had already been discovered in the neighbourhood of the Corona station, at about 60 miles north of Silverton. The country where these lodes were found consists of clay, slates, and altered sandstones, and traversed by several lenticular quartz veins containing brown iron ore and manganese oxide. The yield of silver for an average sample was not large. About three miles further north he saw a large mass of quartite cropping out above the surface from 100 feet in width and three chains in length, flanked on the east by a belt of yellow limestone which in places passed into a network of quartz veins. There were no mica-schists or granite dykes, such as are always present in the vicinity of the silver and lead lodes in the Silverton district, in the immediate neighbourhood of the quartzite ; but these appeared within a few miles to the east, and it was in this locality—apparently the one where the new lode has been discovered—that he expected silver-bearing and other metalliferous lodes to be found. About five miles to the south of Corona an ironstone vein crops out alongside the road, which yielded at the rate of 3oz. 5dwt. of silver per ton, and a trace of gold ; while about a mile to the west is an immense outcrop of brown iron ore four chains long and two chains across at the widest, which rises 30 feet above the surface. An assay of this ore gave at the rate of 1oz. 12½dwt. of silver per ton and a trace of gold. Smaller limestone lodes crop out to the east along the margin of a belt of yellow limestone about 20 chains wide. A copper lode had also been prospected about the same time nine miles north of Corona, near the Mount Brown road ; while between that and Corona station several large ironstone and manganese lodes crop out, some of which Mr. Wilkinson surmised might prove the caps of other copper lodes. Between Corona and the head station of Poolamacca are numerous quartz reefs, some of them containing brown iron ore ; while two short quartz reefs, containing gossan,

galena, and copper ore, are vacated near the station house, Mr. Wilkinson reports the country here to consist of mica-schists, clay, slates, flagstones, limestones, and conglomerates, traversed by quartz reefs and dykes of diorite and granite, containing garnets, blacktourmaline, and chlorite—similar, in fact, with the exception of the limestones, to the formations in the silver-bearing country near Silverton. This is the sort of country in which the new lode hss been discovered, and, although the thoughts of thc Ministerial party at this distance from Silverton were more directed to squatting than mining, and we did not busy ourselues much with the particulars given above, yet, in view of the extraordinary mineral wealth just brought to light at this part of the field, we thought some information of the character of the country would be interesting. The view taken of the value of the new discovery on the field itself, may be gauged from the fact that the whole of the country traversed by the lode has been applied for already, 47 different applications having been sent in, Nor are gold and silver the only metals to be found in the neighbourhood. The copper lodes have already been mentioned ; but tin has also been found, and in a granite dyke near the Euriowrie Gap, 16 miles north-east from Poolamacca, tin ore has been found in detached crystals through the granite, as also in other places in the neighbourhood. It will be seen, therefore, that the country in which the latest discovery has been made is one of wonderful promise, perhaps rivalling in richness any yet known. There are many other silver mines at Sliverton besides those described in the first part of this letter, some of them extremely rich, but the Ministerial party was only able to stay a short time at Silverton, and we could not see everything. In describing those we did visit my duty ends, and I only hope that, insufficient as my account may have been, it may yet have awakened in many of my readers an interest not only in the silver mines at the Barrier Ranges, but in those all over the world, which, from the great part they must soon play in the drama of the world, they richly deserve.

Before leaving this part of the subject I may mention that the Silverton correspondent of the *Herald* visited the Corona lode, under instructions from head-quartors, as soon as news was obtained of its discovery. The correspondent drove about 40 miles almost due north from Silverton, passing through Purnamoota, 20 miles from Silverton, and Poolamacca head station, and thence along the Corona road, till he arrived at the northernmost claim of the new Corona find. " The country about here," telegraphed the correspondent, is of a hilly nature, with the mulga trees scattered sparsely through it, the only noticeable featuro being the numerous white quartz reefs which are continuaily cropping above

surface in all directions. The line of the lode runs about north-west and south-east, and is easily dircernible (although more indistinct at this end than at any part) by the strong ironstone and manganese indications, mostly in form of slugs, with an occasional blow showing above surface. Following the lode for about one and a half miles, the boundary between Corona and Poolamacca stations is crossed, and five chains (about one and a half miles) further on the first shaft is met with. This is being put down, on a 40 acre block by a Silverton syndicate, and is on the east side of an outcrop of brown ironstone and manganese, which here shows a few feet above the surface, extending to a width of 30 feet. The shaft is down about 10 feet, mostly through limestone, until near the bottom of shaft, where ironstone and manganese, with carbonate of lime showing freely through it, come in. No assay has yet been made, but the stone looks to be silver-bearing. This is one of three test shafts which are being sunk along the lode. It is proposed to sink to a depth of 100 feet, and then to put in a drive to cut the lode. For about three miles no work of any sort beyond pegging out has been done on the claims, although the lode can be traced almost the whole way. At this point one of the largest "blows" on the line of lode crops up, being on a 40-acre lease in the names ot Murray, Horan and Groves, who claim, and I think justly, to be the finders of the Corona lode, the former having known of it for more than two years, and the party being the first to bring it under the notice of the field. On this lode they are interested in nine 40-acre blocks adjoining each other, giving them 2¼ miles of the lode by one-quarter mile wide. The actual outcrop above referred to stands 15 feet above the snrface of the ground, and about 80 feet above the level of the plain out of which the hill rises. It has a length of 80 yards, and is 156 feet wide. This outcrop appears along nearly the whole length of the claim, and in places the "walls," of the lode stand nearly 250 yards apart, but whether these are from one and the same lode it is impossible to say without sinking. A shaft has been started near the big "blow," and is down 10 feet through formations similar to the first shaft. Eight assays have been made, and traces of silver have been found, it is said, in all of them. After this the lodes take the same course for two or three miles, crossing over the same corner of the Corona homestead improvement purchase, leaving the head station about one mile on the east. In the improvement purchase there is abont half a mile of lode, and on it some fine looking outcrops. On leaving the improvement purchase, the lodes takes a slight turn to the north, and runs N.N.W. and S.S.E,, and although the outcrops oppear about every quarter of a mile, the indications are particularly marked, and brown ironstone and maganese slugs,

which stretch out to about 300 yards bearing a striking contrast te the white quartz lying on either side of it. About here also the country seems to be well settled, the hills on either side being even and uniform; those nearest to which the lodes runs seem to be composed mostly of limestone. About one and a half miles from the improvement purchases is what is called "Grand Jean's blow," being named after the prospector who pegged it out, and who is now working it. This is the largest outcrop on the line, and is evidently that referred to by Mr. Wilkinson, the Government Geological Surveyor, in his report dated October last, and which he describe thus,—"About one mile west of Corona station there is an immense outcrop of brown iron ore four chains long, and about two chains across in its widest part. It rises about 30 feet above the surface. An assay gave 1 oz. 12½ dwts, of silver, and a trace of gold. On the east side of it is a belt of yellow limestone, and in places along the margin of this, in a southerly direction, smaller lodes of ironstone crop out." This block, with two others, has been pegged out by Grand Jean and party, who have started sinking a shaft on the north-west end of the "blow." The "blow" has much of the rugged-looking appearance of that of the Broken Hill, although on a smaller scale; the formation also being much like it, though carrying less manganese. Should silver be found here in payable quantities, this should be a very valuable property. On the north end of this claim a dry creek seems to cut the "blow" off abruptly, also turning it another point to the north, the course run being north and south; the next outcrop being about a quarter of a mile away in Wilson and partys' claims, after which it branches off into two lodes, one continuing on the same course, viz., due north, and the other running north-east. On each of these branches the lode has been traced, and crops out at intervals for some eight miles. On the northern branch about 15 claims has been applied for, and on north-eastern about the same number. The above shows to what distance this lode has been pegged out. Upon the main lode, between the southernmost end and Grand Jean's some 40 claims have been taken up, and all adjoining in a line, and to the north of this there are about 35 claims, making in all from 75 to 80 which have been applied for in a month. The outcrops and lode generally are more like the Broken Hill than anything I have seen. As to whether it will prove payable or not it is impossible to say. Certain it is, however, that the country is well worth sinking on. Only a year ago the Broken Hill claims were thought to be of less value than these blocks now are or appear to be, and the present price of Broken Hill shares, as now saleable on this field, is £15. The Corunna lode is the longest yet traced, viz. 18 miles, and I think nearly all the ironstone hows near Corona

referred to in Mr. Wilkinson's report are of one and the same lode.

DEPARTURE FROM SILVERTON.

On Wednesday the Minister for Mines and party, having arranged for their departure to Purnamoota and Mount Gipps as early as possible, a final meeting—"Speed the parting guest"—was held at Debaun's Hotel, where about 39 gentlemen assembled to drink the health of the Minister. Mr. W. R. Wilson, general manager of the Barrier Ranges Silver Mining Company, proposed the health of "Our Visitors," and in thanking the Minister of Mines for the great care and pains he had taken in making himself acquainted with all parts of the district, ventured to express a hope that the visit would be productive of immense and lasting good to the field. Mr. Abbot, in responding humorously congratulated himself on the precaution he had taken in bringing with him a teetotal Bishop, as he was certain that but for that restraining influence the amount of hospitality shown to him wherever he had yet been was such as to make it excusable for even one occupying his position to become too exalted. Mr. Abbott proceeded to say that he had been deeply impressed with the wealth of the field, and although not a practical miner, he was convinced that a great future was in store for Silverton. He had been delighted with the attention shown him, and also with the prospects of the various mines he had been lately over. There was no doubt that there were two great wants which the field was suffering from—viz., water supply and railway and tramway accommodation. As regards the first, the people were themselves greatly to blame, inasmuch as they had made no provision for conserving what water was naturally given them. He had not seen a single underground tank in the town, although the area of the roofs of the various houses was such as to allow of many thousands of gallons being saved. He, however, would do what he could with his colleagues to relieve them in this matter. Mr. Abbott, in speaking of the necessity of a railway or tramway communication with South Australia, observed that he was in favour of a free-trade federation, as what would do good to one colony must eventually benefit the whole; but at the same time he could hold out no hope of his Government extending the South Australian line to Silverton.

He could see no difficulty, as the field was developed and its mineral wealth increasing, why the holders of these mines should not avail themselves of the clauses in the new Land Act, and by taking up the necessary lands build a railway or tramway of their own as a speculation, which he was convinced would be greatly remunerative. After pledging himself to inform his colleagues on his return to Sydney what apparently unbounded riches were lying hidden in this remote region, so lately a saltbush desert, and how little had hitherto been done for a district returning a revenue of over £12,000 a year to the Government, Mr. Abbott proposed "Prosperity to the Barrier Rangers," which was enthnsiastically drunk. Mr. Pell then called upon the meeting to drink "The Health of their Member, Mr. Quinn," to whose exertions it was mainly due that Mr. Abbott was induced to visit Silverton, and in the names of the inhabitants he begged to thank Mr. Quin for his exertions. Mr. Quin, in responding, expressed himself as being well pleased at having an opportunity of showing his constituents that he had not forgotten them, and that should he again have the honour of representing them he would do all in his power to assist them, with the help and aid of such valuable members as Mr, Copeland and the Minister for Mines. After three cheers for the Minister for Mines, and three more for the Bishop of Riverina, and much handshaking, the Ministerial party proceeded *en route* for Purnamoota.

At Purnamoota, a township of 200 inhabitants, with 200 claims within a radius of five miles, a deputation presented an address of welcome to Mr. Abbott, and asked for water conservation, a police court, a provisional school, a commonage, and a branch telegraph line. Mr Abbott said that all their demands were reasonable. He had already given instructions for conserving water, and the warden could come every Saturday to administer justice. If they would send the names of gentlemen eligible for justices of the peace through the warden, he would recommend their appointment, and would also recommend his colleagues to grant the other requests. After lunch the party left for Mount Gipps.

CHAPTER XI.

EASTWARD HO!

Ever since leaving Sydney we had been travelling more or less in a westerly direction, due west as far as Wentworth, then north to Menindie, then north-west as far as the Barrier Field. Silverton was our most westerly point, we could not have gone any further in that direction without leaving the colony altogether, and we had no desire to do that, so we turned our face to the east and started on the return journey, with the satisfaction almost every night of knowing we were a little nearer home than when we got up in the morning. On the way to Mount Gipps we came across a remarkable instance of the power of water in time of flood. It was a stone tank, fitted with pumping machinery and iron horse-gear, which had been completely smashed up by a flood four years ago, two men and 6000 sheep being drowned at the same time. One side of the tank had been overturned, swept bodily away, and buried in sand several feet from the bank. A rod of iron an inch and a-half thick hod been bent like a pin, and two huge logs which rested on ponderous iron gear had been lifted on end, and now stood in a vertical instead of a horizontal position. Nearly £400 had been expended on this tank, which had been thus completely destroyed in a single day, The trip from Silverton to Wilcannia was of an entirely different character to that from Menindie to Hay. We had exchanged the wide arid plains, dried to a bone by the drought, for a hilly country which the January flood had more or less clothed with green. We had left land infested with rabbits, and entered a region pestered with flies; and relinquishing hold even of the telegraph and post, we threw ourselves completely on the hospitality of the bush. Wherever we have gone on the Darling Plains, or by the Barrier Range, we have been met with a hospitality which must be simply astonishing to those who did not know what manner of men the western squatters are. They met us everywhere with open arms, and lavished everything their imaginations could suggest for our welfare and comfort. Splendid repasts sprang up as if by enchantment wherever we went, and whether in houses or in the midst of the bush, far removed from human habitations other than a rabbiter's camp, we were equally well received and equally well entertained,

The character of the country on the way to Mount Gipps was in parts too rocky to bear much vegetation, but in patches between the hills we even saw blades of grass, for which we might have looked in vain on the other side; and in narrow gorges where the rain had poured in torrents from the mountain slopes

the grass waved with a luxuriance which would even bear comparison with more favoured eastern plains. But this was the exception and not the rule on Mount Gipps, the general character of the country being poor and rocky, the soil not being favourable to luxuriant vegetation, which was only to be seen where there was a bit of wet ground from the superfluous moisture of the hills: but in such places the effect of the heavy rainfall was remarkable. The most abundant growth was the marsh mallow, whose lovely flowers of lilac and mauve might be seen on every side, the plant frequently attaining extraordinary size.

Mt. Gipps' run, where we rested for the night, is leased by Messrs. M'Culluch, Sellar and Co., and covers an area of about 1300 square miles (842,422 ocres). It carried 80,000 sheep at the time of our visit, besides 280 horses and 82 head of cattle, but its real capacity is reckoned at from 8 to 10 acres per sheep. 8000 were lost during the drought. There is only one natural waterhole on the entire run that will last five months, and none other that will last over three, after a heavy flood. Mr. M'Culluch has made about fifty attempts to find water, and has now 12 usable wells. Cne well was sunk 420 feet, a further depth being bored of 100 feet, at a cost of £3000 for sinking alone, and a supply of 6000 gallons of beautiful fresh water, the best on the run, was obtained. All tho rest is excellent stock water, but only four out of the 12 are fit for human consumption, and that at a pinch. The supply ranges from 6000 to 60,000 gallons per day. Timber for shaft making has to be brought from Echuca, there being little or none on the run. Well sinking, including timbering and material, costs from £3 10s. to £6 per foot owing to the rocky nature of the soil. In two cases water was struck at a depth of 290 feet through sandstone rock, and in this case 380 feet had to be bored through solid rock before stock water was obtained. In the Darling Plains the tanks are permanent waterworks, wells being regarded as accessories and luxuries. In the Barrier Country, on the other hand, wells are permanent waterworks, the majority of the tanks being accessories. This is owing to the fact that the alluvial never goes deeper than 12 feet, and the tanks are, therefore, in danger of being swept away by flood. In addition to this, smaller tanks, one of which is fixed with troughing, are attached to each well. There are others, with a capacity ranging from 4000 to 35,000 cubic yards. The station honses and sheds in the Barrier country are built of stone, which is easy to obtain, and present a substantial appearance, though they can scarcely be more comfortable inside than the wooden buildings on the Darling, since in both is the perfection of comfort attainable.

On Thursday, after a delightful rest from the fatigues of

sightseeing, banqueting, and the reception of deputations at Silverton, we left Mount Gipps under the guidance of the Silver King himself, as we styled Mr. M'Culloch, the manager, from his connection with the Broken Hill mine. Mr. M'Culloch has been managing Mount Gipps' run for 14 years, and is as genial a squatter as there is in the west. He drove us over to Poolamacca station to lunch, where we were very kindly received by Mr. Brodribb, joint lessee with Mr. M'Pherson of Poolamacca run. In front of the homestead grew, but not flourished, a small wattle, while young pepper trees and other shrubs were planted near the porch. This run covers an area of 500 square miles, and is worked in conjunction with Mundora, 650 square miles in extent, which lies on the other side of Corona, and which we entered on the following day. The exact area of the two runs, according to the stock return, is 740,000 acres. There are 35,000 sheep between two stations, all of which are now on the Poolamacca run, having recently been brought from the other station to lamb. There are also a hundred head apiece of horses and cattle. 20,000 sheep were lost during the drought, and they are now so expensive and difficult to obtain, that a large amount of country must remain unutilised for want of them, and a perfect plethora of food wasted, which might otherwise be turned to very profitable account. The estimated carrying capacity is 10 acres per sheep. There are eight wells on Poolamacca run, all good for stock, but only the horses will drink it. Each well is fitted with a tank and troughing, and gives a supply ranging from 5000 to 50,000 gallons per day from a depth varying from 12 to 300 feet.

The Mundora run, where we camped out on Friday night, is being steadily improved, and it is hoped that it will be a station by itself before long. Twelve wells have been sunk on it, but in only one case was usable water found, the shaft being sunk to a depth of 150 feet. All the others had to be abandoned, either on account of the badness of the water or the impenetrable nature of the rock. It is so difficult to obtain water on this run tnat it has been abandoned three times on this account. There are two large tanks, 15,000 and 17,000 cubic yards respectively, and the Tellawolkee Creek has beeu dammed in two places to increase the supply.

After luncheon at Poolamacca, Mr. Brodribb drove us over to Corona, distant 45 miles from Mount Gipps, where on arrival we were hospitably entertained by Mr. Patterson, the energetic lessee. The Corona station, with its stores and barracks, its smithy and woolshed, all built of most substantial stone, presented more the appearance of a small township than of a squatter's home. Around the porch twined a lovely convolvulus, and in an irrigated garden near by flourished tomatoes, cabbages and beans.

The area of the Corona run is about 2600 square miles (1,500,000 acres), on which there were at the time of our visit about 60,000 sheep, 290 horses and 400 head of cattle. The sum of £50,000 has been expended by the present lessee (Mr. Harvey Patterson) in improvements during the comparatively brief time he has had the holding. Out of fifteen attempts at well sinking, only seven proved successful, and in only one case is the water fit for human consumption. Well sinking here is entirely different to what it is on the plains. There it costs about 5s. per foot to bore through alluvial to a depth of 100 ft., whereas here, a shaft has to be sunk through the rocky soil at a cost averaging about 23s. per foot. The erection of a substantial tank, whim and troughing, when water is found, costs another £500 in addition. Well-sinking through solid rock, indeed, is said to cost about £5 per foot, the station finding the necessary plant. Three out of the eight unsuccessful attempts on this run were made to a depth of 250 feet, through solid rock. What the expense of improving a run must be, under such conditions, the most superficial reader may roughly estimate at a glance. The construction of these wells by the squatters has been a great gain to the public and the Government, as without them it would be impossible to travel stock from Queensland and the Western districts to the Adelaide market along the stock route.

Early on Saturday morning the party left Corona Station, Mr. Patterson driving the Minister and the remainder following by coach. The flies were extremely irritating. They followed the coach in a cloud, and covered our faces and coats like a network of fllmy beads. They are seldom seen in summer, but after heavy rain, when the herbs spring up they come in swarms. The weather had been perfect since we left Sydney, and at no time had it been more beautiful than now. Sometimes we skirted a bush-covered plain, sometimes a barren hill or rocky slope, and sometimes ploughed through the bed of a creek choked up with the red coloured sand. Now we jolted over the bed of a rivulet which had torn its way down the heights during a flood, and left a deep indentation in the sand at right angles in our path. The track was full of ruts, and on one occasion the coach canted over to such an extent that the outside passengers had to jump from the box seat, and thereby probably saved the rest of the passengers from an awkward upset.

On the way we saw any amount of native acacia, among whose yellow flowers and pale green leaves the caterpillars love to hang their massive nests, much to the detriment of the bush, a great deal of which has been destroyed by the ravages of insects bred in their midst. Here and there could be seen pretty reddish blossoms peeping out from the dark green leaves of the native

fuchsia, which was a pleasing variety to the saltbush and mulga scrub thinly scattered about the country. All three are favourite food with sheep, but considering the comparatively heavy character of the recent rainfall the outlook was not very promising owing apparently to the rocky nature of much of the ground. The prevailing character of Corona run indeed appeared to be either rugged, rocky, and rainless, or sultry, sterlie, and steep. On leaving Corona we entered the Mundora Run, the particulars of which have already been given. This was in a far better condition than any of those previously passed, the almost virgin soil having profited by the rainfall, which has been heavier here than on the route already traversed, and which had reached its maximum at Wilcannia, where nearly 11 inches had fallen in two and a half days. The red sand flew in the open windows as we dashed along, and covered us with dust. Parts of the run had never been used by stock. Paddocks waved with grass and herbs of every description. The fairy-like swamp grass, so-called because it flourishes in the track of swamps—varieties of Mitchell grass, named after the celebrated explorer, umbrella grass, which owes its appropriate name to its resemblance to an umbrella—and the fattening blue-grass, on all of which the sheep love to feed, could be seen on every side ; and even clumps of clover that had not been seen for years, if ever seen before, adorned the side of the road. But not a sheep was there to enjoy the effects of the rainfall unprecedented in the memory of white or black, and long before the run can be stocked, a great part of the harvest will pobably have fallen a prey to the summer heat. One of the growths was the poison grass, a diminutive herb with six green heart-shaped leaves, edged with red, springing in opposite pairs from a long pedunclo, and resembling in appearance a half closed mussel. When eaten with other food it is comparatively harmless, but when taken on an empty stomach it acts like strychnine, as Mr. Broadribb found to his cost after last year's drought, when a thousand sheep ate it and died on the spot.

At the end of our 60-mile journey, which Woodfield, a famous jehu in the west, had put us through in less than eight hours, we were met by Mr. Robert Kennedy, lessee of a neighbouring run, and at whose house we were to stay the following night. Everything had been prepared for a regular camp out, as the remaining 30 miles to Wannaminta were so rough that it would have been foolhardy to have attempted it without a rest. After a hearty meal in a structure resembling the hut of an African chief, and which had formerly been used as headquarters by the squatters, the Bishop read prayers round the camp fire, and the party retired to tents provided for them and slept soundly on rugs spread

over clumps of bastard bluebush. By 8 o'clock on Saturday morning we were off again, Mr. Robert Kennedy, senior, driving the Minister and Bishop alternately, and one of his sons driving the remainder in the four-in-hand, The first 14 miles was in Teltawonge block, on the Mundora run, over a rough track, which only a western man would attempt to pull through with a six-in-hand. Not far from our track lay Bercannia Lake, the only lake on Mundora run, which was filled, for the first time since 1864, by the recent flood, and will last for a couple of years.

Since leaving Corona, the hilly country had given way to plains although these were frequently broken by rising ground. One of the natural eminences in the distance was Peak-saddle Hill, a long narrow ridge on the Gnalta Run, where prospectors believe they have discovered payable silver ore, and have pegged out several claims. The lode is said to pass right through the horse paddock and past the squatters' house. The country along our route presented a wonderful contrast to that on the other side of Menindie. It was the change from country suffering from extreme drought to one just recovering itself after a phenomenal fall of rain. Everywhere vegetation was luxuriant, and a crop of cotton bush, the finest food for stock, interspersed with most nourishing grass, such as has already been described, was a sight to see, while the ground was covered with wild melons of enormous size, from which the very best jam is said to be made. But the carcases of dead oxen and horses occasionally scattered along the route told a different tale, and showed through what a season of drought this now luxuriant country had but recently passed. Much of the country was spoiled by the roly poly, which flourished in even in greater luxuriance than the saltbush, but which is utterly valueless for food except when just shooting above the ground. When dry it resembles a light wicker football, and every wind sends it rolling along the ground at a prodigious rate, so that the paddock sometimes looks as if alive. Near the boundary of the Wannaminta we passed Burke's Hole, where that adventurous explorer rested for a while on his journey to the Gulf of Carpentaria. By 1 o'clock we arrived at Wannaminta Station, where we were greeted with a regular pæan from the steam whistle, and where, if possible even more than usual hospitality was lavished upon us. The scenery at this point is somewhat picturesque. Five miles due north rises the Korningbury Range, which extends about 6 miles in length, and rises to the height of 1150 feet. It is the highest range between here and the Gulf. A gum-fringed creek skirted the side of the house, and a small artificial lake lies in front. A great deal of damage had been done by the January floods, which had swept away dams and tanks, and filled wells with sand and silt. Only the strongest dams have been able to

withstand the terrific onslaught of water, which has filled lakes which have been dry for many years. Forty miles due north is Cobham Lake, 8 miles by 2, which has not been full for a lengthy period, but is now 30 feet deep. The sandhills by its sides are covered with beautiful heliotropes, bunches of which adorned the dining-table. Mrs. Kennedy showed us a great variety of grasses which had sprung up since the flood, although no grass had been seen to grow anywhere around during the five years she had been there. The average annual rainfall here is extraordinarily low, only between 6 and 7 inches. At Milparinka, 80 miles north, the rainfall was 6 inches in 1882, five inches in 1883, and only $4\frac{3}{4}$ inches in 1884, while $9\frac{3}{4}$ inches fell in last January in four days, filling Lakes Zantara (14 miles by 6), Cobham, and others. 8 miles from Milparinka is Preservation Creek, where Sturt was hemmed in for six months for want of water, and where Poole, one of his surveyors, was buried. This creek generally pretty full, was dry last year, but is now full, as also is Evelyn Creek, near by, named after Stuart's brother. The drought in these parts is so bad that Mr. Kennedy had to shift his sheep twice on to unoccupied country near the Queensland border, where there is a splendid permanent lake.

Wannaminta run covers 460 square miles, carries 50,000 sheep at present, and can carry one sheep to six acres all the year round. The rainfall this year has been about 13 inches, twice as much as that which fell in the last two years. The run is neither hilly nor sandy, and splendid catches abound, half an inch filling an average tank. Mr. Kennedy has been steadily improving since his term of lease, and several wells and tanks were inspected by the by party.

We left Wannaminta on Sunday morning for the Tarella Station of Mr. Quin, member for the Wentworth electorate, who has accompanied the party all through, and without whom the trip could hardily have come off, as all the preparations were made by him, and the programmee arranged in Sydney, was carried out to the very letter throughout. The distance from Wannaminta to Tarella is 60 miles. A great part of the route was over most picturesque, but deplorably poor, country. The Nuntherungie Run, which covers an area of 377,000 acres, or 508 square miles, is leased by Mr. Edward Kennedy, brother of Mr. Robert Kennedy, the lessee of the adjoining run. The country was taken up 14 years ago by the lessee in the belief that water was easily obtainable ; but eight attempts, averaging 200 feet in depth, through solid rock, conducted with expensive machinery imported from France and Belgium, have only resulted in one well. Thirteen inches of rain have fallen this year, but there is very little stock on the run, as previous to that there was not a drop on the

run, and without water it is impossible to keep the stock alive. Dry creek beds, full of rubble and stones cover the country. but water runs outside, and cannot be retained, on account of the nature of the soil. The extraordinary effects of the January floods were seen. One well had been smashed up, and the troughing carried through a deep gorge in the Lyell Range right out to the plains beyond. The country is table land, without a single natural waterhole in the entire run, which has had to be abandoned several times, and the sheep shifted to Queensland, on account of the absolute want of water. In November they had got to the laet drop on the run when the first shower fell.

The drive over the run, however, was most enjoyable, as the sun descended beneath the horizon, and bathed all things mundane in a dreamy light, we came in sight of Tarella, lovely Tarella, and after a delicious drive over a park-like road, over land dotted with graceful leopard trees and spreading mulga, with delicate light mulga grass all around, we arrived at the substantial homestead of the member for the vast Wentworth electorate, and right glad we all were. It being a Sunday, the Bishop of Riverina celebrated the event by holding a service in the dining room, at which we all attended, but I am afraid the bracing air of the country we had passed through, and which had made most of us extremely tired, prevented us from profiting as much by the discourse as perhaps we ought. One thing, however, I could not help noticing, notwithstanding my rather exhausted condition, and that was that the Bishop's new Silverton assistant (the Rev. Mr. Le Barte) read the prayers in a wonderfully expressive manner, such as one very seldom hears now-a-days, but which when one does hear one seldom forgets.

The next day we had a complete day's rest at Tarella, so as to lay in a store of fresh energy after the fatigue of the past three weeks for the banquetting and deputations which were to follow at Wilcannia. Tarella station, leased by Mr. Quin, the member for Wentworth electorate, in conjunction with Messrs. Currie and Co., covers an area of 665,000 acres, or over a thousand square miles. It is composed of salt and cotton bush plains, dotted with elegant leopard trees—so named from the leopard-like spots on their slender trunks—and clumps of spreading mulga, valuable both for timber and for feed, with occasional ridges covered with stones and scattered patches of beefwood tree, so named from the resemblance of the grain of the timber to raw beef, pine trees and balai. The homestead where the party were entertained is an oblong block of stone buildings, the material for which was obtained from a quarry on the run. A fine woolshed is situated near at hand, in which about 4000 sheep could be shorn in a day. There are about 52,000 sheep on the run at present, the actual

carrying capacity being estimated at from seven to eight acres per sheep. Tarella is famous for its draught horses, of which there are 350 altogether, the draughts in the paddock presenting a fine appearance. There are also 365 head of cattle; this large number being required for working and other purposes. More horses and cattle are used on Tarella and Wannaminta runs than on any other in this part of the western division, the number on Mr. Robert Kennedy's Wannaminta station being over 300 horses and about 500 head of cattle. The average rainfall since 1873 has been ten inches; the amount of the present year reaching the unprecedented figure of 13·19 inches. The effect of the January floods may be seen on every hand in the luxuriant growth of the vegetation, and in the injury done to the wells, tanks, and dams. One well near the homestead had been sunk to a depth of 280 feet, and fresh water rising 60 feet had been obtained, when the floods came and filled it up with silt, necessitating the doing of the work all over again. A tract of land one mile and a-half wide was covered with water several feet deep, which ploughed its way along, tearing up the surface, distributing it over the adjoining plains, and leaving nothing but the bare stones in its track. The rainfall, generally, is very erratic, and a comparative study of the rainfall—which has been kept with extreme exactness since 1872, when Mr. Quin took the station—shows how little it is to be depended upon. In December and June the rainfall is always bad, and only on two occasions since 1876 has over an inch fallen at one time in the months named. From June, 1881, to May, 1882, there was not two inches of a fall altogether, while the April showers have been in such small quantities as to be practically useless for storage purposes. Great difficulty was found in keeping the stock alive during the drought, the cotton bush being cut up into chaff for the horses, and the mulga trees were cut down for the sheep. That the soil is good is evident from the luxuriance of the vegetation after a good fall of rain, as since the late flood a whole plantation of gum saplings has sprung up by the side of a creek where none grew before. Wild spinach and native fuchsias, wild oranges as bitter as gall, and the dark-green water-bush, whose pretty white blossoms mark the course of some winding creek, may be occasionally seen on the plains, while another feature of the vegetation is the turpentine bush, remarkable for its irritating properties. Emu bush, good for cattle, and "roly-poly," good for nothing, also cumber the ground, and take up the place of more profitable growth. In the irrigated garden, which the inevitable Chinamen carefully tends, figs and oranges and all sorts of vegetables grow in abundance. There are plenty of good water catches on the run, and the improvements comprise five comparatively fresh

water wells and 27 tanks, besides dams to the creeks, of which there are large numbers on the run. Sandstone abounds on Tarella, and consequently well-sinking and tank-making have been found much less difficult than on the runs previously described. Four unsuccessful attempts have been made to sink wells, the want of success being due to the insufficiency of supply of any kind, and not to too great a supply of salt water, as has been hitherto the case. One shaft was sunk to a depth of 485 feet through hard rock, the yield being very small; another to 270 feet through hard blue slate, a supply being then obtained for 10,000 sheep; and the remainder have been sunk through white sandstone or conglomerate, these being comparatively shallow. In one case a shaft was sunk to a depth of 300 feet, when the attempt was abandoned, owing to an insufficient supply. An increased supply was generally obtained by driving, and in one case a drive was put in to a distance of 150 feet. The tank excavations range from 10,000 to 20,000 cubic yards, the catches being generally very good. Where a large tank has to be excavated over six miles from water supply, a small tank of 1000 cubic yards is located, which is first used as the basis of operations, and ultimately as a feeder to the larger one, catching the silt, and preventing it from blocking up the main channel. The tanks are generally fenced in on three sides, and provided on the fourth side with movable hurdles placed one or two feet from the water, so as to allow the sheep to drink without puddling and wasting the water, and spoiling their fleeces by swimming about in the tank. This method also saves the expense of troughing and pumping out, and being apparently equally effective. One of the difficulties with which the squatters here have to contend is in getting their wool to market. The Tarella wool generally goes to Melbourne, and occasionally to Adelaide when the Darling is too low for traffic. The Wannaminta and Nuntheringie wool, on the other hand, generally goes to Adelaide; but in any case the cost of freight reduces the profits considerably.

The party left Tarella on Tuesday morning, and after passing the Tarella boundary, entered the Mena Murtie run, leased by Mr. Harvey Paterson, whose Corona property has been previously deseribed. On the way the party passed what is generally known as the Dry Lake. A public-house was built in the lake bed, the roof of which is just visible above the water, as the lake was filled for the first time by the recent flood, and the occupants of the hotel narrowly escaped with their lives. They have since built another public-house by the side of the lake, where the business is now carried on. The publican's name is G. T. Smith, and he has a selection of 2560 acres on the Mena Murtie Run. The area of the latter is 427,000 acres, on which were depastured 47,000

sheep, 280 horses, and 80 head of cattle. The selector has been over ten years on the run, and has spent £1000 in obtaining water. At last the water came, and the selector was nearly drowned. His tanks and his fruit trees are all covered by the flood. He has 250 sheep, and though only 17 miles from the largest township on the Darling, and with far greater advantages than the selectors in the back country, he has a hard struggle to make both ends meet. The country from Tarella to Wilcannia was looking wonderfully well after the January floods.

CHAPTER XII.

ARRIVAL AT WILCANNIA.

The party was received with open arms on arriving at Wilcannia. Never, probably had such an equestrian display been seen on the Darling as greeted our eyes on the day of our arrival. We were met seven miles out of town by the leading residents and escorted to the hotel by a large number of carriages—principally four-in,hands—and riders among whom were several ladies, the procession extending to a tremendous length. On reaching the hotel an address of welcome was presented to Mr. Abbott, who acknowledged the compliment from the balcony amid cheers. Among those who helped to drive and accompanied the party into town were Mr. Robert Kennedy, sen., of Wannaminta, Mr. Robert Kennedy, junior, and Mr. Edward Kennedy, of Nuntherungie, Mr. Davies, manager of Mena Murtee, and Mr. Boultbee, manager of Tarella, besides a host of others.

The fine little township of Wilcannia—at once the largest. busiest, and most substantial-looking of any on the Darling—is situated on the western bank of the river, on one of the largest pastoral holdings—if not the very largest—in the colony, that of Mount Murchison and Momba, which covers an area of two million acres, and has had expended on it in improvements considerably over £100,000. It is generally known as the Mount Station, It is leased by the Momba Pastorai Company, and maintains, or did maintain, at the time of our visit, 808,000 sheep, 100 horses, and half that number of cattle. Like almost all Western towns, Wilcannia has fine broad streets planted with different varieties of trees, which it is hoped will afford a pleasant shade from the summer sun, and a fine large common, but the splendid Government edifices—including the gaol—which adorn

each side of the main thoroughfare give it an exceptionally handsome appearance. Wilcannia also boasts a very neat hospital, about half a mile from the centre of the town, of which it has every reason to be proud. The buildings, &c., cost about £5000, and the money seems to have been wisely expended. The latest addition to it is a large airy room for convalescents, who can at pleasure gaze on the river in front, or at the common, which extends on each side. In the neighbourhood of the town is a quarry, from which good building stone is obtained, used in most of the Government and other edifices. The fierce heat of summer is apparently very conducive to thirst, and two large breweries in the vicinity show that the wants of the residents have not been altogether neglected in this particular. At present Wilcannia is suffering from eye-sores. There are three varieties of this disease, which is epidemical in character. One variety attacks the children, the combined effect of beat, sand, and flies—the last named appearing in countless swarms after the heavy rains—having affected a large number of the little ones, and even children of larger growth were admitted to the hospital suffering from the same disease. Another variety of the epidemic—to which the Mayor has fallen a victim—is produced by the telegraph poles, which are considered so unsightly by some of the residents that they were on the point of petitioning the Minister to have them removed and more artistic ones substitued in their place. At the last moment the Mayor was induced to omit this from his list of wants, he is still suffering from eyesore on that account, and it is not thought likely that he will recover for some time. The third and most malignant variety of the disease is attributed to the gaol, a very handsome stone edifice, placed in the centre of the town, but which has so affected the artistic sensibilities of property-owners in the immediate neighbourhood that the majority of them are laid up with eyesore on that account. The attention of the Minister was also called to this, but the answer the deputation received was hardly calculated to produce any amelioration of their sufferings. However, notwithstanding an occasional epidemic of this kind Wilcannia seems to be very healthy, as it apparently is a very jovial place to live in. The principal want of Wilcannia at present is a railway, and the residents are anxiously looking forward to the time—some four or five years ahead—when there will be a direct communication with the metropolis, and the prosperity of the town and district will be for ever assured. Just now the easiest way to get to Sydney seems to be via Bourke, distant about 220 miles by coach, as it is certainly the most picturesque, including as it does a sight of the far-famed Blue Mountains and the Zigzag pass.

On the morning after our arrival Mr. Abbott availed him-

self of the opportunity afforded by the public presentation to him of an address of welcome by the Mayor of Wilcannia (Mr. Walterus Brown), at the Crown Assembly Rooms, to give an interesting review of his tour from Hay to Wilcannia, and to dilate on the experience he had gained as to the working of the Rabbit Act, and to the probable effect of the recent land legislation on the Western division of the colony. There was a numerous audience present, including the Bishop of Riverina, who has accompanied the Minister from Hay, and the leading residents of Wilcannia. The Mayor having formally read the address,

Mr. Abbott in thanking them for their kind reception, said his object in leaving Sydney on the present tour had been of a threefold character. First, he desired to let the people know that the Government were not unmindful of their duty to all parts of the colony, however remote or scattered they might be; secondly, he desired to see for himself to what extent the rabbit pest really existed in the colony, and what had been the effect of the legislative enactments that had been adopted to minimise the evil; and thirdly, he was anxious to see the character of the country known as the Western division. He had travelled 1430 miles since the 1st of May, and he thought his visits to the various towns in that part of the colony, enabling him to ascertain for himself their real necessities and requirements, would be more conducive to a remedying of those wants than any amount of official reports that the Government might receive. Referring to the rabbit question, the Minister observed that it was one of the most difficult problems with which the Government had to deal. It was one little understood throughout the colony, except by those having practical experience in the infested districts. The late Government had attempted to legislate against the evil, and had entrusted the administration of the law to stock and pasture boards; but experience proved that these boards were unable to cope with the difficulties. While some boards had been diligent, others had been apathetic and indifferent, the work of diligent boards being rendered abortive, and the expenditure useless, by the indifference of others. The attention of the late and the present Government had been called to the necessity for stringent legislation by Mr. Quin and other members having a knowledge of the great danger of leaving rabbits to occupy land. Under these circumstances he had felt it his duty to enter heartily and, he trusted, energetically into the question before framing a measure dealing with this terrible evil. He ascertained what the other colonies where rabbits were becoming a nuisance were doing. He had availed himself largely of the experience gained by other colonies. The Bill he presented was of a most stringent character, which gave to the Minister most arbitrary powers. He

was glad to say that with very little hesitation Parliament approved of the Bill. In the administration of the Act he had endeavoured to frame regulations which would be of a beneficial character to the country and not press too hard upon unfortunate owners. The system at first adopted by the Department for carrying out the provisions of the Act did not prove so effective as was desirable, and it was far more costly than anticipated. Profiting by the experience of others, he had endeavoured to frame regulations which would be more effective and less costly, and he was convinced that the new regulations worked better, and that far better work had been done, and would be done, under the bonus compared with wages system. After travelling through the rabbit districts he was fully convinced the owners had gone heartily Into the matter, and that they realised fully the danger of allowing rabbits to increase. He regretted to find that some people even looked upon the rabbit pest as a blessing, and many storekeepers had told him that but for the rabbit expenditure during the late droughts, the towns in which they carried on business would have collapsed. Doubtless the rabbit was one of many blessings which we had received from Victoria; but both in that colony and South Australia, rabbit legislation was of such a loose character that it must utterly fail to accomplish the ends intended. We were constantly being told by Victoria that the Government of that colony were fast getting rid of rabbits, and that good work was being done by those charged with the administration of the law; but they had only to pass along the southern boundary of Victoria on the Murray, and they would find the rabbits there so thick and so little molested that the whole colony would be infested within a distance of 20 miles from the Murray. He had recently tried to persuade the Governments of the other colonies to join in offering a large reward for the inventions of any means by which rabbits might be universally destroyed; but the other colonies did not appear fully to realise the evil consequences arising from the settlement of rabbits, and had not given that hearty response to his invitation which he had anticipated. The Queensland Government once sent an officer to inspect our rabbit-infested districts, and had reported in such a manner that the Queensland Government felt sure the colony stood in danger from the pest. During his present trip he had been assured the rabbits had now passed up the Paroo, and were within the boundaries of Queensland. He would like to warn the other colonies, and he warned the people of this colony, that no greater, more costly, or more terrible scourge had ever fallen upon Australia than the rabbit pest. It would be for ever a source of danger and continuous expense to the colonies unless some effective means were discovered for the extermination

of the pest. Mr. Abbott next referred to the experience gained during his tour in the pastoral districts ; such a tour as no other Minister or Member of Parliament in this and, he was informed, in any other colony had accomplished. Since he left Hay he had travelled through all sorts of pastoral lands, and he confessed he was more than disappointed at the character of the country he had seen. For many years he had had opportuuities of seeing the pastoral lands in the North. In travelling from Hay to Balranald in March he took the northern side of the river for the whole journey. In the present tour he travelled over part of the northern and part of the southern side. The lands passed through to Balranald were utterly destitute of pasture upon which stock could live. The bulk of the lands were poor in character, and not for one moment to be compared to the pasture lands of the Liverpool Plains and New England. He was reputed to have said that the lands between the Murrumbidgee and Murray were of a worthless character. He had never made any such statement, because he had not had an opportunity of seeing those lands. The bulk of the pastoral lands on the northern side of the Murrumbidgee to Balranald were of such a character as to be utterly unfit for pastoral purposes, except when held in large areas. After leaving Balranald he entered what was known as the "Mallee scrub," poor worthless land, the mallee seeming to take absolute possession of the soil. Even when large sums had been spent in obtaining water, this land was only capable of carrying a very small number of sheep. He could not better illustrate the character of these mallee lands than by stating that the poor worthless scrub lands around Botany and Randwick in their natural state would be more capable of depasturing stock than these mallee lands. Those acquainted with the character of the land from Botany along the coast to the lighthouse would fully realise what he meant when he said that those lands were, if anything, superior to that occupied by the mallee. For 60 miles, from Balranald to Euston, the way lay continuously through this mallee scrub or rolling sand-hills. After leaving Euston, and travelling down the Murray towards Wentworth, the mallee did not appear to be so thick, and at the present time the country was suffering from the effects of the most disastrous drought, so that it would be hardly fair to judge that country by its present appearance. He felt convinced, however, that it could only be profitably occupied by the expenditure of large sums of money. After leaving Wentworth he had travelled up the Darling as far as Menindie, having, at one point, near Pooncarie, left that river and gone east for 40 miles, camping out ; then north and then south, spending two days on the journey, and the whole of the time passing through worthless

mallee country, densely interspersed with spinifex, the country being apparently of the most hopeless character. He occasionally saw during his journey of 100 miles small patches of saltbush, a single patch, even if provided with water, being capable of depasturing 100 sheep in the year. He could not realise, nor would his colleagues realise, nor would the public credit that there was so much useless land in the colony as that which they possessed in these mallee scrubs. The soil in these scrubs was of a light loam, which was blown about and produced the sand-storms of the Darling, which could not be realised without having been experienced. All creation seemed to abhor the mallee scrub except his friends the rabbits. They alone seemed to look to them for shelter, and there they could defy the trapper. These scrubs would always be a source of danger to those who were trying to rid themselves of the rabbits. On arriving at Menindie he was thankful to see the last of this inhospitable region, although he was informed it extended still further north. Leaving Menindie, he went to Silverton, a distance of 85 miles, through country of a better character, but without a single water-hole of any permanence upon it. This characteristic, indeed, would apply more or less to the whole of the country west of the Darling, right out to the South Australian border. This of itself would be regarded as a small matter if lessees were sure that on sinking wells they would get fresh water; but on inquiry he found that in not one well in a dozen had water proved to be of any value. When tanks were excavated years might elapse before sufficient rain fell to fill them. The creeks and gullies in this part of the country were unlike any he had seen in any other part of the colony. The country was so flat that these creeks, having little fall, always silted up, and the course of the creek was only known by seeing a few trees growing along it, whilst the bed from bank to bank might be identified by the gravel which it contained, which in nearly every case filled level with the bank. Although these creeks flowed out over the adjacent lands sometimes for miles yet it took them but a few hours to become absolutely dry, as they retained no water. It might be imagined that these creeks formed excellent places of catchment for dams, and many of the lessees had endeavoured so to utilise them, but the rains either silted up, or a fresh course was cut round them. On some runs where these creeks had been dammed previous to January last there was less water in them after the heavy rainfall of that month than before, as the dams had been swept away by the torrents which flowed down these apparently dry creeks. When he stated that all the timber that was required for building purposes or for slabbing up wells had to be brought either from Victoria or from South Australia, they

could readily realise the enormous sums of money required to improve these dry western blocks. On many of the runs nothing but salt water had been obtained from sinking wells. Tanks had been attempted, and at a depth of 10 or 12 feet rock had been struck. They would readily understand that tanks so shallow, constructed in country of this character, would not be so lasting or so beneficial as if made deeper, as in shallow tanks evaporation would be comparatively rapid. To his mind the energy and determination of the settlers on the runs through which he had passed evinced an amount of faith which was incredible. Why men with common sense ever attempted to reclaim such country, and to make it carry stock, was one of those mysteries which no man could readily understand. The cost of the improvements on some of the runs, if expended in the purchase of freehold estate in the north, would have yielded an ample competence for any persons who were satisfied with a moderate income. Recently he witnessed on the Lower Darling attempts at irrigation on its banks. Although large sums had been spent, little up to the present time had been accomplished, and it appeared to him that owing to the alkaloids and salt in the soil, little could be done to grow fodder which was not usually produced in soil of the character. At the Gunnible station, near Gunnedah, he recently saw irrigation carried on on a small scale by Mr. Wills Allen ; but if half-a-dozen people were to do on the river Namoi the pumping which was done at Gunnible there would be no water left in that river, and he was quite sure that if a dozen steam engines of 40-horse power were placed on the Darling when it was at its summer level, pumping water at the rate of 2500 gallons a minute, as Mr. Wills Allen did with his engine, they would pump the Darling dry in a week. He considered it utter nonsense, therefere, to talk of carrying on irrigation to any extent in these western districts. He saw it recently stated in a Sydney paper that there was not a great pastoral district in the colony but had within its area or accessible to its boundaries large fertile areas as easy of irrigation as those lands near Gunnedah. Now, by anyone who was acquainted with the pastoral districts in this colony that statement would be regarded as of a most reckless and untrustworthy character. There were millions and millions of acres of land within broad pastoral districts that had neither within themselves nor accessible to their boundaries, fertile areas, capable of irrigation. Mr. Abbott next passed on to speak on the Land Act. As they were all aware, the present Government had been called to power for the purpose of framing a Land Bill. By dint of perseverance and determination they had succeeded in carrying through Parliament a measure which he predicted would prove itself to be of the utmost advantage to all classes in the

community. Unlike the one which it replaced, the present Bill recognised the physical distinctions of the colony, which was, therefore divided into three parts, each of which was dealt with in a different way. The land in the dry western districts was dealt with purely by leasing; and, although that district would require great care and great consideration, he had every reason to believe that the administration of the law with regard to it would be of a beneficial and satisfactory character. No Government would dare to administer the law so as to crush out those who had spent their energy and money in attempting to develop what, without that energy and without that money, would be a barren waste. The Bill would enable the Government to make those who occupied the lands pay a fair return for that occupation. The country for a long time had demanded this, and the country required no more. The justice of this the lessees themselves would be the first to recognise. In the past the lands had undoubtedly been held at too low rentals, but in the future he had little doubt fair rentals would be demanded and obtained for these lands. It was proposed to make these rentals in proportion to the value of the lands to those by whom they were occupied. He had seen enough to satisfy him that the rental to be assessed on this country must be carefully considered, so as to prevent even the most worthless country, that covered by mallee, from being thrown up. It would be of no advantage to the country to have any of the Crown lands lying waste. The Act which regulated the alienation and occupation of the waste lands of the colony was introduced by the Government after the most careful consideration, and it was passed into law by Parliament after a discussion of unprecedented duration. Should the measure fail in accomplishing the ends aimed at by the Government and by Parliament, neither could be charged with a want of care or attention to the provisions of the Act. Of course there were some who denounced the Act in unmeasured terms, and none more vehemently than Sir Henry Parkes, who, however, was on an European tour during the whole of the period that the provisions of the important measure were under discussion. Being entertained at a banquet in Sydney, Sir Henry Parkes denounced the bill as one which did not contain a single principle. Fixity of tenure to the pastoral tenant was nevertheless one principle at all events contained in the bill, which Sir Henry Parkes had advocated when not in office, but which he did not dare propound when Premier, although his (Sir H. Parkes') Government introduced a new Land Bill, upon which, happily for the colony, they were defeated. Many other principles were in the present Act which, in some form or other, Sir Henry Parkes approved of before he was asso-

ciated with Sir John Robertson. He mentioned Sir H. Parkes's name because of his prominent position, and because, from his long public career, people were apt to regard him as an authority, His condemnation of the present Act could not be regarded as of any value, since he had condemned every law that had been either proposed or passed in reference to our Crown lands, and since, moreover, during his long public career he had taken no steps to remedy the defects in the late land law, which he had been only too willing to point out before he was associated with Sir John Robertson as a Minister. No man in public life more strongly at various times denounced the land policy of Sir John Robertson, and yet Sir John Robertson telegraphed to the electors of Argyle that Sir H. Parkes was " sound on the land question." If Sir H. Parkes was sound now, according to Sir John Robertson, his opinions must have undergone a speedy and most remarkable change, for he undoubtedly advocated security of tenure to the pastoralists, and denounced the provision of Sir John Robertson's land laws as being " founded on vicious principles." He thought they would agree with him that the stoppage of auction sales by the present Act was a new principle, and not a bad one. The present Government had practically put a stop to auction sales, and they had given to all leaseholders, whether pastoral tenants or selectors, security of tenure for their land, and reliable titles to conditional purchasers. It did appear to him that these were new principles, and such as Sir H. Parkes advocated himself in 1877, when he condemned Sir John Robertson's land laws. The present Government had even gone further, and so far as practicable had given local administration for the carrying out of these laws. As a result of the liberal and careful administration of that measure, he hoped that the revenue of the colony would be largely increased, whilst the expenditure in connection with the administration of that law, though heavy at first, must ultimately be largely reduced. With regard to railways, Mr. Abbott reminded them that the present Government had proposed a large scheme which would have the effect of opening up the dry interior of the colony to the productions of the more favoured districts, and would allow an interchange of commodities which, must be alike favorable to each district, and to the colony at large. It had always been his opinion that Wilcannia should be connected with the metropolis by railway. Through the advocacy of their member, Mr. Quin, surveys had been made for a railway to Wilcannia, and he was informed by his colleague, Mr. Wright, that the plans were in such a forward state, that he hoped in the next session to be able to obtain the approval of Parliament to them. When this was obtained, the working plans would be got ready, and he understood the railway could be constructed within four years

after tenders were accepted. He would do all in his power to have the great national work pushed on to a speedy conclusion. After briefly referring to the Soudan, Mr. Abbott concluded by expressing sincere thanks for the cordial reception he had met with, not only in Wilcannia, but in the various districts through which he had passed, and by hoping that his visit would be of a lasting benefit to them as it would be of advantage to himself. He resumed his seat amid loud and continued cheering.

An extra round of cheers were given for the New South Wales Contingent, the Minister's defence of the Government policy in despatching the troops meeting with particular approbation.

Among those who also addressed the meeting was Mr. Quin, who responded at some length to the call for a speech, and gave details of the working of the past and present Land Acts, and showed how far superior the latter was to any which preceded it. It nevertheless required some very important amendments before it would satisfy the lessees in the Western division, where land was not of sufficient value to stand the present high rental. He knew many squatters in the dry country who would only be too glad to get rid of their leases at a sacrifice, and lose much of the money which they had spent in improving the value of the land if they only had the chance. He was sure, too, that if the Government enforced the obnoxious clauses in the Act with regard to rental and reversion of improvements the same result would follow here as had followed in Victoria, and millions of acres would be thrown up. The comparatively worthlessness of the land in the Western division for cultivation purposes was shown by the fact that only 3,000,000 out of 83,000,000 acres had been alienated, and from this alone might be inferred the absurdity of attempting to extort a heavy rent. In referring to the Local Government Bill, which he understood was nearly ready for presentation before Parliament, Mr. Quin suggested that it should at any rate be tabled next session, so that the members could go to the country on the bill. If the funds raised in the towns were spent by the residents it would be the means of making members more independent in their relations to the members of the Government.

In proposing a vote of thanks to Mr. Abbott, the Mayor (Mr. W. Brown), stated that there was uninsured property worth £150,000 in the town, the insurance companies not caring to accept risks while there was no water supply.

In the afternoon the party were driven round the town and shown the hospital, waterworks, quarries, racecourse, cemetery, punt, wharf, reserve, and public buildings.

BANQUET.

A banquet was tendered to the Minister in the evening, at O'Leary's Hotel, at which the Mayor (Mr. Walterus Brown), presided, and Messrs. David Brown, of Kallara, and E. B. L. Dickens (son af the famous Charles Dickens), acted as vice-presidents. There were about 100 people present. In response to the toast of " The Ministry," proposed by the Chairman,

Mr. Abbott said that the cordial manner in which the toast had been received was encouraging to himself, and he was sure would be to the Ministry, of which he was a member. The chairman had been good enough to commend him for the trouble which he had taken to make himself acquainted with this part of the country ; but he did not think a man deserved praise for doing his duty, and he certainly considered that he was no more than doing his duty in visiting this part of the colony in order to understand its necessities and realise its wants. It had been said that his journey was a fatiguing one ; but through the kindness and courtesy of the people, who had shown him the greatest hospitality on the way, the trip had been a most delightful one, and he should never forget it so long as he lived. He had seen some of the finest driving it was possible to witness, and altogether he had enjoyed himself thoroughly. His example must be followed by those who came after him, as future Ministers would be compelled to come out and see for themselves what sort of country they were temporarily called upon to govern. All the tales that were told about this district were of little value to a man compared to what he might see for himself. Since the Ministry had been in office they had endeavoured to do their duty. They had doubtless made many mistakes, and probably would continue to do so ; but they aimed at performing as well as they were able, the important duties entrusted to them. Through the kindness of the Mayor he had been able to address all classes in the community that morning, and he hoped that in the future other Ministers would adopt a similar procedure, and speak to the public freely instead of only to a limited few. He thought it only right in a country which possessed the manhood suffrage, where the humblest citizen could exercise the franchise equally with the richest, that they should all have the same opportunity of hearing a Minister of the Crown give expression to his political views, and he had seized the opportunity afforded him at the reception that morning to give a *resumé* of his experience on his tour, and to let the people of the colony know what sort of country he had passed through. By the general surroundings of a town one could read up and understand the kind of people who ruled and governed, and by the character of the public improvements one could gauge the energy of the

people in it. He was glad to see that they had done so much during the short time they had been a municipality. It was gratifying to him to know that there were people in the town who took such a warm interst in its improvement, and who did all they could to advance the interests of the town. It was a remarkable thing that they had living in the town the sons of two of our most distingushed Englishmen—Anthony Trollope and Charles Dickens. (Cheers.) It was an honour that had not been conferred upon any other town in New South Wales or any of the Australian colonies, and it was a circumstance of which they might be proud. He hoped that those gentlemen would make their mark in whatever position it might please God to call them. It was very gratifying to him as a Minister of the Crown to find that the officers placed by the Government in this distant part of the colony were of such high character. They constantly heard the Civil servants reproached, and so far as the officers in his department were concerned, he made a point of instantly dismissing such as proved themselves unworthy of the positions they held. It was very gratifying to him, then, to know that they had in the Wilcannia district such men as Messrs. Hanna and Burns, as well as a few rabbit inspectors, of whom he was not ashamed. He was always glad to bear testimony when the Civil servants were men of probity and intelligence, and were he at the head of Mr. Hanna's department, he would not have the slightest hesitation in allowing him to superintend the construction of the waterworks in this town. He hoped the day was not far distant when there would be a railway to Wilcannia. In the Cabinet and in Parliament he had always advocated the connection of the Western line with Wilcannia. Others had suggested the point of connection to be higher up or lower down. Some had proposed Pooncarie, but the Government had always resisted such a course, and he thought the Government were right. Wilcannia was in a different position to almost every other town in the colony. They were not brought into easy contact with the metropolis of their own or of any other colony. He was informed that goods ordered more than two years ago were still in the river between here and Bourke, and it would be difficult to say when they would be delivered. The business people of Sydney would doubtless reap the benefit when the railway connection was made. Wilcannia, too, would reap the benefit of being connected with the metropolis; and he hoped that their progress and prosperity in the future would be even greater than it had been in the past. One of the great features of the Land Bill—which he had omitted to notice in his speech that morning—was the local administration of the Land Act by land boards. By this means they have tried to get rid of delays of the old law.

They had endeavoured to select officers of high character and of high standing—men of intelligence—and in not one instance had a member been appointed to his position on account of any political power he might have. (Cheers.) It was the intention of the Government, before the next general election, to divide the electorates, so as to separate the mining from the pastoral interests, which naturally clashed, but neither of which ought to be allowed to swamp the other. Mr. Abbott concluded with a eulogy on the member for the district, Mr. Quin, and also on Dr. Linton, the bishop of the diocese. It was to the interest of the district, he said, to get men of influence, men of high character and fair education, such as was Mr. Quin, to represent them, and it was to the interest of the Church to find men of high culture and intellect as was Dr. Linton, to sever their connection with the old country and perform the duties of their calling in these distant lands. (Applause.)

The other toasts were "The Parliament of New South Wales," proposed by Mr. E. W. Barnes, and responded to by Mr. Quin, M.L.A.; "The Clergy," by Mr. Trollope and responded to by Dr. Linton; "Our Member," proposed by Mr. J. Haydon, and responded to by Mr. Quin; "Prosperity to the Town and District," proposed by the Hon. J. P. Abbott, and acknowledged by Mr. David Brown for the pastoral, and Mr. W. H. Wright for the commercial interests; "The Visitors," proposed by Mr. J. Isaac, and respond to by Mr. J. P. Abbott; "The Municipality of Wilcannia,' proposed by Mr. H. C. Armstrong and acknowledged by the Mayor, &c., &c.

On Thursday afternoon, the Minister attended a banquet given at Mount Murchison Hotel in his honour by the members of the Moorabin Lodge of Freemasons. Amongst those present were the Mayor, the Bishop of Riverina, and about 50 others. After the banquet, a procession was formed, consisting of the Oddfellows, Druids, and Masons. Arriving at the site of the proposed new Public school, the procession halted, and the Minister laid the foundation-stone of the new building. After formally laying the stone the Minister delivered a brief address on educational matters. He upheld the system at present prevalent in this colony as perhaps the best that could be devised under the circumstances. It had ever been his opinion that the State had no right to favour one denomination any more than another, the duty of the Government being fulfilled in giving all encouragement in its power to the practice of morality and religion. In this colony parents could send their children to school without fear of their imbibing the dogmas of any theological school. He was in favour of the Bible being read in schools to a certain extent, the reading of

selected portions generally having an elevating influence on the minds of the young. He believed that the secular system of education was the popular one, and he hoped that no agitation would be got up to introduce any other. In the neighbouring colonies of South Australia and Victoria, Bible reading was prohibited in Public schools ; but in this colony clergymen could give religious instruction after hours to those children whose parents desired it. Over £774,357 had been spent for educational purposes, and 197 new schools had been opened by the Government, during the past year. As showing the effect of recent legislation, he stated that since 1882, when Government aid had been withdrawn from denominational schools, the State schools had increased by 404. The expenditure might appear high for a population of less than a million, but he considered it a far wiser policy to spend money on schools than on gaols and hospitals. He defended the system of charging school fees as it brought in revenue amounting in the past year to over £56,766, and did away with the objection parents had of having it cast in their teeth that their children were being educated at a pauper's school.

There were about 300 people present at the ceremony. In the evening a public tea meeting and concert were held in the Court-house in honour of the Bishop of Riverina, the Mayor being in the chair. The proceeds of the entertainment, amounting to £36 15s., were devoted to the church fencing fund.

DEPUTATIONS.

On Thursday morning Mr. Abbott was waited upon by a deputation from the Municipal Council. The Mayor, Mr. W. Brown, went through a long list of wants, the first of importance being that of water supply. The Mayor pointed out that three years ago, when the town was first incorporated as a municipality, they asked the Government for money for a water supply. None was then available, and they accordingly borrowed £4000 and started the work themselves ; but the money had been found inadequate to complete the work, and they asked the Government for pecuniary assistance. Mr. Abbott said that the municipality had placed itself in a very awkward position by undertaking the work themselves, the Government not being able, as it stood, to recoup them for the money expended. A similar case had

occurred at Hay, and the Government were inclined to bring in a special Bill to enable them to get over the difficulty. As soon as it was made legal he promised that the Government would do as much for Wilcannia as it could do for Hay. Meanwhile, he advised the municipality to go on with the work, trusting the Goverment to assist them as soon as they legally could.

The Mayor asked that the Government should hand over the lease of the punt to the municipality at the end of the year, when the present lease expired. At present the punt was in private hands, and the Government had hitherto declined to hand it over to the municipality, as the lessee would have to be compensated. Mr. Abbott promised to ask the Works Department to take over the property, and at all events not to grant a new lease to private persons, and if necessary to provide a better punt. The Mayor stated they had no Government wharf, and the only jetty was a private one. A large number of the stations on the river would ship their goods and wool here to go by train, but at present they had no wharfage conveniences for them. It was stated that a sum of £12,000 had been formerly placed on the Estimates for a wharf, but somehow or other the vote had been allowed to lapse. Mr. Abbott promised to grant the request. The deputation also asked for the removal of the gaol from the centre of the town, but Mr. Abbott characterised the request as absurd and trivial, and said that Sydney, Bathurst, Goulburn, and Darlinghurst had gaols similarly located. The fewer country gaols the better for the discipline of the prisoners, and the less costly it would be to the State. A large staff of officers had to be maintained, and when gaols were scattered all over the colony, the prisoners were too frequently left in a state of idleness for want of work. They had only short sentence men in Wilcannia, as the long-sentence prisoners were removed elsewhere, so that the number of prisoners here was very small. Power was given under a recent Act of Parliament to have these men employed about the town, and they should avail themselves of its provisions.

The Mayor stated that the Customs revenue was the largest of any inland town, and greater perhaps than that of any other town outside of Sydney and Newcastle. Now that the convention with Adelaide was done away with, an annual revenue of £20,000 was anticipated. It was already £14,000, and in two favourable years it had reached £17,000. The Customs officer had only a little room on the river bank. The Customs receipts for the quarter ending March 31 were £4069, making a total np of £6778. Mr. Abbott said that the request was not unreasonable. He had made arrangements to lease offices for the rabbit and stock inspectors ; a land and survey office was being rented, and the premises were quite equal to the requirements.

The Mayor said that an application for the erection of a bridge had been made four years ago, when the Government replied that as a bridge would be required both for the ordinary traffic and the railway, it would not be proceeded with till it was known what course the railway would take, and as it had been nearly decided where the railway would cross the river, they asked the Government to take immediate steps to construct the bridge. Mr. Abbott said that the designs for the bridge would be asked for, and tenders invited as soon as the railway plans were approved of.

In reference to a request to have some channelling done in the street, and to have the courthouse repaired, Mr. Abbott promised to recommend the former, as the street passed through a portion of the town, and he would also favourably recommend that the courthouse should be repaired.

The Mayor asked that thé common might be vested in the municipality. He said that the common was very good, but that it was perfectly useless at present owing to imperfect legislation. Mr. Abbott repeated what he had said at Wentworth as to his intention to introduce a bill dealing with the question in the way desired. The Mayor said that an area of 12 acres had been reserved for railway purposes, but he understood that the land would not be required. It was suitable for a park, and an application had been made to the Government for it, and for a grant to improve it. Mr. Abbott promised to recommend both. The Minister also promised to recommend the fencing-in of the public buildings, and to see Mr. Fosbery about the stock routes.

The Mayor asked that a school board might be appointed for the district. Mr. Abbott said that district school boards were frequently useless owing to the large area over which they extended, and the Attorney-General's opinion had been asked as to whether the districts could ever be made smaller in size. Mr. Quin observed that if any irregularity occurred the boards could at least take cognisance of it, and refer it to the Government. Mr. Abbott promised to consult Mr. Trickett on the subject. Relative to a request for the division of the electorate, the Minister asked the Mayor to sketch out what he thought would be a fair division of the electorate, excluding the mining districts, which clashed with and were liable to swamp the pastoral interests. In making a request for a special grant for the Athenæum the Mayor said that the building alone had cost £1500, and that it was now £600 in debt. Mr. Abbott said that he did not think that special votes had been granted for such purposes; but if the precedent could be found, he would do what he could.

The Mayor asked for a special vote for the cemetery, and

said that Mr. Farnell had promised a grant of £250 some time ago, on condition that Wilcannia collected an equal amount. Only £60 had been collected, and the grant fell through. Twelve years ago they had an additional small grant for fencing the cemetery, but it proved insufficient, and the place was now in a terrible state. They had gone to considerable expense to clear and put it in order, but the tax proved too great for the residents. Mr. Abbott said that the Government generally gave one sum of money for fencing and clearing, but he did not know of a single case where a cemetery had a special vote, and he was surprised to hear that the Government had given the additional vote named. If the Government gave them the land and fenced the cemetery, he thought that their duty then ended.

Referring to the conservation of water, Mr. Abbott stated that he had appointed a commissioner to inquire into and report on the matter. The Government had already spent £350,000 in tanks and wells for travelling stock. A few years ago not a tank was in existence, and he thought the Government had done fairly well. Of course these routes must all have water sooner or later, and he would do his best to assist them.

The Mayor suggested that the fines inflicted at the police court for drunkenness should go towards the hospital, instead of the fines for assault as was now the case. This would increase the hospital revenue, and at the same time make those contribute who were also benefitted from it. Mr. Abbott thought that the suggestion was a very good one, and he only regretted that they could not make the publicans maintain the victims of their traffic in the hospitals. In some of the American States the publicans were made responsible to the families of men who had been deprived of their senses through drink, and he thought that this was not unreasonable. He was, however, afraid that the Mayor's suggestion could not be carried out without legislation, but he would himself introduce a bill on the subject.

A deputation from Milparinka next waited on the Minister to urge upon him the necessity for a permanent water supply for Milparinka, and to ask him to use his influence to get a sufficient sum granted to enable the work to be carried on satisfactorily. Milparinka is a post town situate on Evelyn Creek, and a central depot for the Albert gold-fields, having Mount Browne on the west and a large extent of only partially prospected auriferous country on the east and north, besides which it is on the proclaimed stock route, leading from the Bulloo and Cooper's Creek, in Queensland. It forms the junction of the main thoroughfare from South Australia, and is surrounded by a valuable pastoral conntry in our own colony, being about 60 miles from the Queensland border, and 40 miles from that of South Australia. The

agitation for a permanent water supply by the construction of a dam across Evelyn Creek has been going on for four years, but nothing has been done. The Milparinka Progress Committee indeed, characterised the attempts of the Government at well-sinking as feeble, and stated that, so far, these attempts had signally failed, adding that if the amount frittered away upon the work had been devoted to the construction of a dam upon the site suggested, a permanent supply would have been obtained. They pointed out that cattle accustomed to natural surface water would not drink at the wells, however good ; and drovers, knowing how their stock deteriorated if brought via Milparinka, would avoid Milparinka and go via South Australia, whose Government did their utmost to obtain the traffic. The committee further asked that a portion of the prospecting vote now upon the Estimates might be applied in prospecting at Mount Browne. Since the January rain many miners had returned, and eight claims had been bottomed on payable gold in depths varying from 55 to 133 feet, and great hopes were entertained of its proving a rich and extensive lead. A petition was also presented from the residents of Mount Browne, stating that the want of water for domestic and mining purposes had for years retarded the development of the Albert goldfield. That Mount Browne gave better indications of the existence of a deep lead than any other part of the field. So strong was the belief of experienced miners in the richness of the field, that they had returned again and again to the work of prospecting, and as often had been driven away for want of water. The petitioners also recommended the construction of a dam on the site previously named.

Mr. Quinn supported the petition, and pointed that Milparinka formed a grand junction. It was the turning point of the road to Silverton, Bourke, via Wanaaring and Wilcannia, for all stock coming from the south-western corner of Queensland. It was the centre of a large amount of traffic. A very large and productive goldfield might be discovered if the water supply was good.

Mr. Abbott, in reply, said he never heard of the Government providing water for mining. They would be asking the Government next to provide water for the squatters. When Government provided water for domestic purposes their duty had been fulfilled. He would inform his colleagues of what had been stated, and his own inclination at present was to comply with the request, but he would make no promise, and would get reports from the officers of the Department.

CHAPTER XIII.

HOMEWARD BOUND.

The Ministerial party left Wilcannia on Friday, May 29, crossing the Darling in one of those awkward ferries or punts with which river townships are generally provided—or, as in this case, they provide themselves. The Minister was escorted to the opposite side by some of the leading residents, including the Bishop of Riverina, who had accompanied the party all the way from Hay, but left is at this point. The way to Buckimbee, our next destination was long—88 miles, but the weather was simply perfect, a regular Riverina winter's day—without cloud, without heat, without dust, and nature's face seemingly wreathed in one unvarying smile. Our route lay along the river's bank, where the full effects of the river flood could be seen in the luxuriance with which every now and then the grass, lignum, saltbush, and other herbage grew. True, the roly-poly water-weed, and other useless rubbish flourished as well; but taking the country all through, it certainly looked remarkably well. Wild turkeys could be seen by the score, crows flew about in troops, pretty pink-breasted galahs rose from cover as we passed. and from the top of many a stunted gum shone the crest of the black cockatoo. Several creek beds were passed on the way between Wilcannia and Louth, which block up the route in time of flood, and compel sheep drivers to make a detour of a hundred miles, when a straight walk of 50 would have done had the creeks been bridged. Mr. Abbott's attention was drawn to the matter, and he promised that the most fordable of the creeks should be bridged. Between Wilcannia and Buckimbee, where the party stayed a night, we passed through portions of the following runs: —Billilla (leased by Messrs. Chirnside and Co.), about 445,000 acres, 30 miles river frontage, used to carry 75,000 sheep, but have lost heavily during drought, now carries (according to the Stock Report), 39,293 sheep, 100 horses, 130 cattle, average capacity about 10 acres per sheep; Murtie (leased by Messrs. Shaw and Davies), 550 square miles, 352,000 acres, 20 miles frontage, 53,000 sheep, lost 9000 during drought, 100 horses and 500 head of cattle, average capacity about eight acres per sheep; Cultowa (leased by Messrs. Pooth, Oakden, and Co.), 20 miles frontage, 384,000 acres, 63,598 sheep, and 56 horses; Nelyambo (leased by Messrs. Longham M'Callum and Co., unless it has changed hands recently), 346,694 acres, 80,000 sheep, and about 100 head each of horses and cattle; Budda block (leased by Messrs. G. and F. Sutter), 50 square miles, with 10 miles frontage, 10,000 sheep; Buckimbee (leased by Messrs. A. and J. Kirkpatrick and Co.),

175,000 acres, 10 miles frontage, 32,000 sheep, or nearly full standard, 5000 lost during drought. The "Co." in this last run stands for Mr. Quin, who was now to take leave of the party which he had so skilfully chaperoned through his vast electorate with signal success. The improvements on Buckimbee consist of five wells, all fresh but one, varying in depth from 50 to 170 feet, 12 tanks, ranging in capacity from 4000 to 12,000 cubic yards. The January rainfall was six inches at the station and eight and a half out back, and the average annual rainfall between 9 and 10. Left Buckimbee on Saturday and drove to Winbar station, leased by Messrs. Nankiville, Longhnan, and Co., distant forty-eight miles.

The country between Buckimbee and Winbar is looking fairly well, and in some parts extremely well, a luxuriant growth of lignum and grass having been the result of the recent heavy rains. A very short time ago, however, the whole of the country is said to have been in even a worse condition than that between Hay and Menindie is to-day. The scenery here is rather picturesque, the route skirting a mountainous range fairly covered with scrub, which gradually slopes away till it mingles with the plain. To the left of the route, the steep winding banks of the Darling occasionally arrest one's gaze and now and then ene catches the gleam of water, but not much more, as a shallower stream it would be difficult to conceive. The only new runs entered by the party on Saturday were Curranyalpa (leased by Messrs. G. and H. Suttor), and Winbar. The former has 20 miles frontage, and goes 20 miles back, and carries about 46,000 sheep. Winbar has an area of about 962 square miles, 352,000 acres, and carries 67,000 sheep, less by 53,000 than before the drought, the losses sustained having been extremely severe. The run also maintains 200 horses and 250 head of cattle. The January rainfall registered 8·23 inches, the fall this year to the end of May having been 11½ inches. An experiment has been made at Winbar to grow lucerne in a nine-acre paddock. A 10-H.P. engine, pumping 1500 gallons per minute, does the work, and the experiment is considered a success. It is, however, said, that if the example were to be followed by others along the river banks, each station irrigating a small lucerne paddock, the course of the stream would be considerably affected, as there would be very little water left. It was stated that far more water was used to irrigate this small paddock than would be required to water the stock on the two largest runs in the district. The rabbit pest is creating no little alarm around here. Rabbits are not doing much damage as yet, but they have commenced increasing, and it is feared that large expenditure will have to be incurred before the evil can be got rid of. In the adjoining run of Yanda cats are

being bred up for the purpose of helping to exterminate these terrible pests. From a cursory examination it seemed as if one expenditure at any rate might have been advantageously incurred by the squatters between Wilcannia and Louth, namely, in conserving the river overflow in creeks by sluice-gates, which would give a water supply over tolerably large areas for years to come, and in some cases for ever; but there are certain difficulties in the way which have prevented this from being done to any large extent hitherto. In the first place the country has not been held for its present purpose any very great length of time, and the seasons have been exceptionally bad. One good example goes a long way, and that example has been set at Yanda, where a dam was finished two years ago on the Yanda Creek, at a cost of £800. For two years the expenditure was without any result; but the wisdom of the expenditure was seen in January, when the creek, which had been dry for years, became a raging torrent, and the Yanda back blocks have a perpetual supply. Other dams had been constructed higher up the creek, which flows from the hills near Cobar, a distance of 150 miles, to the river; but they were carried away by the torrent, and the expenditure on them lost. The splendid effect of irrigation at Winbar was seen, not only in the lucerne paddock already mentioned, but in the garden surrounding the house which was gay with petunias, geraniums, and numerous other flowers, and in which flourished the vine and the fig, and almost every known vegetable form. Mr. Wright, the manager, does not, however, consider the soil is very good, as both garden and paddock require to be heavily manured in order to produce the desired result, while in summer nearly 3000 gallons is daily poured on the garden, which only measures about four chains. The wisdom of adopting some method of more generally conserving the water from the Darling for stock purposes, such as that used with such signal success at Yanda, as mentioned above, is the more apparent owing to the rapidity with which the river falls after a heavy rise, creeks full of water one week being comparatively empty the next.

At Winbar we met Mr. Wilson, one of the lessees of Dunlop, a famous run of 800,000 acres on the opposite side of the river, on which were about 180,000 sheep before the drought. During that terrible time 80,000 sheep were lost, only 93,000 now remaining alive. A very interesting paper on the geological formation of Dunlop was recently read before Parliament, the result of Mr. Wilson's observations on well-sinking. At depths varying from four to twenty feet salt water is almost universally found the mineral properties of the soil converting the underground rainfall into salt over a large area of country. Six wells have

been sunk, five successfully, after immense expenditure, in one case amounting to £4000, owing to the great depth which wells have to be sunk in order to obtain fresh water. Beneath a conglomerate surface full of salt water a crustacean formation is met with, which varies in depth from 300 to 500 feet, and in some parts is believed to extend to perhaps double that depth. No water of any kind has, so far, been obtained from this compact formation ; but existence of numerous shells and, occasionally, petrified wood, leads to the belief that the western side of the Darling was formerly an immense marine lake. Underneath this crustacean formation fresh water is obtained, but the salt water in the conglomerate has to be puddled back, and this is a matter of great although not insuperable difficulty. As wells only water stock within a radius of six miles, the expense of obtaining water is considered far too great in a country which only supports a sheep to 10 acres. When Dunlop was taken up by the present lessees (Messrs. J. M'Caughey & Co.) about ten years ago, the country was looking magnificent, and luxuriant grass and other vegetation, on which sheep had never browsed, were judged capable of yielding any quantity of wool. But the vegetation was soon eaten down, and as it does not spring up again with anything approaching the rapidity anticipated, the hopes entertained have been doomed to disappointment. Another noteworthy feature about Dunlop is, that it was discovered by accident some five years ago that the water on a small lake, which had been used for drinking purposes, rested on a 2-inch layer of salt water, without the fresh being deteriorated thereby. Wherever practicable, and especially on cane swamps, tanks on Dunlop are now bottomed on a thin layer of salt water in preference to clay, as the former method prevents loss by soakage, which is considerable in summer, when the clay gets hot and sucks in water like a sponge. Tanks bottomed on salt last much longer than those resting on clay. In the Astronomer's official prospectus on "Physical Geography and Climate of New South Wales," published only last year by Government, it is stated that there is an "unfailing supply below surface," and that "holders of back blocks need fear no dry season, for with abundance of water to be got by sinking, the driest season loses its worst terror.' Experience during the present tour has been that stock water is generally very difficult, and fresh water often almost impossible to obtain, even putting expense out of the question ; whilst the worst terror of drought either on frontage or back blocks is not so much want of water as utter want of feed. During the drought 53,000 Coonong sheep were shifted on to the Dunlop and adjoining Tooraleruns ; a batch of 5000 rams being also sent up from Coonong to serve the same flocks. Owing, however, to the red

sandy nature of the soil the wool on the sheep deteriorates when grown here, and loses it is said, half its value. The wool grown in this district is, nevertheless, very valuable, and some of the Dunlop and Toorale scoured clip fetches as high as 2s. 2½d. in the London market. Mr. M'Caughey's Coonong fleeces are famous, as all sheeep breeders in the colony know. A list of the weight and value of the fleeces of selected Coonong sheep has been given in a previous chapter. Mr. M'Caughey is also interested in the Dunlop and Toorale runs, which together comprise the enormous are of 2¼ million acres—about the same as the Mount Murchison and Momba holding, on which Wilcannia stands. Under the general name of Coonong is embraced four different holdings, comprising an area of about a quarter of a million acres. Last year Mr. M'Caughey spent £6000 for stud rams—six at £420 apiece, and six more at £120 or £130 each. As an evidence of his skill as a sheep breeder, it may be stated that last year he gained no less than 17 prizes at the Narrandera show. Some very fine specimens of this year's wool bred at Winbar—four-tooth rams and hoggets—were shown while the party were at the station, the four-tooth rams having been kept on a frontage paddock during the drought, and yielded as much as 15 pounds and 16 pounds apiece last year.

Twelve miles from the pleasant Winbar homestead is Louth, a diminutive township, on the Darling, where life must flow along calmly and delightfully enough in the charming winter months. With the exception of a post and telegraph office, public-house, and one or two stores, there is little to distract the attention of the resident from the enjoyment of a Riverina winter's day. In summer it must be rather monotonous, rather dusty, and, to say the very least of it, rather warm. In a time of drought, such as that from which the Bourke district was suffering last year and the two years previous, the storekeepers were hardly making their fortunes, and the squatters lost untold sums ; but just now bare existence in this part of the world seems to be a luxury indeed. Louth is the first township on the coach route between Wilcannia and Bourke, in the Bourke electorate, which Mr. Russell Barton has represented in the House for many years past, and which is only second to the enormous Wentworth electorate in point of size. On the other side of Louth is the Gundabooka run—leased by Mr. J. Robertson, of Mount Murchison, Victoria. This run covers 320,000 acres, and at one time—needless to say before the drought—carried as many as 100,000 sheep, although that number was never shorn in one year. There were 42,000 sheep on it at the time of our visit, about 30,000 having been lost during the drought. The water improvements consist of tanks, of which there are a large number, ranging from 10,000

to 18,000 cubic yards. The country along the river frontage had been gradually assuming a more grassy appearance than had hitherto been the case, the salt bush being very much eaten down. So much is this the case on Yanda run, which adjoins Gundabooka, that rock salt has to be distributed over the ground for the sheep to feed on. The annual average rainfall here is about 14 inches, a great improvement on the rainfall on the other side of Wilcannia, although the phenomenal fall for the present year is not quite so heavy as there—only 10 inches, in fact, since January! The Yanda run (leased by Messrs. Hatton and Dean) covers an area of 279,000 acres, and has a frontage to the Darling of 10 miles. Out of 81,000 sheep depastured on this run, over half that number—41,000—were lost during the drought, leaving, therefore, only 40,000 behind to tell the tale. Water there was in plenty all down the Darling, but feed there was none, and about £40,000 was expended on the Yanda run alone in procuring Hay for the horses, 70 of which died notwithstanding all efforts made to save them. Great difficulties, too, were found in keeping the cattle alive, and 170 head were lost during the drought. Still 178 horses and 400 cattle survived the drought. The extraordinary severity of the season which the squatters in the Bourke district had to pull through as best they could, may be inferred from the statement made by Mr. Hatton, that in his run alone the progeny of 39,000 ewes amounted to less than a thousand lambs, and the majority of the mothers succumbed. During the latter part of the drought 80 men were kept constantly employed on the Yanda run in cutting down mulga to feed the sheep. But the loss during the drought was shared by the whole Bourke district, as may be seen by consulting the returns, from which it appears that in 1883 the total number of sheep amounted to 3¼ millions, whereas last year there were only 1,170,000! Figures may generally be made to prove anything, but in this case it would be difficult to extract any other meaning from the figures given above than that an enormous loss must have been incurred by the unfortunate pastoral lessees in this part of the colony—a loss which will take them many years of prosperous seasons to get over, if they ever get over it at all. A great deal of damage was done. too, last year, by the kangaroos which abounded in the district, 12,000 being killed on the Yanda run alone, and nearly 80,000 in the remainder of the district. The formation of the country on this side of the river appears to differ considerably from that on the opposite side. The result of the well-sinking on the Dunlop run has already been described. Only one well has been sunk for stock purposes on the Yanda run, although there are two small ones near the homestead for domestic purposes. The well out

back was sunk through a soft conglomerate for about 40 feet, when fresh water was struck. It was then carried down further to increase the supply, when at a depth of about 70 feet salt water was tapped. It was found impossible to keep the salt water back, and the drinking quality of the fresh was consequently somewhat deteriorated thereby, although it is still used for drinking purposes, and the stock prefer the combination to any other. Among the other improvements on Yanda is a fine woolshed, erected at a cost of £2000, where about 40 shearers are employed in the shearing season. Most of the wool on the runs in this district is scoured on the premises, and this materially reduces the cost of freight. This is everywhere a very considerable item, especially when the river is unnavigable, which it has been more or less for five years past. When the river is full the wool can be sent to Adelaide at a cost of £5 per ton, including insurance, and this will always be the favourite method whenever practicable, as railway rates are much higher. As much as £14 per ton has had to be paid to get the wool to market during recent years. Last year when the railway was opened as far as Byrock it cost £10 to get the wool to the trucks and thence to town. This year the railway has been brought within three miles of Bourke, and the Yanda wool will be got to market at a little over £7 per ton. Next year when the railway will have been completed, and wool sheds and other accommodation will have been put up at Bourke, it will probably cost £6, so that the steamers will always be able to compete for the carriage if they can only run. But there can be no doubt that the bringing of the railway to Bourke will be the death-blow to the Adelaide trade. Formerly the stations used to order their goods for two or three years at a time from Adelaide or Melbourne firms, and had to put up with the leavings of everybody else, glad if they could only obtain the goods at all. Now all that has changed, goods are only bought in comparatively small quantities, and the stations can depend on obtaining better goods at lower prices than ever before.

Before arriving at Bourke the route passes through a portion of the Jandra run (leased by Mr. Robertson, cousin of the lessee of Gundabooka), which covers an area of 375 square miles, 240,000 acres, on which were depastured 40,000 sheep. The soil is what the Wentworth people call a "good black," possibly on the *locus a non lacendo* principle, because it looks extremely white! Part of it was covered with most luxuriant grass—the tallest and the thickest anywhere along the route—but part of it, alas, was covered with equal luxuriance by roly-poly, which seems to spring up with extraordinary rapidity, after a heavy rain. I was informed by Mr. Deane—I mention his name because the

statement would otherwise appear almost incredible—that within 24 hours after the heavy rainfall in January last the ground, which had been absolutely bare of vegetation for a long time past, was already giving signs activity, and that in some spots grass had actually attained a height of four inches where before there had been nothing but dead tussocks ! On arriving at Bourke the tour may be said to have terminated, as, unfortunately, the official part of it had unexpectedly terminated shortly before. It had lasted from the 1st of May to the 1st of June, and during that short period we had covered a distance of nearly 1200 miles by coach and carriage, averaging during travelling days 59 miles a day, not reckoning the distance covered by railway, which amounted to another 900 by the time we returned to town. It is said to have been the longest Ministerial tour ever undertaken in this or any other colony, and were it not for the unfortunate illness of the Minister, which prostrated him with rheumatism at Winbar, it would have been without a hitch of any kind to mar its perfect success.

At Winbar the Hon. Minister for Mines was unfortunately laid up with a severe attack of rheumatism, which had attacked him at Wilcannia, and prostrated him at Winbar for several weeks. A doctor was immediately telegraphed for from Bourke, who arrived in due time, and those who know Mr. and Mrs. Wright need not be told that everything was done by them to ensure the patient's comfort while he remained under their hospitable roof. Here the official part of the tour terminated, as Mr. Abbott was too ill to carry out the remainder of the programme and visit Cobar, much as he wouid have liked to have done so. I am glad to be able to record, however, that Mr. Abbott's illness only lasted a few weeks, and that he recovered sufficiently to be able to resume his Ministerial duties before the commencement of spring.

FINIS

H. Solomon,
CAXTON PRINTING OFFICE,
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