THE RAILWAY GUIDE OF New South Wales.

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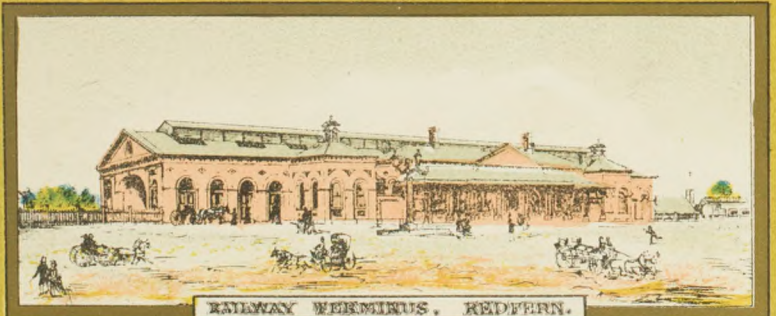
THE ZIG-ZAG, LITHGOW VALLEY.

THE RAILWAY GUIDE OF NEW SOUTH WALES.



RAILWAY TERMINUS, REDFERN.

PUBLISHED BY AUTHORITY.
SYDNEY, 1879.
THOMAS RICHARDS
GOVERNMENT PRINTER.

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THE RAILWAY GUIDE

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OF

NEW SOUTH WALES,

(FOR THE USE OF TOURISTS, EXCURSIONISTS, AND OTHERS),

A CONVENIENT VOLUME OF REFERENCE TO RAILWAY ROUTES, STATIONS, AND PLACES OF INTEREST ON THE LINES OF RAILWAY; CONTAINING A MAP OF THE BLUE MOUNTAINS AND NUMEROUS ILLUSTRATIONS.

By Authority:
SYDNEY: THOMAS RICHARDS, GOVERNMENT PRINTER.

1879.

PREFACE.

THIS Guide Book is intended as a convenient volume of reference for excursionists and others who travel by Railway in New South Wales.

The Introduction contains a short history of the Railway system of the Colony, and subsequent chapters furnish an outline of routes, and all information as to the various Stations. The illustrated Itinerary, for the use of the traveller in search of the picturesque, includes brief notices of places of interest which lie within easy reach of the Railway line, and the Tourists' Map shews the mountainous country traversed by the Great Western Railway, from the Nepean River to Bowenfels.

The papers, descriptive of the Fish River Caves, and explaining the geological formation of the Blue Mountains, contributed by Mr. C. S. Wilkinson, F.G.S., will be read with interest, as will also the Treatise by Dr. Woolls, F.L.S., illustrated by Miss Harriet Scott, on the Flora of that part of the country. The other illustrations form a novel and interesting feature of the work; they are pictures from Nature, reproduced by the photo-mechanical processes recently introduced by Mr. Richards, Government Printer.

The Compiler has to acknowledge his obligations to Messrs. Burton, Tingle, and Wells, from whose descriptive writings he has derived much valuable information, which he ventures to believe is now offered to the public in a compendious and convenient form.

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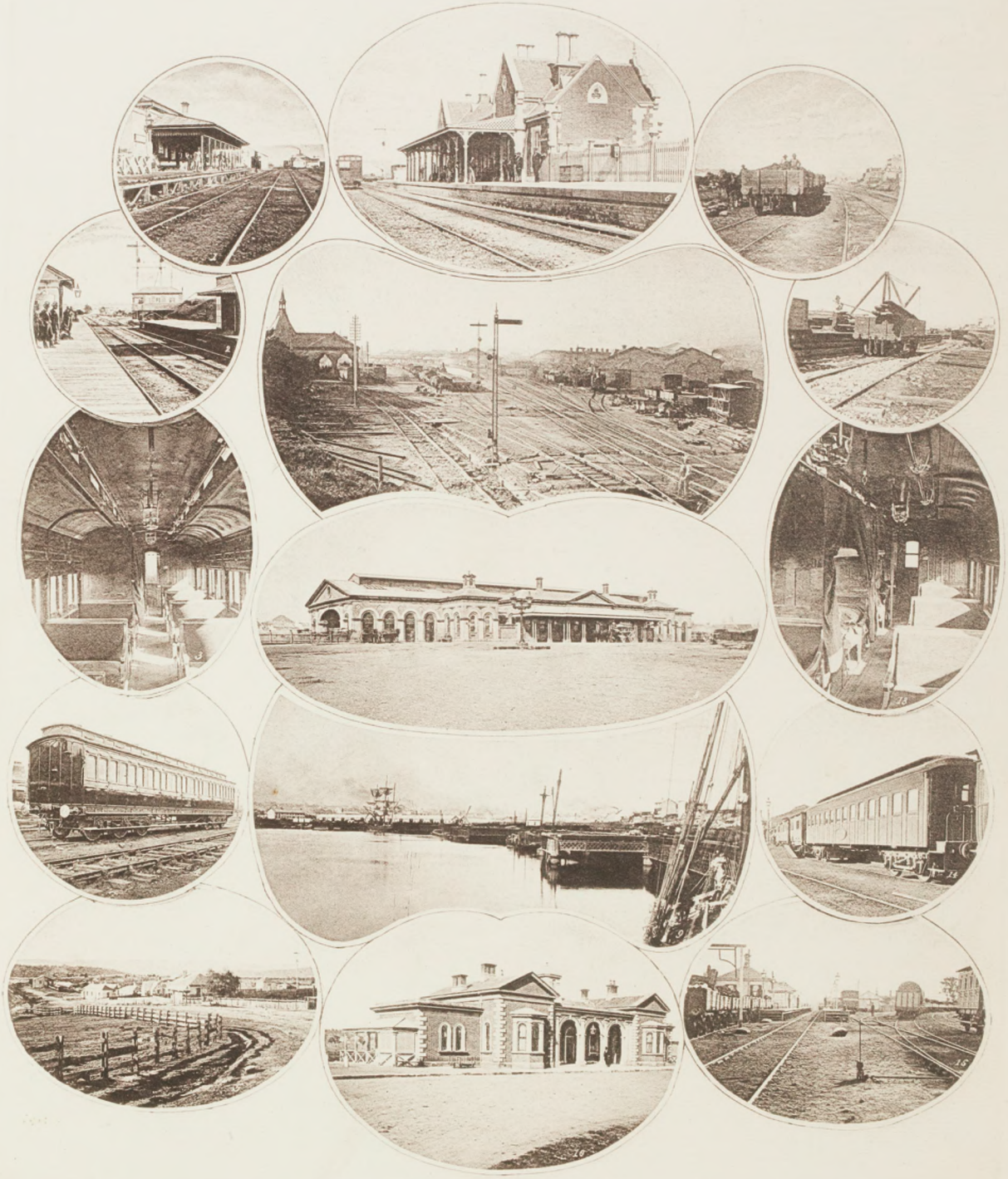

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INTRODUCTORY CHAPTER.

1.—RISE AND PROGRESS OF RAILWAYS IN NEW SOUTH WALES.

Early History.—The first combined movement on the subject of introducing railways into New South Wales took place in January, 1846. On the 29th of that month a public meeting was held in Sydney, and a committee appointed, who, on the 26th August, reported that, from the best ascertained data as to the products, population, and traffic, they believed that a line from Sydney to Goulburn might be constructed at £6,000 per mile, and that a net profit of 8 per cent. might be anticipated on the capital expended. In the beginning of 1848 a survey of the line to Goulburn was completed by Mr. Woore. In April, in the same year, a petition, based on this report, was presented to the Legislative Council, and referred to a Select Committee, of which Mr. Charles Cowper* was chairman. A report was brought up, and on the 15th June the Council passed a series of resolutions to the effect that the period had arrived for the formation of railways in the Colony, and that it was expedient for the Government to offer some inducements to encourage private enterprise. The resolutions were transmitted to the Secretary of State by the Governor-General, with a recommendation that the encouragement asked for should be granted. On the 11th September, 1848, a Provisional Committee was appointed, and in November the prospectus of the "Sydney Tramroad and Railway Company" was issued. The capital was £100,000, and interest for ten years at 5 per cent. was guaranteed by the Government. The expressed intention of the projectors was that a main trunk line should be carried from Sydney to the point from which it might afterwards be determined that the Southern and Western or North-western Branches respectively should diverge. Eventually it was intended to augment the capital in order to carry the line to Goulburn, and, if found practicable, to Bathurst also.

On the 13th November, 1849, the first general meeting of the shareholders was held, and the Sydney Railway Company (incorporated by Act of 13 Victoria) then entered on its duties, and was managed by a Directory elected by the shareholders. The survey of the line from Sydney to Parramatta and Liverpool was completed in December, 1849, and on 8th January, 1850, the first report of the directors was read. It congratulated the shareholders on their position and prospects; and notwithstanding the apathy of some persons, and the undisguised hostility of others, the directors entertained the fullest confidence as to the ultimate success of the undertaking. The sum of £10,000, required by the Act to be raised before the Company could commence operations, having been paid into the Colonial Treasury, the directors lost no time in breaking ground. On 3rd July, 1850, the first turf of the first railway in the Australian Colonies was turned by the Honorable Mrs. Keith Stewart, in the presence of her father, Sir Charles Augustus Fitz Roy, and a large concourse of inhabitants.

The financial prospects of the Company, however, soon became so gloomy that the directors found it necessary to make a general reduction in the salaries of their officers. The directors complained of the obstacles they met with, and stated that but for the countenance and support of the local Government they should feel disposed to abandon a post which was beset at every stage with difficulties and discouragements of no ordinary kind. In this unpromising position of their affairs the first contract for 4½ miles from Haslem's Creek towards Sydney was accepted. The progress of the work continued satisfactory until the discovery of

* Afterwards the Hon. Sir Charles Cowper, K.C.M.G., now deceased.

gold in the Bathurst district upset the calculations of the contractor and the directors, threatening the former with ruin and entailing much anxiety on the latter, from the sudden and unexampled rise in the price of labour and materials. Under these circumstances the directors were induced to release the contractor from his agreement, without enforcing the penalties for non-fulfilment. The offer of Mr. Randal, the contractor, to carry out the works to Ashfield and subsequently to Parramatta, at a schedule of prices, was afterwards accepted, and as the attractions of the gold-fields continued to diminish the supply of labour in Sydney, the Government agreed to import five hundred labourers from England. An additional loan of £150,000 was obtained from the Government in the proportion of three-fifths of public money to two-fifths subscribed, on condition that the Government should have the power to name one half of the directors. The Company had now reached the last stage of its existence, and its affairs were under the direction of a Board, partly elected by the shareholders and partly nominated by the Government.

At the first half-yearly meeting on 17th January, 1854, the directors stated that from the enormous rise in wages and materials the cost of the line to Parramatta would be increased from £218,420, as estimated in 1853, to £320,000, besides £69,000 for the Darling Harbour works. To provide for this, the capital was increased by £100,000, and an additional loan of £150,000 obtained from Government, on the same terms as the former loan. The estimate of £320,000 for the line to Parramatta was made in anticipation of a fall in the rate of wages; but instead of falling they continued to rise, and in January 1855, the Engineer had to increase his estimate to £500,000. This startling announcement must have satisfied the shareholders of the hopelessness of carrying out the works at a profit, and prepared them for a transfer of the property to the Government.

While the Sydney Railway Company was struggling with the unprecedented difficulties of the times, and leaning on the strong arm of the Government for support, a movement took place in 1853 for the construction of a *line of Railway between Newcastle and Maitland.* A Provisional Committee was appointed on 20th April, and a capital of £100,000 subscribed on the spot. With flattering anticipations, and the promise of aid from the Government, the Hunter River Railway started into life; but after an existence of little more than a year, which was necessarily exhausted in preliminary arrangements, this Company had also to yield to the pressure of the times, and be swallowed up by the Government.

Railways of N. S. Wales when transferred to the Government.—Accordingly, under the Act 18 Victoria No. 40, the properties of both the Companies were transferred to the Government, the Hunter River at par, and the Sydney Railway with a bonus of 7 per cent. added. From the date of these transfers the railways became the property of the Government, and have since been carried out under the superintendence of Government officers.

The Railways of New South Wales, though essentially one entire concern, as the property of the Government, are naturally and geographically separated into two great divisions—the one having its principal terminus at Sydney, the other at Newcastle; upwards of 60 miles apart. The former consists of two great trunk lines, and one subsidiary branch; the latter of a great trunk line throughout, with two branches and several private lines from ½ mile to 8 miles in length, connecting the various Coal Mines.

The line from Sydney to Parramatta was opened for traffic on 26th September, 1855, just twenty-five years after the opening of the first railway in England—the line from Liverpool to Manchester on 16th September, 1830.

Peculiarities of Construction—Curves and Gradients, &c.—The English narrow gauge of 4 feet 8½ inches has been adopted for the railways of New South Wales, but has not been followed in any of the other Australian Colonies. The battle of the gauges was fought as fiercely in Australia as in the Mother Country, and with similar unfortunate results; and now that we are approaching the borders of the neighbouring Colonies, the inconvenience of the break of gauge will begin to be felt.

The line from Sydney to Parramatta Junction (13 miles) has double way and works, and was originally laid with the Barlow patent rail of 75 lbs. to the yard, which has since been replaced with the double-headed rail of the same weight. From Newcastle to Hexham (10 miles) and on the Bullock Island Branch (1½ mile) the line is also double, but with these exceptions all the lines are single. Preparations are however being made for doubling the line from Parramatta Junction to Parramatta (1 mile); and also the length between the bottom of the Lithgow Zig Zag to Bowenfels (4 miles).

The Richmond Branch is laid with rails of 55 lbs. per yard. The rails on the other lines as far as Goulburn, Bathurst, and Tamworth, are of wrought iron, double-headed and fish-jointed, and weigh 75 lbs. per yard. The chairs are 25 lbs. each, and are secured to the sleepers with wrought-iron spikes. Beyond these termini a lighter system of construction is adopted. The rails which are single-headed and fish-jointed, weigh 70 lbs. to the yard, and are secured to the sleepers by spikes and screws alternately.

On the line from Sydney to Goulburn, with the exception of seven curves of 16 and five of 20 chains radius, there is no curve of a smaller radius than 30 chains. From Goulburn to Wagga Wagga, excepting one of 19 chains, the smallest radius of a curve is 20 chains, and from this to Albury the smallest is 30 chains.

On the line from Parramatta to Penrith the smallest radius of a curve is 30 chains. Between Penrith and Bathurst the smallest is 528 feet, the total length of such curves being 5 miles, including those on the Zig Zags. There are also 20 miles of curves ranging from 8 to 12 chains radius. Between Bathurst and Orange the smallest radius of a curve is 12 chains.

On the line from Newcastle to Murrurundi, if we except one of 20 chains, there is no curve of smaller radius than 30 chains. From this to Tamworth the smallest radius of a curve is 12 chains.

The steepest incline on the line from Sydney to Picton is 1 in 66. Hence to Mittagong there is one continuous incline of 1 in 33 for 67 chains, and 1 in 30 for a continuous length of 2 miles 2 chains. There are also inclines of 1 in 33 for 17, 45, 42, and 9 chains, and 1 in 30 for 70 chains. From Mittagong to Goulburn there are none steeper than 1 in 40. From Goulburn to Wagga Wagga the steepest incline is 1 in 40 for 1 mile 58 chains; and thence to Albury, 1 in 60 for 1 mile 64 chains.

From Parramatta Junction to Penrith the steepest gradient is 1 in 60 for 74 chains; and from Penrith to Bathurst, the lengths of the steepest inclines are 1 in 30 for 1 mile 63 chains; 1 in 33 for 16 miles 53 chains; 1 in 40 for 6 miles 20 chains; 1 in 42 for 4 miles 2 chains; 1 in 46 for 31 chains; 1 in 47·89 for 70 chains; 1 in 48 for 48 chains; and 1 in 50 for 4 miles 77 chains—making 35½ miles of inclines ranging from 1 in 30 to 1 in 50. From Bathurst to Orange the steepest incline is 1 in 40, and the longest continuous incline 2 miles 70 chains.

Between Newcastle and West Maitland the steepest gradient is 1 in 63, and from Maitland to Singleton 1 in 80. From Singleton to Muswellbrook there are four short inclines of 1 in 33; thence to Murrurundi the steepest gradient is 1 in 50, and to Tamworth 1 in 40.

The rails and sleepers on the Darling Harbour, Haslem's Creek Cemetery, Collingwood, and Morpeth Branches, are the same as on the main line. The Bullock Island Branch for mineral traffic is laid throughout with steel rails of the same weight and section as on the main line. The smallest radius of a curve is 12 chains, and the steepest gradient 1 in 200.

Capital expended.—The total capital expended on lines open to 31st December, 1877, was £8,883,177, upon which the interest was 4·81 per cent. The expenditure for construction was £9,314,500, upon which the interest was £443,688, or 4·76 per cent. This will appear moderate when the difficulty of the country and the heavy nature of many of the works are taken into consideration. Thus, on the Southern Line there are the wrought-iron girder bridge over the Nepean at Menangle, the costly viaducts at Picton, Wingecarribbee, Wollondilly, Mulwarree,

Barber's and Boxer's Creeks, and the expensive tunnels at Redbank Range and Gibraltar Gap. On the Western Line—the bridge over the Nepean at Penrith, the viaducts at Knapsack Gully and Lithgow Valley, the Clarence tunnel, and the tunnels at Lithgow Valley Zigzag, Morangaroo, and under the Mudgee Road, and the bridges over Solitary Creek at Tarana, and over the Macquarie River at Bathurst. And on the Northern Line—the handsome bridges over the Hunter at Singleton and Aberdeen, and the tunnel through the Liverpool Range.

Summit elevations.—The summit elevations above high-water mark at Sydney on the different lines are 2,357 feet on the Southern, 3,658 feet on the Western, and 2,113 feet on the Northern.

Zigzags at Emu Plains and Lithgow Valley.—The principal objects of interest on our Railways are the Zigzags at Emu Plains and Lithgow Valley on the Western Line. Since the opening of the line to Bowenfels thousands of tourists from all lands have visited these works, and expressed unbounded admiration at the rugged grandeur of the scenery, and the engineering skill and pluck displayed in designing and constructing these stupendous works, which are probably not surpassed on any railway in the world. But a description or even an inspection of the Lithgow Valley Zigzag gives only an imperfect idea of the difficulties that had to be encountered, and the vast amount of work that had to be performed, before it was hewn into its present shape. From the Clarence Tunnel to the bottom of the Valley there is a descent of 470 feet, through a deep and rugged ravine, where formerly there was scarcely footing for the mountain goat, and where the surveyor's assistants had occasionally to be suspended by ropes in the performance of their perilous duties; but human skill and enterprise have opened a pathway through these broken mountain ranges for the railway train that now traverses the sides of the mountain on a gradient of 1 in 42. In the execution of these works, two gigantic masses of rock—the one estimated to contain 40,000 and the other 45,000 tons—had to be blasted; and the contractor, after calculating the cost determined to call in the aid of electricity for that purpose. For the first mass 3¼ tons of blasting powder were employed, and the Superintendent of Telegraphs (Mr. E. C. Cracknell) succeeded in firing the blast, which tore the mountain asunder, heaving huge masses of rock into the valley, and leaving the face of the parent mountain almost as smooth as if it had been cut with chisels. The removal of the second mass—the blowing up of a tunnel—for which 3½ tons of powder were used, was successfully accomplished also by galvanic agency; the electric spark having been communicated to the powder by the hand of the Countess of Belmore, in the presence of His Excellency the Governor, and a large concourse of spectators who had assembled to witness the effects of the explosion.

Statistical and Descriptive.—The following Statistical and Descriptive Information will be read with interest. It forms the summary of the transactions for the year 1877, and is taken from the Report of the Commissioner for Railways, Charles A. Goodchap, Esq., dated the 12th of June, 1878, and brought up to the 31st December, 1877. Mr. Goodchap reports that: "The expenditure for construction was £9,314,500, upon which the interest was £443,688, or 4·76 per cent. The capital expended on Lines open for traffic, was £8,883,177, upon which the interest was 4·81 per cent. The net earnings were £396,935, yielding 4·26 per cent. to the total capital expenditure, and 4·47 per cent. to the capital expenditure on Lines open for traffic. The interest paid by Government was therefore only ·50 and ·34 per cent. in excess of the percentage of net earnings to total capital, and to capital reproductively employed respectively. At the close of the year (1877) 598 miles of Line were open for traffic, and 217½ miles were in the course of construction, to be completed by 31st December, 1880. The rolling stock consisted of 138 locomotives, 352 coaching and 2,806 goods vehicles. The number of employés was 3,289, and the wages paid £305,581 16s. 8d, being an increase of £68,404 17s. 10d., over 1876. The cost of the railway materials, in the conveyance of which 92 vessels were employed, amounted to £375,341, and the freight and insurance to £31,169, making a total of £406,510. During the year 1877, 33,707 passenger trains and 23,532 goods trains

GREAT ZIGZAG, LOOKING WESTWARD.

were run a distance of 2,106,802 miles. The earnings amounted to £815,920, and the working expenditure to £418,985, or 51·35 per cent. of the earnings. The number of passengers who travelled was 2,957,144, of whom 703,325 were first class and 2,253,819 were second class. The proportion per centage of these classes is for first class passengers 13·82, second class 56·84 and for season-ticket holders 29·34. The merchandise traffic consisted of 580,657 live stock, 133,597 bales of wool, 1,024,411 tons of minerals, and 360,932 tons of general goods. The average earnings per mile open were £1,478, the average expenditure was £759, the net earnings were £719. The average earnings per train mile were 92·95d., the expenses 47·73d., and the net earnings 45·22d. There was an increase of 107,081 in the number of first class passengers, of 254,715 second class, and 116,402 in the journeys made by season-ticket holders, an increase in the receipts of £37,718 from coaching traffic, and of £84,977 from goods traffic—making a total increase of £122,695. The working expenses were increased by £79,579, and the net earnings by £43,116. On the South and West Lines there was an increase in interest on capital of ·02 per cent., on the North of ·12, and on all lines combined of ·04 per cent."

In view of the above valuable information in his pre-cited Report Mr. Goodchap, the Commissioner for Railways, says:—"It must be satisfactory to all who are interested in the welfare of New South Wales to find that the results arrived at in this review of the transactions of the Railways during the past year show a steady increase in the prosperity of this large and important portion of the public works. Not only have the Lines of Railway been considerably extended, so as ultimately to assist in developing the resources of comparatively remote districts, but in their immediate results have proved to be highly successful. This condition of affairs, showing as it does that the greater portion of the public loans is invested in works returning a high rate of interest, cannot fail to increase confidence in the financial stability of the Colony, and enhance the value of its securities."

Progressive Utility and Financial condition.—The following carefully prepared and authentic Tabular View of the Progressive Utility and Financial Condition of the railways of New South Wales, from the opening of the trunk line to Parramatta in 1855 to 31st December, 1877, will be appreciated by all thoughtful readers.

Year.	Length of Line, 31 December.	Number of Passengers.	Tonnage of Goods.	Earnings from Coaching Traffic.	Earnings from Goods Traffic.	Total Earnings.	Working Expenses.	Earnings per Train Mile.	Working Expenses per Train Mile.	Percentage of Working Expenses to Gross Earnings.	Net Earnings.	Capital invested on Lines open.	Interest on Capital.
	Miles.	No.	Tons.	£	£	£	£	d	d	℔ cent.	£	£	℔ cent.
1855	14	98,846	140	9,093	156	9,249	5,959	157·34	101·37	64·43	3,290	515,347	·638
1856	23	350,724	2,469	29,526	2,757	32,283	21,788	113·32	76·48	67·49	10,495	683,217	1·536
1857	40	329,019	20,847	34,970	8,417	43,387	31,338	96·58	69·75	72·23	12,050	1,023,838	1·176
1858	55	376,492	33,385	45,858	16,451	62,309	43,928	105·69	74·51	70·50	18,381	1,231,867	1·492
1859	55	425,877	43,020	46,502	15,258	61,760	47,598	100·41	77·38	77·07	14,162	1,278,416	1·107
1860	70	551,044	55,394	45,428	16,841	62,269	50,427	83·37	67·52	80·98	11,841	1,422,672	·832
1861	73	595,591	101,130	49,637	25,367	75,004	61,187	83·77	68·34	81·58	13,817	1,536,032	·899
1862	97	642,431	205,139	62,096	41,775	103,871	68,725	90·79	60·07	66·16	35,146	1,907,807	1·842
1863	124	627,164	218,535	71,297	52,644	123,941	96,867	94·38	73·76	78·16	27,073	2,466,950	1·097
1864	143	693,174	379,661	81,487	66,167	147,653	103,715	85·30	59·92	70·24	43,938	2,631,790	1·669
1865	143	751,587	416,707	92,984	73,048	166,032	108,926	82·42	54·07	65·60	57,106	2,746,373	2·079
1866	143	668,330	500,937	85,636	82,899	168,535	106,230	82·49	51·99	63·64	62,305	2,786,094	2·236
1867	204	616,375	517,022	87,564	101,508	189,072	117,324	82·02	46·87	62·08	71,748	3,282,320	2·185
1868	247	714,563	596,514	99,408	124,951	224,359	144,201	70·06	45·03	64·29	80,158	4,060,950	1·973
1869	318	759,635	714,113	109,427	155,548	264,975	170,362	71·17	47·37	66·57	88,613	4,681,329	1·892
1870	339	776,707	766,523	117,854	189,288	307,142	206,003	81·81	54·86	67·08	101,139	5,566,092	1·817
1871	358	759,062	741,986	129,496	225,826	355,322	197,065	91·57	50·79	55·46	158,257	5,887,258	2·688
1872	398	753,910	825,360	164,862	260,127	424,989	207,918	98·43	48·15	48·92	217,071	6,388,727	3·397
1873	403	875,602	923,788	178,216	306,020	484,236	238,035	104·71	51·47	49·16	246,201	6,739,918	3·653
1874	403	1,085,501	1,070,938	188,595	347,980	536,575	257,703	103·09	49·51	48·03	278,872	6,844,546	4·074
1875	437	1,288,225	1,171,354	205,941	408,707	614,648	296,174	100·20	48·28	48·18	318,474	7,245,379	4·396
1876	509	1,727,730	1,244,131	233,870	459,355	693,225	339,406	98·50	48·22	48·96	353,819	7,990,601	4·428
1877	598	2,957,144	1,430,041	271,588	544,332	815,920	418,985	92·95	47·73	51 35	396,935	8,883,177	4·468

This Tabular View shows that the expenditure for the construction of our railways is a wise and profitable investment of the public funds on reproductive works, which already yield a direct return on the capital expended almost equal to the interest on the money borrowed, and confer on the Colony indirect benefits which cannot be estimated in money. It is also satisfactory to know that the farther our railways have been extended the more profitable they have become; and from the steady increase of profit during the last few years it may reasonably be anticipated that the time is not distant when our railways will be self-supporting, that further extensions will tend still more to increase the profits on existing lines, and thus gradually diminish and ultimately extinguish the annual payment of interest from the Consolidated Revenue Fund.

Present and prospective advantage.—It is a question of policy for the Government to suggest, and for Parliament to decide, in what direction and within what period further extensions shall be made; but it is almost a truism to assert, that our railway system will be incomplete till our lines shall reach the borders of the neighbouring Colonies. Sooner or later this desirable object will be accomplished, and every step in the progress will be attended with beneficial results. The tendency of railway extension is to reduce the price of commodities to the consumer, and enhance the value of land; to stimulate production, by widening the area within which agricultural and garden produce, and animal and vegetable substances can be brought to market; to accelerate the development of our own resources, and by rapid and constant inter-communication and interchange of commodities with our neighbours, to extend and strengthen our commercial relations, to cement the bond of union between the Australian Colonies, and to advance the general prosperity of the country at large.*

* Taken and adapted from official reports amongst the records of the Department of Public Works.

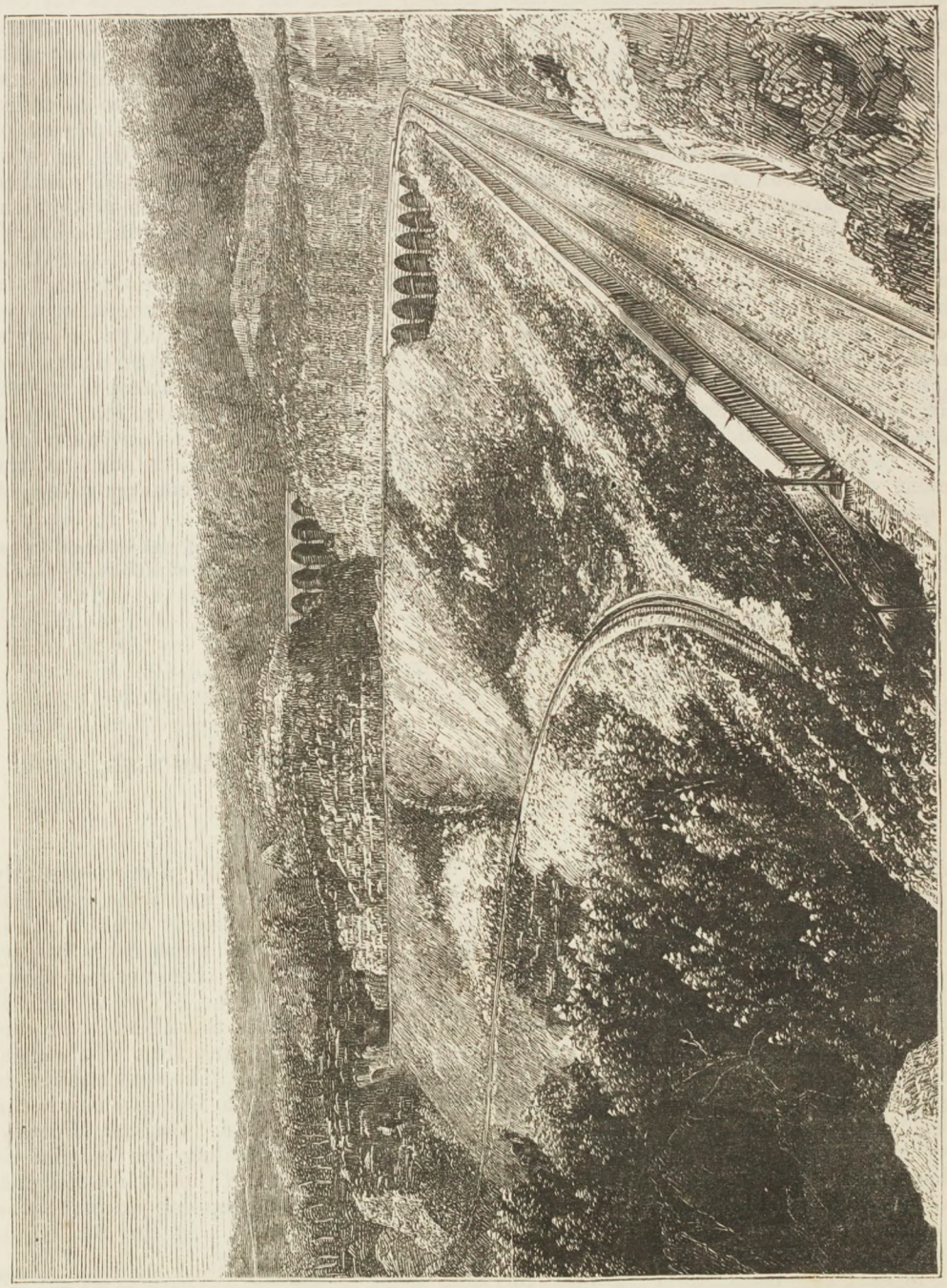
II.—ANALYSIS OF RAILWAY ROUTES—MAIN AND SUBSIDIARY BRANCHES, WITH STATIONS AND PLATFORMS.

Railway System in New South Wales.—The Railway system of New South Wales consists of three Trunk Lines at present, one of which is unconnected with the other two: (1) The Great Southern Line; (2) the Great Western Line; and (3) the Great Northern Line. The Southern Line starts from Sydney, and has, as a trunk line, a southerly direction from Parramatta Junction; up to which station it runs in common with the Western. The Western Line also starts from Sydney, but diverges from the Southern Line at Parramatta Junction; (13 miles distant from Sydney). The Northern Line starts from Newcastle, and has its terminus at present at Tamworth.

(1.) Taking the Western Line first, it may thus be briefly described.

The Western Line (by a north-westerly turn) passes through Parramatta, and has, for the most part, a westerly direction till it comes to Bathurst, 145 miles from Sydney. Its general direction is then north-westerly until it reaches Orange, 47 miles further. Thence the course of this line will be due north to Wellington, and from Wellington north-west to Dubbo. The continuation of this line from Orange to Dubbo is now in the course of construction. On the Western Line there are, including the termini at Orange and at Sydney, (*) fifty-nine stations, and other occasional stopping places, for the distance of 192 miles. At the Blacktown

* That is, taking in the trunk line from Sydney to Parramatta Junction, common to both the Western and Southern Lines.



GENERAL VIEW, GREAT ZIGZAG. (*See* page 62.)

Junction, the *Blacktown to Richmond Subsidiary Branch* joins the Western Line. This subsidiary branch, 16 miles in length, has a north-westerly direction from Blacktown, and has four distinct stations, and one platform or stopping place. There is a *second Subsidiary Branch* in contemplation for a junction with the Western Line between the Wallerawang Station and Mudgee. This subsidiary branch will take a north-westerly direction from Wallerawang. Besides the subsidiary line to Richmond there are tramways that feed the line at intervals—with shale at Hartley Vale siding, and with coal at Lithgow. There are cattle truck sidings at Blayney, and sidings for such like purposes elsewhere.

(2.) The Southern Line has for about 100 miles (from Parramatta Junction to the neighbourhood of Marulan) a south-south-westerly direction. From Marulan to the station at Bethungra (about 154 miles) the general direction of this line is, for the most part, westerly, with a marked southerly deflection, first for Yass, and finally towards Wagga Wagga on the Murrumbidgee, the present terminus. A railway line has been authorized from Junee (south-west of Bethungra) to Narrandera, on the Murrumbidgee, in the direction of the important inland town of Hay. On the Southern Line there are, including Sydney and the present terminus at Wagga, fifty-nine* stations, and other occasional stopping places, for the distance of 304 miles.

(3.) The Great Northern Line (the eastern terminus of which is at Newcastle, about 60 miles north of Sydney Heads) has, for the most part, a north-westerly direction, with a south-westerly deflection between West Maitland and Muswellbrook. Its extreme length from Newcastle to Tamworth is 182 miles. On this Northern Line there are—including the termini at Tamworth and at Newcastle—thirty-nine stations and other occasional stopping places for the extreme distance traversed. On this Line there is one "Main Branch"—the North-western—starting from Werri's Creek, and at present terminating at Breeza. There are also *three* Subsidiary Branches: *First*, one from Newcastle to Bullock Island, *viâ* Honeysuckle Point, to the northward, 1½ mile; *second*, one from Newcastle to Wallsend, on the southern side of the line, 8 miles; and *third*, one from East Maitland to Morpeth, on the north side of the line, 4 miles. (1.) The first (*i.e.* Waratah) subsidiary line is near Newcastle, and is used chiefly for mineral traffic. (2.) The second subsidiary branch, (Wallsend Junction), running south-westerly, commences 1½ mile west of the Waratah Station, and is in length 4½ miles. The Wallsend branch is principally used for mineral traffic. (3.) The third subsidiary branch is the Maitland and Morpeth Branch, which runs from East Maitland to Morpeth (north-easterly) 4 miles. Including East Maitland and Morpeth itself, this branch may be considered to have three stations, or stopping places, viz: East Maitland, Northumberland-street, and Morpeth.*

* That is, taking in the trunk line from Sydney to the Parramatta Junction, common to both of the Main Branches, the Western and Southern.

* The railway between Newcastle and Tamworth has been completed, and now the Great Northern Railway measures 182 miles. It has taken over twenty-three years to make this length. The first span, 17 miles, from Newcastle to East Maitland, was opened on the 5th April, 1857; on the 27th July, 1858, a further length of 2 miles brought the trains to West Maitland. Seven miles more, or the distance from West Maitland to Lochinvar were added to the line open on the 2nd July, 1860; a further length of 8 miles was opened to Branxton on March 24, 1862. The extension to Singleton, 14 miles, was opened on the 7th May, 1863; and then a long delay occurred, till, on the 19th May, 1869, 30 miles of extension gave railway communication to Muswellbrook. The 16 miles between Muswellbrook and Scone were opened on the 17th April, 1871, and an additional mile to Wingen on the 1st of August in that year. The opening of the extension from Wingen to Murrurundi, 14 miles, took place on the 5th April, 1872, and the next opening was in 1877, on the 13th August, when 24 miles were added to the length of the railway, and Quirindi had been reached. And the remaining length of the contract, the 38 miles between Quirindi and Tamworth, was declared open for traffic on Tuesday, the 15th October, 1878.

The total length of railway now open for traffic in the colony is 703½ miles. No addition of importance is likely to take place to this length till 1879, when the 41-mile line from Werris' Creek to Gunnedah will be opened, if all goes well, on the 30th June. The only other current contracts are those for the lines from Orange to Wellington, and Dubbo, a length of 85 miles, and from Wagga Wagga to Albury—a length of 81 miles. The line to Dubbo is expected to be opened on the 31st July, 1880, and the line to Albury on the 31st December of that year.—*Herald*.

The above complete analysis of the railway system of New South Wales, as it at present exists, may be illustrated (and will perhaps be rendered more easily understood) by a perusal of the following *Tabular View:—*

Tabular View in Analysis of Railway Routes.

The Western Trunk Line—

Suburban Line.

SYDNEY *(Terminus)*
Eveleigh
M'Donald Town
Newtown
Stanmore
Petersham
Ashfield
Croydon
Burwood
Redmyre
Homebush
Rookwood
Auburn
Parramatta Junction.....*The Southern Main Branch or The Southern Line—*
PARRAMATTA

The Western Line—

The Western Line or Western Main Branch Line.

Seven Hills
BLACKTOWN
Rooty Hill
South Creek.... connecting ....
Parkes
Penrith
Emu Plains
Lucasville
Glenbrook late *Brookdale*
Blaxland late *Wascoe's*
The Valley
Springwood
Faulconbridge
Numantia
Woodford
Lawson late Blue Mountains
Wentworth Falls late *Weatherboard*
Katoomba
Blackheath
MOUNT VICTORIA
Hartley Vale—Tramway
Mount Wilson
Clarence Siding
Esk Bank
Lithgow—Tramway
Bowenfels
Marrangaroo
Wallerawang
Rydal
Sodwalls
Tarana
Locksley late *Locke's Platform*
Macquarie Plains
Raglan
Kelso
BATHURST
Perth
George's Plains
Wimbledon
Newbridge
Blayney—Tramway
Spring Grove
Spring Hill
Huntley
ORANGE

Richmond Subsidiary Branch .....
Riverstone
Mulgrave ..[Proposed
Windsor
Clarendon
RICHMOND

Proposed Subsidiary Branch here to MUDGEE

The continuation to *Wellington* and to *Dubbo* now in course of construction.

The Southern Main Branch or The Southern Line—

The Southern Line or Southern Main Branch Line.

Merrylands
Guildford
Fairfield
Canley Vale
Cabramatta ..Line of Railway]
Liverpool
Glenfield
Macquarie Fields
Campbell Fields
Campbelltown
Menangle
Douglas Park
Picton
Picton Lakes
Rush's Platform
Mittagong
Bowral
Burradoo
Austermere
Moss Vale
Jordan's Crossing
Cable's Siding
Morrice's Siding
Marulan
Carrick
Towrang
GOULBURN
Yarra
Breadalbane
Fish River
Gunning
Jerrawa
Yass
Bowning
Binalong
Galong
Cunningar
Murrumburrah
Wallendbeen
Cootamundra
Cungegong
Bethungra
Billabong
Junee—Proposed Subsidiary Branch here to Narrandra.
Wallace Town
WAGGA WAGGA

The continuation to Albury *viâ* Hanging Rock, now in course of construction.

The Northern Trunk Line—

The Northern Line.

NEWCASTLE *(Terminus)*
Honeysuckle Point
Hamilton
Waratah — Subsidiary Branch to *Wallsend*
Hexham
Hexham Township
Woodford
Victoria-street
EAST MAITLAND JUNCTION
High-street
WEST MAITLAND
Wollombi Road
Lochinvar
Allandale
Greta
Branxton
Belford
Whittingham
SINGLETON
Glennie's Creek
Ravensworth
Liddell
Grass-tree
MUSWELLBROOK
Aberdeen
Scone
Park
Wingen
Blandford
MURRURUNDI
Temple Court
Doughboy Hollow
Willow-tree (*or* Warrah)
Braefield
Quirindi
Quipolly
Werris Creek—Main Branch Line to Gunnedah, open as far as Breeza.
Currabubula
TAMWORTH

Subsidiary Branch to Bullock Island.. ..

Subsidiary Branch Line to *Morpeth*.... ..

Proposed continuation, Tamworth to Uralla, now in course of construction.

N.B.—The ordinary Stations are in plain type, the Stations at important places or townships, &c., in small capitals, and the Platforms and other *occasional* stopping-places in italics. Persons wishing to alight at any such occasional stopping-place must be careful to give notice to the Guard at the *next* previous *Station*. *Mark* that Station, where you have thus to warn the Guard.

UPPER POINTS, GREAT ZIGZAG.

ROUTES.

Routes on the Western Line.

Route No. 1—From Sydney to Bathurst: 145 miles.—In this route, as on all others, remember to be at the station from which you intend to start (especially should it be the Sydney Terminus) full quarter-of-an-hour before the train is to leave; more particularly if you are not alone or have any luggage. Take the morning train if you wish to see the varied scenery along the line on the Blue Mountains* and particularly that of the First Zigzag near Emu Plains, and the Great Zigzag near Lithgow. Dine at Mount Victoria. You can, by using the telegraph at the Sydney terminus, order any dinner to be ready for you at the Mount Victoria refreshment-rooms—if you like to incur the expense. It will probably take you between 8 and 9 hours to get to Bathurst.

Route No. 2—From Sydney to Orange: 192 miles.—Follow directions for Route No. 1, except that you should also take a hasty "tea" at the refreshment-room at Bathurst, and come provided with a rug to sleep in between Bathurst and Orange. At Orange there are several excellent hotels. An omnibus at the Orange station will convey you and your luggage to "The Royal." There is now an hotel (Mr. Kenna's) conveniently close to the Orange station.—Probable time for your journey by this route—11 hours.

Route No. 3—From Sydney to Lawson (formerly Blue Mountain) Station: 58 miles.—You can go by the morning or evening train to "The Blue Mountains" (Mr. Henry Wilson's place, formerly well known as "The Old Blue Mountain Inn"). A fine prospect is visible from the inn itself; and there is diversified and beautiful scenery on both sides of the line, within 2 miles distance either way. On the north side are Dante's Glen, and three waterfalls, each one of a different character; and on the south are the Adelina Falls and other charming cascades. Excellent roads, fit even for the restricted exercise of the sick or aged, lead to the Adelina Falls and to Dante's Glen. Mr. H. Wilson's commodious inn (often mistaken by travellers for a private residence) stands about 100 yards west of the station. If the time of the visitor be limited he can make this inn his head-quarters, and supplement his excursions by a flying visit to "Wentworth Falls," 4 miles further on.—Time of journey by this route, 3 hours and a half.

Route No. 4—From Sydney to Wentworth Falls (formerly called the Weatherboard Platform): 62 miles.—Should you desire to go from Sydney direct to "The Weatherboard Gorge and the Campbell Cataract"—a grand piece of scenery of wondrous wildness and unrivalled beauty—your better way will be to drop a line by post to the keeper of the accommodation house at the "Weatherboard," Mr. Charles Abraham Wilson; and, having so arranged for your bed and entertainment, go up by the evening mail train and sleep. You will arrive at Mr. C. A. Wilson's in the evening at about quarter-past 11 o'clock. But whether you go up in the morning or in the evening, you must remember to tell the guard, at the old Blue Mountain station, to set you down at "Wentworth Falls," or you will be carried on to Mount Victoria. The accommodation house, a clean but unpretentious little place, stands close to where the train stops, and on the southern side of the line. Having slept there that night, you can, without fatigue, visit the Weatherboard Gorge and Cataract early on the following morning.

* The "Blue Mountains" were first crossed by Europeans in May, 1813, by an adventurous party consisting of "Mr. Gregory Blaxland, Mr. William Wentworth, and Lieutenant Lawson, attended by four servants, five dogs, and four horses laden with provisions, ammunition, and other necessaries." They appear to have crossed pretty near the present line of the railroad, previous ineffectual attempts having been made much further to the southward. They got back again to the Nepean on the 6th of June, having apparently got past the Blue Mountains as far as some of the plains beyond.—See *Journal of a Tour of Discovery, &c., in the year* 1813. [The "Mr. William Wentworth" here mentioned afterwards became the celebrated Australian statesman, recently deceased.]

If you return to Mr. C. A. Wilson's in time, you may also conveniently visit "The Water Nymph's Dell" on the north side of the line. Both of these places are within 2 miles of the accommodation house, where for a few pence the services of a youthful guide can be secured. You can go back to Sydney by the "up" train from Bathurst and Orange, which passes the pointsman's house at the Weatherboard at an early hour in the afternoon. You may thus be back in Sydney at 6 p.m., and congratulate yourself upon having had a short, pleasant and inexpensive trip. If you start on a Friday evening, or on a Saturday, you can get a return ticket at a reduced rate; and the charges at Mr. C. A. Wilson's place are reasonable.—Time of journey, rather less than 4 hours.

Route 5—From Sydney to Blackheath (i.e. "Govett's Leap") 73 miles.—If you should desire to pay a hasty visit to the lovely and stupendous gorge and waterfall usually known by the curiously inexpressive name of "Govett's Leap" (and you do not particularly care whether you see any other spot on the occasion or not) take your place in the train for Blackheath, and tell the guard at "The Blue Mountains" (or Lawson station) to put you down at Blackheath. There is a convenient accommodation house here, 2 miles from Govett's Leap, on the north side of the line; an easy walk, and an easy way to find. You had better sleep at the inn, and return to Sydney on the next day by the "up" train; for Blackheath is only a siding with a platform, and you may find it troublesome to be up and ready at the proper time, so to get to Sydney by the eight train from Bathurst and Orange. If you find yourself comfortable at Blackheath, and time permits, you can ride, drive, or walk thence to Mount Victoria and back, so as to see the numerous breaks of scenery to the southward—away over the Cunimbla Valley—to the greatest advantage. But you will find it too far to visit the Hartley Vale from this remote stand-point. Time of journey from Sydney to Blackheath, about 4 hours and a half.

Route No. 6—From Sydney to Mount Victoria: 77 miles.—Everything is clear before you in this route, according to the Station lists in the Time Tables, until you arrive at your destination. Mount Victoria will be for you a good head quarters, from which Govett's Leap, at Blackheath, may conveniently be visited, either by driving up to the eastward on the old road in a buggy, or by riding on a hired horse, or by walking along near the railway. The distance from Mount Victoria to Blackheath is only 4 miles, and the old road here is in a state of good repair. Near Mount Victoria there is much beautiful and attractive scenery. The air, being very bracing and remarkably pleasant, is much recommended for invalids. In the immediate neighbourhood of Mount Victoria are found The Fairy Dell, The Engineer's Waterfall, The Little Zigzag (overlooking the northern part of the Cunimbla Valley), Mount Piddington, Mount Piddington's Waterfall and Dell, and many other picturesque spots. From the back of Mr. John Perry's hotel, past the Protestant Church, the old road will take you down into the romantic and secluded vale of Hartley, the peculiar scenery of which will well repay a visit. There is at Hartley, near the two churches, a decent, old-fashioned, wayside inn, kept by Mrs. Evans. The little town, or rather village, of Hartley, on the borders of the river Lett (a tributary of Cox's River) is quaint and pretty; and, from the bridge over the stream of the brawling Lett, an excellently kept road winds north-westerly up the valley towards Bowenfels—passing on its way, under boldly defined and truly majestic rocks, known as "Hassan's Walls." Mount Victoria has three good hotels (Mead's, Perry's, and Finlay's), the third being a very large and handsome inn, just completed, and called "The Imperial." If you make Mount Victoria your head quarters—as many do—you must set apart at least a day and a night for your visit to the Weatherboard Gorge and Campbell Cataract. You cannot conveniently visit *that* most remarkable and beautiful spot from Mount Victoria. The distance is too great, and the old road, between Blackheath and the Weatherboard, has of late, since its almost total disuse thereabouts, fallen greatly out of repair. Time of journey from Sydney to Mount Victoria, about 5 hours.

Route No. 7—From Sydney to Lithgow and Bowenfels: 96-97 miles.—Starting from the Sydney Terminus, you can reach the busy, rising town of Lithgow in six hours; the train pausing, for a few moments, at the more established station at Bowenfells about 10 minutes afterwards. If you wish to stop at Lithgow, be sure to tell the guard at Mount Victoria that you must be put down there, or he will (most probably) take you on to Bowenfels. At Lithgow there are numerous hotels; the "Commercial Hotel" (by Richard Blackford) and Mr. Grey's inn, being, perhaps, the best adapted for visitors. These hotels stand near the Commercial Bank, not far from where the train at present stops. From Blackford's you can make a pleasant 10 miles' excursion by going right round the mountain to the westward and south-westward—where (thanks to Mr. Henry Cambridge, the road surveyor, and the energy and forethought of the Public Works Department) an excellently kept road, past Hassan's Walls, will bring you down the valley to Hartley. Or you can go down to Hartley by a shorter way (about 6 miles) right over "Brown's Gap" behind the easternmost end of Lithgow, up Clyde Valley. From the last road (a very clever piece of practical engineering by Mr. Cambridge) there is a grand prospect to the southward, just as you come down into the valley from the Gap.—Time of journey, 6 hours.

Note* Weekly Tourists' Trains.—Once a week opportunities occur for conveniently visiting Lithgow and Bowenfels by the tourists' trains, which leave Sydney for Bowenfels on Saturdays at 7·50 a.m., and return to the Sydney Terminus on the following Monday morning at an early hour. This weekly tourists' train is run at very cheap rates and will enable persons from the Sydney side to visit either "Blue Mountains" (Lawson), the Weatherboard, or Blackheath (Govett's Leap); but the excursionist will have, beforehand, to make his election as to which of these three places he will stop at until the return of this train to Sydney.

* The above will, it is believed, be found to be the principal routes for tourists, from Sydney downwards, on the Main Branch Western Line. Others may possibly be suggested, when the different stations and stopping places shall, in their respective places, come to be particularized.

Routes on the Southern Line.

Route No. 8—From Sydney to Goulburn: 134 miles.—In this route, as on all others, be sure that you are at the station from which you intend to start (especially should it be the Sydney terminus) a full quarter of an hour before the train is to leave; more particularly so if you are not alone or have any luggage. Take the morning train if you wish to enjoy the varied scenery along the line from Sydney to Mittagong. You had better dine at the last-named place, which you will reach about four hours after your train leaves the Sydney terminus. Be sure that you get into a carriage that is going to Goulburn, or to some other place on the "Southern line"; otherwise, you will have to look out (sharply) at the *Parramatta Junction*, and change into a carriage going South. The guards—uniformly a civil, trustworthy, and respectable class of men—always warn the passengers of every necessary change, and *occasional* stopping place; but passengers (especially ladies) are often inattentive, and get "carried on" in consequence—to the annoyance of themselves, and the vexation and worry of everybody else. Goulburn (a fine, thriving, inland city, the capital of the south-west, with plenty of good hotel accommodation) is a wholesome and pleasant place, one of the prettiest towns in the Colony, but rather cold in the winter season. Provide yourself therefore with clothing accordingly. Goulburn is the centre of a wealthy and important district, and lies on the border of rich and extensive plains.—Time of journey from Sydney to Goulburn, 7 hours and a half.

Route No. 9—From Sydney to Gunning: 165 miles.—Follow directions for Route No. 8. Change your carriage at the *Parramatta Junction* for one going on the Southern line,

if you have not (more wisely) got into your right carriage at the Sydney terminus. Dine at the refreshment-room at Mittagong. There is a refreshment-room at the station here (Gunning) where you will have time to take some tea, or other refreshment, if you have to go further. The district of Gunning is agricultural and pastoral ; the country surrounding the town being mountainous, with undulating plains. From Gunning to Wagga Wagga the present south-west terminus (1879) the distance by rail is 143 miles.—Probable time of journey, rather more than 8 hours.

Route No. 10—From Sydney to Campbelltown: 34 miles.—A cheap and quiet but delightful jaunt may be improvised by any tourist from Sydney to Campbelltown, on the Southern Line—distant from the Sydney terminus only 34 miles. Mind you are in the right carriage for the Southern Line when you come to the *Parramatta Junction*. There are numerous hotels at Campbelltown. It is one of the oldest towns in the Colony, and is situated in a hilly, well cleared agricultural district, celebrated for the salubrity of its climate. The scenery round Campbelltown is very pretty, especially in the spring and early summer. From it there are many agreeable rides and drives, in all directions. The roads to Camden and to Appin, wind, each of them, through many charming bits of rural scenery, now, by the general public, neglected and well-nigh forgotten. Nine miles to the north-westward, near Camden (where, in a commanding situation, there is a magnificent Anglican church, built by the MacArthur Family), the country will be found highly cultivated, undulating, and extremely pleasing. Good hotel accommodation at Camden. The district adjacent to Camden is occupied by graziers and agriculturists; and there are also, round it, many dairy farms. Close to that township there is a fine bridge over the Nepean. At Appin, 9 or 10 miles from Campbelltown, in an opposite direction, on the Illawarra road, there are two hotels. Near this secluded village will be found much curious river scenery, and (a few miles south from its two churches) a singularly wild and rocky pass, adjoining to which is a deep stream with a dangerous ford. Time of journey to Campbelltown from Sydney, rather better than 1 hour and a half.

Route No. 11—From Sydney to Menangle, 40 miles.—(See Route No. 8.)—This is a station on the Southern Line, 6 miles further than Campbelltown. It has some characteristic park-like scenery, the country being more open than usual in this part of Australia. Menangle is much visited by Sydney excursionists, and deserves its popularity. Cultivation and grazing farms on a limited flat and fertile area. You can go to Menangle from the Sydney Terminus in a very short time, and return in the evening. The surrounding country is elevated, and undulates to the foot of the mountain range. The steep ridge known as "Razorback" lies about 3 miles to the westward. The loftiest peak in the neighbourhood is Mount Hunter. Time of journey from Sydney to Menangle, nearly 2 hours.

Route No. 12—From Sydney to Picton: 53 miles.—You can reach Picton by the train from the Sydney terminus by a short and pleasant trip. Mind you change your carriage, if necessary, at the Parramatta Junction. (See Route No. 8.) If you require a cheerful rest and a reviving repose for a few days, you may secure what you want by a railway trip to this picturesque village formerly known as "Stonequarry." There are three hotels here, suitable for visitors. The viaduct over the Stonequarry River is a grand piece of masonry. The scenery at Picton chiefly consists of precipitous hills, grassy glades, and straggling woods. A ramble down the winding rock-enclosed course of the "Stonequarry" has delighted and astonished many an artist and man of cultivated taste. Near this little township there is a long tunnel through which the Southern Line passes on its way towards Goulburn, Gunning, and Wagga Wagga. Time of journey from Sydney to Picton, 3 hours.

Route No. 13—From Sydney to Mittagong: 77 miles.—(See Route No. 8).—You can reach Mittagong from the Sydney Terminus after a comparatively short and agreeable *trajet*. Grand and impressive views in this neighbourhood, at the Gibraltar Pass, and

pleasing scenery at Bowral and at Bong Bong. Near Bowral (a thriving little village with a station of its own, about 3 miles from Mittagong) there is a long and admirably constructed tunnel. Time of journey from Sydney to Mittagong, about 4 hours.

Route No. 14—From Sydney to Moss Vale: 86 miles.—(See Route No. 8).—The Sydney tourist to Moss Vale had better take his wayside refreshment at the Mittagong station, and secure such hotel accommodation as he may require here on his arrival. The scenery round Moss Vale is picturesque. The village of Sutton Forest, lying on the Old Bong Bong and Goulburn Road, is a much admired, healthy spot, often visited by invalids. There are good accommodation houses for visitors. Time of journey from Sydney, rather less than 5 hours.

Note: Weekly Tourist's Trains.—Once a week opportunities occur for conveniently visiting Campbelltown, Menangle, Mittagong, Bowral, and Moss Vale at cheap fares by the Tourists' Trains, which leave Sydney for Moss Vale on Saturdays at 7 a.m., and return to the Sydney Terminus on the following Monday morning, at an early hour. This train will enable persons from Sydney to visit either of the five above-mentioned places; but the excursionist should wisely elect beforehand as to which of those places he will stop at, until the return of this train to Sydney.

[The above will, it is believed, be found to be the principal routes for tourists from Sydney downwards, on the Main Branch Southern Line. Others may possibly be suggested when the different stations and stopping places shall, in their regular and consecutive order, come to be particularized.]

Routes on the Sydney to Richmond Subsidiary Line.

(Connected with the Western Line.)

Route No. 15—From Sydney to The Hawkesbury, Wiseman's Ferry, and the Macdonald River, via Windsor: 100 miles.—If the Sydney tourist wishes to visit the Hawkesbury* and the Macdonald Rivers, at a small expenditure of time and money, he had better get a railway ticket to Windsor at the Sydney Terminus some afternoon—say on a Saturday—and he may then, about two hours afterwards, find himself in the pleasant old town of Windsor, elsewhere described. Three miles from the Windsor Station stands Pitt Town, to the vicinity of which the tourist may either walk or ride on an omnibus. From that point on the Hawkesbury, so reached, a small steamer, "The Telegraph," starts every Monday morning at 8 o'clock, and arrives at the wharf at St. Alban's on the Macdonald River, on the afternoon of the same day at 5 o'clock. If the excursionist, avoiding the numerous sinuosities of the Hawkesbury, prefers to walk (or ride) along the road to Wiseman's Ferry,

* The Hawkesbury *(Deerubbun)* is remarkable for its singularly tortuous course. Its basin has three distinct slopes in the eastern watershed—a southern, eastern, and western. The main stream comes from the southern slope, and is first called *The Wollondilly*. It successively receives the Mulwarree, the Cookbundoon, the Wingecarribee, the Guinecor Creek, and the Nattai and Coxe Rivers, and is then called *The Warragamba*. When the Cowpasture River has next contributed its waters, the river becomes known as *The Nepean*, a name which it bears until its junction with the Grose, which flows down into the main river through a cleft in the Blue Mountains. The river so constituted is, from that point, known as *The Hawkesbury*, a name first bestowed, in order of time on this stream of many aliases. After receiving the South Creek at Windsor, and then the Colo and the Macdonald Rivers, the Mangrove creek and other minor streams next become its tributaries; the Hawkesbury finally discharging itself into the Pacific, at Broken Bay. The entire length of the Hawkesbury is generally estimated at 330 miles (130 miles longer than the River Severn, in Great Britain), and it drains a much disconnected area of about 9,000 miles. Owing to the immense area drained by the Hawkesbury, and the flatness of the country in the lower portion of its stream (but chiefly, perhaps, in consequence of the confined and winding channel below Windsor, through which the enormous volume of accumulated waters cannot always with sufficient velocity be discharged), the lower course of this river is liable to sudden and dangerous floods. The Hawkesbury received its name from the first Governor of this Colony, Captain A. Phillip, R.N., in honour of Lord Hawkesbury.

he will find his line of transit about half the distance—from 24 to 25 miles only. The scenery, both on the river and on the road to the east of it, is, for the most part, extremely interesting; but the best way to see the Hawkesbury is, of course, to see it from the river itself. Portland Head and Sackville Reach are much admired; but all along the banks of the Hawkesbury, from Windsor to Wiseman's Ferry, the frequent farms and flourishing homesteads give a cheerful British air to the ever changing scene. A little way off the road the traveller by land—at a place known as "Stone Chimney," about half way — will find an excellent stream of water. The "Maroota" road, on which he journeys, having been joined by the Great Northern Road, crosses the Hawkesbury near its celebrated confluence with the Macdonald, at a place called Wiseman's Ferry. From the "Ferry" the Northern Road stretches away northerly, through a wild and desolate country, to Wollombi. Two miles before reaching the Hawkesbury the traveller, by land, has to keep along a lofty ridge, which, descending abruptly to the river, discloses a most enchanting prospect. The Hawkesbury, about a quarter of a mile wide here, sweeps round in a semicircle; its calm, deep, lake-like expanse being enclosed on all sides by forest-clad, precipitous hills. At Wiseman's Ferry, the traveller—whether he arrives by the road or in the little steamer—will find cleared land, an inn, a school-house, and an old ruined church. The entrance to the Macdonald River is about a mile or so below this picturesque but decayed township. The still waters of the little known "Macdonald" are navigable by small craft up to the wharf near St. Alban's, about 12 miles from the Hawkesbury. The adjacent levels and banks of the Macdonald are remarkably fertile and beautiful. St. Alban's—the only township in the valley of the Macdonald—is secluded and picturesque. The houses are built on the side of the hills surrounding this quaint little town, in which will be found a stone church, stores, a smithy, and a comfortable inn, known as "The Settlers' Arms." From this convenient stand-point an adventurous tourist might, after crossing the "Ferry," pay a visit (*viâ* Snodgrass Valley) to "the Mangrove," in the Brisbane Water district. From the Sydney terminus to Windsor the distance by rail is 34 miles; from Windsor to Pitt Town, where the steamer starts on her riverine voyage, 3 miles; from Pitt Town to Wiseman's Ferry (by the windings of the Hawkesbury) about 50 miles; from Wiseman's Ferry to the wharf near St. Alban's (on the Macdonald), rather more than 12 miles. Total distance from Sydney say 100 miles. The steamer returns from St. Alban's to Pitt Town almost immediately after her arrival. This route seems to suggest the cheapest and most convenient way for any family or party of friends to view the grand and ever changing scenery of the Vale of the Hawkesbury, and of that of the Macdonald. The scenery on the Hawkesbury was much admired by the celebrated novelist Anthony Trollope, who considered that it compared favourably with that of the Rhine. Excursionists from Sydney and Parramatta can easily reach Windsor by the train, and be conveyed thence to where the "Telegraph" lies—usually at Pitt Town. It would, however, always be better to write to the master and proprietor of that steamer and obtain his reply, before any such party is fully organized and carried out—so as to prevent any possible disappointments. Time of journey (by rail) from Sydney to Windsor, about 2 hours.

Route No. 16—From Sydney to the Kurrajong Heights, &c., via Richmond, 41 miles: —The Sydney tourist intending to visit the Kurrajong Mountains (a north-easterly offshoot of the Blue Mountains commonly so-called) will do well to possess himself of a ticket at the Sydney Terminus some fine afternoon, and taking his seat in a railway carriage he may find himself, about two hours and a half afterwards, in Richmond, a very pretty little country town, elsewhere described. At the Richmond railway station he can readily hire a commodious car, in which he may—for a few shillings—be whirled off, with all due expedition, to one of the many comfortable accommodation houses to be found near the top of the Kurrajong. This car, after leaving Richmond by the cutting near the Anglican Church, passes over a wide, dreary, alluvial flat, at the northern limit of which

MOUNTAIN HOME.

flows the Hawkesbury River (just after the junction of the "Nepean" with the "Grose") and here running easterly. Crossing the river by an excellent bridge, the traveller is first taken past the little hamlet of Enfield, through some miles of an agreeable, undulating country, with homesteads, orange orchards, and farms; over Wheeney Creek, past "Lamrock's," and then up the steep mountain side until he reaches his destination—Belmore Lodge, or wherever else it may be that he is determined to go. The ascent of the road after Wheeney Creek is so sudden that the alteration of the atmosphere to a more bracing and healthy climate becomes very perceptible, and is, moreover, strikingly evidenced by a concurrent change in the vegetation. From the windows of his bedroom on the following morning the tourist will find himself looking down upon a broad and partly wooded expanse of hill country, on the misty plains beyond which the Hawkesbury is, here and there, to be seen winding along towards the Pacific. The towns of Richmond, Windsor, Pitt Town, Wilberforce, Castlereagh, and Penrith—are more or less visible; and even the exact site of the Metropolis with its wide spread suburbs and adjacent coast ridge, can be traced (beyond the blue hills of Parramatta) in the extreme distance. In fact, nearly the whole of the broad county of Cumberland—hemmed in towards the west and south by far-off shadowy mountains—lies before the enraptured view of the visitor to the Kurrajong. At the back of Belmore Lodge, an abrupt ascent brings the visitor to a well-known sylvan seat, whence the prospect of the lower country can be seen to the greatest advantage. On the summit of the ridge a pretty sheltered path, trending easterly, leads through the woods to the late Mr. Comrie's residence, from the grounds of which there is a grand view to the southward. When staying at the Kurrajong, the tourist should seize the opportunity of visiting "the Vale of Avoca"; so called from the "meeting of the waters" of the Grose with those of a large mountain stream, unnamed, flowing out of one of the many wild ravines of the Kurrajong. The best way to view this lovely landscape is to hire a horse and guide on the Kurrajong, and so to make a day of it. The tourist will first have to descend the mountain as far as Lamrock's, and then to turn off and travel for several miles in a westerly direction. The Vale of Avoca should be approached through a gum tree forest, on a gradual elevation from the southward; so that nothing can be anticipated, and thus the full grandeur and singular beauty of the prospect allowed to burst suddenly upon you. The Grose comes rapidly down its own dreadful precipitous gorge to the left, and the Nameless Stream hastening to meet it rushes from the heavily wooded crags of the Kurrajong, down before you from the right. The last-mentioned stream sweeps onward past the base of the rock on which the spectator stands, and a mile or so away unites with the Grose on its headlong course to the Hawkesbury. In front, many hundred feet below, a broad densely timbered green peninsula—the colours softened by the dizzy distance, as it rises from the water's edge into a gentle eminence—contrasts agreeably with the more sombre outlines of the rude dark cliffs and lofty, forest-clad mountains on either side, forming the *frame*, as it were, to this charming picture. "The meeting of the waters" is deemed by all who have seen it to be well deserving of its distinguished and poetic name. No tourist should, if possible, omit to pay a visit to this locality. There are many agreeable rides and drives about on the Kurrajong, commanding a great variety of mountain and forest scenery. Time of journey (by rail) from Sydney to Richmond, about 2 hours and 20 minutes.

Routes on the Northern Line.

Route No. 17—From Newcastle to Tamworth: 182 miles.—The tourist who leaves the Newcastle Terminus for Tamworth will in five hours and three-quarters reach Murrurundi. If he starts by the first train in the morning he had better take his breakfast at Singleton, where there is a refreshment-room, and where all passenger trains stop for fifteen minutes. If he takes his departure from Newcastle by the 9 o'clock morning train (passengers and goods) he may conveniently *dine* at Singleton (at 1·35 p.m.) before proceeding to Murrurundi—which he will, in that case, reach at about 10 minutes past 7 in the evening. He will find Murrurundi a prosperous inland town, beautifully situated on the Page River, which (conjoined with the Isis) forms a western tributary to the Hunter. Here there is another refreshment-room at which the traveller had better take a meal, as he will not meet with another opportunity before his arrival at Tamworth. Leaving Murrurundi he has then before him a journey of 60 miles, and to pass eight stations and stopping places before he arrives at his destination. The first of these is Temple Court Platform, 1 mile from Murrurundi; the second, is Doughboy Hollow, a platform 5 miles further on; the third, Willow Tree (or Warrah), a station 8 miles further; the fourth, Braefield Platform, 6 miles further; the fifth, Quirindi station, 4 miles further; the sixth, Quipolly station, 6 miles further; the seventh, Werris Creek station, 5 miles further; the eighth, Currabubula station, 9 miles further. 18 miles beyond Currabubula station stands the present terminus at Tamworth. Of these stations and stopping places it may here be remarked that Quirindi lies on the northern slope of the Liverpool Range, 24 miles from Murrurundi, on the banks of the Quirindi Creek, an eastern tributary of the Namoi River. The Line penetrating the Liverpool Range arrives at Quirindi through a well formed tunnel 528 yards long, lined with brickwork set in Portland cement. Tamworth stands to the northward from Quirindi, 38 miles; and across this intervening space the Great Northern Railway has just been completed. Breeza is a small town, west of Quirindi 25 miles; and Wallabadah, a pastoral and agricultural settlement, is 16 miles away to the eastward. Those who intend to visit Armidale, the capital of New England, usually travel by this route, *viâ* Murrurundi, Quirindi, and Tamworth. Time of journey from Newcastle to Tamworth 10 hours.

Route No. 18—From Newcastle to Murrurundi: 120 miles.—For directions on leaving Newcastle for Murrurundi see Route No. 17 as to dining at Singleton, &c., &c. Murrurundi—at an elevation of 1,546 feet above the sea-level—lies 192 miles north of Sydney, at the foot of the Liverpool Range, 94 miles distant from the nearest portion of the coast of the Pacific. This town, which has a population of 400 souls, is the centre of an extensive and progressive district, principally devoted to pastoral pursuits, but endowed with a singularly varied amount of mineral wealth not yet fully developed. The land is in many parts of an excellent quality, and, year by year, as the population becomes more numerous, agriculture also becomes more general, and, what is better, is found to pay well. The local newspaper is the *Murrurundi Times*. There is much fine scenery in this district, especially in the more elevated portions of it, for the Liverpool Range is a magnificent chain of mountains—from 3,000 to 4,000 (sometimes even as much as 5,000) feet high—rising, at irregular intervals, into lofty detached peaks, with rugged cliffs, and traversed by deep precipitous gorges. Some of these picturesque localities are heavily timbered, and some are well nigh denuded of vegetation. Murrurundi Gap is 2,314 feet above the level of the sea. One of the highest and most remarkable mountains near Murrurundi is Mount Murrulla, 3 miles E.E.S. of the township. Mount Murrulla, like Mount Wingen, is rather *connected* with the Liverpool Range than an actual part of that chain, which runs across the country to the north of both. Mount Wingen, 1,820 feet high, lying a few miles east of Mount

Murrulla, is perhaps better known as "The Burning Mountain," from the accidental ignition of a large coal seam beneath it. The places of note near Murrurundi are as follows:—*Blackville*, a pastoral settlement, 45 miles distant; *Blandford*, another settlement (agricultural as well as pastoral) on Page River and Warland Creek, 3 miles south of Murrurundi; and *The Willow Tree* or *Warrah*, the well-known station of the Australian Agricultural Company, 15 miles distant from Murrurundi; *Haydonton* is a suburb, now connected with Murrurundi (since 1864) by the "Arnold Bridge." *Timor*, on the River Isis, is a locality situated a few miles to the eastward of Murrurundi, and chiefly noticeable for its caves. "They present," we are told, "a series of extensive chambers, the floors of which are covered with stalagmites, while stalactites of all ages depend from the ceilings." Time of journey from Newcastle to Murrurundi—rather less than 6 hours.

Route No. 1 —From Newcastle to Scone: 96 miles.—The tourist leaving Newcastle by rail may, if he pleases, in less than 5 hours find himself at Scone; having, *en route*, had the option of breakfasting or dining at Singleton, according to the train by which he may have come "down" the line. (See directions for Route No. 17.) Scone is rather a pretty little place, situated on the banks of a stream oddly called the "Kingdon Ponds," which, with the Darkbrook, forms a western tributary of the Hunter, falling into that river about 9 miles above the township of *Aberdeen*. Scone, at an elevation of 680 feet above the sea-level, is reckoned to be 167 miles north of Sydney by the postal route. It has a population of 600 souls. It lies 7 miles west of Page River, and 7 miles north-west of the Hunter. The country round Scone is mountainous, the adjacent district being chiefly occupied for pastoral purposes. Near the township is a plain, on which are found quantities of fossil wood; the rooted trunks of large fossil trees, standing in the ground, as if still in their places of growth. Besides Aberdeen, above-mentioned, the principal places near Scone are Bunnan and Rouchelbrook. In the mountains and highland glens near Scone there is much wild and picturesque scenery. A beautiful spot there, called "Flat Rock," is spoken of as well deserving of a visit. Time of journey from Newcastle to Scone—4¾ hours.

Route No. 20—From Newcastle to Musclebrook: 80 miles.—(For directions as to place of stopping for breakfast or dinner on this journey see Route No. 17.) The traveller by rail from Newcastle to Musclebrook (or Muswellbrook) arrives at his destination in about 4 hours after leaving the Newcastle Terminus. Musclebrook (475 feet above the sea-level) lies on the margin of the Musclebrook and the Hunter, that river skirting the township on its western side. It is, by postal route, 152 miles north of Sydney, and contains about 1,500 inhabitants. There is a very handsome Anglican Church here, noteworthy as being one of the finest ecclesiastical edifices at present erected in the northern portion of the colony. The visitor should go and see it, especially the interior. The country around Musclebrook is favourable to the growth of wheat, maize, sugar, tobacco, and the vine. *Denman* is a small town, lying 16 miles south of Musclebrook, about 2 miles above the confluence of the Goulburn and Hunter Rivers, on the main road from Maitland to Merriwa, Cassilis, and Mudgee. The other settlements in the neighbourhood of Musclebrook are Goorangoola, Grass Tree, Gungal, Kayuga, and Wybong. Time of journey from Newcastle to Musclebrook, nearly 4 hours.

Route No. 21—From Newcastle to Singleton: 49 miles.—Singleton, the centre of the rich and flourishing district of Patrick's Plains, is an agreeable well-planned country town, on the Hunter River, 123 miles north of Sydney by the postal route. He finds the station 135 feet above the sea-level. Here there is a good refreshment-room, and trains carrying passengers stop 15 minutes. Singleton is a wealthy thriving place, with comfortable inns, several churches, and other handsome public edifices. The Court House is one of the finest buildings of the kind in the Colony. The town (which has a good local newspaper) contains over 1,200 inhabitants. The district, in which Singleton holds the chief place, has many advantages for pastoral and agricultural pursuits. Large quantities of good wine have been

produced, and copper, iron, freestone, and limestone are found in the adjacent country. *Jerry's Plains* is a township on the Hunter, 19 miles west of Singleton, on the road from Singleton to Cassilis. Coal abounds in its neighbourhood, and other valuable mineral deposits. The remaining noticeable settlements near Singleton are:—Belford (on the Line 10 miles south-east from Singleton), Bridgeman, Camberwell, Glendon Brook, Howe's Valley, Ravensworth, Scott's Flat, Sedgefield, St. Clair, Vere, Warkworth, and Westbrook. Time of journey from Newcastle to Singleton, about 2½ hours.

Route No. 22—From Newcastle to West Maitland: 20 miles.—Maitland (by many once not unfairly ranked next after the capital of the Colony, for its wealth and importance) is divided into East Maitland and West Maitland by Wallis Creek, over which there is an excellent bridge. East Maitland was the original Government township; but when "Maitland" is now spoken of West Maitland is generally meant—it being, of the two, by far the largest and most important place. "Maitland" lies low; only 124 feet above the sea-level. Maitland is 12 miles south of Paterson, the chief town of the Paterson District. Maitland is also reckoned to be 95 miles from Sydney, by the ordinary postal route; 20 miles by rail from the Newcastle Terminus, 19 miles from Singleton, 30 miles from Cooranbong, 60 miles from Muscle-brook, 100 miles from Murrurundi, and 124 miles from Quirindi. West Maitland contains several good hotels, and fine public buildings; with many commodious churches and schools. The population of West Maitland, in 1871, was over 5,000 souls, but it is now probably much greater. The townships, villages, and settlements, near East and West Maitland, are: Anvil Creek, Bishop's Bridge, Branxton, Buchanan, Creswick, Elderslie, Farley, Greta (late Farthing's), Hinton, Largs, Lochinvar, *Morpeth*, Mount Vincent, Rothbury, and Woodville. Of these, Lochinvar, Greta, and Branxton are stopping places on the Great Northern Railway, to the west of Maitland; and Morpeth is to the north-eastward, at a distance of 6 miles. Morpeth is the head of the navigation of the Hunter River, and steamers constantly ply between it and Sydney, by means of which towns and settlements* on the Williams and Paterson rivers (and their affluents) may perhaps be most conveniently visited.

Route No. 23—From Newcastle to East Maitland: 18 miles.—East Maitland station—reached by the railway traveller, after a trip of rather less than 1 hour's duration—is situated in a pleasant spot, with rising ground near it; the station itself being not more than 18 feet above the sea-level. East Maitland is considered to be one of the best laid out towns in the Colony, and when the numerous trees, so judiciously planted, shall have grown up, it will be one of the most picturesque. In its wide and well kept streets there are many excellent and substantial buildings, churches, banks, hotels, and shops. The Government gaol and the adjacent court-house are both fine and commodious buildings, standing on a gentle eminence, to the north-east of the township. The population of East Maitland, in 1871, was 1,675 persons; but of late it has been reasonably estimated at considerably over 2,000. Courts of Quarter Sessions and Circuit Courts are held here. You can go from East Maitland *direct*, by the Subsidiary Line, which starts from here to Morpeth. Near East Maitland (to the eastward) are Morpeth, Wickham, Woodford, and Hinton. Time of journey about 55 minutes.

Route No. 24—From Newcastle to Waratah, 4 miles.—Waratah is a busy thriving township, only 4 miles west of Newcastle, and not more than 13 feet above high water mark. It is said to have a population of about 3,000 souls, the principal industries being coal-mining, stone-quarrying, and copper-smelting. Coal is shipped from shoots into vessels lying in the lower waters of the Hunter at Point Waratah. At the distance of about 1½ miles west of Waratah the Wallsend Subsidiary Line joins on to the Great Northern Railway. There is no particular beauty in any of the surroundings of Waratah, but it is outside of the "great coal city" into something like the country, and

* Such as Raymond Terrace, Miller's Forest, Seaham, Tomago, and Williams Town, on *The Williams*; and Paterson, Clarence Town, Dungog, Campsie, Eccleston, Gresford, Vacy, Lewinsbrook, and Lostock, on *The Paterson*.

the place is consequently a favourite resort to the citizens of Newcastle, from which it lies about 10 minutes' distance, by rail. Besides Waratah the places near Newcastle are Stockton, Honeysuckle Point, Hamilton, Lambton, Minmi, New Lambton, Plattsburg, *Wallsend*, Brookstown, *Hexham*, Alnwick, Adamstown, Charlestown, Oneygamba, and Tighe's Hill. Wallsend and Hexham are connected (by rail) with the terminus at Newcastle. Time of journey from Newcastle—from 15 to 25 minutes.

Routes of Subsidiary Lines to Northern Line.

There are three Subsidiary Lines to the Northern Line, but they are not of such length and importance as the Subsidiary Line from Blacktown to Richmond, or the proposed line from Wallerawang to Mudgee. 1. The *first* of these is the Subsidiary Line from Newcastle to Bullock Island; 1½ mile. This joins the main line at Honeysuckle Point, just outside Newcastle. It is not much used for passengers, but is of great utility for the conveyance of coal and other mineral products. 2. The *second* of these Subsidiary Lines, to the Great Northern Line, runs from Newcastle (westerly) to Wallsend—a distance of 8 miles. There is a morning and afternoon train every day (including Sundays) and the *trajet* is made in 35 minutes. The trains between Newcastle and Wallsend call, either way, at Waratah (at Hamilton only if required) and at Honeysuckle Point. Wallsend, the terminus of this Subsidiary Line, is a busy, rising, incorporated town, with adjacent collieries. It already numbers at least 5,000 inhabitants. Wallsend is 20 miles north-east of Cooranbong, by which, after a journey of 32 miles to the southward, Gosford, the pretty chief township of Brisbane Water, may conveniently be reached. There is a good road, and the telegraph line runs along the same, all the way. Cooranbong can also be reached by a road southerly from Maitland. 3. The *third* Subsidiary Line—that from East Maitland to Morpeth—is, in its extreme length, 4 miles long. There are several trains on it every day (including Sundays) and the *trajet* is made in half an hour. The trains between East Maitland and Morpeth call at Northumberland-street, which is the only intermediate stopping place on the line. This Subsidiary Line is one of great practical use to the inhabitants of the towns it connects; especially when it is remembered that Morpeth is the head of the navigation of the Hunter River.

Route of Main Branch North-western Line.

There has recently been opened a short extension of this line from Werris Creek to Breeza, 15 miles, which is to be continued on to Gunnedah. The works on the extension are in a forward state, and in a few months the line will be opened to the latter town.

NEPEAN RIVER.

ITINERARY AND DESCRIPTIONS OF SCENERY.

RAILWAY ITINERARY—STATIONS AND PLATFORMS, &c WITH DESCRIPTIONS OF SCENERY.

I.—SYDNEY TO PARRAMATTA JUNCTION.

(WESTERN MAIN TRUNK LINE.)

N.B.—"Suburban Trains" to the Town of PARRAMATTA, 1 mile beyond the *Parramatta Junction* to the N.W.

Eveleigh Platform, 1 mile; 70 feet above sea-level.—Eveleigh Platform, only a short distance to the left, beyond the Redfern Railway Tunnel, is reckoned a mile from the Sydney Terminus. Short as this distance is, *by rail*, this platform is found to be very convenient for persons residing at Alexandria, Redfern, and Waterloo. As the passenger leaves the Sydney Terminus he may have a good view of three handsome stone edifices near the line—the Railway Mortuary Station, with the Wesley Church, to the right; and St. Paul's Anglican Church and Tower to the left. Many "Suburban trains"—such as can, between Sydney and Parramatta, readily stop (*if specially required*) at a "platform" like Eveleigh—pass by during the day.

McDonald Town Platform, 1½ mile; 80 feet above sea-level.—Having passed "Eveleigh," the passenger by the train has, at once, to the left, a fine prospect of Botany Bay in the distance; across a level, open, country, with the church and village of St. Peter's on elevated ground to the westward. On the right of the Line can now be seen the grand architectural outlines of the Sydney University—to the west of which (on the ridge of the hill, close to Newtown) stands the Deaf, Dumb, and Blind Asylum—a curious red brick building, in marked contrast to its more pretentious neighbour. The "McDonald Town Platform" is placed at a siding, just where the railroad winds to the right, before it enters Newtown.

Newtown Station, 2 miles; 96 feet above the sea-level.—The Railroad, ascending gradually from the Terminus, now runs under a bridge and through the pleasant suburban township of Newtown. Emerging from the shadow of a second bridge, the traveller usually finds that the train halts for a few moments at th Newtown Station; close to a pretty Gothic church erected by the Roman Catholic communion. Appointed time for train to reach the Newtown Station after leaving the Sydney Terminus, about 6 minutes.

Stanmore Platform, 2½ miles; about 100 feet above sea-level.—This Platform stands about half-way between Newtown and Petersham Stations, and is for the convenience of the residents of the hamlet of Stanmore.

Petersham Station, 3 miles; 100 feet above sea-level.—Having left Newtown the traveller by the train is pleased to observe an excellent and comprehensive view stretching away to the northward—to the heights of the picturesque suburban hamlet of Balmain, the church towers and houses of which here first become plainly visible. Beyond Balmain the North Shore hills extend in the extreme distance. On the southern side of the line, houses, villas, gardens, and slowly developing streets are successively presented; where (not long since) there was nothing but open country, or shady "bush." The first clump of forest trees, yet undisturbed, on the old Annandale Estate, next shows itself on the right, and is, of course, the object of much curious speculation to European visitors, unaccustomed to the rather stiff and formal eucalyptus. On approaching Petersham Station a fine view over the country unfolds itself to the right—the celebrated "Blue Mountains" becoming visible far away to the westward. Petersham Station is now the centre of a thickly populated suburban district, and on the slopes around it are many really delightful villas and gardens. Usual time of *trajet* from Sydney to Petersham, about 12 minutes.

Ashfield Station, 5 miles; 86 feet above sea-level.—Quitting the Petersham Station the railroad for a while traverses a rolling country, numerously inhabited. The burial-ground

and Roman Catholic Church of St. Mary and St. Joseph then stand together for a moment near the advancing train to the right; and, after that, the old (and somewhat decayed) village of Petersham comes directly in view, down in the hollow, lying on the side of the Parramatta Road. The course of the train brings the tourist next, somewhat abruptly, by a viaduct over Long Cove Creek, a stream which flows along the bottom of the gorge, down which—away towards the Parramatta River—is suddenly disclosed a long vista of picturesque woods. The slender spire of St. David's Presbyterian Church is seen amongst the trees to the north-west in the mid distance. Away to the left are woods much nearer to the Line, and then the southern edge of the old Ashfield Racecourse is gained, with the old Southern Road from Sydney on the right hand; and so, passing under a bridge and through a deep cutting between houses, orchards, and gardens, the train at last comes thundering into the pretty village of Ashfield. Time between the Sydney and Ashfield Stations, about 18 minutes—sometimes less.

Croydon Platform, 6 miles; 86 feet above sea-level.—The railway passenger, on leaving Ashfield Station, is now (for about a mile) hurried past an agreeable bit of home scenery; diversified by gardens and trees, with a wide, uneven space on either side of the road in the back ground, where Nature has not yet been ruthlessly *improved* away. Streets (for the most part mere lanes) intersect this tract, whereon stand villas and gardens belonging to Sydney people, displaying a considerable amount of domestic comfort, originality, and even elegance of design. Vistas of pleasant country roadways—green, and as yet innocent of dust and mire—stretch up the gentle eminences to the left and right; and then the sombre eucalyptus, intervening market gardens, and rural homesteads, successively meet the eye before the train reaches Croydon Platform. Here the train (if suburban) may possibly stop for a moment, but probably speeds onward unchecked to Burwood.

Burwood Station, 7 miles; 68 feet above sea-level.—After passing Croydon Platform, the railway traveller will at first only see a continuation of such scenery as he has been observing between Ashfield and Croydon. Nevertheless (just before he arrives at the prosperous village of Burwood) he may catch a passing view of the Congregational Church to the right, near the Burwood station; and he may likewise—beyond that pretty little ecclesiastical edifice—observe the Anglican Church on the Parramatta Road, with a good view of Balmain and the North Shore hills in the distance. To the left he will doubtless notice another handsome Anglican Church (with an adjacent school-house) on Burwood heights; also more bush scenes, presenting a series of gardens and woodland glades. Near Burwood, on the Line, he may likewise get a hasty glimpse to the north-west of the hill country near Parramatta. Appointed time from Sydney to Burwood, usually about 24 minutes.

Redmyre Platform, 7½ miles; 60 feet above sea-level.—A half mile beyond Burwood, to the westward, is a platform named Redmyre, for the convenience of residents in the adjacent houses and villas.

Homebush Station, 8 miles; 32 feet above sea-level.—Between Burwood and Homebush there is a considerable descent on the Line, amounting to not less than 36 feet. After passing the Redmyre Platform the railway traveller has a distant view of the country to the north-west, across an open range of forest. The hills beyond Parramatta now more plainly appear; and there is also an unexpected prospect of the long settled country about Ryde across the Parramatta River. The tops of the Blue Mountains are again visible to the westward. On the right the traveller (if a sporting man) may observe, with some interest, the old Homebush Racecourse—which, before the establishment of *Randwick*, was the one great arena for race-horses, jockeys, and bookmakers. Leaving Homebush, the Railroad passes through an uninteresting piece of bush country, in which the (so-called) Tea Tree Scrub seems to be the principal feature. Appointed time from Sydney to Homebush, about 29 minutes.

Rookwood Station, 10 miles; 55 feet above sea-level.—Between Homebush and Rookwood Station—a distance of 2 miles—the country adjacent to the Railroad is of a dreary character, somewhat suitable to the locality approached—the great Metropolitan Cemetery, or Necropolis, at Haslem's Creek. People here look out of the carriage windows, with lengthened faces, at that melancholy waste, where long rows of graves are

but partially relieved by trees and shrubs. The ground, however, has only a few years been dedicated to its object; and every effort is made to render it not merely interesting but tasteful. The buildings connected with this cemetery are really handsome edifices—the Mortuary House, or Station, at the end of the siding on the ground particularly so. The Jewish Burial-ground adjoins that appropriated to all the various denominations of Christians, who here sleep peacefully together. This station was once known as "Haslem's Creek," but it has recently assumed the name of "Rookwood"—a name borrowed, it would appear, from Harrison Ainsworth's well-known "deadly-lively" romance. The trains reach Rookwood from Sydney in half an hour. Funeral trains stop at Rookwood, and are shunted into the cemetery siding—which is about a quarter of a mile long.

Auburn Platform, 12 miles; about 40 feet above sea-level.—"Auburn," if not a pretty name for an ugly place, cannot certainly be said fitly to designate the "loveliest village of the plain." It is only a *platform* (2 miles on the Line west of Rookwood) where there is little or nothing to see. There is some sloping ground a considerable way to the left; a deep cutting or two, low scrubby trees with brushwood, and then a barren country. The Railroad continues to descend towards a lower level at the Parramatta Junction.

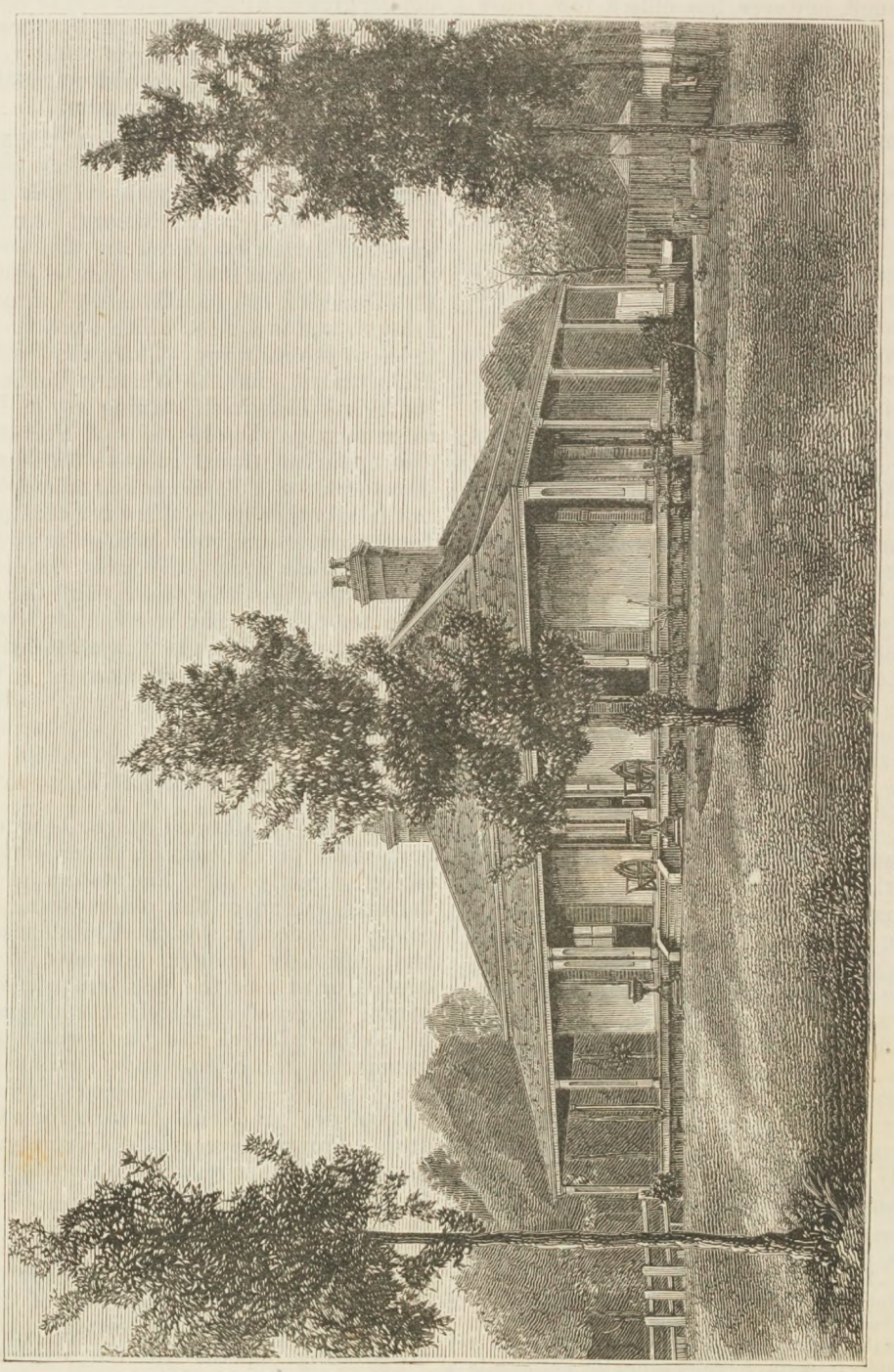
Parramatta Junction Station, 13 miles; 32 feet above sea-level.—After passing Auburn the train approaches Duck River, with an adjacent tweed factory. An uninteresting barren bit of country follows, and then the Parramatta Junction is reached. This Junction is 1 mile from the Parramatta Station, and is a place which owes its existence to the railways. There the Southern Main Branch joins the Western Trunk Line; the Trunk Line itself turning to the N.W., to go through the old town of Parramatta. The suburban trains go past the Junction into the town of Parramatta, and stop *there;* but in all other trains there is a change here for passengers or goods destined to go south. The suburban trains, of course, travel more slowly than the other trains, but the usual time for the journey between Sydney and the Parramatta Junction is reckoned to be rather more than half an hour.

II.—PARRAMATTA TO ORANGE—THE WESTERN LINE.

Parramatta.

Parramatta Station, 14 miles; 49 feet above sea-level.—The traveller proceeding from the Parramatta Junction to the Parramatta Station, first (by a sharp turn and a deep cutting) passes through a short hilly piece of bush country, and then he has before him a charming view of Parramatta, with its many fine churches and other public buildings. To the north of the town stand numerous hills, of no great elevation, but which are pleasing to the eye—wearied, as it naturally is, by the monotonous wilderness recently traversed by the train after passing Homebush. Parramatta* (originally called "Rose Hill"), situated at the head of the navigation of Parramatta River, communicating directly with the waters of Port Jackson, is one of the oldest towns in the colony. Indeed it was once, by all accounts, and curiously enough, intended for the capital, or at least the chief seat of Government; in proof of which it is alleged that St. John's Church was (somewhat pretentiously for those early days) built with its *two* towers — exactly copied from the "Reculvers" in Kent—to serve for a Cathedral. For many years the Governors continued to reside here, and the town flourished as the *second* place in the colony. Then, for an interval, it not only made no progress, but actually appeared to be hastening to utter decay. The Railway, however (which is *said* to have destroyed some of the old inland towns) has most certainly given an invigorating impetus to the existence of Parramatta; for it is now, year by year,

* Parramatta is connected with Sydney by steamers, plying to and fro daily on the Parramatta River. By these steamers Subiaco, Newington, Ermington, Kissing Point or Ryde, Gladesville, Villa Maria, Hunter's Hill, Biloela, Fitzroy Dock, and other places on the said river (or rather estuary) may be most conveniently reached. A bridge across the Parramatta River is now in the course of erection near Ryde.



MR. C. MOORE'S MOUNTAIN RESIDENCE.

extending, and becoming more and more a distant suburb (as it were) of our sea-side Metropolis. Some fine houses have now been built near the Railway Station. The present population of Parramatta is over 7,000 souls. It supports two good local newspapers ("*The Cumberland Mercury*," and "*The Cumberland Times*"). There are numerous Government and charitable institutions at Parramatta, such as the Gaol, the Orphan Schools, the Lunatic and Benevolent Asylums, &c., &c. There are several good hotels. There are also in Parramatta a Free Public Library, a flourishing Mechanics' Institute, three Public Schools, and six churches. The King's School, near Parramatta Bridge, was long the *only* grammar school in the colony, and is still a most useful scholastic institution; revived of late years by the Rev. G. F. Macarthur. The old Government Domain is now utilized as a beautiful park, belonging to the townspeople. Parramatta has been an incorporated municipality since the year 1861. The villages and places which are more or less connected with this town are—Castle Hill, Dural, Enfield, Field of Mars, Gannon's Forest, Guildford, Hornsby, Liberty Plains, Pennant Hills, and Prospect.

Seven Hills Station, 20 miles; 113 feet above sea-level.—After leaving the Parramatta Station the traveller in the "down train" (that is the train proceeding to the westward) passes over a viaduct, and along an embankment, from which there is a fine view of the town and of the neighbouring country to the north of it. The picturesque old *Georgian* brick Parsonage may then be noticed, yet standing on the hills to the left; whilst nearer still, lying only a few yards from the Railroad, the old Burial Ground claims a passing glance, as the resting-place of that well beloved "stainless patriot" Robert Campbell, and of other historical celebrities. Further on, and to the right, a glimpse is next caught of the *ci-devant* Government House, with the adjacent undulating glades, gardens, and shrubberies, of the Public Park—scenes of many a gay and festive event, and of some very sorrowful ones—the oaks, pines, and other choice trees, reviving pleasing recollections of a distant fatherland. Then comes a deep cutting, and the train sweeps past the site formerly occupied as the show place of the Australian Agricultural Association—when the yearly exhibitions of that body were more local than national; chiefly confined to ploughing matches, and manifestations of cattle, horses, sheep, fowls, and dogs, and farmers' machinery. The country now becomes much more interesting, frequent orange groves of dark green foliage, decked with "the golden fruit of the gardens of the Hesperides," imparting a new and delightful charm to the beauty of an ever-changing landscape. Well grassed apple-tree flats, with undulating and more open country, and farm-houses, gardens, and cottages succeed; until after a run of 6 miles the train stops for a moment, at the quiet little rural station of Seven Hills—a locality once, by early colonists (less ambitiously, and, after a comical outburst of vice-regal impatience, rather *facetiously*) designated as "Nowhere."

Blacktown Station and Junction, 22 miles; 183 feet above sea-level.—Two miles from the Seven Hills Station (through a somewhat uninteresting but useful country) stands the station of Blacktown; a locality owing its name to an institution which was unavailingly formed here many years ago by Governor Macquarie, for the education and civilization of the aborigines. In the country between Seven Hills and Blacktown, on either side of the road, numerous herds of cattle and flocks of sheep are usually to be seen, browsing in serene and blissful unconsciousness of their approaching fate; as though abattoirs were things that had no possible existence, and metropolitan butchers and their hungry city customers were nothing but nonentities. As you come along pretty bits of scenery may here and there be observed; open, partially wooded hills—with occasional signs of cultivation, farms, ponds, orchards, and flats—appear to the right, and orange groves and pretty country residences are unfolded to the left. There is, however, nothing here calling for particular remark; except, perhaps a quaint and unexpected piece of the Old Western Road, with its broken-down wayside inn, visible for just a moment, before the railroad turns abruptly away to the right, so bringing the railway traveller to the Blacktown

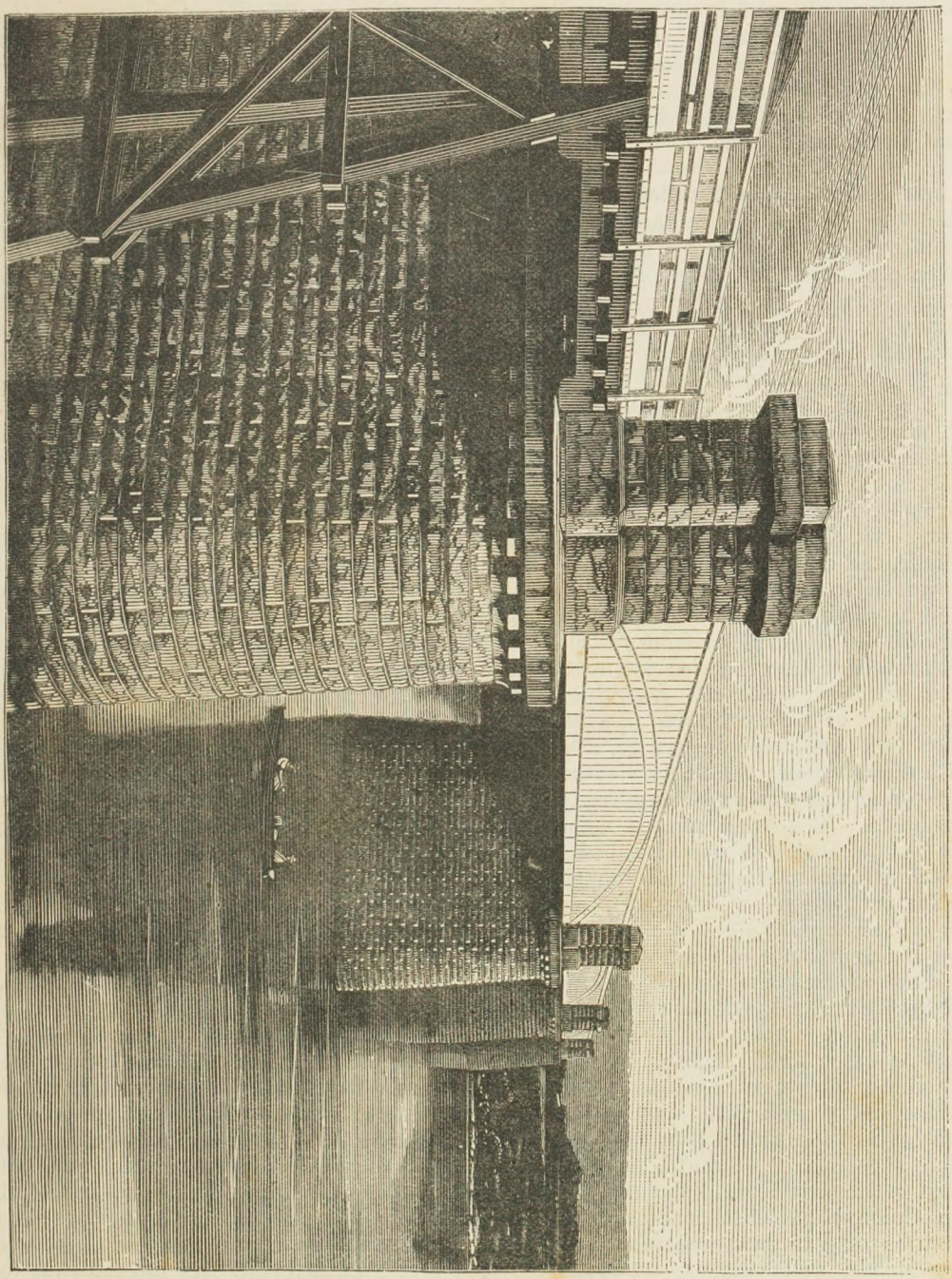
Station. At Blacktown there is a miniature terminus for the Richmond and Sydney Subsidiary Branch, which here joins on to the Western Trunk Line. Blacktown is a small, and by no means attractive place, chiefly depending on the railway, with two or three stores and inns of a humble and unimportant character. As the train approaches the Blacktown Station you first catch sight of a distant and limited view of the far-famed Blue Mountains.

Rooty Hill Station, 25 miles; 131 feet above sea-level.—After leaving the Blacktown station a lovely view of the Blue Mountains is disclosed to the right, peeping over the trees across a flat and uninteresting country. This tract, immediately adjoining the Line, is but partially wooded, huts and cottages appearing occasionally, some with holdings and gardens, and some without. Before Rooty Hill is reached (after an interval of 3 miles) there is a grand outline prospect of the Blue Mountains to the westward, across an open country, with the seat of Walter Lamb, Esq., in the distance. Large quantities of firewood are hence despatched to Sydney.

South Creek Station, 29 miles; 113 feet above sea-level.—The country on either side of the Railroad, after it passes by the Rooty Hill Station to the westward is, for the most part, open, flat, and poor. Here and there the line passes through the bush, but there are not many trees near it. Before arriving at the South Creek Station (which is 18 feet lower than Rooty Hill), the traveller may get another fine view of the Blue Mountain Range, which he is now approaching. South Creek Station is about 4 miles west of Rooty Hill, and about half a mile away to the north of St. Mary's, South Creek—an old, pleasant, and prosperous village, on the Sydney and Penrith Road, chiefly dependent upon agricultural and grazing pursuits. Dairy farming, and wine making are here also carried on. Large supplies of timber and firewood are likewise cut here, and forwarded by the line to Sydney for use on the Railway and for sale. The Messrs. Saddington and Sons have a large tannery at this place. There is a new inn and a telegraph office near the South Creek Station. The new inn (a large and commodious one), called "Shanes' Park Hotel," is kept by Mrs. Ellen Darcy. It stands opposite to the station, and is built of adobe, with a zinc roof. South Creek takes its name from a considerable tributary to the river Hawkesbury, into which it eventually flows near Windsor.

Parkes Platform, 31 miles; about 100 feet above sea-level.—After passing by the South Creek station, a fine view of the Great Western Highlands is gained to the right of the Line and to the westward. There is then a flat partially wooded country for 2 miles until you arrive at the Parkes Platform and Siding, 3 miles from Penrith.

Penrith Station, 34 miles; 88 feet above sea-level.—Penrith, 12 miles west of Blacktown, is a quaint old inland township, the last Station reached by travellers in the so-called "down" trains before they begin to ascend the Blue Mountains. In the "coaching and bullock-driving days"—when the neighbouring river had to be crossed by vehicles in a punt—Penrith was a very bustling and flourishing place, and it appears sufficiently prosperous at present—certainly far from going back. It is surrounded by broad pasture lands, and alluvial plains, of a vast extent and singular fertility; bounded, westerly, by the river Nepean, soon to assume the better known name of the Hawkesbury. The town itself is a municipality, with ratable property reported to be of upwards of £120,000 value; the population of the township being over 1,200, with 45 miles of streets, roads, and lanes. There are four churches belonging respectively to the Protestant Episcopalian, Roman Catholic, Presbyterian, and Wesleyan Communions. The course of the Nepean runs parallel to the town, at the distance of about a mile from the Station, where it is crossed by a boldly designed and admirably constructed Iron Tubular Bridge—supported by four huge piers of solid masonry, the two centre ones being 58 by 17½ feet at their foundation, with an extreme height of 59 feet. These piers are 186 feet apart. Altogether, it is one of the finest works of the kind in the colony, and of itself worth going to Penrith to see. (See view of Nepean Bridge.) 5 miles to the south of the town the River flows down northerly through a tremendous gap in the hills; and, the heights on either



BRIDGE OVER THE NEPEAN, PENRITH. (*See* page 32.)

side being well wooded, many charming effects are produced. There are two or three good inns, one of these hotels being not far from the station. Penrith is the polling-place for the Nepean Electorate. The places near Penrith (besides those already mentioned as having been traversed by the Line), are Mulgoa, Greendale, Luddenham, Bringelly, Castlereagh, and Emu.

Emu Plains Station, 36 miles; 87 feet above sea-level.—The attention of the traveller by the train leaving Penrith for the mountains must (even previous to his arrival at the Tubular Bridge over the Nepean) be agreeably occupied with the scenery before him to the westward; where he observes verdant plains, fringed in the distance by the winding edge of a rolling country, the grassy knolls of which are pleasingly dotted here and there with clumps of trees. Beyond this charming picture the majestic "Blue Mountains" rise abruptly, like a vast natural fortification, overgrown, almost everywhere, with sombre foliage, and extending for many miles from the south to the north towards Castlereagh, their base being washed by the Nepean. (See view of the Nepean—evening.) Along the broken face of this grand barrier, not cerulean here but *dark, green, and grey*, the Railway Line may be seen winding upwards—past huge rocks and steep declivities, alternating with dense woods; the noble viaduct across Knapsack Gully being hence already distinguishable. The train sweeps noisily over the Tubular Bridge above described; crosses a rich alluvial plain beyond the river and under cultivation—where grain, fruit, and vegetables appear to be the chief products—and at the distance of 2 miles from Penrith, quickly reaches the Emu Plains Station, where the first ridge of the mountain begins. This Station commands a comprehensive view of the First Zigzag, by means of which the heights of Lapstone Hill are to be gained and passed. The immediate neighbourhood of the Emu Plains Station (having been successfully occupied as an agricultural settlement from the earliest days of the Colony) presents many pretty rural pictures of gardens, orchards, corn fields, homesteads, and villages—assimulating, in many of its features, to portions of moorland scenery in the west of England.

Lucasville Platform, 39 miles; about 700 feet above sea-level.—Lucasville Platform—standing on the upper edge of the eastern face of the Blue Mountains, where the line turns off to the westward—is merely a solitary spot at which the train stops when signalled for; but between it and the Emu Plains Station beneath there is a shifting series of panoramic views of all the Lowland Country in the county of Cumberland, such as for extent and beauty can hardly be surpassed. As you leave the Emu Plains Station and begin gradually to ascend the steep incline—away to the south towards Mulgoa, Greendale, and Luddenham—your eyes can first feast themselves for a moment on that fair prospect in mid distance—the already mentioned Gorge of the Nepean. Then, a few yards further on, as the train rises more slowly towards the First Zigzag, you are carried past trees and woodland scenery to the left, with a deep gully (or "ghyll," as Wordsworth would have termed it) to the right; after which, "as from the stroke of an enchanter's wand," a wide and magnificent expanse of level country, stretching away far below, bursts, in all its unexpected glory, upon your dazzled sight. In this great range of open plains—the extreme limits of which are faintly defined by the ethereal outlines of the light blue hills on the coast—the town of Penrith (at the distance of 4 or 5 miles) is displayed to the greatest advantage, with its public buildings and churches on the other side of the Nepean. The winding course of this truly Royal Stream, stretching for miles and miles like a broad blue "garter ribbon," is seen traversing the westerly portion of this unequalled campaign, the land near to its banks being, for the most part, *treeless;* although a long thick belt of forest land—more or less enveloped in hazy atmospheric tints of grey, cobalt, or purple—is visible beyond the plains. All the nearer portion of the Lowlands is either cultivated or laid out in bright verdant pastures, especially round about Penrith, along the Nepean, and to the north-eastward; the open country being dotted here and there with villages, farms, homesteads, and orangeries—and intersected by narrow roads and picturesque remnants of forest. As you continue to rise, and shift from slope to slope of the "Zigzag," the prospect before you is more and more

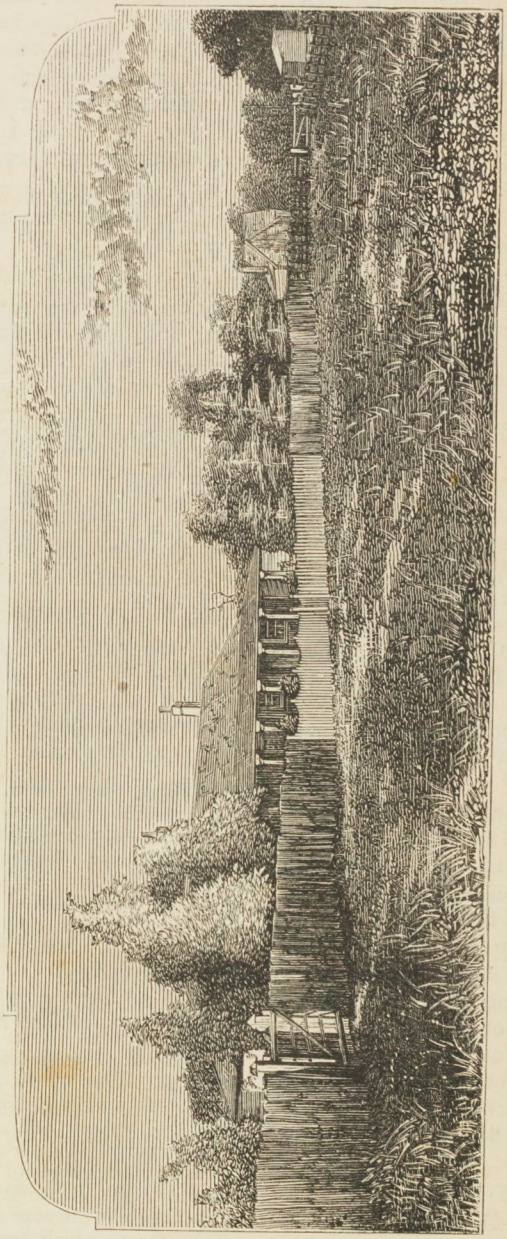
displayed,—back to the south-east, towards Camden, and directly to the southward, whence the Nepean flows placidly down, from the junction of the Cowpasture and Warragamba Rivers, on its way to the distant sea. You have by this time arrived at the Knapsack Gully Viaduct (245 feet above Emu Plains), boldly erected across a steep and stony gorge by the genius of the Engineer-in-chief, John Whitton. This admirable and imposing structure (which Imperial Rome, in her palmy days, might have been proud to claim), consists of seven successive arches—five of 50 feet span, and two of 20. It is of solid masonry throughout, the stones having been set in the best Portland Cement—built for a single line of railway, and with an incline along it of 1 foot in 30 feet. The length of this viaduct is 388 feet, and its greatest height, from the foundation in the rock to the level of the rails, is 126 feet. Several panoramic views of Cumberland increasingly developed are shown to the traveller and abruptly withdrawn, as the train proceeds. First, it goes 200 or 300 yards in one direction, rising slowly every yard until it stops; then, by the co-operation of the skilled engineer and the watchful pointsman, the train is quickly "reversed" and launched back upon another ascending gradient, in an opposite direction, up to a corresponding point. From that, the Zigzag mode of progression is once more intrepidly resumed; until at length (by such successive changes of direction, and in an incredibly short time) the train is found to have deftly climbed to an elevation of of nearly 700 feet. The consequent alteration of climate at the top of the Zigzag is very remarkable; exhilarating and sudden, not unlike what may sometimes be experienced after ascending to the summit of a very lofty tower, like the campanile of the Town Hall of Sydney. This mode of ascent incidentally develops in a very striking manner the beauty and the variety of the scenery. Lucasville Platform is named from the country house of the Hon. John Lucas, M.L.A., standing somewhere in the vicinity.

Glenbrook Platform, 41 miles; 766 feet above sea-level.—After passing the Lucasville Platform the Line is continued, first westerly, and then with a bend to the northward, until after an interval of rather more than 2 miles the summit of Lapstone Hill, near "The Old Pilgrim Inn" is attained. About half way between Lucasville Platform and the summit of the hill is Glenbrook, formerly known as Brookdale or Wascoe's Siding, where water for the engine is obtained. The contrast between this particular portion of the Line and almost every other portion of this picturesque and beautiful route is very striking. There is nothing, however to be seen here but gum-trees and underwood.

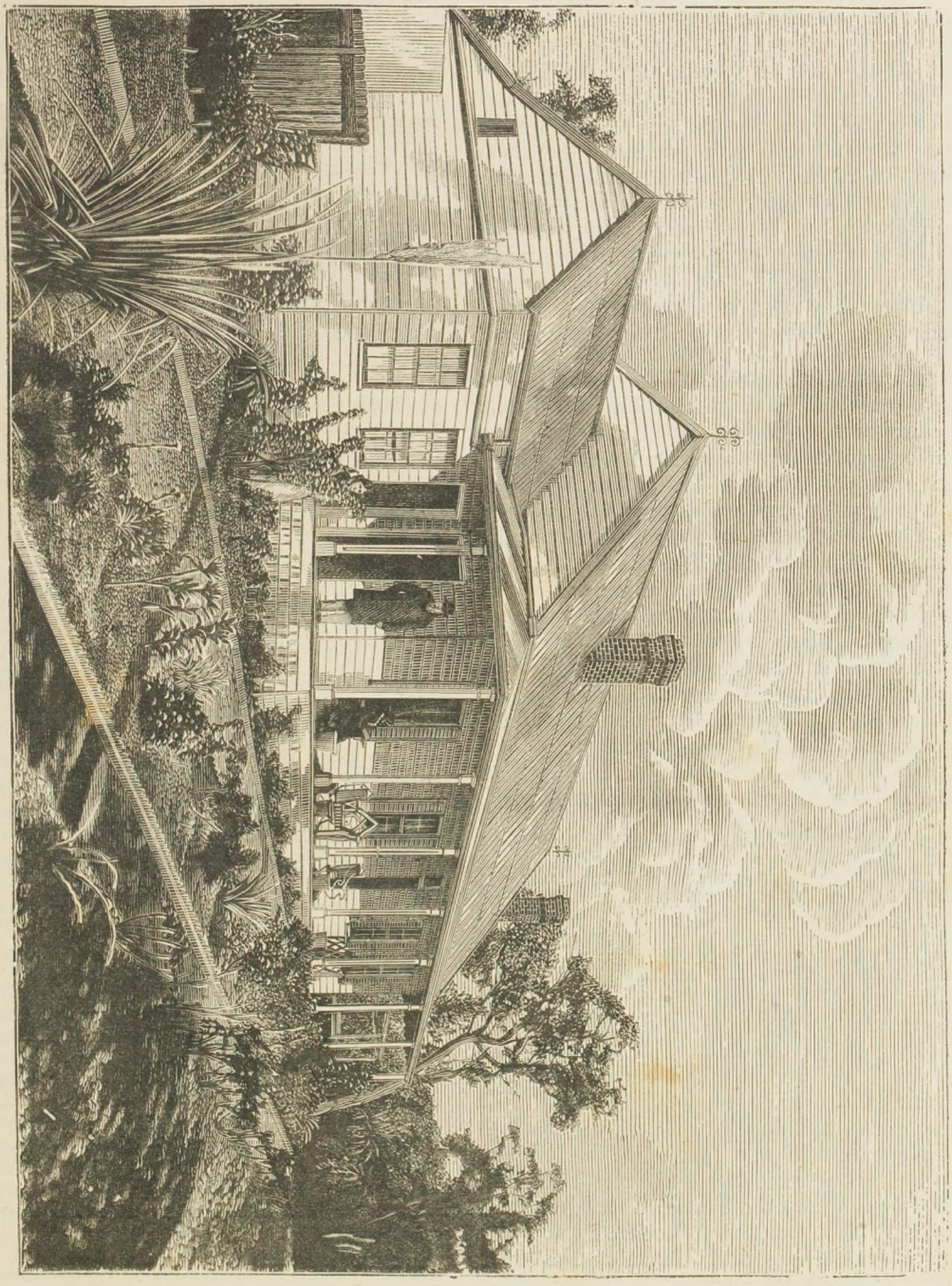
* **Blaxland Platform, 42 miles; 766 feet above sea-level.**—This Platform, formerly designated "Wascoe's," is 1 mile north of Glenbrook, and is equally undeserving of remark. Leaving Blaxland (about half a mile from "The Old Pilgrim Inn") the Line directly proceeds to follow the main range, dividing the tributaries of the Nepean and the Cox from those of the Grose River, to the north and to the north-westward. The Railroad naturally winds considerably as it follows the top of the range, but takes for the most part a north-westerly direction, continuing still to rise until it comes to Springwood, rather more than 4 miles further on.

The Valley Platform, 46 miles; 1,048 feet above sea-level.—Near this quaintly-named Platform in the breezy highlands stands "Wyoming," the neat and commodious country residence of the Hon. Geoffrey Eagar, on the north side of the Railroad, with its

* The nomenclature of three of the stations on the Western Line of Railway has recently been changed, viz., Wascoe's, now named "Blaxland," Blue Mountain, now named "Lawson," and Weatherboard, now named "Wentworth Falls," to commemorate the first successful exploration of the Blue Mountains. "It was not till 1813 that a route across these mountains was discovered. A severe drought had aroused grave apprehensions for the safety of the flocks and herds of the colony, which were even at that early date beginning to be appreciated at their true value—many an arduous search for water was the result—at length, when every resource was apparently about to fail, Mr. Wentworth, the pioneer of material and social progress in Australia, in conjunction with Messrs. Blaxland and Lawson, organized an exploring party to endeavour to penetrate to the interior through some of the mountain gorges. After encountering many difficulties the party were fortunate enough to discover a pass by way of the valley of the Grose, which soon led them to the land of plenty, and the route was immediately marked out as the highway to the interior and has ever since formed part of the old Great Western Road. The Railway follows nearly the same course."



THE HON. GEOFFREY EAGAR'S MOUNTAIN RESIDENCE, "WYOMING." (*See* page 35.)



SIR HENRY PARKES' MOUNTAIN RESIDENCE, FAULCONBRIDGE. (*See* page 38.)

pretty garden and grounds. Near to Mr. Eagar's house is the post office and telegraph station, the residence of Mr. Russell, and the country homes of other eminent citizens, who have sought here the reinvigoration of mountain air and the refined pleasure afforded by the contemplation of beautiful scenery. "The Valley" derives its name from a very lovely far-off prospect commanded herefrom down the valley (which is beautifully grassed, open, and park-like) to the eastward towards the Nepean. A considerable extent of land has of late years been here taken up on the ridge to the north of this hamlet, and west of Fitzgerald's Gully, dividing the watersheds of the Grose and the Nepean.

Springwood Platform, 47 miles; 1,216 feet above sea-level.—Leaving the charming little mountain village designated "The Valley," the Railroad winds away westerly for a mile, and after rising 100 feet it brings the traveller to Springwood; where at a short distance below the platform, on Sydney side, will be found an excellent inn ("Raymond's Hotel"), the front of which commands a fine view of the Nepean Valley to the eastward. There are other good views in the vicinity. Botanists and others qualified to judge in such a matter have declared Springwood to be the best place on the mountains for choice ferns and lycopods; and here excursionists are often to be seen coming back to the Platform loaded with such sylvan spoils.

Faulconbridge Platform, 49 miles; 1,463 feet above sea-level.—Still following the topmost ridge of the mountains to the westward for 2 miles further by a sinuous course, the traveller reaches the Faulconbridge Platform, named from the adjoining property of Sir Henry Parkes, about 500 acres in extent, and chiefly valuable perhaps for the salubrity of its situation and the singular beauty of the scenery it commands to the southward,—overlooking a rugged and broken country forming part of the watershed of the Nepean. In the neighbourhood of Sir Henry Parkes' residence—a pretty mountain *chalet* (see View) the Terraced Gardens, the Rocklily Glen and the Rocklily Cave are very characteristic and charming localities much admired by visitors. As you pass Faulconbridge to the westward, the top of Mount Hay becomes visible about 9 miles to the north-westward. The scenery on either side of the road now becomes intensely interesting, presenting surprises which seem like gorgeous glimpses of fairy land; so suddenly are they manifested and withdrawn.*

Numantia Platform, 52 miles; 1,672 feet above sea-level.—When the train has passed the Platform at Faulconbridge its course for a few hundred yards is due west; it runs south-south-west for about a mile, passes the residences of Dr. Badham and of Sir Alfred Stephen (Alphington) on the left, and so trending somewhat westerly reaches the platform at Numantia,—the classical name selected for the temporary residence of His Honor Sir James Martin, the Chief Justice, of which we here present an accurate view. Numantia lies 3 miles from Faulconbridge,—to the south-west of it. Near here Sir James Martin is building a large family mansion. There are some good views from Numantia to the southward.

Woodford (late Buss's) Platform, 55 miles; 2,191 feet above sea-level.—As the traveller proceeds on his journey into the interior past Numantia, he may (if he is sharp enough) catch a lovely but fleeting glimpse of home view scenery to the northward; another view—nearly in the same direction—of the Pass of Broken Back in the far off Sugar-loaf Range, in the county of Northumberland; two views over the rugged ravines to the southward and south-eastward; and distant but approaching views of Mount

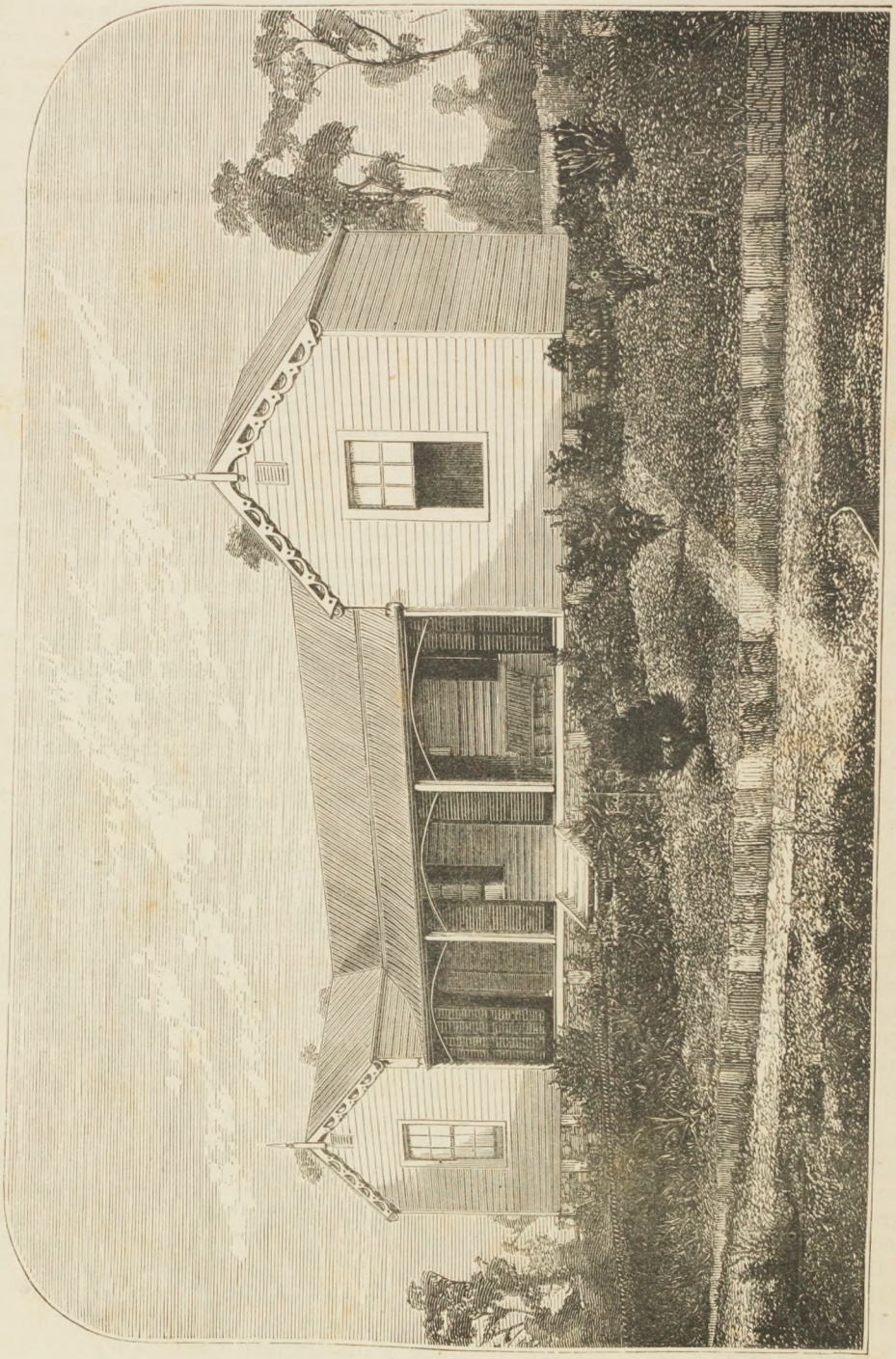
*A recently published work of standard merit, compiled under authority by Mr. James Tingle, speaking of the Hartley District, says: "We have said that this is a remarkable district, and justly so, because for magnificence of scenery, wealth of mineral resources, and monuments of engineering skill, it is probably without a rival in the southern hemisphere. The Blue Mountains, with their innumerable hills and ravines, present extensive panoramas of the grandest description. As the traveller in the Railway is sped along the summit of the range, and catches glimpses of the thousand valleys stretching like ocean waves to the horizon, on both sides of the line (which for a considerable distance is laid on a narrow causeway that looks as if built up for thousands of feet out of awful depths of precipice and ravine) he finds it difficult to imagine a nobler representation of the grandeur and sublimity of nature.—"Sands' Official Post Office Country Directory and Gazetteer of New South Wales for 1878, 1879, page 267."

Hay and Mount King George. The Line after leaving the Numantia Platform takes a sharp turn to the southward, and continues on the ridge in that direction for nearly 2 miles, in the middle of which stands a handsome stone gate-house where the Old Road (which has been running parallel with the Railroad nearly all the way from "Blaxland") again crosses the Line. The gate is now but seldom opened for the Old Road is practically superseded by the Railway. This gate-house is 53 miles from Sydney. 1 mile south-west of this gate-house and 2 miles in the same direction from Numantia stands the Woodford Platform, about 520 feet higher than Numantia and Alphington, &c. Here Mr. Alfred Fairfax has a commodious residence and large gardens (Woodford), from which the Woodford Platform takes its name. Before you get to Woodford there are several fine glimpses of scenery, and especially the grand unfolding of a long, pale blue, *broken* line of mountains in the extreme distance to the north-eastward beyond the Brisbane Water district, and in the direction of Maitland. Woodford is only 3 miles from Numantia; and, although perhaps somewhat exposed in wintry weather it is noted for its fine bracing atmosphere, which resembles that of the more elevated portions of the West of England.

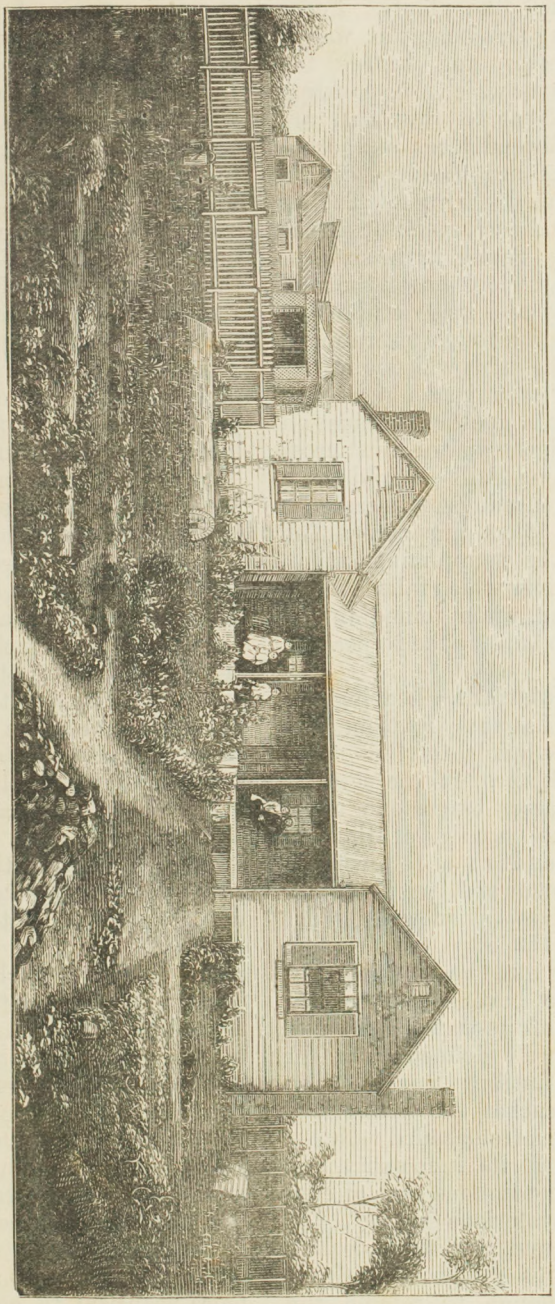
*** Lawson Station ("Blue Mountains"), 58 miles; 2,399 feet above sea-level.**—At about 1 mile due west from the Woodford Platform, the Line takes a turn and runs for a mile to the west-north-west; then due west for another mile, and then west-south-west for a fourth mile; to the "Old Blue Mountain Inn Station"—now proposed to be distinguished by the name of "Lawson"—the vague, equivocal designation of "Blue Mountains," often misleading unobservant travellers. This is to be noted as the *first* Station arrived at after Emu Plains, the intervening localities being only platforms or sidings of minor importance. Blue Mountains or Lawson, is a small hamlet with a telegraph station and post office, &c., the principal house being the commodious Family Hotel kept for many long years past by Mr. Henry Wilson, a little to the south-west of the railway station. Lawson is noted for having near it several views of great beauty and deep interest on either side of the Line, and at comparatively short distances in places easy of access to the sick, the weak, or the aged. The Hotel near the station is much resorted to by invalids who can there without fatigue enjoy the mountain scenery, the pure, invigorating air, and the material comforts of a good well managed inn. There is a fine prospect to the north from the verandah of the hotel. It takes the Railway Traveller about three hours and a half to arrive here by train from Sydney, and about two hours to come up to this spot from Penrith. Here the tourist can conveniently visit the Adelina Falls (two of 40 feet descent, one of 60, and one of 70 feet) on the south side of the Line; with Dante's Glen and three other waterfalls on the northern side—one of 40 feet, one of 90, and one (the most remarkable of them all) with a descent of 120 feet. Perhaps a short description of these two adjacent localities may not be unacceptable to the reader.

* See foot-note on page 35.

The Adelina Falls.—The Adelina Falls (named after Miss Adelina Wilson, daughter of the landlord of the adjacent inn) are, all four of them, grouped together, at a distance of a mile or so, to the south-eastward of the Station; and from the platform to the first and most important of these beautiful cascades (see View) there is an excellently formed road, by which the visitor soon arrives at the edge of a line of rock, whence he can readily descend into the immediate vicinity of the waterfall by a convenient flight of rudely constructed steps. A smooth path leads him from the foot of the steps straight down to a craig on the eastern side of a small ravine, over the rocky (northern) wall of which the clear cold waters of a mountain stream leap headlong into an abyss. These Falls—the Adelina Falls, *par excellence*—are not less than 70 feet in their unbroken descent, and are justly admired, tumbling over a mass of dark shining rock into the scene of sylvan beauty represented by our artist. This water-formed chasm (or "ghwyll" as the Welsh would call it) is fringed with masses of green brushwood and long reedy grass, well shaded everywhere by the white-trunked eucalyptus; the narrow



SIR ALFRED STEPHEN'S MOUNTAIN RESIDENCE, ALPHINGTON. (*See* page 38.)



SIR JAMES MARTIN'S MOUNTAIN RESIDENCE, NUMANTIA. (*See* page 38.)

semi-circular valley itself, into which the streamlet dashes, being partially filled up with tall straggling gum trees. Near the base of the grand cascade there is a fine display of ferns and such like plants. Ferns and creepers overhang this beautiful waterfall like waving tresses, and bedeck the sombre wall of cliff over which the sparkling rivulet descends. Near to this Fall are several elegant coachwood trees and other arborescents, such as are usually seen in these moist and secluded localities. The air is deliciously fresh and cool, even during the hottest summer day. Seated in the shade—from his dry and elevated look-out on the solid rock—the visitor may pass many an hour of delicious repose listening to the murmuring plash of the water, the faint whisper of the wind, and the joyous "sweet jargoning" of the birds. To reach the three other cascades on the south of the road, the visitor must cross the head of the Adelina Falls—an old track to the westward, here running south-easterly, being available for that purpose. The streamlet is one of the many minor tributaries of the Cox, a river which falls into the Warragamba, destined, when joined to the Cowpasture River, to become the Nepean.

Dante's Glen and Waterfalls.—Leaving the Blue Mountain or Lawson Station, and proceeding for a few yards to the north north-west, by a track through the scrubby forest, the visitor passes two stone tanks or reservoirs for the supply of the engines with water; and then following a recently cleared downward path, trending northerly, he arrives (after walking for about half-a-mile) at the edge of a sloping reedy marsh draining into the watershed of the Grose. A little beyond the eastern extremity of this out-of-the-way and desolate spot, a rough but well defined path for awhile leads him on, until at length by an abrupt descent he reaches the precipitous sides of a wide and dark tree-shaded valley—suddenly revealed in all its immensity, and resounding with the continuous rush of concealed waters in its mysterious depths. The lonely devious path, and the steep declivities of this cavernous glen, are difficult enough and wild enough to remind the student of the "selva oscura" mentioned in the opening of the grand and gloomy Poem of the "Immortal Florentine;" there being a weird character about the whole place calculated to inspire the soul with admiration and with awe. Hence, doubtless, the expressive name of Dante's Glen, by which this valley has lately been distiguished. In Dante's Glen there are three waterfalls which can be reached by an adventurous and active tourist. The first—about three-quarters of a mile from the Station—is seen to the right, soon after you enter the glen. The easterly stream here falls over a ledge of rock to a depth of 40 feet, and becomes invisible during the rest of its course down the valley. Beneath this first, a few chains further on, there is a second waterfall of 90 feet. A small steep track leads down towards both of these from the topmost ridge of the valley. The lower portion of the path thus winding down into this sequestered locality is thickly wooded, and ends in two deep precipitous gorges, uniting at an inaccessible rocky northern outlet. To the right is the lower (or second) cascade already mentioned—the largest waterfall of all three being away in the gully up to the left. The western extremity of this intersecting ravine is a huge black cliff, hemmed in on all sides by tall trees, and overhung with ferns, creepers, and parasitical plants. Over this dark precipice a fine stream falls 120 feet in sheer descent, its broken feathery sprays being caught and collected at the foot of the cliff in a basin like a Naiad's bath hollowed out of a flat rock. The course of this stream, descending therefrom to its junction with the other, is like the rest of the glen, densely timbered with coachwood, tree ferns, a kind of alder, and sassafrax. There is a rocky shelf beside the pellucid pool at the bottom of the cataract, curiously overarched by the cliff, and of course a favourite haunt for excursionists. You can pass right under this Fall if you choose to be so foolhardy, but you had much better not do so, for the feat is not unattended with danger. Looked up to from the end of the overarched ledge above referred to, the effect of this waterfall is exceeding solemn and grand. It has been justly said, by an excellent authority (Burton): "There is nothing more beautiful to be seen in the whole of the Blue Mountains than this wonderful spot."

* **Wentworth Falls, or Weatherboard Platform, 62 miles; 2,856 feet above sea-level**—On leaving Lawson Station near the "Old Blue Mountain Inn," the Line runs for two miles along the ridge to the west-south-west, and then (by a sharp turn) trends west-north-west for 2 miles further, when it reaches the locality generally known as the "Weatherboard," where there is a platform and a pointsman's house. The railway excursionist is now on the confines of that considerable extent of level ground upon the mountains, about 24 miles in length, and formerly known by the appellation of "The King's Table-land," a name given to it (as early chroniclers inform us) by Governor Macquarie himself during an adventurous vice-regal tour in this direction when deeply impressed with the "majestic grandeur of the situation, combined with the various objects to be seen from the spot." On the south-west side of this table-land the mountain terminates, as an old Colonial annalist informs us, "in abrupt precipices of immense depth; at the bottom of which is seen a glen as romantically beautiful as can well be imagined, bounded on the further side by mountains of great magnitude, terminating as abruptly as the others, and the whole thickly covered with timber." The glen thus graphically described—and named Prince Regent's Glen by Governor Macquarie—appears to be identical with one of the north-westerly prolongations or branches of that great Cunimbla Valley which is now known to be more or less connected (at its north-westerly extreme) with the beautiful Vale of Hartley. The name of "Prince Regent's Glen" should therefore now, perhaps be judiciously restricted to a north-westerly and less extensive ravine, reaching from its intersection with the great Cunimbla Valley back to an abrupt rocky end in the neighbourhood of the far famed Waterfall of the Weatherboard, the true (historical) appellation of which, by the way, is Campbell's Cataract—a name bestowed upon it by Governor Macquarie in honor of the Colonial Secretary of the period. The upper or north westerly extreme of Prince Regent's Glen is, it may be remarked, of a somewhat circular form, presenting a grand *coup d'œil* of mountains rising beyond mountains, with stupendous masses of cliffs in the foreground and in mid distance, reaching almost round the vast and deep well-wooded hollow to the west and to the southward; except, indeed, where the Prince Regent's Glen opens out on to the great sunken valley above-mentioned, and so displays a glorious, many-tinted, and distant view of vast shadowy walls of precipice on the other side of that valley, many long miles away. This circular termination of the Prince Regent's Glen, at its northernmost end, was named by Governor Macquarie the "Pitt Amphitheatre" in honor of the Right Honorable William Pitt, and is what is usually referred to by tourists under the very vague and most inexpressive name of the Weatherboard. From any good point on King's Table-land—such, for example, as the verandah of Mr. Charles Abraham's accommodation house, about 2,900 feet above the sea-level—the light-house at the Sydney South Head, on a clear night, looking due east, is distinctly visible at a distance of 62 miles. The same well known beacon can, it is said, at times, be seen from Blackheath, nearly 500 feet higher, and 11 miles further away from the coast.

General description of the Weatherboard.—Mr. C. A. Wilson's accommodation house lies about 50 yards from the pointsman's house, on the southern side of the Railway, not far from the semaphore, and an old powder magazine in the open—both conspicuous objects. Near the semaphore is a tombstone—"Sacred to the memory of James Ferguson, who was killed by lightning on 21st December, 1859; aged 22 years and 10 months." Formerly, as it would appear, there was a burial-ground now traversed by the Railway in this secluded spot, of which this now seems to be the sole remaining tomb. A few cottages are yet to be found in the vicinity. The air is fresh and wholesome, as might be expected at such an elevation; but in stormy weather it is not a locality where there is much that can be pleasant for the tourist out of doors. The old Western Road, between the Weatherboard and Blackheath, is now almost wholly disused, except when fat cattle are occasionally driven over it by night. In many

* See foot-note on page 35.

ADELINA FALLS (LAWSON), BLUE MOUNTAINS. (*See* page 39.)

places this picturesque old road is utterly dilapidated, torn and worn away by the wind and rain. At the back of Wilson's there is a ruined bridge, through the broken arch of which a fine stream (Jamison's Creek) flows away, southerly for 1½ or 2 miles, to the neighbouring gorge. The road to the Weatherboard Falls from the so-called "station" leads by this broken bridge, through the bush south-westerly to the edge of that celebrated chasm, and most enchanting view. There is also a pleasant walk on the north side of the Line, to the north-west of the semaphore. North of the Railroad, but somewhat more to the eastward, lies the winding track to "The Water Nymph's Dell," the direction of which is, however, far too intricate to be discovered unless under the guidance of some resident. The accommodation at Mr. C. A. Wilson's, without being in any way pretentious, is cheap and good.

Visit to the Weatherboard Gorge and Falls.—"Starting from the accommodation house with a guide, I crossed," says a recent visitor, "the ruined bridge at the back of Wilson's, struck into the bush to the south-west, and—after walking along a pretty fair road for about 1½ mile—I reached at the end of a rather devious path the framework of a hut erected by the Government for tourists and others, and wantonly and basely destroyed (like that at Govett's Leap) by thoughtless or selfish persons. From the elevated point thus arrived at on the topmost edge of this Titanic Gorge, there is a steep and almost precipitous descent to the southward, partly shaded with stunted trees, and terminating—after passing a flight of steps, cut boldly out of the solid rock—in a broad, natural platform of waterworn stone, immediately opposite to "The Campbell Cataract," or *Falls*, and overlooking that vast amphitheatre named after the renowned statesman William Pitt which here terminates the Prince Regent's Glen. The platform seems actually to *overhang* the Great Falls, which are, however, at some distance from it to the left (the eastward), across a huge semi-circular abyss, hollowed out of red and grey rocks, and over-shadowed everywhere with trees and ferns. In front of the spectator is the chasm's edge, stretching along like the elevated margin of a bay; and beyond this rough but well-defined line is that fairy-land of mountain, cliff, and forest, which no pencil can perfectly depict, or pen adequately describe. To the left, is a small tract of barren and mountainous country, of an immense altitude, coming up from the southward, and forming the easterly frame of this vast and marvellous picture. Its westerly frame presents rude cliffs and a wooded talus towards the entrance to the Pitt Amphitheatre; and on its upper surface are seen mountain streams and rivulets hastening to unite themselves to the main stream coming from the opposite direction (Jamison's Creek) and then to dash themselves into a cylindrical abyss, whose falling waters resound in your ears like an everlasting sigh. Approaching cautiously to the edge of the platform, or (what is perhaps more safe) lying down to look over, you see the stream wildly precipitated over broad stratified rings of grey, red, and black rock, into the bottom of this grand mountain glen, a distance of (apparently) not less than 1,000 feet in sheer descent. The waters of the cataract drain away into the far off depths of the densely wooded valley beneath, the lowermost line of which seems ultimately to indicate a south-easterly direction. When I first approached this spot at about 9 a.m., the falls were threefold in their development, and stood in a deep and misty shadow. Near the bottom of the *first* fall, breaking into feathery spray, long before it reaches a slightly projecting mass of broken fragments of stone, about half way down, there is to the south a long thin line of forest trees, the foliage of which looks dim and soft when seen from the great height of the platform on the rock. These trees, half way down into the abyss, spread all along the surface of the small projecting ledge in the precipitous wall on the eastern side of the gorge; their irregular masses of greenery contributing greatly to the charm of the scene. Below these broken masses of stone, and trees, and brushwood, a second dreadful precipice descends, and a second fall may, by a daring spectator be seen, far below the dizzy altitude—so far that no murmur from this and the next succeeding fall ascends to break the silence. It is only the everlasting sweep of the upper portion of the cataract which makes itself distinctly

audible. Below, as I have intimated, the stream follows unseen its appointed course through the sylvan depths of that enchanted valley. Anything more sublime and awe-inspiring cannot possibly be imagined. On the western side of the Gorge of the Weatherboard, at the distance of about ½ a mile, there is a second wall of parti-coloured rock, with a huge talus of rock and trees, and a towering royal crest of trees and undergrowth. Further away to the south-westward (on the north-west side of the Amphitheatre) comes an abrupt break; and then more cliffs and declivities, and another wide valley of low-lying forest and hill scenery is displayed, enclosed by another and yet more extensive range of rocky wall and *talus*, or slopes formed of detritus or decayed rock. This range of brightly-tinted cliffs (in which deep red colour predominates) trends easterly for some miles, and at last—having almost traversed the entire picture—ends with an abrupt descent into the Prince Regent's Glen. Beyond the eastern extremity of the distinct line thus furnished in mid-distance is another stretch of woodland, dim and cerulean in its many shadowy gaps and hollows. Beyond that line again comes another more shadowy tract in bright cobalt; and beyond that yet again appear the far off outlines of a mountainous country, wrapped in a mantle of denser blue, its summits crowned with cliffs in exquisitively blended tints of pink and yellow. Over all that again at intervals (and especially from the ruined hut) can be seen an ethereal light blue outline of lofty hills in the extreme distance. On the rocky platform which overlooks the "Falls," the aspiring mind of Young Australia has prompted the inscription of names and surnames of parties not yet otherwise distinguished. These names have been boldly carved on the ledge of stone in the vain hope of thereby securing some adventitious immortality. The whole of the rocky ledge which overlooks the gorge is public property, but some of the land in the vicinity has already been alienated. "The Weeping Rock," for instance, is on private property, belonging to Mr. D. Fletcher, of Sydney. This "weeping rock," an object of great interest to those who visit the Weatherboard, stands above the "Great Fall," on the east side of the Gorge, and well deserves the name which has been given to it. The continuous flow of water which trickles over this curious half isolated mass of stone is occasioned by a rivulet breaking away from the main stream, known as *Jamison's Creek*—the same which feeds the Great Fall, or Campbell's Cataract."

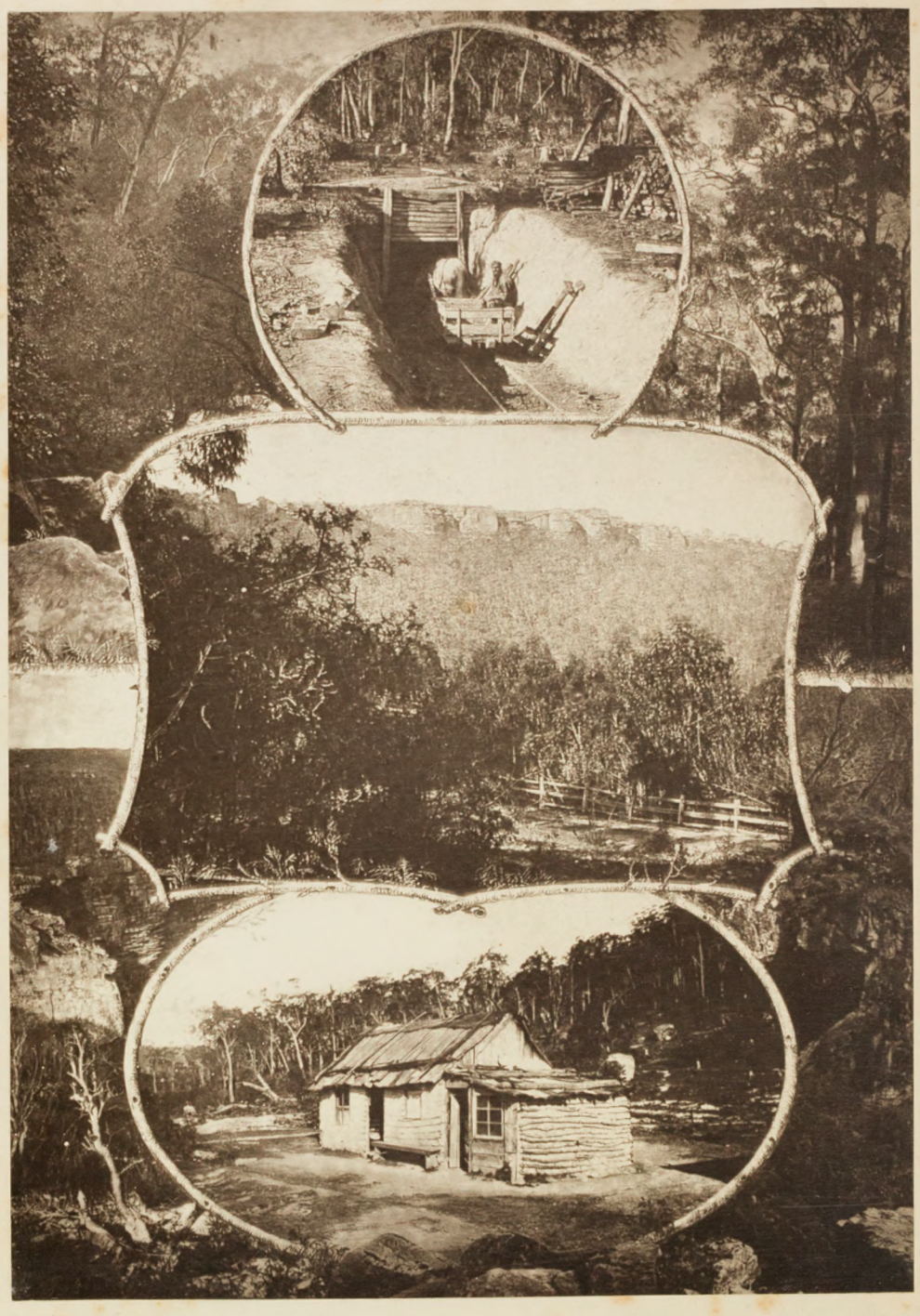
Another description of the Campbell Cataract and the Gorge at the Weatherboard.—The following description of the Campbell Cataract and the adjacent gorge is taken from Mr. Edwin Burton's Guide, an admirably compiled and useful little work. Mr. Burton's *Guide*, page 118, says:—"The Campbell Cataract is, however, the great attraction to tourists. The water leaps over the tremendous precipice into the glen below. The scene has thus been depicted by the Rev. Dr. Lang:—'At the point where the rivulet from the Weatherboard hut discharges itself there is a break, or bay, in the line of cliffs on that side, as if a vast portion of the wall of rock had been quarried out for the purpose, the two points appearing from behind like two lofty headlands jutting out into the valley, and bearing a remarkable resemblance to the Heads of Port Jackson. The rivulet, which in its course of 2 miles and a half has been swelled by one or two smaller streams issuing from lateral valleys, to the size of a common mill stream, precipitates itself all at once over the rocks at the head of the bay and is lost in the abyss, the fall being at least 1,000 feet. On gaining the edge of the precipice the waters of the rivulet seem to shrink instinctively from the frightful leap to which they have been conducted in their course down the valley, each individual drop appearing endowed with separate volition, and seeming determined to shift for itself, and the whole mass of fluid resolving itself into what appears like innumerable particles of frozen snow. Many hundred feet below, the tops of apparently lofty trees are seen at the bottom of Prince Regent's Glen, and so completely do the cyclopean walls of rock which form the glen defy all direct communication between the heights and the hollow, that the shortest practicable route from the place where the rivulet leaps over the precipice to the bottom of the cliffs, over which it falls, is 16 miles. Governor Macquarie named the waterfall the Campbell Cataract, in honor of the Colonial

THE FALLS, WEATHERBOARD. (*See* pages 43, 45, and 46.)

Secretary of that period. At the time we visited the Fall there was a strong wind blowing up the glen. The wind caught the falling waters before they had time to reach the bottom, and scattered them into mist, carrying them to great distances. The sun's rays falling on the particles produced the phenomena of innumerable rainbows, the effect of the whole scene being indescribably beautiful.' Connected with this wonderful place there is a legend about the inhumanity of the keeper of a "shanty" near by the precipice, in the early days of the Colony. Before railways were thought of, lucky diggers had to use the road, and this "shanty," where grog was sold on the sly, was often resorted to by those who wanted shelter and rest. As the story goes—and there are more improbable stories—the keeper used to lure them to the precipice, rob them, and then pitch them over into the valley beneath. The Falls are about 2 miles from the railway platform. There is a small accommodation house near the platform, where a guide may be procured. Persons may leave Sydney by the morning train, visit the Falls, and return to Sydney the same night."

The Water Nymph's Dell.—Directly opposite to the Weatherboard Station (or rather Platform) there is a very pretty waterfall, in a curiously-secluded narrow glen; both waterfall and glen being well worthy of a visit. You cross the Railroad a little to the west of the pointsman's house, and turn down at once into an adjacent scantily wooded valley, wherein flowering shrubs and rushes appear as the principal features. A path leads down a continuation of this valley to the eastward, on somewhat firmer ground, for about a mile and a half; and then, by an abrupt turn to the right, a winding and precipitous track takes you down into the upper end of a deep and rocky gully. The bottom and sides of this gully are shaded with tall trees of coachwood and sassafrax, everywhere interlaced with vines; and in the lower portions of the gully there is an abundance of ferns, mosses, and lycopods of all descriptions—some of them very choice and rare. Tree ferns—(the *Alsophila australis* and the *Dicksonia antarctica*) display their graceful fronds on all sides of you, in this cool umbrageous place; and when you stand upon the lower ledge of rock, at the base of the tortuous path, the pleasant rippling sound of falling water becomes distinctly audible. Proceeding further still, the noise of a waterfall is soon heard, and over the grey cliff opposite, across the gorge (draped in the glittering, dark foliage of trees and arborescent plants) a charming cascade comes down, whispering and murmuring into the glen. Following the rough and difficult path to the westward, up this lovely but lonely place, the end of the gorge becomes suddenly revealed. At the termination of the path, and below the cliff, lies a pool of limpid water, wherein Egeria herself might not have disdained to bathe. This pool is supplied by the waterfall, descending at the back of it, from the precipice, in several broken rills, for more than 50 feet. The dark sides of the rock and the edges of the basin in this Water Nymph's Dell are fringed and decked with mosses and creeping plants of a wonderful beauty and variety. The path down the hill-side appears to be by no means an easy one, but the youthful, smiling guide speaks admiringly of the indomitable energy and daring of the lady visitors to this beautiful and romantic spot. Another less hazardous ramble may be found by leaving the semaphore near the line, and following up a bubbling stream, by the edge of a marsh, to the north-westward. The visitor may do this for some considerable distance and find his gravelly path bordered by a profusion of mountain flowers, ferns, lycopodiums, and those other plants which, in Australia, appear to take the place of the heather, in the uplands of Scotland and other parts of Europe.

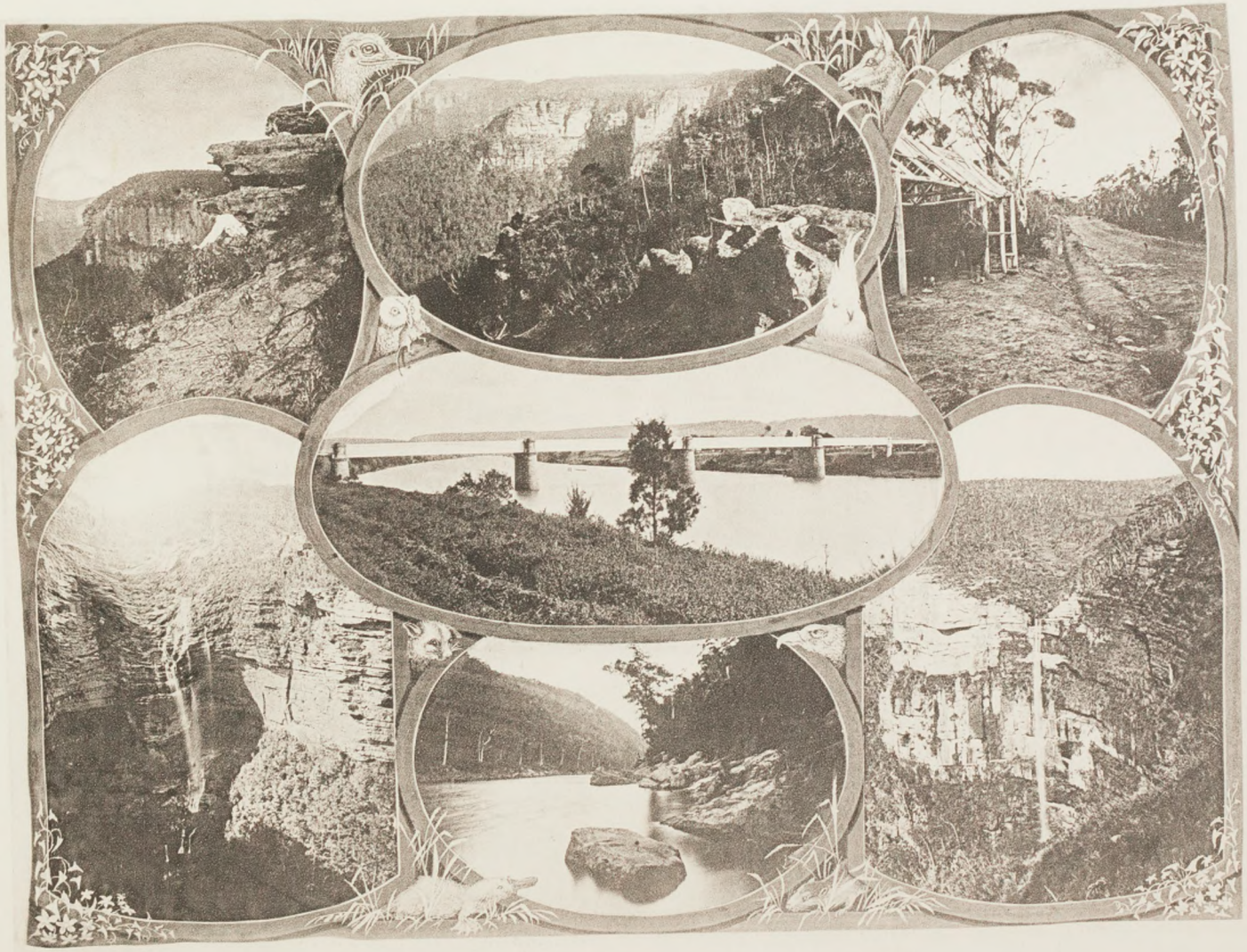
Katoomba Platform, 66 miles; 3,349 feet above sea-level.—Leaving the Platform at the Weatherboard, opposite the pointsman's house, the Line takes a sinuous course to the west-south-west for 4 miles, when it reaches the platform at Katoomba. At Katoomba will be found a platform, point-house, and telegraph station, but no inn or accommodation house. The scenery in the neighbourhood is magnificent, and much of it may be enjoyed by an attentive traveller from the windows of the railway carriages. Mr. J. H. Neale, J.P., resides near Katoomba, in a very pleasant and salubrious spot. There is a fine waterfall 4 miles from the siding, on the left or south-western side.



BLUE MOUNTAINS.

KEROSENE MINE, HARTLEY VALE. HASSAN'S WALLS.

WATTLE AND DAB HUT.



Rocks, Govett's Leap.

Rocks, Weatherboard.

Halting-place, Govett's Leap.

Bridge over Nepean, Penrith.

Weatherboard Falls.

Nepean River.

Govett's Leap Falls.

MOUNT VICTORIA.

NO. 1 CUTTING. ROCKS, KUNIMBLA VALLEY.

KUNIMBLA VALLEY.

FAIRY DELL. FAIRY DELL FALLS.

When you leave Katoomba there are peeps to the left as you proceed for about 2 miles further to the westward. Mountains then become visible to the right, and distant views are to be seen to the left with lofty red cliffs and dark blue and grey ranges. Then the road—at Pulpit Hill—takes a sharp turn to the northward, and runs through many deep cuttings on this prolongation of the table-land still lying between the two great water-sheds; winding a good deal, and showing many glimpses of blue mountains and magnificent cliffs of red and grey sandstone. To the left, over the Cunimbla Valley, views are occasionally to be seen of a wondrous beauty, and strangely diversified with rich varieties of colour and atmospheric effects. The Line passes a pretty Gothic gate-house (for the benefit of those drovers who may still have occasion to use the Old Road) and soon after you catch sight of the far off ranges of mountains, which lie in the direction of Windsor and Richmond, and even of Brisbane Water—the "Gap" beyond Cooranbong, in the Broken Back, or Sugar-loaf Range, being readily distinguishable on a clear day by those who know where to look for it. Then there are several hastily displayed, and as rapidly withdrawn views of the Cunimbla Valley away to the south-westward; and so, after a very pleasant *trajet* of 7 miles, the traveller finds himself arrived at Blackheath, in the immediate vicinity of Govett's Leap and Gorge, overlooking to the north and north-eastward the Great Valley of the Grose.

Mount King George, Mount Hay, Mount Toomah, and Mount Wilson.—Lying north-eastward and north of the Line between Katoomba and Blackheath—from 6 to 13 miles away, and in the almost inaccessible country which constitutes the watersheds of the Grose and the Colo Rivers—are the four lofty mountains of King George, Hay, Toomah, and Wilson. Mount King George, on the north-west side of the Grose—the Saddle-backed Hill, visible from Sydney—is 3,620 feet high; Mount Hay, on the south-east side of the same river, 2,400 feet; and (more northerly, between the Colo River and the Wollangambe Creek) Mount Wilson, 3,580 feet. Eastward of all these, stands Mount Toomah, 3,240 feet high. These mountains, the most conspicuous points in the whole range, can be seen from Sydney, and are sometimes spoken of collectively, as "The Dromedary." Some of them can first be seen from the verandah of the "Old Blue Mountain Inn," at the Lawson Station; but as the traveller proceeds to the westward, they become gradually more and more developed. "Mr. Charles Moore, of the Sydney Botanic Gardens," says Burton's Guide (page 121), "has drawn attention to the fact that on these four hills the soil is of the richest kind, composed principally of disintegrated trap, and clad with noble timber trees of a brush character, the undergrowth being chiefly tree and other ferns. This is the more extraordinary from the fact that they are surrounded in all directions by others of a sandstone formation, covered by a wretched and sterile scrub, and some eucalypti of miserable growth. For long after the opening of the Main Western Road, Mount Hay was supposed to be inaccessible, until that indefatigable explorer, Count Strzelecki successfully crossed the ravines, and ascended the summit. "Some idea," says Sir Thomas Mitchell, in his work on Australia, "may be formed of the intricate character of the mountain ravines in the neighbourhood, from the difficulties experienced by the surveyors in endeavouring to obtain access to Mount Hay. Mr. Dixon, in an unsuccessful attempt, penetrated to the Valley of the Grose, until then unvisited by man, and when he at length emerged from the ravines in which he had been bewildered four days, he thanked God (to use his own words, in an official letter), that he had found his way out of them." Even Count Strzelecki tells us, that in the course of his researches he was engulphed in the endless labyrinth of the almost subterraneous gullies of Mount Hay, and was unable to extricate himself and his men until after days of incessant fatigue, danger, and starvation. "But," he adds, "the ascent of Mount Hay, when these difficulties are once surmounted, repays richly the exertions and fatigues which it entails. From its basaltic top the distant views to the south and west are somewhat intercepted by King's Table-land, and other mountains somewhat higher than Mount Hay. But to the east, the sea-coast, bordering the

interesting basin, through which flows the rivers Nepean and Hawkesbury, the vicinity of Parramatta River, together with Sydney and Botany Bay, are distinctly visible. To the north also the prospect is extensive. In the intervening space may be noticed the vast Gorge at the head of the Grose River. In a westerly direction, in the valley, lie the towns of Hartley and Bowenfels, with Mount Lambie in the back ground." Mount King George, Mount Hay, and Mount Toomah, form conspicuous objects in the grand view from the edge of the Gorge near Blackheath, which generally goes by the odd but well-known name of "Govett's Leap."

Blackheath Platform, 73 miles; 3,494 feet above sea-level.—Blackheath Station, or rather Platform, is a place of much more easy access than the Weatherboard, for there is much less danger of being carried past it by the train, and it may be readily visited from Mount Victoria, either on foot or on horseback; there being a good road near the Line all the way, a distance of about 4 miles. A good accommodation house stands near the Blackheath platform On the eastern side of the hotel a road branches off to the north-eastward and leads the tourist, after a walk or ride of 2 miles, to the edge of the Gorge. Mount King George is found rising to the left of the traveller when he reaches this interesting spot, and Mount Hay appears in front of him, at the distance of rather more than 5 miles, "as the crow flies." Between the hut and Mount Hay there is a general and almost continuous descent to the extreme depth of 1,850 feet; the vast densely wooded basin beneath converging towards the Gorge of the Grose, presenting a *coup d'œil* which can never be forgotten. On the right of the ruined hut, at the distance of about half a mile, is "The Govett's Leap," or Falls, an unbroken descent of between five and six hundred feet. Far below, in the valley, is "The Trinity Cascade," and to the westward (nearly on a line with Govett's Leap) is another waterfall, not so easy to see, known as "The Left Hand Fall," for want of some more fitting designation. There is also yet another cascade formed by one of the minor tributaries of the Grose, away to the eastward, at the distance of two or three miles from the hut. Another track—ending on the west side of the accommodation house—leads to "Perry's Look Down" into the Grose Valley near Hat Hill—some miles further to the north of Govett's Leap. From "Perry's Look Down" the track is continued past "Docker's Ladder," down to a place called "The Gap," and so on to "Junction Camp," in "the Gorge of the Grose," properly so called, 2,150 feet below the Blackheath platform; but no ordinary visitor should, on any account, attempt to visit these last-named spots without a thoroughly competent guide.

Govett's Leap: Waterfalls and Gorge.—From a bold and rugged mass of rock in a bay, or bend, at the southern extremity of the valley or chasm, and near the ruined hut at the end of the road, the visitor may, perhaps, obtain the best general view of this wondrous spot. To the right, at the distance of about half a mile, the Govett's *Leap*, or Fall, pours itself, headlong, over a perpendicular wall of dark tinted rock; 520 feet, in sheer descent, on to a mass of black fragments of stone, which has, in the course of ages, accumulated at the base of the cataract. This descending mass of water—white and misty as the driven snow—sways, as the wind blows, to and fro, like the veil of a bride; the vast height of the waterfall, the strong contrast of colour, and the undulating motion so produced, imparting a very singular and most charming effect. When the sun attains to a certain altitude, a rainbow plays for hours around the cloudy folds of this Fairy Veil. From the neighbourhood of the hut the other cascades are not visible; but on turning a few yards to the westward the deep whisper of the Left Hand Fall may be distinctly heard. The whole of this rock-enclosed valley before the spectator is for the most part hemmed in with titanic walls of red and gray rocks from 400 to 800 feet in height, and from the irregularly defined base of these outermost and uppermost walls of the valley there is everywhere a steep rocky incline, or *talus*, covered with thick woods, down to the lowest depths, 1,200 feet below the level of the rock on which the traveller stands. Here and there, in this broad and verdant expanse of tree tops, rising and falling according to

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the varied surface, may be seen a few grey patches of half denuded rock; but for the most part all these lower slopes (on either side of the devious but invisible central stream) are densely shaded with primeval forest trees, the tops of which, from the altitude occupied by the spectator, appear strangely soft and dim in their outlines. Beyond the "*Leap*"—apparently a Cumbrian provincialism for *waterfall*, named after W. R. Govett, a Government surveyor, who first explored these parts—and round the first point to the eastward, there is another deep "bay" of precipitous rock; and from the furthest limit of this bay there is a winding channel, leading down to the centre of whole tableau. From the easternmost end of the Govett's Leap Gorge the rocky walls trend north-westerly, until, ending sharply as before, the semicircular barren top of Mount Hay becomes visible, with long lines of blue hills in the extreme distance. The Govett's Leap Gorge is shut in on the western side of its northern limit by a boldly projecting termination of cliff and talus; and thence inside of that outer boundary a grand sweep of rocks, mountains, and declivitous slopes comes back to the left of the spectator. To the west of the hut, as you go towards the Left Hand Falls, there is a most extraordinary echo, by which short sentences are distinctly repeated nearly half a minute after they have been uttered. In the slopes many hundred feet below, in the vicinity of the Left Hand Fall, there are large and lovely groves of tree fern, and such like products, the rocks behind them being beautifully decked with trailing creepers and arborescent plants. Mount King George (here assuming the outline of a couchant lion) overlooks the western side of the Govett's Leap chasm—a southern offshoot of the Valley of the Grose, the course of which, by the way, is here from north-west to south-east. The glorious character of the entire scene, in all its vastness and sublimity—cliff, mountain, forest, and shadowy distant hills—impresses the beholder with admiration and with awe, the never ceasing sigh of unseen and remote waters naturally conducing greatly to the general effect.

Another description of Govett's Leap.—The following description of the Govett's Leap Gorge and Falls is from the accomplished pen of Mr. E. Du Faur, F.R.G.S.: "Leaving the Blackheath Platform (73 miles from Sydney) the tourist follows a road trending east-north-east, through an uninteresting scrubby forest, for about 2 miles (having gradually descended about 320 feet), when he arrives at the edge of a gorge hemmed in by perpendicular cliffs of sandstone, lying in horizontal strata, and varying generally from 400 to 800 feet in depth. From the foot of these cliffs a steep talus descends to the centre of the gorge, at a depth of 1,850 feet from the edge of the precipice. The width of the gorge varies from three-quarters of a mile to a mile and a-half, and its length, in a straight line, to its confluence with that of the Grose River, is 3¼ miles. At a distance of 520 yards from the end of the road a small watercourse abruptly terminates in the Falls known as Govett's Leap, the perpendicular depth of which has been determined at 520 feet, to where the water first touches the rocks below, while the actual foot of the Falls, at the basin, immediately below those rocks, may be considered as 600 feet. From the head of the Falls, to which an easy track has been cleared, another similar waterfall is visible, bearing about north by west, and distant 920 yards from Govett's Leap, and equally accessible from the road; and another of at least equal depth exists about 1½ miles to the south-east, but is more difficult of access. The gathering grounds of the watercourses which terminate in these Falls is very limited, being confined to the northern slopes of the main ridges along which the Railway passes; but being fed from swamps or 'sponges,' they are perennial, and show little variation in the quantity of water passing down them in winter or summer, except immediately after heavy rains. The descent to the foot of the Falls is at present impracticable from their immediate neighbourhood. It was reached for the first time—at least for many years—in the month of October, 1875, from a sketching camp formed by the writer, at the junction of Govett's Leap Gorge with the Valley of the Grose, to be hereafter described. That junction is situated about 12 miles down the Grose Valley from the Hartley Vale Siding (80 miles from Sydney), and

2,270 feet below the Railway ; thence, owing to the roughness of the upper part of Govett's Creek bed, and the denseness of the scrub, fully three and a-half hours are required to reach the foot of the Falls, although the distance, as above stated, is only about 3¼ miles in a straight line. As described by its visitors on that occasion, the scene at the bottom of the Falls is, if possible, grander than that from above. From the top you can see nothing distinctly, only an awful gulf, with a confused mass of foliage far below ; but from below it appears a large amphitheatre, filled with trees of luxuriant growth, and ferns and mosses. The water coming down sometimes like falling rockets, sometimes dissipated by the wind into clouds of spray before it has half completed its downward course, is wafted over a large area, and insures the conditions of perennial moisture so plainly evidenced by the luxuriance of the surrounding vegetation. Then again, from below you have a sky-line broken into many fantastic shapes, and lighted up in parts with delicate bright hues, while others are in deep shade in lieu of the almost uniformly level horizon seen from above. Standing at the basin at the foot of Govett's Leap, which is only about 25 yards from the pependicular wall of rock, it is almost impossible to look up at the Falls. The better plan is to lie on one's back, and look upwards to the zenith, when the 700 feet cliffs forming the ends of the horse-shoe bend in which the Falls are situated, tower above you on either side, while the waterfall appears to be coming down from a depression in their centre almost on to your face. Few persons, perhaps, could lie in that position for more than a minute or two at a time without feeling giddy, the sight is so grand. Besides the three principal falls above referred to, there are many others in this valley and in that of the Grose of almost equal depth, which have not yet been closely approached ; while some of the minor cascades—notably the 'Trinity Falls'—are of excessive beauty. Before leaving the subject it may be as well to record the origin of the name, 'Govett's Leap.' Mr. W. R. Govett was a Government surveyor who, in the year 1832, under instructions from Sir Thomas (then Major) Mitchell, the Surveyor General, "to survey the features of the county of Cook," is supposed to have first discovered the Falls. He made some unsuccessful attempts to descend into the gorge ; but his plans of the contour of the ranges and gorges, as partly traversed and otherwise sketched in from above, and which illustrate an area of some 650 square miles, are proved to be remarkably accurate, when the early date and limited means at his disposal, in country of so remarkably difficult a character, and entirely uninhabited, are considered."

Another description of Govett's Leap.—Mr. Edwin Burton's description of Govett's Leap and its vicinity will also be read with interest. That indefatigable *littérateur* says: "One of the greatest natural wonders of the world is Govett's Leap, 6 miles from Mount Victoria Station. The goods train, which leaves soon after 10 o'clock every morning, will drop the excursionist at Blackheath Platform, and a walk of a mile and a half through some pretty scenery, will bring him to the Gap itself. There was once a stockade here, and the ruins of the officers' quarters may still be seen lying on the ground, whilst on the opposite side of the station is an old graveyard. The track leading to the "Leap," which is wide enough for buggies, is entered amidst some tea-tree scrub, a hundred yards or so to the left of the Main Western Road, and not far from the hotel. Once on the track the visitor has nothing to do but to follow it up until he reaches the tremendous rent or depression in the earth, which is said to be the deepest chasm with perpendicular cliffs in the known world. It is almost surrounded with these cliffs, which are believed to be nowhere less than 3,000 feet above the level of the sea. The full sublimity and majestic grandeur of the scene is not realised at a first glance. After contemplating it for a time the mind becomes filled with awe and wonder as it vainly strives to comprehend

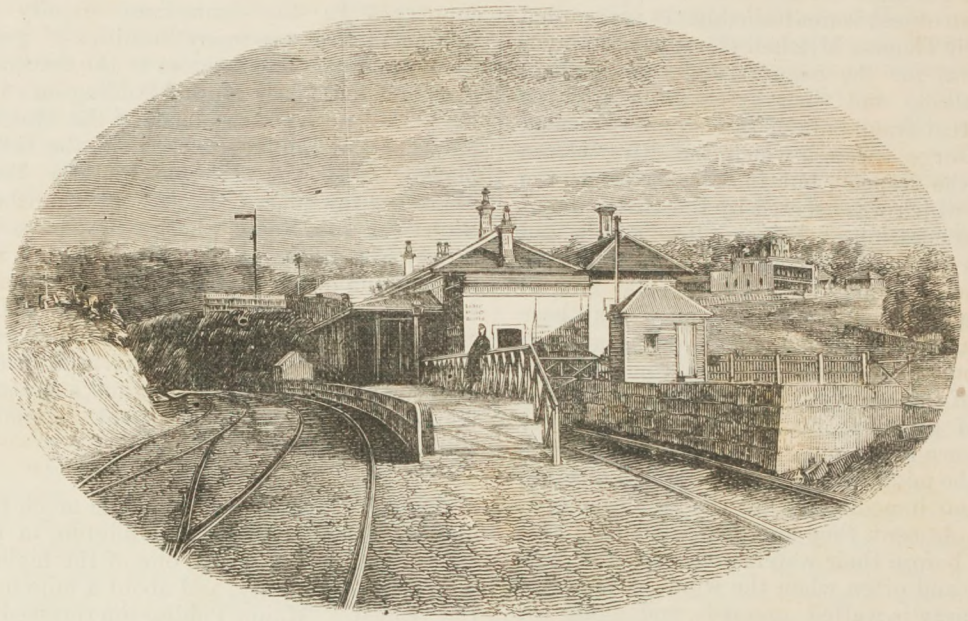
> "——— The vast immeasurable abyss
> Outrageous as a sea, dark, wasteful, wild."

The trees in the valley below, although one or two hundred feet high, or perhaps more, are undistinguishable in their individuality. Standing on the abrupt precipitous wall, one cannot help feeling a strong desire to reach the depths of the gorge. But the closer one

seeks for a spot at which a descent can be made, the more certain does it appear that such an object is unattainable. It is recorded that Sir Thomas Mitchell (formerly Surveyor General for the colony) endeavoured, first by walking and then by crawling between the great fragments of sandstone, to ascend the Gorge through which the River Grose joins the Nepean, but in vain. Near to the shed, which was erected by the Government on the occasion of Prince Alfred's visit, and which overlooks the ravine, a track may be noticed winding down 200 or 300 feet, to where a rock juts out, and on which those who are fearless enough may recline, and endeavour, if they can, to form some conception of this wonderful place. The scenery is full of grandeur, and to add to its beauty there are two streams, which are precipitated into the mighty chasm, and although meeting with no impediment but the atmosphere in their descent, they are dissipated into mist long before their waters can reach the bottom; and often when the wind is favorable the spray is wafted upwards, and along for a considerable distance. To a few members of the New South Wales Academy of Art is the honor due of having explored the valleys which lead up to this tremendous gorge. For some days this gallant band made their home in the ravines, and succeeded in ascertaining the heights of the hills, and taking a number of excellent photographs of the scenery."

Mount Victoria Station, 77 miles; 3,422 feet above sea-level.—4 miles north-north-west from the Blackheath Platform is the Station of Mount Victoria, not the less remarkable for the centrality of its position and for its bracing atmosphere than for the grandeur of its scenery. Mount Victoria is at present but a small place, but is gradually becoming enlarged, being a very favourite place of resort for tourists and invalids. Already it contains numerous villa residences, a post office, a telegraph station, two or three stores, and not less than three excellent hotels—Mr. J. L. Mead's (the "Royal"); Mr. John Perry's "Family Hotel," and the "Imperial"—just finished. There is also a Public School, and an Anglican Church. The "Imperial Hotel" is a large castellated edifice, and occupies a commanding situation between the two other hotels, from both of which there are fine views of the surrounding country. In the immediate vicinity of Mount Victoria are many localities of great beauty and peculiar interest to the traveller. Amongst these are: Mount Piddington; the Fairy Dell, near the residence of the Messrs. Fairfax; the Engineer's Cascade, the Little Zigzag; and the Mount Victoria Pass. There are few places throughout the whole Blue Mountain Range where a more pleasant variety can be found for the lovers of the picturesque or more comfortable accommodation. It is not uncommon for tourists to make Mount Victoria their head quarters, and thence to make excursions in different directions—up and down the Line, away into Hartley Vale, and into the great Cunimbla Valley, and elsewhere.

Mount Piddington.—A favourite much frequented spot is Mount Piddington, to the south of Mount Victoria, one of the highest points in the vicinity, and about a mile from the "Royal." Mount Piddington received its name in commemoration of the enterprise and public spirit of the Hon. W. R. Piddington, the late Colonial Treasurer, who felled many trees on the summit, formed the roads, and caused seats to be constructed by the Government for the convenience of pedestrians. This grand eminence, visible from the Railway on the Sydney side, overlooks a portion of the Vale of Hartley and the broad Cunimbla Valley, amongst the undulating hills and forests of which there are numerous homesteads. To the south-east are the uplands of the country near the town of Camden; and to the north may be seen the distant ranges which lie away in the direction of Singleton, on the Hunter. Much nearer, at the distance of only a dozen miles or so, may be recognized the four mountains of King George, Hay, Wilson, and Toomah. The view from Mount Piddington (everywhere traversed by admirable roads) is extremely fine in the early morning, when the varied depths of the whole Valley of Cunimbla often lie whelmed in a misty moving sea of blue (cobalt) tipped here and there with the rosy (or golden) light of the sun. Mr. E. Vickery's country residence, on some far-away hill in the great valley below, is at all times a conspicuous and



MOUNT VICTORIA STATION. (*See* page 53.)

HARTLEY TOWN. (*See* page 53.)

interesting feature in the charming prospect here unfolded to view. It is near Vickery's, only 2 or 3 miles beyond it, that the Blackheath Creek falls into the River Cox. South-eastward of the mountain a steep path leads down into a shady wilderness; and at the bottom of this dell there is a beautiful cascade—rushing noisily through a curious cleft in the massive rock, into a deep pool of clear cold water. Here, at the base of the fall, and shut in by the over-arching rocks, visitors occasionally bathe in the summer season, and so return refreshed and jubilant to the adjacent township.

The Fairy Dell.—The Fairy Dell lies west of the residence of Mr. James R. Fairfax, and is gained by a gravelly path following a stream of water down a glen of gentle inclination. This little valley, agreeably sheltered from the westerly winds, affords a pleasant ramble in the winter season, and contains many pretty bits of scenery. At a quarter of a mile from the house of Mr. Edward Fairfax there is a rather sudden descent, and then the path winds to the right round a dell and cascade. As usual in these Blue Mountain glades the termination of all is the cascade, and its capacious pool of pellucid water, overhung with alders and ferns. Here there are seats for visitors to this glen; the deep seclusion of which is so frequently disturbed with the uproar of the unseen train, as it passes thundering along the Line about a mile away.

The Engineer's Cascade.—The Engineer's Cascade is a fine water-fall a mile or so at the back of Mr. John Perry's Family Hotel, about midway between Mount Piddington and the Little Zigzag—a little to the left of the road as you go down towards the Pass. Here, as in many of the other dingles and glens, wild flowers, mosses, and ferns abound. The view from this spot to the south-westward is very highly spoken of.

The Little Zigzag or Cunimbla Pass.—Not far from the Old Main Road, and to the rear of Perry's Hotel, there is a bridle-track laid out by the Roads Department, leading from the mountain down the face of the precipice into the Cunimbla Valley. This is generally known as the Little Zigzag, or Cunimbla Pass, and is well deserving of a visit. This pass, formed with much skill on a series of zigzags, is 46 chains in length. There are sixteen of these traverses on the side of the mountain, each averaging about 190 feet in length. The scenery from these successive terraces (and especially from the upper ones) is very grand. To the right is Mount Victoria, with its connecting pass on the old road, in full view, and there is, moreover, an unbroken prospect stretching over all the lower country. Half-way down this road are some remarkable fissures in the rocks, known as the Cunimbla Caves. These extend into the mountain for some considerable depth, and should not be explored without a light or a guide.

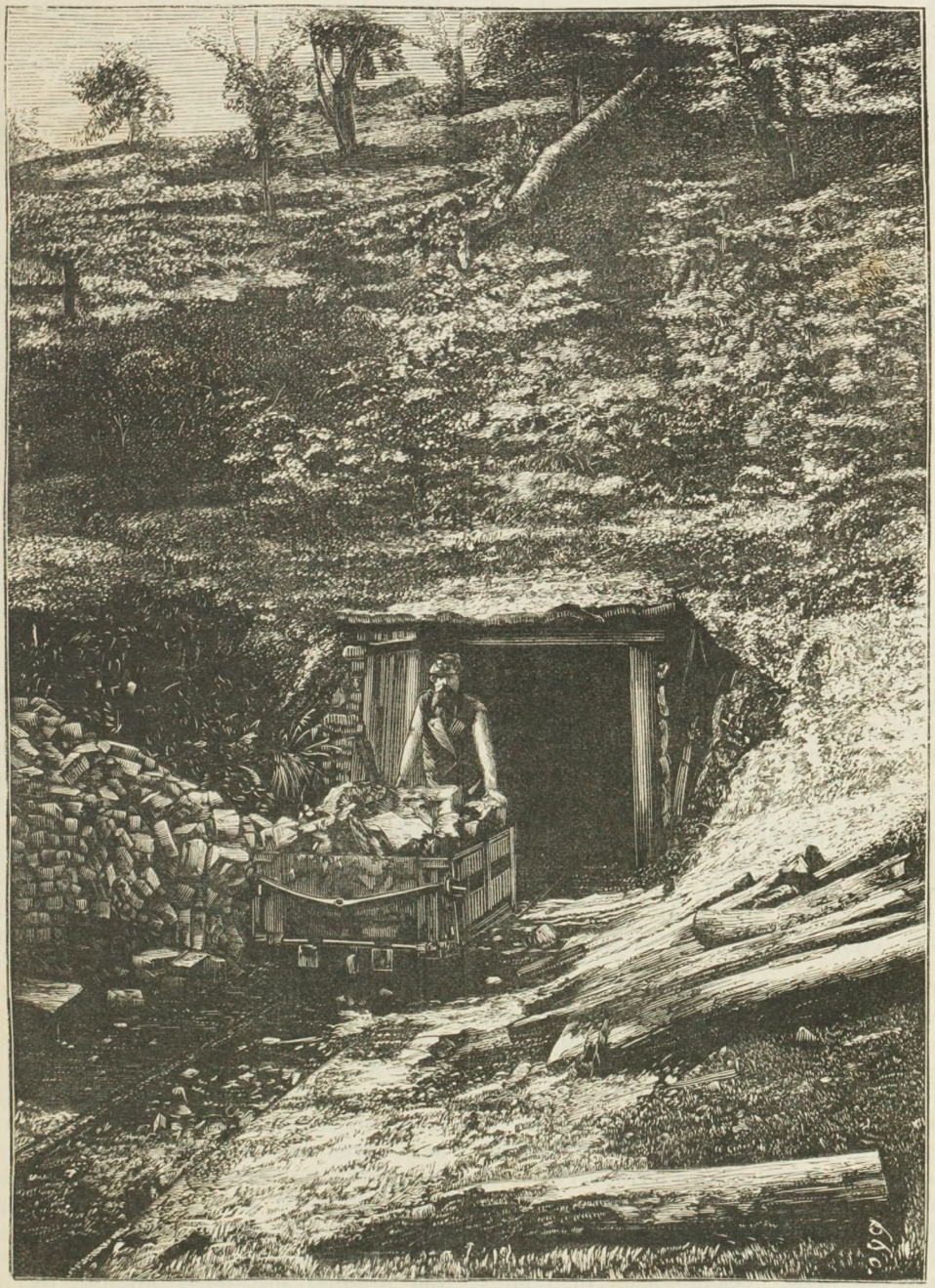
The Mount Victoria Pass.—The Mount Victoria Pass—about 2 miles from the Mount Victoria Station, on the Old Road to the westward leading towards Hartley—was constructed many years ago by prison labour, under the supervision of Sir Thomas Mitchell. In the old days, before the existence of railroads, it was regarded as a triumph of engineering skill, and it is still well worth a visit. After passing through a deep cutting at this spot the visitor should turn off the road for a few yards to the right, and he will then have spread before him a magnificent panorama of mountain, vale, and forest; Little Hartley lying at his feet, Great Hartley beyond, and Bowenfels in the distance. Here Hartley Vale (containing the measured lands of the New South Wales Shale and Oil Company, with Mount York and Mount Clarence adjoining—in fact the whole upper basin of the River Lett and other minor tributaries of the Cox) lies away to the north and west of this road and pass, hemmed in by the steep mountain ridges upon the east and north.

Mount York.—Another pleasant walk from Mount Victoria may be found along the ridge to Mount York, one of the most prominent elevations on the western side of the range. This mountain—which is named after Her present Majesty's uncle, the Duke of York—terminates abruptly to the westward (at about 6 miles from the Mount Victoria Station) in precipices of over 750 feet in height; its topmost point being 3,292 feet above the level of the sea. On the one hand, at the base of this mountain

lies the *Valley of Clwydd—extending 6 miles in a north-westerly direction—and, on the other, the yet longer and more beautiful Hartley Valley. Across this last-named romantic tract of country, in the direction of Bowenfells, may be seen the conical summit of Mount Lambie; to the left, Mount Tarana—at the foot of which the Railway passes; and in the far distance (beyond the spur of Tarana) one of the lofty peaks of the Canoblas, near Orange, is on clear days distinguishable. Mount Clarence—on the western declivity of which is the Lithgow Valley—is directly opposite to Mount York, in a north-westerly direction. Passing along the Mount York road, and at about a mile or so from the Mount Victoria hotels, the original road—by means of steep traverses or zigzags—descended into the adjacent valley, and traces of this pass may, it is said, yet be discerned by following along the declivity to the right. This was the old track down into the Hartley Valley before the Victoria Pass was designed and constructed by Sir Thomas Mitchell. The pass now referred to, being abrupt and dangerous, has long since been abandoned.

Excursion from Mount Victoria to the Weatherboard.—An artist, or any real lover of the picturesque, may take a very pleasant (although rather fatiguing) excursion from Mount Victoria to the "Weatherboard," by starting early in the morning, and walking all the way down by the side of the Railway, a distance of 15 miles. Water will be found in abundance and of excellent quality on the way, but the tourist will have to take with him all other refreshments, as nothing of that kind can be met with after he shall have passed the accommodation house at Blackheath, 4 miles from Mount Victoria. It will be well for him to start early, so as to reach Mr. C. A. Wilson's accommodation house at the Weatherboard before night-fall, as the road between Katoomba and Wilson's is lonely and bad. Much lovely scenery may thus be observed by a pedestrian tourist, which he cannot otherwise see, either from the Line or the Old Road. At about a mile to the eastward of Mount Victoria he will come, always looking to the right, upon a bold bluff in the foreground, fringed with woods along its outline; sweeping round from the railway range to where it ends, in a cliff with a well-wooded talus. Beyond this stands disclosed an enchanting prospect of the Great Cunimbla Valley to the south-east—spread out before you as on a model map. These distant reaches of country are beautifully diversified in outline and colour, and when seen early in the morning, or (better still) in the evening, are full of great effects in light and shade. Further on, at the top of a deep perpendicular cutting—near the staff of the telegraph line—there is another grand view of the same valley, the chrome coloured cliffs in the foreground lending to it a strange but striking attraction. Then the tourist has to scramble, at some risk, past three precipitous cuttings, and he will at length find himself rewarded with the unexpected prospect of a curious grey rock to the west of a great gap to the southward—best seen from an old disused road to the south of the Line. Another grand view is next disclosed further on to the eastward, the Great Cunimbla Valley appearing over the broken edge of a shelving semi-circular basin of rock, with sloping woods, set off (laterally) by tall and brightly tinted cliffs. The next change presents a modification of the same kind of scene, dotted everywhere with broken fragments of isolated grey rock, and rough pyramids of stone; Mount Piddington reappearing in the distance to the westward. This pretty well occupies the first 4 miles of the trip; but (near the Blackheath Platform) there are still occasional peeps of the Great Valley worth going many miles to see, and not visible from the adjacent line. Passing Blackheath and continuing along the Line towards Katoomba there will be found a varied succession of views to the south and south-east — at least six — that are well deserving of the artist's pencil. Having reached Katoomba—11 miles from Mount Victoria--the tourist will find several grand views of huge parti-coloured cliffs and shadowy ranges—especially one which he

*The Vale or Valley of Clwydd was so named by Governor Macquarie in 1815, in consequence of the strong resemblance it bore to a vale of that name in North Wales (Wells' Gazetteer). Often, however, the Vale of Clwydd (lying, as it does, to the *left* of the Line), appears to be confounded with the Valleys of Cunimbla and of Hartley.



ORIGINAL KEROSENE MINE, HARTLEY VALE. (*See* page 58.)

will open out soon after he has passed the siding and telegraph station. There being (as already intimated) no inn or accommodation house at Katoomba he must now hurry on towards the Weatherboard, or he may possibly be belated.

Hartley Vale Platform, 80 miles; 3,318 feet above sea-level.—After leaving the Mount Victoria Station the Railway takes a northerly and sometimes even a north-easterly direction, along a narrow ridge, known as the "Darling Causeway," and dividing the watersheds. The waters fall into the Grose to the eastward; whilst, on the western side of the ridge, the heads of the River Lett, and other affluents of the Cox, although eastern waters, commence their course by flowing to the westward. As the traveller proceeds towards Lithgow and Bathurst, he may first observe a fine view to the left opening up a deep well-wooded valley—that of Clwydd; whilst to the right (the eastward) Mount King George, with its singularly stratified cliffs, is seen in mid-distance. Next he catches, on the same side, a passing glimpse of a wild and stony country; and then—as by a magic shift of the camera—a grand and more distant view is seen of Mount King George and Mount Hay. After that (still to the eastward) he has a brief out-look over the upper portion of the Gorge of the Grose, stretching past the northerly mouth of the gorge of Govett's Leap. To the westward, the traveller can occasionally see peeps of the beautiful Vale of Hartley, which, curiously enough, gives its name to the next railway platform after Mount Victoria, upon the mountain ridge.

Kerosene Mines in Hartley Vale.—"The Kerosene Mines in Hartley Vale," says Burton, "are well worth seeing, not alone on account of the scenery but also because there is some interest attaching to a successful and important industry. There is a siding laid down from the Great Western Railway, about 3 miles from Mount Victoria, and the goods and passenger trains may be availed of. Visitors will be put down at the Hartley Vale Siding if previous notice be given to the guard. Then a walk of a mile and a half will bring them to the face of an almost perpendicular rock 600 feet high, up which the shale is hoisted by a wire rope worked by steam. The shale is conveyed to Sydney, the bulk of it for making oil at the Western Kerosene Company's Works at Waterloo, some for the manufacture of gas, and some for export. The main road from Mount Victoria to Bowenfels passes within 4 miles (to the south) of the mines." The best seam of petroleum oil coal here is 3 feet 2 inches thick. It has been pronounced by the Examiner of Coal Fields to be equal to any known seam in any other part of the world. It yields from 150 to 160 gallons of crude oil to the ton, with an illuminating power equal to forty candles. The quantity of shale despatched from this mine in 1875 was 9,856 tons, and for 1876, 15,598 tons; an increase of nearly 6,000 tons in one year.

The Valley of the Grose.—From the Hartley Vale Platform, on its eastern side, the traveller may, with some necessary assistance, find the best track down into the Valley of the Grose, following that river from its head down to the "Junction Camp," already spoken of under the section of Blackheath and Govett's Leap, a distance of about 9 miles. The Valley of the Grose, says Mr. Du Faur, "may be taken as typical of the character of the ravines by which the Blue Mountains are intersected in all directions; their geological character will be treated in a separate paper. Possessing at present but a limited watershed of about 268 square miles, it is bounded on the south by the main ridge which has been chosen for the Railway Line; on the west, for about 6 miles, by the Darling Causeway above referred to; and on the north by the main ridge along which "Bell's Line of Road," a route for stock only, passes over Mount Tomah and the Kurrajong Hills to Richmond. Its course in a direct line, from the Darling Causeway to its confluence with the Hawkesbury River, a little above Richmond, does not exceed 26 miles; yet within this limited area, through which flows a stream that may generally be forded, though at times an impetuous torrent, are everywhere present evidences of the silent workings of Time and Nature on a stupendous scale; no sudden upheavals of volcanic force, but the gradual disintegration due to atmospheric and pluvial forces, commenced probably under very different conditions to those obtaining at present, but still continuing.

The valley was traversed throughout in 1859 by a party of sappers and miners, with a view to testing its practicability as a route for the Western Railway; since that date it has only been visited occasionally at long intervals. In 1875 it was determined to form a sketching and photographic camp at about 12 miles down the valley, with a view to roughly illustrating it, in order to bring it under the notice of artists and lovers of natural scenery; and also, as previously stated, to explore a route to the foot of Govett's Leap Falls. On a preliminary trip, made in July, it was found that the sappers' and miners' track was so overgrown, encumbered by fallen trees, and obliterated in parts by landslips, that a considerable amount of clearing was necessary to enable packhorses to pass down the gorge with reasonable safety. This having been done, two camps were at last formed in October—the upper one at about 7 miles below the railway, and the lower at the junction of Govett's Leap Creek with the river, under the magnificent cliffs of Mount King George. The transport of instruments and chemicals, by hand, down such a path, and the limited time for which the services of the photographer (supplied by the Commissioners for the Philadelphia Exhibition) were available, precluded any hope of obtaining results of finished excellence. Each spot, previously selected, had to be taken when reached, irrespective of adverse conditions of light or weather, and of chemicals constantly disturbed; and the strength of the party was altogether inadequate for making the clearings in timber and scrub, without which many of the finest views could not be favourably reproduced by photography. At the upper camp, at which operations commenced, a depth of 1,880 feet had been reached; but between that point and the Junction Camp, although the actual difference of level was only 390 feet in 5 miles, the track was particularly hilly, passing over the lateral spurs which descend very abruptly to the river bed; in some places also the width of the gorge is so little, in comparison to the stupendous heights of the adjacent cliffs, that the latter subtend a larger angle than can be compassed by the camera. The scenery in many parts of the river bed is remarkably picturesque; the colours of the rocks of most varied hues; the foliage on the river bank, more especially on its left bank, of a luxuriance so seldom met with in the Colony; while the rush of the water amongst the obstructing boulders, and its perfect transparency in the still pools, or slighter rapids, afford fresh charms to the artist at every turn—charms which, unfortunately, cannot be reproduced by photography."

Mount Wilson Platform, 83 miles; 3,478 feet above sea-level.—3 miles north of the Hartley Vale Siding, and 6 from the Mount Victoria Station, stands the Mount Wilson *Platform*, erected at the western termination of the Bell's Line of Road from Richmond, between 4 and 5 miles to the westward of Mount Wilson, from which it takes its name.

Mount Wilson.—Speaking of Mount Wilson itself, where the scenery is as striking as it is uninteresting at the "Platform" of that name, Mr. Du Faur has remarked on the beauty of the vegetation, and the fertility of the soil. That gentleman says, "The scanty vegetation and miserably stunted and gnarled timber which everywhere surround the tourist on the Blue Mountains, and obscure his view—except when, standing on the edge of a precipice, he looks down on the more luxuriant growth, which is barely visible in the gorges beneath him—detract immensely from the interest of the scenery. There are but two striking exceptions to this general condition, viz.: at Mount Tomah, on Bell's Line of Road (which is unfavourably situated, owing to its distance from the Railway), and at Mount Wilson, the position of which has already been generally described. A ride of about 5 miles (from the Mount Wilson Platform) along the northern watershed of the Grose, and of about 3 miles further along a spur trending to the northwards from Bell's Line of Road, and leading down into some of the heads of the Wollangambe Creek and the Colo River (also affluents of the Hawkesbury River), brings the tourist to the foot of a ridge, which on his right hand appears to be bounded by the usual perpendicular escarpment of horizontal sandstone of the Hawkesbury formation; but the denser undergrowth, the increased size and improved symmetry of the trees, and the rich black soil beneath his feet, tell of a sudden change.

WORKINGS—KEROSENE MINES. (*See* page 58.)

A few yards further on, along a rather steep ascent of about 1 in 7, is disclosed a charming avenue cut through this dense undergrowth, on a steep sideling bordered with clematis, wild tobacco plants, native raspberry, and other luxuriant shrubs, amongst which tower lofty blue gums (*Eucalyptus botryoides*), stringy bark (*E. amygdalina*), black butt (*E. pilularis*), and other *eucalypti*, interspersed with clumps of sassafras (*Doryophora sassafras*), acacias, and tree ferns (*Alsophila australis*, and *Dicksonia antarctica*) of an unusual height. The cause of this sudden change is at once apparent. The upper bank of the road is studded with boulders of basaltic rock, a dyke of which has burst through and overcapped the sandstone, and its disintegration has formed the rich black chocolate-coloured soil which has favoured this special vegetation. A rise of 260 feet in less than half a mile leads to the summit of the ridge, which extends in an east-north-east direction for about 10 miles, but has not been fully explored for more than half that distance. Bounded on all sides by steep thickly-wooded slopes, penetrable with difficulty by man or beast, and by precipitous cliffs, this remarkable oasis appears to have been scarcely visited until 10 years ago, except by Mr. Surveyor Govett, who traversed the western portion of it in 1832. In 1869 the present road up the mountain was cut by the Government, and the richer portion of the land measured for sale; it remained, however, unnoticed until 1875, when the sixty-two allotments previously measured, and containing in all about 1,025 acres, were taken up by thirty-three purchasers. The distance of Mount Wilson from the Railway,* and the large amount of available land, barren as it is, within easier access, has hitherto militated against its settlement; but there can be little doubt in the minds of those who have once visited it, that it will eventually become a favourite resort by those requiring a change from the relaxing climate of Sydney, as it affords a climate as bracing as that of Tasmania, and a vegetation and scenery not inferior to that of New Zealand. In the winter season occasional falls of snow occur, and ice lies in the shady spots for several days together—the thermometer falling at night as low as 22° Fahr., and for weeks in succession below freezing point, but the shelter afforded by the vegetation protects the locality from the bleakness experienced in the more exposed parts of the mountains; and in June and July it is not uncommon on still bright mornings to find the thermometer standing at 60° in the sun, while the frost still lies unthawed in the shade. The summit of the ridge is chiefly covered with a dense growth of eucalypti (the mere trunks of which almost obscure the horizon), and in the undergrowth it is no exaggeration to say that thousands of tree ferns, ranging up to 30 feet in height, are visible in every direction; it is on the southern slopes that the sassafrax jungle is found, in which mosses and orchids luxuriate, and festoons of lianes hang from the topmost branches. There are two peculiarities in this vegetation which are worthy of notice: (1) that the tree ferns (*Alsophila australis*) frequently bifurcate at a short distance from the ground, and in many cases divide into three or four, and sometimes into five and six stems, from one root; (2) that tree-ferns (which must be of very ancient date) are frequently almost entirely absorbed by the growth of forest trees (*Quintinia sieberii*) which germinating in the axles of their fronds, send down suckers to the ground, and enclose within their solid timber the fern stems from which they derived their first support. In some cases are seen ferns which, having attained a growth of 20 feet in height, have been laid low by the wind, and where some portion of their heads have touched the ground a second growth of equal altitude has succeeded, which, in its turn, has been subsequently enclosed by a quintinia of large diameter, while the roots of the original tree-fern still retain their vitality. The measured lands on Mount Wilson include the greater part of the rich basaltic formation, interspersed with poorer sandstone soil, which frequently leads to abrupt precipices forming its boundaries; from the edge of these, extensive views are obtained over the broken uninhabited ranges and gorges which

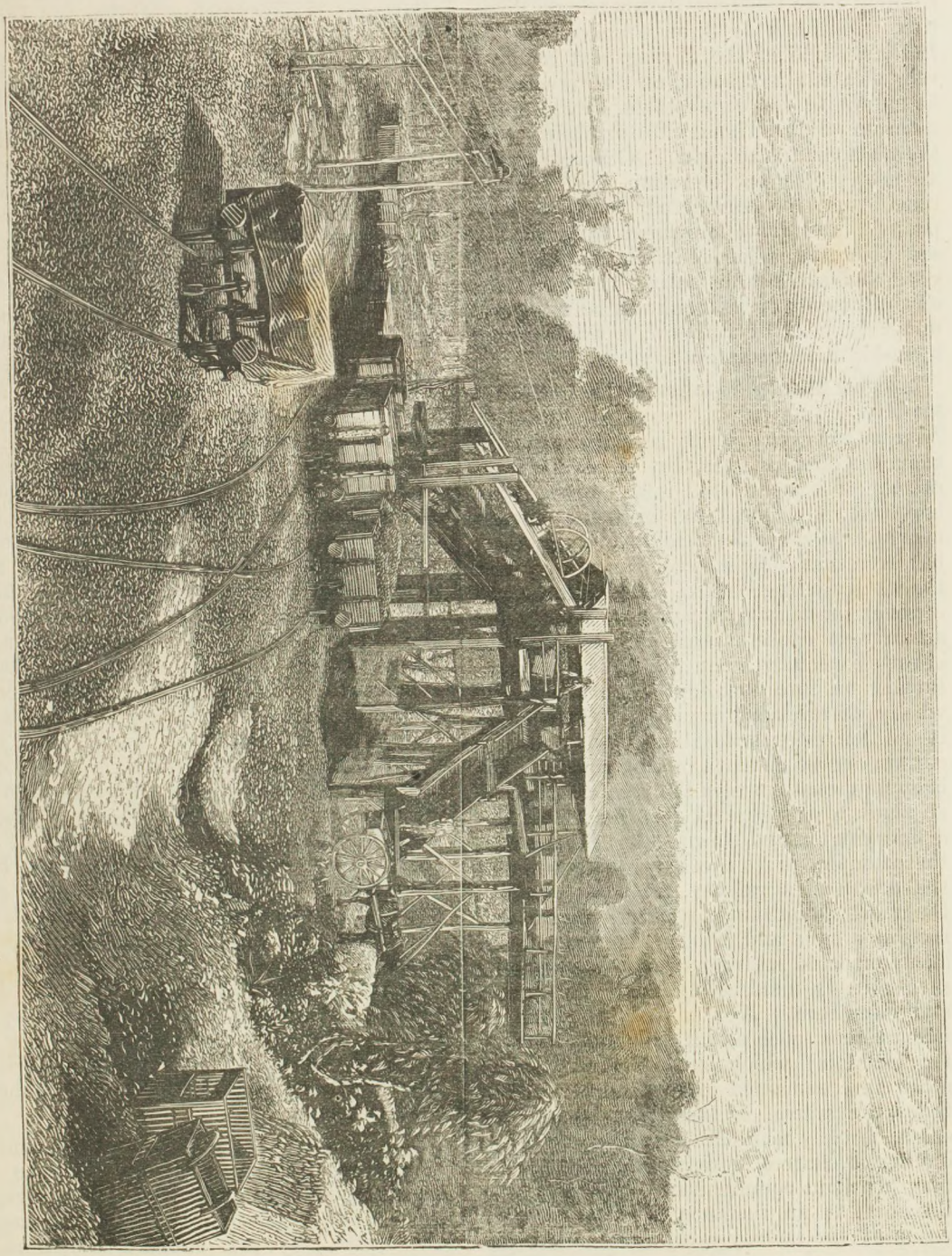
* About 8 miles, by Bell's line of road. After the turning-off to Mount Wilson, "Bell's Line" continues to take a south-east direction for nearly 2 miles, and then follows up a ridge to the north-east, between the waters of Bowen's Creek and the affluents of the Grose, passing Mount Bell on the right, and "The Haystack" on the left, towards Mount Tomah and the Kurrajong.

surround it in all directions. This scenery extends as far as Capertee, 32 miles distant. From other points the dividing ranges forming the watershed of the Hunter River are visible (Warra Wolong, distant 60 miles in one direction, and Werong and Coricudgy, 50 miles in another), while from the cliffs first mentioned as lying to the right hand of the traveller when ascending the mountain, the view (including 180° of the horizon) has been considered almost unsurpassed on the Blue Mountains; it embraces Barranjuey (Broken Bay Heads), on the horizon to the east, and Mount Jelore (60 miles distant), to the south; the Flagstaff Hill, Mounts Victoria, King George, Hay, and Tomah, and the Haystack in the middle distance; and the northern watershed of Bowen and Wollangambe Creeks, a succession of broken ravines more than a thousand feet below the stand-point, form the foreground." Mr. E. C. Merewether, Mr. E. King Cox, Mr. Wynne, the Hon. J. B. Wilson, Mr. Henry Stephen, and others, are the owners of land in this picturesque and beautiful locality.

Clarence Siding Platform, 88 miles; 3,658 feet above sea-level.—The Line having made a slight descent between Mount Victoria and the Hartley Vale Siding, rises 160 feet before it reaches the Mount Wilson Platform, and continues to rise 180 feet more during the next 5 miles to the north-west, when (at the Clarence Siding) its greatest altitude is attained—upwards of 3,650 feet. Here there are signs of cultivation, a large siding, and several houses for persons employed upon the Line. At a short distance to the west of the platform there is a tunnel, 539 yards in length, lined with cemented masonry throughout. The Mount Clarence Tunnel is about a mile on the Sydney side of the Lithgow Valley Zigzag. The features of the country hereabouts were such that the surveyors who marked out the Line had to be lowered down over the rocks with ropes, the contractor having also to commence his work in a similar way. Emerging from the long dark tunnel the traveller finds abundant occupation in looking about him as he is whirled, in perfect safety, down the Great Zigzag, one of the greatest wonders of the colony—perhaps, it may be said, of the world.

The Lithgow Valley Zigzag, 92 miles.—The Lithgow Valley, or Great Zigzag, 15 miles on the Bathurst side of the Mount Victoria Station, has been thus comprehensively described by Mr. Burton:—"Some of the cuttings through hard stone are from 40 to 50 feet deep, the gradient of the Line being 1 in 42, with the exception of one part near the reversing station, which is 1 in 66. The height of the nine arches crossing No. 3 Viaduct on the middle line is 76 feet from the surface to the rail level. Just beyond the tunnel (about the middle of the Zigzag), which is 75 yards long and cut through the spur of the rock, is the scene of a great blasting operation. Three and a half tons of gunpowder, deposited in borings made in different parts of the rock to be removed, were fired simultaneously by means of a powerful electric battery, by the Countess of Belmore. The next cutting is 80 feet high. There are several other cuttings and embankments, which it is unnecessary to particularise. The fall from the Clarence Tunnel to the bottom of the Zigzag is 687 feet; and the length in which this descent has been gained is 5 miles. A tolerably good view of this great engineering achievement may be obtained from the spurs which form the boundary-line of the gully. The best view, however, is undoubtedly to be obtained from the bottom of the gully itself. The cost of this part of the Railway was between £20,000 and £25,000 per mile. Visitors can go from Mount Victoria to the Zigzag by the goods train in the morning, and return again by the passenger train in the afternoon. They will be put down at the foot of the Zigzag if previous notice is given to the guards." Near the point-house, at the foot of the Zigzag, is the entrance to a picturesque well-watered ravine, running for some distance back into the mountain, and a favourite place in summer for excursion picnics. A stream flows out from the spot, joining Farmer's Creek about a mile below the "Lower Points."

Eskbank Platform, 95 miles; 3,033 feet above sea-level.—The Eskbank Platform, over 600 feet below the Clarence Siding, is the first stopping-place arrived at after the train gets clear of the Great Zigzag, and so enters the Lithgow Valley. The traveller now finds himself in a long enclosed valley, with well-



LITHGOW VALLEY COLLIERY. (*See* page 64.)

wooded hills on either side of him and a pretty murmuring stream (Farmer's Creek) running near the Line in a westerly direction. Eskbank is 3 or 4 miles on the Bathurst side of the Zigzag, and makes a very pleasant impression on the traveller as he enters it; the comfortable, old-fashioned mansion of Mr. Thomas Brown, being near the platform to the right. Although still in a country of great elevation, the "Mountains" may be considered to have been passed; and travellers must be pleased to see that the adjacent roads are all in a good and serviceable state. The industrial establishments of Eskbank will be treated of under the head of Lithgow, to which rising township it immediately adjoins.

Lithgow Station, 96 miles; 3,006 feet above sea-level.—"Attention," says a journalist, "has rather despondently been drawn to the supposed circumstance that an extension of railway to some retired inland towns, both here and in England, not only fails permanently to advance their relative importance, but even that such a direct connection with the more stirring centres of population and commercial activity appears frequently and actually to cause a sort of retrogressive effect—especially when the "Line" passes further on into the depths of a hitherto wholly undeveloped country. There is, as in all such generalizations, no doubt a certain degree of truth in that remark; but it by no means conveys the true assertion of an absolute and general fact, for very often a decaying inland town (like Parramatta, for example, in this colony) will, through the action of a railway, gradually—and in the most astonishing manner—revive and receive a new and healthy impetus; such an unexpected reinvigoration as may also be seen already manifesting itself at Bathurst and elsewhere. Nor is that all; for in many places (such as Lithgow and Blayney, for example) which but for the Railroad must have remained mere picturesque solitudes, the arrival of the "iron horse" has shown a really marvellous tendency to *create* industrial centres, thriving townships, and busy populous communities. We may take Lithgow as an instance of this creative action of the railway everywhere, and especially in such a country as New South Wales."

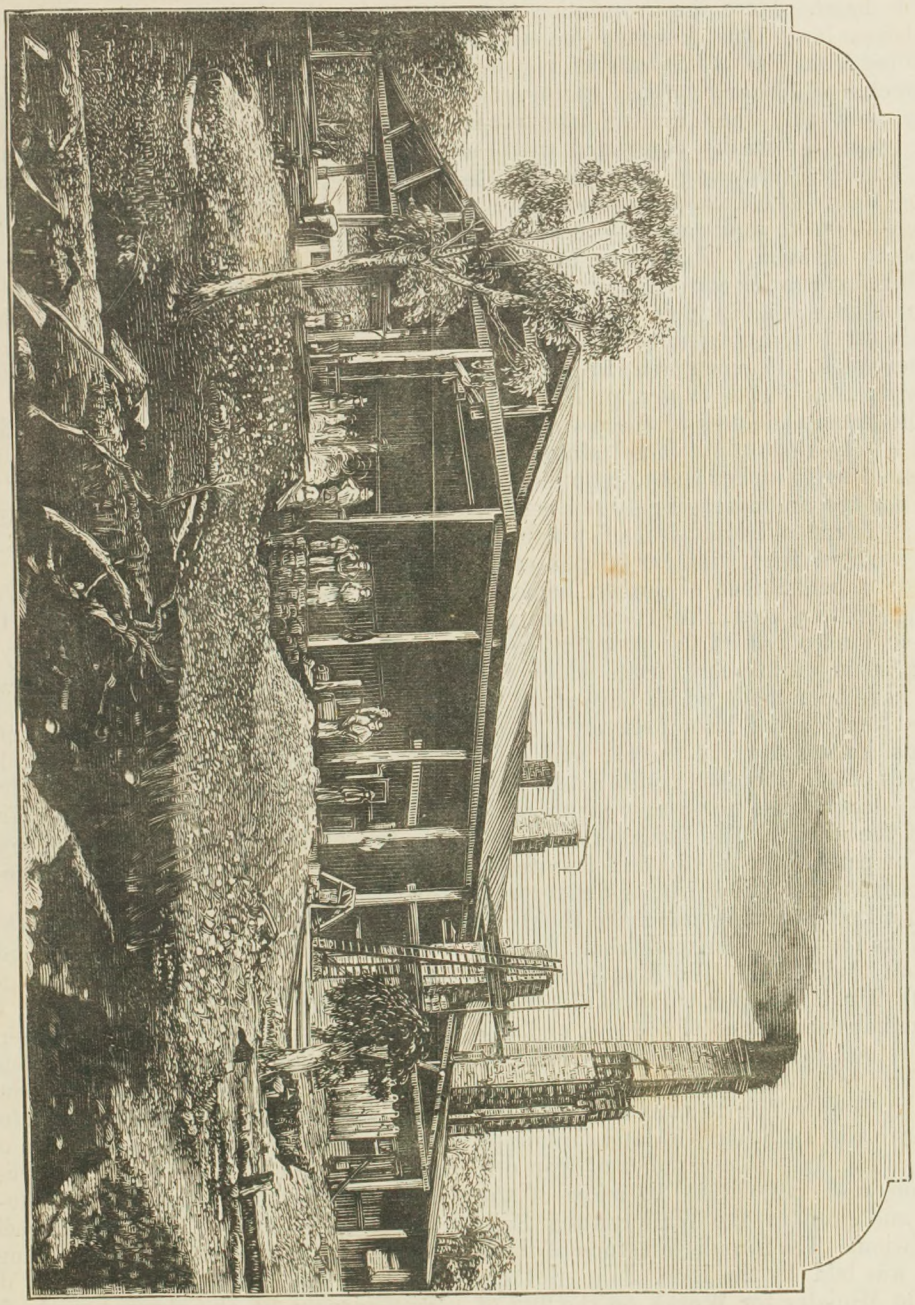
General description of Lithgow.—Lithgow, 96 miles from Sydney and 49 miles east of Bathurst, is now a rising Mining and Industrial Township, situated in the wider and westerly portion of that secluded, rocky, glen into which the Western Railway abruptly descends by the well-known "Great Zigzag." This Town, called into existence by the Railway, and not above five years old, already numbers about 2,000 inhabitants; having several excellent Hotels, Stores, and Dwelling-houses, with a handsome and commodious Bank, Telegraph Office, Public School, Insurance Offices, Assembly Rooms, Club Houses, and such like Commercial and Social Institutions. Everywhere substantial Buildings are in the course of erection in its long wide streets, and every day some new sign of the rapid development of this Railway Township is forced upon the observation of the astonished visitor. The present number of houses is over 300. "Lithgow" stands in the entrance, or more open part of Lithgow Valley—a picturesque locality, enclosed by precipitous, well-wooded mountains, and is undeniably a place which but for *The Railway* would most certainly have remained to the end of time (as it did for countless ages after creation, and for many long years subsequent to the foundation of this Colony) unknown to the civilized world, and utterly useless and unproductive. In this town and its immediate neighbourhood are four collieries in active operation, with Iron Works, Pottery and Terra Cotta Works, Copper Smelting Works, a Lime-kiln, a Tweed Factory, a Tannery, a Brewery, and such like Industries. Coal is, of course, cheap and good, and firewood (as yet) abundant. Water also is plentiful and of an excellent quality. At almost all of the collieries coal is readily obtained by running "drives" into the hill sides, which is a decided economy of labour. Good pipeclay and fireclay are to be found everywhere, and potteries and brick-kilns are therefore attached to most of these establishments.

The Lithgow Valley Colliery Company's Works are carried on at the distance of about a quarter of a mile from the Telegraph Office, and the principal Inn (the "Commercial Hotel," by Mr. Richard Blackford); and close to the mouth of the colliery the same company are engaged in Brick, Pipe,

and Tile Making. The seam of coal operated upon by the Lithgow Valley Coal Company, under the general management of Mr. Kerr, is 10 feet in thickness, and is worked from the "*adit.*" There is a tramway with a siding to the adjacent Trunk Line, by means of which the coal can in all weathers be expeditiously despatched to the market. The coal, on "skips" or trucks is drawn out laterally from the mine by a small steam-engine with a tail rope of wire. The daily out-put is on an average 100 tons. In 1876 the annual out-put was 11,300 tons. The tramway on entering this mine follows the dip of the seam for about a quarter of a mile, and then the skips are loaded from the workings. The coal is finally transferred from the skips by a platform and shoot at the pit mouth into the waggons, in which it is thence taken away to the Line by Government engines. The number of men constantly employed on this colliery is twenty. Two horses are engaged for wheeling the coal in the skips inside of the mine. The Brick and Tile Works of the same Company adjacent to the mine, within half a mile of the Railway, are well deserving of a visit. Here (by machinery) are made fire-bricks, pressed bricks, and common bricks. They also make sanatory drain-pipes (for sewers) of a very superior quality, and of large size—from 3 inches to 2 feet in diameter. Drain pipes of a small size, for the purpose of draining land, are also here made to order for agriculturists. These are from 2 inches in diameter up to 6 inches. Tiles of various shapes and colours are here also deftly manufactured. A first-class machine is here now in the course of erection for the purpose of making bricks by steam, and this when completed will enable the Company to turn out 12,000 bricks per diem, and to furnish tiles of various descriptions to order, with equal expedition and perfect finish. The bricks are made by the dry process and by the semi-plastic process. Clay for that purpose abounds; and the fire-clay (supposed to be quite equal to any found in the Australian colonies) is all obtained from the shale, crushed by a "disintegrator" worked by steam. In the kilns the bricks, pipes, and mouldings for windows, &c., &c., are burnt by the over-draft. The fire-bricks here made have been well tested, and have been proved to be of far better quality than those commonly sent out from the Home Country. In the Brick and Tile Works of the Lithgow Valley Coal Company there is a steam-engine of 40-horse power, working with a wire rope on a barrel, by means of which coal is not only brought up for immediate consumption on a tramway from the Pit Mouth, but all the elaborate machinery is moved for the Pipe, Tile, and Brick making. The same engine is also connected with a pump to keep water out of the mine, and to supply the same element for the brick-making, &c. There are large sheds for drying the Bricks, Pipes, and Tiles; and hard by also stand constantly shifting stacks of all that has been manufactured for sale. The Brick-Making Machine on a new model (by Whitehead, of Preston, in Lancashire) is the first of the kind ever imported into this Colony. The new "disintegrator" works at 500 revolutions per minute, having a double motion of the wheels. To an enquiring mind all the details of this elaborate machinery (including mixing pan, pug mill, &c.) for moulding and making these pipes, with a wonderful speed and precision, are extremely interesting. The pipes can be made of whatever sizes or patterns may be required. The products of these works are taken down, by a small tramway, to the siding of the Railway, which runs back from the Line to the mouth of the coal mine. Besides the general manager (Mr. Kerr) there is superintendent or upper manager, named Mr. John Doig. The Company consist of Messrs. Higgins, Gell, Wilton, Busby, and Coombes.

The Eskbank Iron and Coal Company's Works are about a mile or so to the eastward of the Lithgow Valley Colliery on the north side of the Line, near what is known as "The Eskbank Siding." These Works, extending over a level area of 700 acres, stand near the steep slopes of several thickly-wooded hills, a locality well adapted in every respect by nature and by art to its present appointed purpose. A perennial stream of good water, having its source in the adjacent heights, flows through the property of the Company; and the ore operated upon is found in quantities on the low flat near the foundry (just beneath the surface) and on a neighbouring hill to the

TERRA COTTA WORKS, LITHGOW VALLEY. (*See* pages 64 and 65.)



ROLLING MILLS, ESKBANK IRON WORKS. (*See* page 68.)

north-east. Coal may be readily procured for this company on the ground, and in a colliery immediately adjoining to the Railway; and freestone, loam, and sand are all ready to hand. Here the Proprietary Company have a large Blast Furnace—capable of producing from 100 to 120 tons of pig iron per week—a 70-horse-power engine, two boilers, and all other needful apparatus. There is also a Foundry connected with the great furnace producing castings for the Rolling Mills. The Company make their own castings for use, and can supply whatever may be in demand. They have likewise a puddling furnace for converting "pigs" into malleable iron; and their Rolling Mills, recently erected, are capable of rolling 100 tons per week. A recent reliable authority (*Essay on New South Wales*, p. 76) states that the ores in the area of these works consist of—"(1) Beds of clayband stone, varying from 6 to 15 inches thick, cropping out of the surface and averaging 40 per cent. of metal; (2) red silicious ore, of which the bed is about 4 feet, yielding 22 per cent.; and (3) a bed 2 feet of brown hematite, yielding 50 per cent. A 10-feet seam of splint-coal crops out on the property, overlying a seam of fire-clay, from which fire-bricks have been made which have stood the severest test of the Mint Assayer." Commodious houses for the miners and other employés of the Company (quite a neat little village) stand at the north-east corner of the area of the works. The Eskbank Iron and Coal Company (who have here manifested an intelligence, public spirit, and enterprise, beyond all praise) of course make their own fire-bricks for their furnaces from the clay found on their land. The Manager of the Works is Mr. E. Hughes, who first discovered the peculiar capabilities of the site, and who is understood to have formed the Company. In addition to the large area occupied by these works, it is only fair to say that the Company have also 1,400 acres of land containing well nigh inexhaustible supplies of iron ore, limestone, and coal within 10 miles of the works, and close to the Wallerawang Railway Station. The foundation stone of these Works was laid by the Hon. John Sutherland, the Minister for Works, on the 2nd of January, 1875, and they were completed in December in that year.

The Eskbank Colliery is owned by Mr. Thomas Brown, whose pleasant, old-fashioned country seat is in the immediate vicinity. This colliery, (which immediately adjoins the Railway on its southern side) is worked by a steam-engine, platform, and shoot, &c., and commands every facility for sending off the coal produced. The engine is of 12-horse power, and the shoot of an approved construction; the out-put being about 170 tons per diem. The out-put at this colliery in 1876 was 28,702 tons, valued at £7,876. It is from this colliery that supplies of coal to the neighbouring Ironworks are usually made. The coal is sent thither by means of a small tramway, which crosses the Line by going over the Railway Bridge. This pit is one of the ordinary character, and is at present only 78 feet deep. Besides supplying the Ironworks and other customers, Mr. Brown's Colliery also supplies the requisite fuel for the adjacent Copper-Smelting Works, which is worked by a Company. The Manager of the Eskbank Colliery is Mr. William Pitt.

The Eskbank Copper Smelting Works are carried on close to Mr. Brown's Colliery, under the management of Mr. Henry James. This interesting and valuable industry is going on prosperously; the ore, here converted into shining ingots of copper, being forwarded to this spot by rail from different parts of the country, and chiefly from the Western District. The principal shareholder in the Company is Mr. Lewis Lloyd, well known for his energy and enterprise in this particular direction.

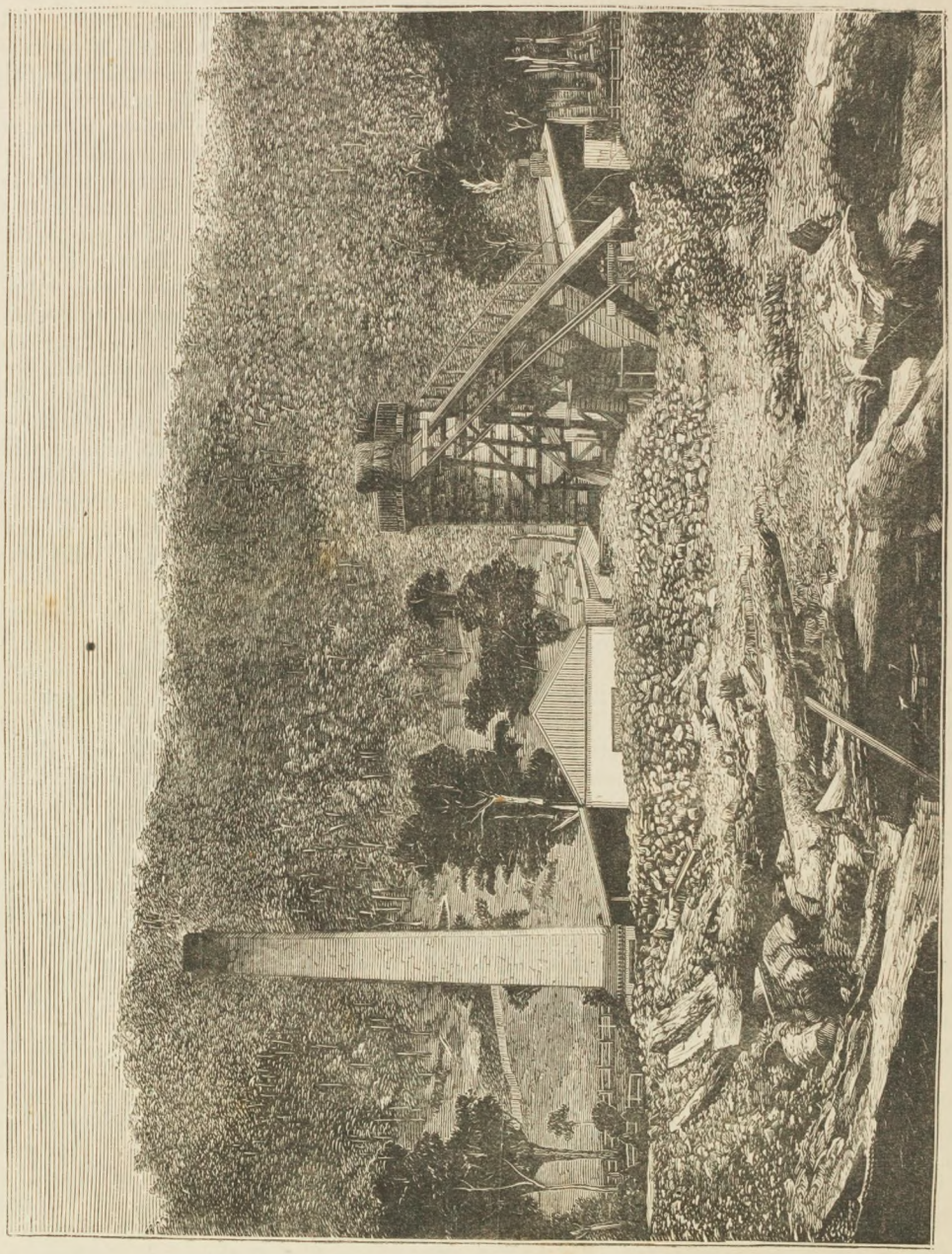
Higher up the Lithgow Valley (but still in the immediate vicinity of Lithgow) are the spacious Slaughter Houses designed by the late Mr. T. S. Mort for service in connection with the well known enterprising Plan of that lamented citizen and true patriot, for freezing meat for exportation to England. These buildings, constructed after an admirable design, at an immense expense of money and labour, are not at present in use. The establishment has engine-houses and engines and an unrivalled mechanical apparatus for ventilating and cleaning these abattoirs; at which 2,000 sheep a day can conveniently be slaughtered and dressed. The whole premises are fitted up in the most perfect manner, and so arranged that

the temperature can always be kept down to 50 degrees Fahrenheit. Meat can here be kept without damage for eight days, and then with due care be successfully preserved. The fan of the engine for driving the air and ventilating the place can make 2,000 revolutions in a minute. Mort's Slaughter-house and Stores for Preserved Meat are on the same side of the Line as the Eskbank Ironworks.

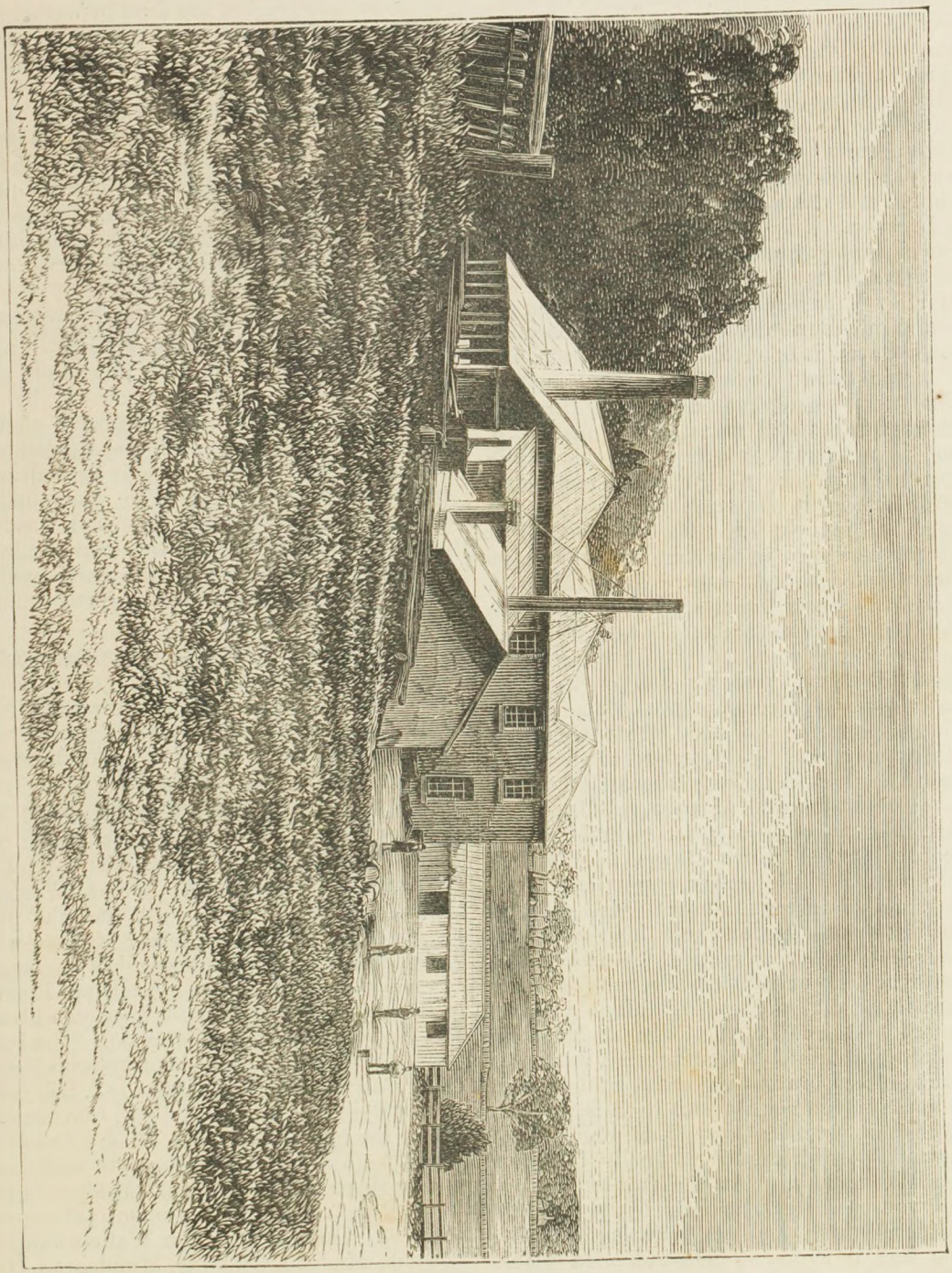
The Vale of Clwydd Colliery Works stand on the south side of the Railway, further up the "Valley," and nearer to the Zigzag, at the edge of a swampy glen, through which there is now a very fair road leading (by a short cut) directly over a gap in the mountains to Hartley and Hartley Vale. The Vale of Clwydd Colliery, though close to Lithgow, is shut out from it by a gentle eminence. A sort of village, or rather hamlet, embosomed in the hills and woods, has here sprung up, the miners' homes in this spot being perhaps less comfortable than picturesque. Their habitations are, for the most part, huts of mud or wood; but some, manifesting an Arab-like independence, apparently prefer to live in tents. The Works are under the management of Mr. Wilson. In this colliery there is a perpendicular shaft sunk to about 250 feet below the surface; and from this shaft there are long "drives" in various directions, the prevalence of water in one of them, which runs under a neighbouring swamp, being often rather troublesome to the engineer, and inconvenient to the miners. The Vale of Clwydd Colliery has a contract with the Government, and commands a weekly output of as much as 1,400 tons. Good limestone is found with the coal, and is burned on the spot for use, and for sale. Here also (as in the neighbourhood of Mr. T. Brown's Colliery) Copper Smelting Works have been established. A tramway connects this colliery with the Western Railway.

About a mile or so from Lithgow, on the other (western) side of the Township, and not far from the Bowenfels Station, is a Tweed Factory built by Mr. Andrew Brown, and leased to Mr. D. V. Hunter. In this long brick and stone building (which contrasts curiously with Mr. A. Brown's pretty rural homestead and gardens), about forty hands find constant and remunerative employment. In the factory are 24 power looms, three sets of carding machines, and all the other requisite appliances; £18,000 having been here invested in the best and most recently devised machinery. 4,000 yards of good tweed are here manufactured every week; the beautiful fabric so made finding a ready sale at Sydney and in the adjacent colonies, where (for the integrity of its workmanship) it is justly esteemed. The wool used is of course *Colonial*—brought from the interior to this spot by the railroad, and here prepared for use. The machinery is driven by steam and water-power—the latter being supplied through a race brought from a never-failing streamlet, 2½ miles distant. Cottages have been erected for the workpeople near to the walls of the Factory. To the south of the Factory, on the road towards Hartley—at the distance of a mile or so, and soon after you have passed the village near the station, there is a Tannery. At Bowenfels Station, near the Tweed Factory, there is yet another Colliery, from which in 1876 7,528 tons of coal were obtained.

Excursion from Lithgow to Hartley.—A pleasant excursion may be made from Lithgow to Hartley, either on horseback or in a buggy; starting from Lithgow at an early hour, and going round the mountain past Bowenfels. Bowenfels and Hartley, two small townships on the Old Western Road, are separated from the Lithgow Valley by a steep chain of sandstone hills, forming a spur or off-shoot of the Blue Mountain Range to the westward. These eminences, on their southern face, terminate abruptly towards the Valley of Hartley, in boldly defined precipices, which go by the fanciful name of "Hassan's Walls" and overhang the road, south-easterly, to Hartley, for several miles. The views from the summits of these grey masses of rock are said to be grand and extensive; and along the irregular line which they disclose and guard are several cascades, and almost inaccessible glens, of more wildness, perhaps, than beauty. From the heights of "Hassan's Walls" the country in the direction of Mudgee and of Bathurst is distinguishable for a great distance. The tourists' road from Lithgow lies first to the westward, along the side of the Railway, for rather more



ESKBANK IRON WORKS. (*See* pages 67 and 68.)



TWEED FACTORY, BOWENFELS. (*See* page 69.)

than a mile; he then turns sharply off to the left (near the schoolhouse to the east of Coerwull) and so follows down the Old Road, southerly, as far as Bowenfels, just round the end of the mountain range. In this road there is much agreeable scenery—first, Mr. Hunter's Tweed Factory, away in the fields, with Mr. A. Brown's house and gardens; then a tannery, a good country house, and an old road-side inn; then a quaint old church and churchyard; and last, not least, a Lock-up. This is Bowenfels. On gaining the elevated ground, to the west of the end of the sandstone range, a fine view of the Hartley Valley is obtained. When you get round into Bowenfels another and more extensive view is opened up to the south-east—looking down towards the Victoria Pass. The now somewhat decayed village of Bowenfels has still many large houses in it, and is a cheerful, healthy, and pleasantly situated spot. By a turn in the road, soon after leaving it *en route* for Hartley, you come full in sight of "Hassan's Walls," at an end of which (to the southward) towers a curiously isolated rock, presenting a singularly exact facial outline peculiar to the "Great Iron Duke," but loyally and rather absurdly called "King George's Head"—being, probably one of the discoveries of the Georgian Era. Some of the distant country of the Great Cunimbla Valley may now be perceived as you come down the winding road; where, in many of its essential features of copse, headland, and streamlet there is a great resemblance to the scenery of South Devon in England. The road itself is pretty, and along it are poor but picturesque homesteads—such as cottages and gardens, old inns with oak trees, and other attractive features—until you reach the end of the wall of cliffs already mentioned. Then there is a dull mile or two before you come to the edge of the deep descent into Hartley, standing on the rocky banks of the murmuring Lett, about a mile or so above the point where it falls into the river Cox, draining the whole region from beyond Bowenfels until it finally falls into the Wollondilly. At the foot of the last hill you pass over the Lett by a very fair wooden bridge, and so, entering Hartley, you find it a quaint old-fashioned place. Here you can put up at the Village Inn (Mrs. Rachael Evans), and either return by the road you came, or (sending back the horse or trap) regain the Line by walking on to Mount Victoria. Or you may ride across the mountain to the north, over "the Gap," and so back again into Lithgow. For an invalid or an over-wrought jaded man there can be few more acceptable retreats than Hartley. It has two pretty stone churches, a Court House, and a store or two, but it is quite a rural village. The distance from Lithgow to Hartley, as above indicated, is about 10 miles. Across the mountain, by the new road over the "Gap," it is not more than 6.

Bowenfels Station, 97 miles; 2,972 feet above sea-level.—Bowenfels station—3 or 4 miles north of the town of Bowenfels, and 1 mile north-west of Lithgow—is by no means a large place, the majority of the houses being at Cooerwull, a short distance from the Line. The District is agricultural, pastoral, and mining. The surrounding country is mountainous and well wooded. Between this place and the next Railway Station—Wallerawang to the north-west—there is a rather dreary track, with tunnels and cuttings.

Marrangaroo Platform, 101 miles; 3,073 feet above sea-level.—Marrangaroo is a Platform, 4 miles west of Bowenfels Station, and 4 miles east of Wallerawang. It is one of the most elevated spots between the great Zigzag and Bathurst.

Wallerawang Station, 105 miles; 2,928 feet above sea-level.—Wallerawang is a small but busy place, being the spot where the road to Mudgee joins on to the Great Western Line. At Wallerawang will end the proposed Branch Line connecting Mudgee with this Railway. Wallerawang has a small street, with a few houses—Anglican, Roman Catholic, Presbyterian, and Wesleyan Places of Worship—and a Public School. The Inns are—the "Royal Hotel," kept by John Shaw; the "Commercial Hotel," kept by J. Hill; and the "Railway Inn," kept by J. Clotworthy. Here the tourist may take Cobb's Coach to Mudgee (away to the north-north-west) and arrive there in a few hours. Mudgee is the centre of an extensive and important mining district. Coaches run from Wallerawang to Coolah, Mudgee, Gulgong, Mundooran, Gilgandra, Coonamble, Walgett and districts.

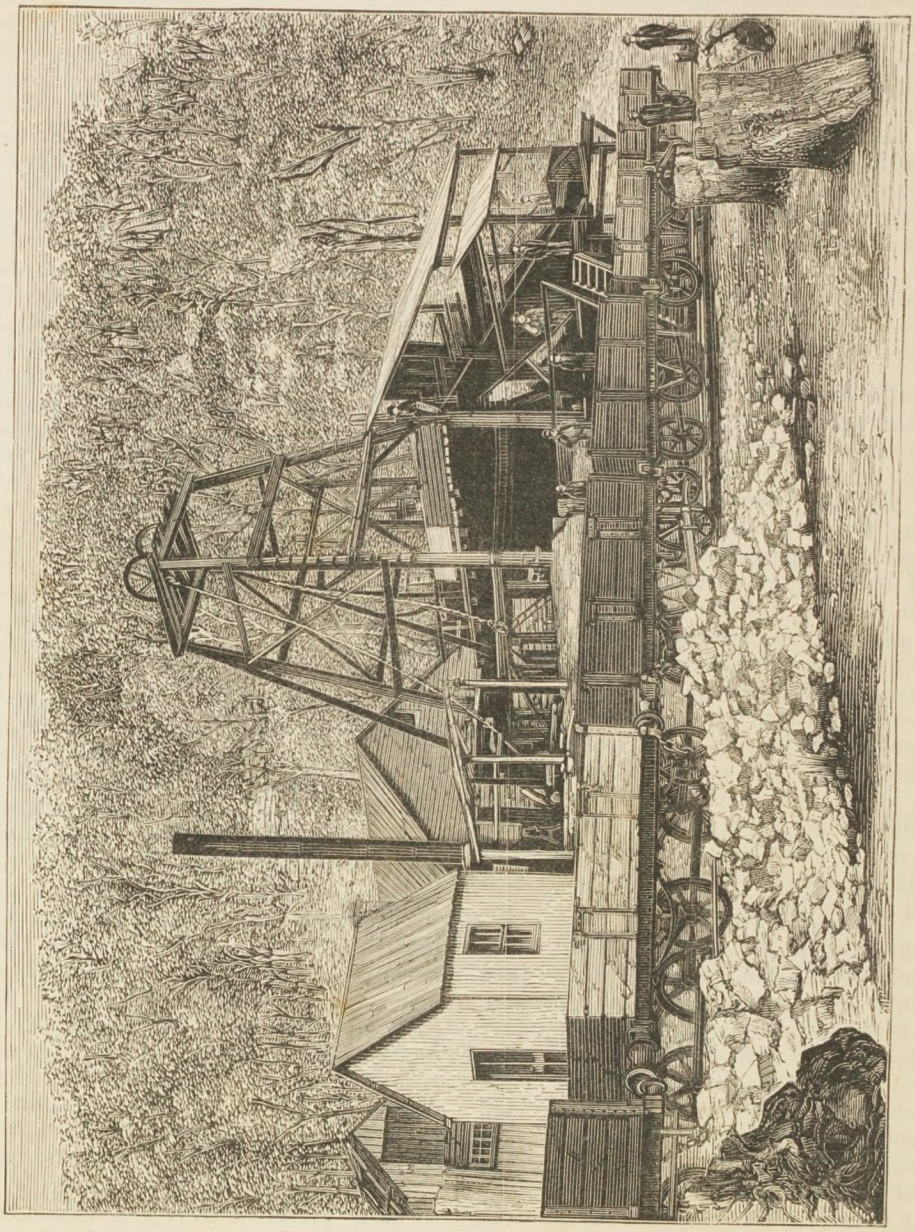
Rydal Station, 111 miles; 3,117 feet above sea-level.—Soon after passing Wallerawang the Line trends sharply to the south-west, and, rising to a somewhat higher level, passes to the eastward of Honeysuckle Hill. Before the Line takes its southerly turn the road to Rylstone (which has been running near to the rails) branches off to the northward. Rydal is but a small place, with a quaint looking stone church and three inns. These inns are the "Globe Hotel" (Jane Green); the "Freemasons' Hotel" (James Gale); and the "Commercial Hotel" (Thomas Warren). Country adjacent—agricultural and pastoral; rugged mountain scenery, and heavily timbered. Near Rydal, on the southern side of the line, is the extraordinary rock known as "Evans' Crown."

Sodwall's Platform, 114 miles; 2,850 feet above sea-level.—After passing Rydal the Line begins to descend, and continues to do so, following the winding valley of the Fish River, towards Bathurst. The country adjoining the Sodwall's Platform is of an agricultural character, with farms and some sort of cultivation;—rather pretty. The traveller has now left the County of Cook, and is pushing on, westerly, through the County of Westmoreland. It is hereabouts that he catches the first glimpse of the Fish River—a stream which he has to cross *nineteen* times before he finally leaves it, not far from Macquarie Plains. The Fish River having joined the Campbell River, a few miles south of Bathurst, becomes thenceforth known as the Macquarie, the native name of which is "Wambool." The Macquarie is an affluent of the Darling.

Tarana Station, 120 miles; 2,561 feet above sea-level.—At Tarana Station there is a watering-place for the engines. It is a pretty place, but dull. The country appears to be poor, and the mode of farming rather careless. The fencing is extremely rude and picturesque—a mere separation of the land by felled timber, heaped together. There is one hotel at Tarana—Fawcett's. Here you can get a carriage, or buggy, and go to Mutton Falls, westerly—about 4 miles off. From the Mutton Falls you can ride or drive to a small township called Oberon—a good agricultural settlement, with mineral resources—and go on thence to the Fish River Caves. Tarana, 35 miles from the Fish River Caves, is the nearest point of the Line to those vast Limestone Caverns. There is some nice scenery along the road in that direction.

The Fish River Caves.—The celebrated Limestone Caverns on the Fish River (near O'Connell, in the neighbourhood of Bathurst), commonly known as the Fish River Caves, are of vast extent, and singularly attractive; having a great variety of very intricate galleries, or passages, only to be traversed in safety under the care of the experienced Local Guide, employed by the Government. The subterraneous scenes, herein disclosed, are indeed magnificent; well worth the time and trouble of paying them a visit. There is a whole group of these grand subterraneous halls and bewildering galleries, and each one of the series is known by a different name: the New Cave, Lucas' Cave, the Bell Cave, the Lurline Cave, &c. Several objects of great interest are to be viewed at and in the Fish River Caves; and amongst these are the Great Archway, the Carlotta Arch, the Meeting of the Creeks, the Pinnacle Rock, the Interiors, the outside entrances, and adjacent woodland scenes. The Carlotta Arch—a curious natural archway in the rocks—excites much astonishment and admiration. These caves, so remarkable for their stalactitic and stalagmitic formations, are of such an immense extent that whole days are necessary for their due exploration.

One of these enormous caverns is estimated to be not less than 500 feet in height, and of a proportionate length and breadth. The strange forms, gradually assumed by the drippings of the limestone rocks throughout, are almost infinite, and not to be anywhere else surpassed in beauty. In one place there is the weird, rock-like semblance of a well-stocked menagerie; and in another place the pendants from the roof and slabs below are of a still more fantastic and extraordinary character. When lighted up with the magnesium wire these sublime palaces, "which Nature's hands have deftly formed," present a truly gorgeous spectacle, being filled with delicate pendants and drooping sprays, gigantic columns and shadowy arches—all resplendent with dazzling, *illusive* gems. In the "New Cave"



COLLIERY, VALE OF CLWYDD. (*See* page 69.)

the scene developed by the magnesium light is described (by Burton) as "one of surpassing loveliness," the appearance of a heavy fall of snow being produced; the rocks in the rear presenting to the imagination a black, frowning sky. Occasionally a sparkling waterfall heightens the effect of the scene. The caves are in the charge of Mr. Jeremiah Wilson, who receives a small remuneration from the Government. It was found desirable to place them under control, as visitors often committed ruthless destruction. The Government has had constructed a number of wire ladders for the convenience of visitors in ascending and descending some of the caves. To visit the caves *comfortably* the best way to proceed is for a number of friends to form themselves into a party. The party will have to provide their own blankets and camping equipments. They may either take their own provisions or procure them from Mr. J. Wilson—the guide. If requested (by letter) Mr. Wilson will meet a party at either Tarana or Bowenfels Station, with horses or a wagonette. It will greatly lessen the fatigue of the journey from Tarana to the Fish River Caves, and increase the comfort of the tourists if the party of excursionists stop for the night, *en route*, at Oberon, where there are three hotels and very fair accommodation. We present our readers with some excellent illustrations of the Fish River Caves.

Locksley Platform, 130 miles; 2,428 feet above sea-level.—The country in the neighbourhood of Locksley Platform is, on the whole, *not* interesting; but there are views on the Line near it not unworthy of some notice. This platform was formerly known as Locke's.

Macquarie Plains Station, 135 miles; 2,476 feet above sea-level.—Leaving Locke's Platform behind him to the eastward, the railway traveller passes through an open, treeless country; having only here and there a few patches of bush. Then undulating plains, with sheep and cattle feeding, are opened up; and so the traveller, after an interval of 5 miles, finds himself opposite to the well-built station of Macquarie Plains—being on the easterly boundary of that singular tract of country adjoining Bathurst, and giving to that City one of its distinctive appellations.

Raglan Station, 140 miles; 2,436 feet above sea-level.—Raglan is a Station in the midst of the Macquarie Plains, where a road from the north of that tract joins on to the Old Western Road. Here you first catch a distant but impressive view of the City of Bathurst, to the westward. At Raglan there is an Anglican Church and a Public School.

Kelso Station, 143 miles; 2,154 feet above sea-level.—Kelso Station is the stopping place on the Railway for Kelso, a populous suburb of Bathurst, on the eastern side of the Fish River, or (as it is here called) "The Macquarie." The Bathurst City Station is 2 miles distant, to the south-westward.

Bathurst Station, 145 miles; 2,153 feet above sea-level.—Bathurst, "The City of the Plains" and metropolis of the western geographical division of the Colony, is situated on the left bank of the Macquarie River, 145 miles from Sydney. Originally founded by Governor Macquarie on 7th of May, 1815, just after the discovery of the country beyond the Blue Mountains, it has gradually risen to its present position of great influence and established wealth. A whole book might be written about this city, but the description of it in an "itinerary" must necessarily be very brief; notwithstanding its political, social, and physical importance. A few miles before reaching Bathurst the traveller cannot help being struck with the altered appearance of the country. Instead of wooded mountains and ridges of sandstone, the eye rests everywhere on a fine open tract, about 12 miles square, almost devoid of trees, and covered with a rich soil. This *treeless* character becomes still more confirmed when the traveller passes the Macquarie *Plains* Station, but the aspect of the country is undulating, and even hilly at times, though usually and familiarly spoken of as "Plains." Bathurst occupies a commanding situation, on a gradual westward slope down to the Macquarie; with a beautiful and extensive prospect in every direction for miles around. Within a few miles of the city, gold and copper mines are worked. The climate, like that of a town in England, is frequently very cold in the winter months, but extremely healthy and invigorating. In some respects Bathurst

is entitled to be considered as next in rank to the Capital. It is laid out in blocks of 10 chains square, with many miles of wide streets lighted by gas ; and it is the seat of a Bishopric, both in the Anglican and the Roman Catholic Churches. There are two Cathedrals, with colleges in connection with each of the largest communions, and a handsome Presbyterian Church ; also a Wesleyan Church, and other Places of Worship. The Roman Catholic Cathedral, although not quite completed, is a noble structure, and near it stands the convent and its school, in buildings of an imposing appearance. There is a School of Arts, with 4,000 volumes, a fine Hall, excellent stores, Banks, and Hotels ; Local Newspapers are here published, as at all the principal Inland Towns. The annual receipts of the Bathurst Hospital amount, it is said, to over £500. Bathurst enjoys the advantage of a great variety of local institutions, and was proclaimed a municipality in 1862. The population of Bathurst and its environs is now, probably, considerably over 6,000. At the Bathurst Station (on the south side of the city) there is a large and convenient Refreshment Room for the use of travellers. Persons intending either to go inland towards Orange, or "up" the line, towards Mount Victoria, will do well to remember this. The places near Bathurst are—Black Springs, Box Ridge, Caloola, Cow Flat, Dirty Swamp, Dunkeld, Duramana (or Back Creek), Evan's Plains, Glanmire, The Lagoons, Limekilns, Meadow Flat, Mitchell's Creek, Oberon, O'Connell, Palmer's Oakey, Peel, Quartz Ridge, Rockley, Sofala, Trunkey, Turon, and Wattle Flat. Coaches run from Bathurst to Sofala, Hill End, and districts.

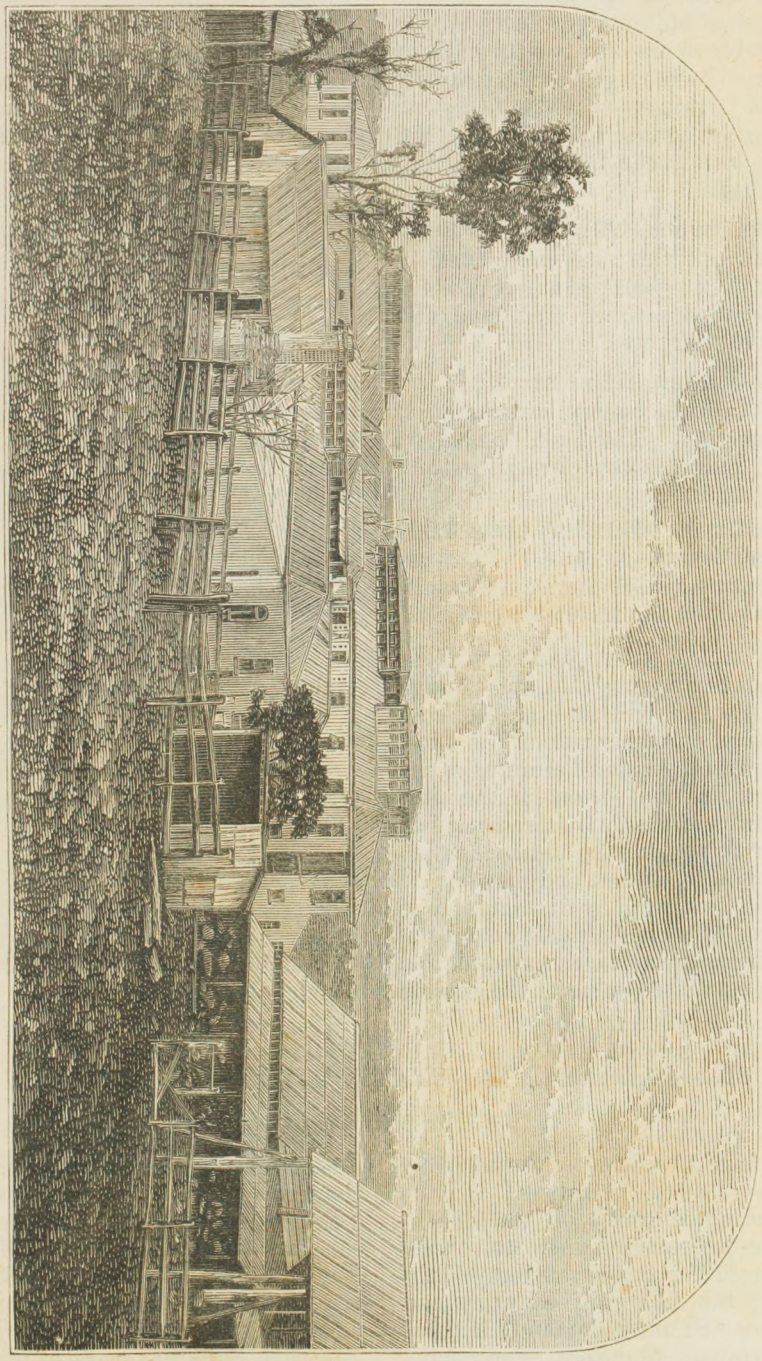
Perth, Platform, 149 miles ; 2,225 feet above sea-level.—The Platform of Perth, 4 miles from Bathurst, presents nothing remarkable. The adjacent country is of an open character, with peculiar looking bare hills beyond it. Between Bathurst and Perth several country residences and farms are passed.

George's Plains Station, 151 miles ; 2,260 feet above sea-level.—There is some fine scenery, with a wide stretch of arable and pastoral country—lying between Perth Platform and the George's Plains Station, a distance of about 3 miles.

Wimbledon, Platform, 158 miles ; 2,737 feet above sea-level.—The Wimbledon platform is a convenient stopping place for the inhabitants of an extensive tract of country, 34 miles from Orange and 13 from Bathurst. Near Wimbledon is the fine country residence of Mr. Joseph Smith. Between Wimbledon and the next station a barren tract intervenes.

Newbridge Platform, 164 miles ; 2,877 feet above sea-level.—Newbridge, a rising place, is the nearest point on the Great Western Railway to the town of "Arthur" and the Trunkey Diggings, 16 miles distant. Situated 19 miles west of Bathurst, and 28 miles east of Orange, Newbridge has already 3 Hotels and numerous other houses springing up. Near Newbridge good iron fire-clay can readily be procured. The Bell Flat Diggings lie away to the left as you come in from Bathurst, across a beautiful tract of cultivated country. Near the Trunkey Creek Diggings are the Pine Ridge and the Grove Caves, &c. There is a fine and comprehensive view over the whole country to the north-east, a mile or two to the westward of the Newbridge Platform—on the line towards Blayney, at the Stringy Bark Cuttings. Newbridge was formerly known as Back Creek. The name by which it is known in the Post Office Directory is the aboriginal name of Duramana. The roads lead south by the shortest way to Caloola, where alluvial gold is still being worked, and to Trunkey, lately the scene of immense activity in quartz-mining. Great quantities of wool also arrive at the Station from these parts, so that Newbridge is likely to become a very important position in connection with the traffic on the Great Western Railway. An iron mine has been opened by a Company within 300 yards of the Railway Station, and a deposit of asbestos has been discovered about 2 miles away.

Blayney Station, 172 miles ; 2,841 feet above sea-level.—Blayney is one of the new and rising Townships owing its existence, like Lithgow, to the Railway. It is quite a new place, and promises soon to be a large town ; for it is the centre of a great Squatting District, and is closely connected with mining interests. It stands on the Belubula River, only 8 miles from the junction of the roads from Calder and Grenfell. From this Station fat stock are sent "up" by the trains



PAPER MILLS, LIVERPOOL. (*See* page 79.)

every night in large numbers for the Sydney Market. There are churches for the Anglicans and Presbyterians; and a Roman Catholic church is building on the right side of the Line. There are also two large Flour Mills at work. To the right, as the traveller goes towards Orange, there is (beyond Blayney) a curious conical hill. Coaches run from Blayney to Carcoar, Cowra, and Grenfell, and districts.

Spring Grove Station, 179 miles; 3,138 feet above sea-level.—At this neat little Station, which stands high, there is a goods shed. The country around is open bush land, and used for pastoral purposes.

Spring Hill Station, 183 miles; 3,086 feet above sea-level.—The country hereabouts is not very interesting. The land, divided by queer-looking fences, is used for agricultural and pastoral purposes.

Huntley Platform, 186 miles; about 3,000 feet above sea-level.—A small Platform between the Spring Hill Station and Orange; about six miles from the latter township.

Orange Station, 192 miles; 2,843 feet above sea-level.—Between Spring Hill and Orange the railway traveller will find arable land under cultivation on either side of the Line. Orange—the present Inland Terminus of the Great Western Railway—is one of the most progressive towns of the Colony, remarkable, amongst other things, for the unusual excellence of its hotels, stores, and banks. It adjoins a fertile and wealthy district, and is the busy centre of a considerable amount of trade of all kinds, agricultural, pastoral, and mining. The estimated value of the ratable property of Orange is said to be already £26,000 greater than that of the property within the municipality of West Maitland. (*Tingle.*) The town is well laid out; the wide, well-built streets presenting an imposing and well nigh *metropolitan* appearance. Orange has a School of Arts, a Masonic Hall, a Hospital, Churches for the four chief Denominations, and other places of Public Worship. There are two large Schools, a small but commodious Court house, and three Local Newspapers. The principal hotels are—The "Royal," kept by J. W. Smith; the "Club House Hotel," kept by William Tanner; and the "Telegraph Hotel," kept by J. Nightingale. Kenna's Hotel is opposite to the railway Station, but the majority of the hotels are away up in the town. The chief places in the neighbourhood of Orange are:—Cadia, Cheeseman's Creek, Lucknow, Ophir (the first gold-field opened in Australia), Byng, Guyong, Heifer Station, Icely, Springside, &c. The railway is to be extended from Orange to Wellington and Dubbo,—and is now in course of construction. A trial survey has also been completed for a further extension of the Railway from Dubbo to Bourke, on the River Darling. Another trial survey has been completed between Orange and Forbes and Condobolin (on the River Lachlan) to the westward of Orange. This trial survey has been completed to a spot at some considerable distance beyond the Lachlan; and is in progress from that point to Wilcannia, on the Darling. Coaches run from Orange to Molong, Ironbarks, Dubbo, Wellington, Warren, Cannonbar, Bourke, Brewarrina, Forbes, Condobolin, and districts.

III.—PARRAMATTA JUNCTION TO WAGGA WAGGA.

(The Southern Line.)

Note.—The first 13 miles on the Railway out of Sydney, to be traversed by the Tourist intending to travel on the Southern Line, are necessarily upon the Main Trunk Line, used for Suburban Travelling, and including the following Stations and Stopping-places: Sydney, *Eveleigh*, *McDonaldtown*, Newtown, *Stanmore*, Petersham, Ashfield, *Croydon*, Burwood, *Redmyre*, Homebush, Rookwood, *Auburn*, and Parramatta Junction. These stopping-places and stations will be found already described in the "Itinerary," under the heading of "Sydney to Parramatta Junction"—*Western Main Trunk Line.* The *Itinerary* for the Southern Line proper must therefore commence from the "Parramatta Junction," where the Southern Railway separates from the Main Line—continued on (past Parramatta) to the westward.

Parramatta Junction Station, 13 miles; 32 feet above sea-level.—The Railroad, after leaving the Parramatta Junction, stretches nearly due south for some miles, and then takes a turn to the westward. It lies, for the most part, through a rather uninteresting and but partially cleared tract of country. 3 miles from the Junction stands the Guilford Platform.

Merrylands Platform, 14 miles; about 70 feet above sea-level.—A Platform, one mile south of the Parramatta Junction, and two miles distant from the Guilford Platform.

Guilford Platform, 16 miles; 88 feet above sea-level.—Guilford is a rather sparsely populated locality in the neighbourhood of the southern end of the Old Dog Trap Road, here connecting Parramatta with the Old Southern Road.

Fairfield Station, 18 miles; 30 feet above sea-level.—Fairfield is a pretty sylvan, low-lying place, with a small population of Farmers, Graziers, and Free Selectors. A large Reservoir is to be made at Prospect, about a mile from this Station, which will cover an area of about 2 square miles, &c.

Canley Vale Platform, 19 miles; 40 feet above sea-level.—This is merely a platform, 1 mile to the south of Fairfield.

Cabramatta Platform, 20 miles; 52 feet above sea-level.—Cabramatta Platform, on a creek of that name, is a rural place, 2 miles north-east of Liverpool. There is a village of this name about 10 miles to the westward, with which this place must not be confounded.

Liverpool Station, 22 miles; 50 feet above sea-level.—Liverpool, one of the oldest towns in the Colony, is 10 miles from Parramatta, and 12 miles from Campbelltown, by rail. Population—about 1,400. Four churches—belonging to the four principal denominations, one Public School, and two Denominational Schools, and one College for Theological Students—"Moore's College"—at a short distance from the Town (Church of England.) There is a large Benevolent Asylum for the Aged and Infirm; also, several industrial establishments, amongst which are a complete Wool-Washing Establishment and a large Paper-Mill. Liverpool stands at the head of the navigation of George's River. It was formed into a municipality in 1872. Denham Court, Glenfield, and other settlements are in the immediate neighbourhood. Those who have means and leisure may here make a pleasant boat excursion down George's River to Sans Souci, and thence go by omnibus or buggy to Sydney.

Liverpool Paper Mills.—The property consists of 13 acres with frontage to that extent to George's River. Buildings cover an area of 5½ acres, built of stone and brick; machinery, 4 50-horse-power steam-boilers; 5 steam-engines from 10 to 50 horse-power; 12 rag engines; 6 rag and fibre boilers; 1 very large high-pressure fibre boiler; bleach house capacity for 30 tons weekly; paper-making machine, 84 inches wide, speed 100 to 120 feet per minute; patent cutting and repping and winding machinery; 4 sets of callendar rolls; 1 set chilled American rolls; 2 water-filtering pounds (the largest in the Australian Colonies); pumping engine, capable of drawing 100,000 gallons per hour.

Manufacture—22 to 25 tons weekly news printing, in sheets and in reels 3 to 4 miles in length, for the continuous web news-printing machine; engine-sized writing papers; royal hand and brown wrapping-papers. Number of hands employed in the works, 115 people, with agents all over the Colonies.

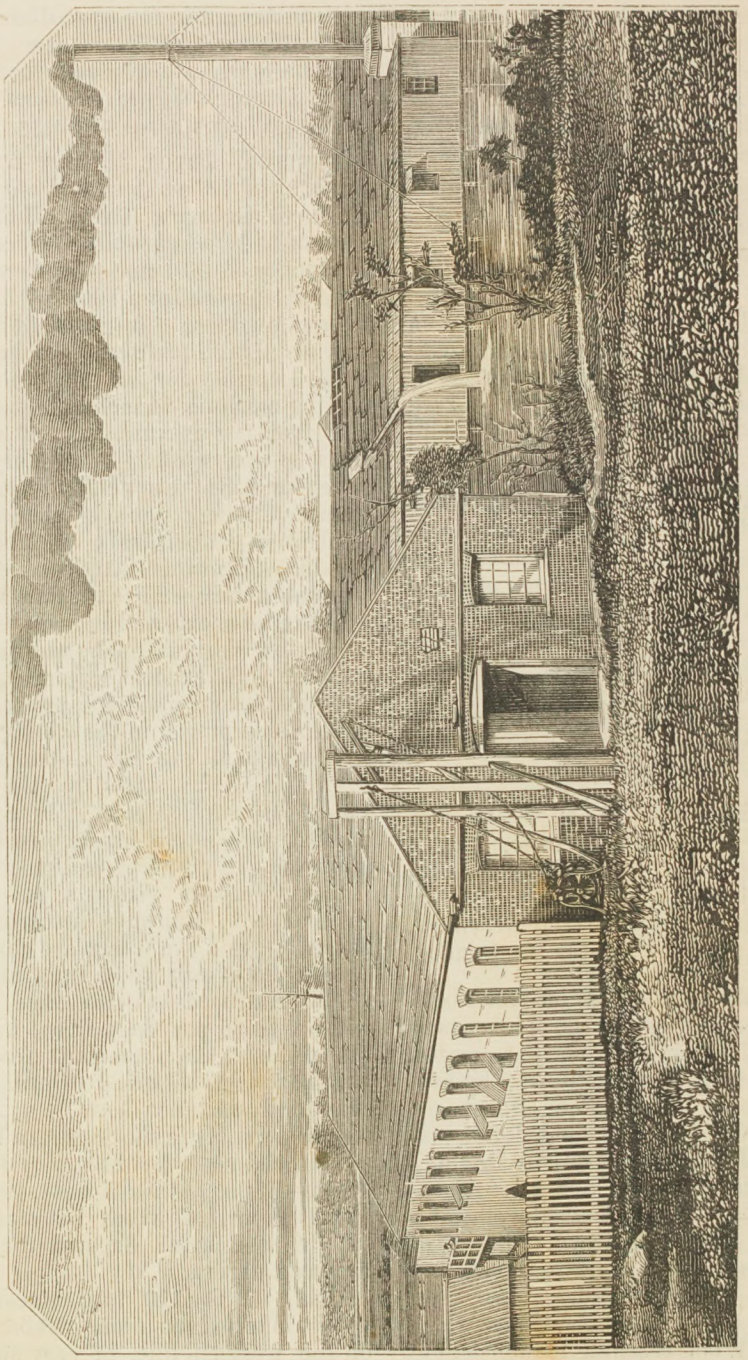
Established in 1869 by the Australian Paper Making Company. Five years in the present proprietors, hands, who have greatly improved the property and machinery.

The Company yields a revenue to the Government Railways exceeding £2,500 annually; and the works are connected by a branch line of rails which runs into the works.

Material used—Cotton rags and canvas, with 50 to 65 per cent. fibre, indigenous to the Colony; an important feature in the manufacturing of news printing when it is computed that not less than 200 tons is required weekly in the Southern Hemisphere.

Material used for brown and grey wrappings—Rope, old woolpacks, bagging, and waste paper, of which there is an ample supply, and a full demand for the manufactured paper.

Coal, 90 to 120 tons weekly required, which is obtained from Eskbank Colliery, on the western line, of easy access to the works, the quality of which will compare favourably with some of the English coal.



WOOL-WASHING ESTABLISHMENT, LIVERPOOL. (*See* page 81.)

During the last five years the works have been well employed on news printing papers principally, and during that period not one day idle for any purpose.

The Collingwood Wool Scouring and Fellmongering Establishment is situated on George's River in close proximity to the town of Liverpool; the works cover an area of several acres, and are very complete, the machinery employed being very extensive and capable of scouring, packing, and sending away about 250 bales of wool weekly. The fellmongering establishment is also admirably adapted for the work, consisting of large soak-pits, sweating sheds, and pulling houses. About 4,000 skins are fellmongered weekly; the best of the pelts are sent to be tanned into basils, and the remainder are made into glue at a manufactory on another portion of the premises; a branch of Southern River runs into the premises, and wool is received and loaded into the railway trucks at the Wool Stores. The Works give employment to about seventy hands.

Glenfield Platform, 25 miles; 38 feet above sea-level.—The platform at Glenfield is 3 miles from Liverpool. It takes its name from the large and beautiful estate of Glenfield. There is a populous and picturesque neighbourhood here, bounded on the south by the George's River.

Macquarie Fields Platform, 27 miles; 74 feet above sea-level.—At the Macquarie Fields there is a fine open country, dotted over with trees. There are hills and slopes on either side of the line. The country here much resembles that near Rooty Hill on the Western Line.

Campbellfields Platform, 31 miles; 140 feet above sea-level.—Campbellfields is a very pretty sylvan locality, 3 miles out of Campbelltown, on the Sydney side.

Campbelltown Station, 34 miles; 210 feet above sea-level.—Campbelltown, a very old township, is named after a gentleman who was Colonial Secretary of New South Wales in the days of Governor Macquarie. It is the centre of an agricultural district, and contains about 600 souls. In the town are three churches—one for the Anglican (St. Peters), and the other two for the Roman Catholics and Congregationalists. There are also several inns, and one Public School. The surrounding country, consisting of hills, valleys, and plains, is devoted to grazing and cultivation, and is eminently healthy and picturesque. In the neighbourhood (10 miles to the south of it) lies the pleasant little village of Appin, with much fine scenery not far from it—at Broughton's Pass, Jordan's Pass, Pheasant's Nest, the Friendly Falls, and Bulli Pass. The Pheasant's Nest Pass, which is at the junction of the Nepean and Cordeaux Rivers, forms the starting point of the proposed works for the supply of the Metropolitan district with water. A tunnel nearly 5 miles long will connect the waters of the Nepean and Cataract, and the united streams will feed a tunnel about 2 miles in length, and by a series of aqueducts the water will be brought to a storage reservoir at Prospect near Blacktown, which when completed, will have an area of about 2 square miles, and contain over 7,100 million gallons of water. Parliament has authorized the necessary expenditure for the carrying out of this great project, and we may expect shortly to see operations commenced in this locality. From Campbelltown a road leads across the country westerly to Glenlee, Narellan, Cobbitty, and Camden. From Campbelltown Tourists can start to the southwards for the Illawarra District. (See Routes.)

Menangle Station, 40 miles; 270 feet above sea-level.—At Menangle the Southern Line crosses the Nepean by means of a fine tubular bridge, the rails being 63 feet above the ordinary level of the river. This bridge and the adjacent viaduct consists (according to Mr. Tingle) "of wrought iron, continuous box girders for a double line, 498 feet in length, extending over three openings of 150 feet clear span each, resting on stone piers, the masonry being set in Portland cement. The height of the bridge from the level of the river to under side of the girders is 65 feet. The approach on the Sydney, or northern side, is 978 feet long, in spans of 26 feet each. The approach on the southern side is of timber, 432 feet in length, in spans of 26 feet." In the vicinity are numerous fine grazing farms, with agricultural patches

laid out on the alluvial flats. Menangle has an Anglican and a Roman Catholic Church, and two schools. There is a grand and comprehensive view of the country from the Line on the Campbelltown side of Menangle—about a couple of miles from the bridge, with Razorback in the distance.

Douglass Park Station, 45 miles; 396 feet above sea-level.—Douglass Park is an agricultural settlement, named after the late Hon. H. G. Douglass, M.D. It is 5 miles from Menangle Bridge on the southern side.

Picton Station, 53 miles; 549 feet above sea-level.—Picton (formerly called "Stonequarry") is a pretty country town, 13 miles from Menangle, on the banks of Stonequarry Creek. Between Menangle and Picton the line rises 279 feet, passing through a country rather interesting and pretty, especially as you approach Picton. The land here is principally devoted to grazing, and held under old Government grants. Population of the township, including the environs, about 500 souls. There are churches for the Anglicans and Roman Catholics, a Public School, and good hotel accommodation for travellers. It is not far from the sunken valley of Burragorang, in the vicinity of which are some beautiful mountain scenes. The Railway Viaduct at Picton is a work of considerable importance. It is built of masonry, set in cement, and consists of five openings of 40 feet each. Its entire length is 276 feet, and its height, from foundations to rail level, 78 feet. The Tunnel beyond this, to the south of the town (through the Redbank Range), is 198 yards long.

Picton Lakes Platform, 59 miles; 1,074 feet above sea-level.—Leaving Picton, and emerging from the Redbank Tunnel, the line during the next 7 miles continues to rise, until, at a place known as the "Picton Lakes," it attains to an elevation of 525 feet above the Station of Picton. Here there is a platform, with a watering-place for the engines. The water is pumped up from several large lagoons to the west of the Line, down in a singular, precipitous valley close by. Hence the name of this platform. This retired and beautiful spot is a favorite place with excursionists.

Rush's Platform, 74 miles; 1,946 feet above sea-level.—Rush's Platform is named after Mr. Rush's Family Hotel, in the immediate vicinity. There is much lovely scenery in this healthy locality, which is about 3 miles from Nattai and Mittagong.

Mittagong Station, 77 miles; 2,069 feet above sea-level.—Mittagong and Nattai—to all intents and purposes the same place—lie in an elevated region, being over 2,000 feet above the level of the sea. Mittagong has around it a pastoral and agricultural neighbourhood. Its mineral resources are coal and iron; the Fitzroy Iron Mines at Nattai being immediately adjacent. There are also several fine freestone quarries, and chalybeate springs. The place is a favourite resort for invalids, and has some romantic forest scenery. 2 miles from the station, on the southern side, is the Gibraltar Tunnel, probably the longest in these colonies, being 572 yards from end to end. This tunnel is named after a remarkable Pass, the cliff over which is called the Gibraltar Rock. The tunnel has been cut through hard shale and sandstone, and is lined throughout with brickwork and cement. The scenery between Mittagong and Bowral is deservedly admired for its wild and picturesque character. The trains either way pass each other at the Mittagong Station every afternoon and night, and passengers are here allowed 20 minutes to refresh themselves. Parties going *right through* should remember this.

The Joadja Kerosene Mine.—To any one interested in the industrial progress of the Colony and the development of its natural resources a visit to the Joadja Kerosene Mine would prove highly interesting. The works are about 16 miles from the Mittagong Railway Station, and can be reached for part of the distance in a buggy, and the remainder of the way by means of a light tramway which the Company has constructed. This tramway commences from the mine, and is worked by a locomotive, 8½ miles. After leaving the railway station the traveller proceeds for about 3 miles along the road to Berrima, passes on his way the Fitzroy Iron Mines, and takes a turn to the right, which brings him to the tramway terminus, 7 miles from Mittagong.

INCLINE, JOADJA CREEK. (*See* page 84.)

It is proposed to extend the tramway into Mittagong, where it will join on to the main line of the Great Southern Railway, and thereby reduce the time of transit from the mine to two hours.

The mine is situated in a most picturesque valley, through which runs a stream known as the Joadja Creek. The valley is almost surrounded by high mountains, and accessible only by foot passengers, by means of a path down a very steep descent, along which for the purpose of hauling up the shale a tramway has been constructed. The trucks are lowered by a steel wire rope, controlled and worked by a fixed engine at the head of the incline. The distance from the engine-house to the foot of the mountain is over 3,000 feet,—the incline for 1,500 feet being 1 in 2, and the remainder of the way varying from that to 1 in 20.

The entrance to the mine is prettily situated on the brow of one of the hills, at an elevation of about 500 feet from the bottom of the gully. The distance into the main drive of the mine is 680 feet; the other tunnels, which branch off right and left, vary from 150 to 200 feet in length. These drives and tunnels are well ventilated by the air being drawn through the mine, and regulated by a large furnace and air chimney.

The valley is rendered most interesting not only through its natural beauty but also by the substantial retorts, purifiers, and other buildings erected by the Company. There are about 150 persons employed on the works. The manager is provided with an excellent house, and the miners, mechanics, and others, with very comfortable cottages. There are besides these buildings a store belonging to the Company, a post-office, two butcheries, two bakeries, and a schoolhouse is now being erected, making a total of seventy-five houses and huts on the estate. Near the mouth of the mine very good coal is being worked for local purposes. Altogether the village bears a busy and cheerful aspect.

The operations consist of shale mining, extracting oil from the shale and refining it, timber-sawing, erecting buildings, and all the mechanical operations necessary to carry on the works. Some fifty men are engaged in winning 350 tons of shale or mineral per week, which is either exported or treated for oil extraction. The lower division of the seam is 10 to 14 inches thick, and that of the upper one 7 to 10 inches thick—the shale obtained from the lower division being the most valuable is exported, and contains about three-fifths of the whole.

When the oil is extracted at the works the shale is put into the retorts and distilled at an extremely low temperature. The oil being carried down by gravitation to the purifying works, is received into a tank, and with an addition of sulphuric acid for the purpose of purifying it by chemical action, brings off a black viscid tar, composed of the basic substances of the oil. The liquid then passes into another tank, where it is treated with a solution of caustic soda and sent on for a second and third distilling. After being treated each time with the acid and soda the kerosene is finally re-distilled, and then put into store tanks, filled into 4-gallon tins, and placed in cases ready for market. One month is necessary to make good burning oil, but during its manufacture other valuable substances are extracted and brought to market, as is evidenced by the following figures :—100 tons of kerosene shale produce 10,000 gallons of crude oil, or 5,000 gallons of good burning oil, 3 to 5 per cent. of gazoline at 670°, 1½ to 2 per cent. of paraffine, 6 per cent. of tar, and 10 to 15 per cent. of lubricating oil. In extracting the oil from the shale fourteen men are employed; and two boys by means of American machinery are enabled to make 400 tins per diem for holding the oil.

The water used at the works is brought from a distance of 1¼ mile, and is very clear and good. The estate has an area of 1,887 acres. About 66 bullocks and 56 horses are worked upon it.

There is more to be seen at Joadja than at any similar mine in the Colony. The processes of extracting and refining the oil are particularly interesting, and to the lover of grand scenery the locality has scarcely a rival. A very large sum of money has been already expended, and doubtless more will be required before the Company can hope to receive the rich reward which is unquestionably before it, and which it deserves for its spirited and unostentatious enterprise. The expenditure of such a large amount of capital, and the consequent location of a numerous industrial population, will

have a most beneficial effect upon Mittagong and the surrounding districts; and it is to be hoped that the people most interested will rightly appreciate the great manufacturing undertaking carried on in their vicinity.

The works are under the superintendence of Mr. Fell.

There can be but little doubt but that as soon as Joadja Creek (an ugly name by the way) becomes better known it will have many visitors, who will be well repaid for the visit.

Bowral Station, 80 miles; 2,171 feet above sea-level.—Bowral is a pretty thriving village, near several wooded heights, verdant meadows, and open forests. It has stores and inns. Bowral is chiefly supported by the traffic of the Kangaloon farmers. It is considered to be a very healthy place. Kangaloon is 10 miles distant from Bowral to the south-east; and Robertson is in the same direction.

Burradoo Platform, 82 miles; 2,168 feet above sea-level.—This is a platform for the convenience of persons residing 2 miles to the southward of Bowral.

Austermere Platform, 85 miles; 2,180 feet above sea-level.—This is a small platform, 3 miles from Burradoo, and 1 mile from Moss Vale Station.

Moss Vale Station, 86 miles, 2,205 feet above sea-level.—This is an important township, commanding the traffic of Berrima (on the Old Southern Road), Sutton Forest, Burrowang, and lastly the Kangaroo Valley—towards Illawarra—now occupied by prosperous settlers. In the vicinity of Moss Vale stands "Throsby Park," formerly the country seat of the Earl of Belmore. Moss Vale is surrounded by a fertile agricultural area, and bids fair to become a prosperous place. A newspaper is already published here. 10 miles from Throsby Park, away towards the coast, there is a magnificent cataract "The Fitzroy Waterfall." A tributary of the Shoalhaven River there falls over a perpendicular cliff, 600 feet in height, down into a deep sunken valley, like that at the Weatherboard on the Western Line.

Jordan's Crossing Platform, 95 miles; 2,202 feet above sea-level.—This village is the centre of an agricultural settlement, having a rich deep soil adapted for cultivation. The settlers are also engaged as dairy farmers. There is a good supply of water and plenty of timber hereabouts. Messrs. Amos, the railway contractors, have saw-mills here. In the neighbourhood there is some magnificent scenery; thickly timbered ranges, and bold perpendicular cliffs.

Cable's Siding Platform, 102 miles; 2,163 feet above sea-level.—Cable's Siding is a platform between Moss Vale and Marulan; 7 miles south of Jordan's Crossing, and 12 miles north of Marulan.

Marulan Station, 114 miles; 2,105 feet above sea-level.—Marulan (sometimes called "Mooroowoolen") is the township of a small pastoral and agricultural settlement, on a creek of the same name, 20 miles east of Goulburn. Anglican and Presbyterian Churches, a fine marble quarry, and a Public School. Surrounding country level.

Carrick Platform, 122 miles; 2,036 feet above sea-level.—Carrick is a small settlement 8 miles west of Marulan and 12 miles east of Goulburn. The platform here is for the convenience of the inhabitants, who are not very numerous.

Towrang Platform, 124 miles; 2,049 feet above sea-level.—A small place on the Southern Railway, 2 miles west of Carrick, and 10 miles east of Goulburn. It is sometimes called Manna Fields.

Goulburn, 134 miles; 2,071 feet above sea-level.—Goulburn, one of the prettiest townships in the colony, is the thriving capital of a rich and influential district. In the number of its manufactories and industries Goulburn may aspire to a very favourable comparison with those of Sydney itself; and every year adds to its relative industrial and mercantile importance. It occupies a site near the edge of an extensive plain, watered by the Mulwarrie Ponds and the Wollondilly River. It is the seat of an Anglican (and Roman Catholic) Bishopric, and has decidedly the Chief Railway Station on the Southern Line of Railway. The City is well laid out in rectangular blocks, its streets being broad; and many of its places of business and public edifices are substantially built. The Railway Station at Goulburn (see View) is a very handsome and commodious building. The Hospital,

the Mechanics' Institute, the various Schools, and the different Churches are all of them spacious and good; adapted to their respective purposes, and some of them highly ornamental. Goulburn was declared a municipality in 1859. The present value of the Goulburn City property is stated to be £234,766, and there is at least 25 miles of streets and roads. There are three local newspapers: the *Goulburn Herald*, the *Southern Argus*, and the *Goulburn Evening Post*. Amongst the large industrial concerns are the City Flour Mills, the Argyle Flour Mills, Gillespie's Tannery, Wood and Company's Tannery, Gillespie's Boot and Shoe Factory, Fox, Hunt, and Company's Jam Factory, and the Goulburn Brewery. The surrounding country is agricultural, and on it are many valuable estates. The places in the neighbourhood of Goulburn, at a greater or less distance, are Bannaby, Big Hill, Binda, Boro, Bungonia, Crookwell, Currawang, Curraweela, Fullerton, Golspie, Greenwich Park, Gurrundah, Jacqua, Jerrong, Laggan, Long Reach, Manna Field, Merilla, Middlearm, Mummell, Mutbilly, Myrtleville, Pejar, Tarlo, Tarrago, Taralga, Windellama, Woodhouselie, and Woore. A Trial Survey has been completed for the extension of the railway from Goulburn to Queanbeyan—to the south of Goulburn. A yet further extension of the survey is projected from Queanbeyan to Cooma, and is now in progress. Coaches run from Goulburn to Tarrago, Boro, Manar, Braidwood, Araluen, Bungendore, Michelago, Collington, Cooma, Queanbeyan, and districts.

Yarra Platform, 141 miles; 2,228 feet above sea-level.—Yarra is a settlement on the Southern Line, with a platform for the inhabitants, 7 miles west of Goulburn.

Breadalbane Platform, 149 miles; 2,280 feet above sea-level.—A settlement 15 miles west of Goulburn, where there is a platform for the use of residents.

Fish River Platform, 161 miles; 1,871 feet above sea-level.—A platform at a spot near part of the Fish River, 27 miles west of Goulburn.

Gunning Station, 165 miles; 1,893 feet above sea-level.—Gunning is a town with a station on the Great Southern Railway, 22 miles on the Sydney side of Yass, and 27 miles west of Goulburn. A Refreshment-Room at the Railway Station here. Gunning lies on the Meadow Creek; the Lachlan River being 3 miles to the north-east of it, and the Jarrawa Creek to the south-west. Two Protestant Churches here and one Public School. Population: 300 souls. Places near Gunning: Collector, Dalton, Gundaroo, and Wheeo. The Railway Line here takes a turn to the south-westward, until it crosses Manton's Creek, when it trends to the north-west towards Yass.

Jarrawa Platform, 175 miles; 1,950 feet above sea-level.—A settlement on the Jarrawa Creek (with a Railway Platform) 10 miles south-west of Gunning.

Yass Station, 187 miles; 1,657 feet above sea-level.—Yass is a pretty little township in a valley with a fine bridge over the Yass River of 285 feet span. The Murrumbidgee flows about 10 miles south of this town; through which runs the Main Road to Albury. Yass is well laid out, and sheltered by heavy ranges. Has churches for the four principal denominations, with a Hospital and a Mechanics' Institute. Incorporated in 1873, and has ratable property estimated at £70,000. Surrounding country agricultural with valuable mineral deposits. One local newspaper—the *Yass Courier*. The surrounding country as an agricultural district takes a high rank. The places round about Yass are: Bogalong, Blakeney's Creek, Cavan, Good Hope, Greenfield, Murrumbateman, Mylora, Nanama, Reed's Flat, Talina, Tangmangaroo, and Woolgarlo.

Bowning Station, 194 miles; 1,804 feet above sea-level.—Bowning is a settlement taking its name from Mount Bowning and a creek of the same name 7 miles north-west of Yass. Here there is a small Railway Station.

Binalong Station, 208 miles; 1,568 feet above sea-level.—Binalong is a small post-town in the Burrowa district, 14 miles west-north-west of Bowning and 21 miles from Yass. Binalong stands on an eminence with wooded hills sweeping in graceful undulations around it. Here are several hotels; a Church, a Public School, and a lock-up. It is surrounded with good alluvial land, and is 15 miles from Burrowa, the chief place of the district.

Galong Platform, 216 miles; 1,641 feet above sea-level.—A spot where there is a platform 8 miles to the north-west of Binalong. Near Galong is the residence of Mr. John Nagel Ryan.

Cunningar Platform, 225 miles; 1,479 feet above sea-level.—A settlement (with a platform) 9 miles to the north-west of Galong Platform, and 38 miles from Yass.

Murrumburrah Station, 228 miles; 1,351 feet above sea-level.—A Village Station in the District of Young, 41 miles beyond Yass—by rail. At 1¼ miles from this Station there is a large "opening" over Murrumburrah Creek, spanned by a timber bridge 250 feet in length. This bridge is 24 feet below the level of the neighbouring station. The Line then ascends on a gradient of 1 in 40 for 1¾ miles reaching a height of 1,480 feet—where there is a heavy cutting of 50,000 yards and 39 feet deep. From this point the Line begins to descend again, and continues descending to Demondrille Creek, where there is a bridge of four openings 26 feet span. Connaughtman's Creek is the next watercourse in the way, and that is crossed by a brick bridge. Close to this creek is the Wallendbeen platform. Coaches run from Murrumburrah to Young, Wombat, Grenfell, and districts.

Wallendbeen Platform, 241 miles; 1,514 feet above sea-level.—A Village, with a Railway Platform, in the District of Young, 13 miles south-west of Murrumburrah, and 54 miles from Yass. It is believed that a considerable quantity of wool from the "Levels," will be sent from here, and that Wallendbeen will to some extent become the terminus for Young, as it is several miles nearer Young than Murrumburrah. The soil increases in richness after Wallendbeen is left behind, until it can be seen in the cuttings several feet deep; and in the fields its capabilities meet the eye in the flourishing condition of the farms which are passed as the train goes by, on each side of the Line. The last 5 or 6 miles of country between Wallendbeen and Cootamundra is tolerably level.

Cootamundra Station, 253 miles; 1,079 feet above sea-level.—The station of Cootamundra (formerly Cobramundra) is in the District of Gundagai, 12 miles south-west of Wallendbeen, and 66 miles (by rail) beyond Yass. Cootamundra (a thriving place) forms part of a rich and fertile district, many miles in extent. From Cootamundra to Wagga (a distance of about 50 miles) there is much good land. A good deal of it is formed by the disintegration of granite; but many of the cuttings show a great depth of rich chocolate loamy soil, just the very thing for wheat growing and vineyards. An immense tract of this part of the country remains untilled. The country becomes uneven after leaving Cootamundra, and the earthworks between that place and Bethungra are consequently heavy. The highest point on the Line between Murrumburrah and Cootamundra is at a distance of 243½ miles from Sydney, at which place the height is 1,667 feet above the level of the sea. Then the Line descends on a 1 in 40 gradient for a distance of 1 mile and three quarters and gets on to the Cootamundra Flats, passing thence on to the Cootamundra Station without any earthworks of importance. 3 miles on the Goulburn side of Cootamundra there is a water-station. The Station Buildings at Cootamundra are of timber with galvanized-iron roofing, and comprise a general waiting-room, a ladies' waiting-room, ticket office, and porters' room. There is also a goods-shed, 60 feet by 30 feet; and a turn-table for the engine, and a Residence for the Railway Station Master have also been constructed. The Southern Railway has, without doubt, here tapped a fine wheat-growing district of very considerable area; but in addition to the agricultural population there many of the people who are becoming small squatters, going in for sheep and wool, and in this way making Cootamundra a wool-producing district as well as a grain-growing one. Near Cootamundra are some fine blue stone quarries. Coaches run from Cootamundra to Gundagai, Adelong, Tumut, Tarcutta, Germanton, Tumberumba, Albury, and districts.

Cungegong Platform, 262 miles; 1,269 feet above sea-level.—A Platform nine miles from Cootamundra, and six from Bethungra.

Bethungra Station, 268 miles; 1,051 feet above sea-level.—Bethungra is a pastoral settlement (with a Station on the Railway) in the District of Gundagai, 15 miles south-west of Cootamundra, and 81 miles (by rail) beyond Yass.

Billabong Platform, 276 miles; 881 feet above sea-level. — This Platform on the Southern Line takes its name from the Billabong Creek, over which there is a 10-ft. culvert for the railway to pass.

Junee Station, 286 miles; 985 feet above sea-level.—Junee, 10 miles west of Bethungra, is a pastoral settlement in the Wagga Wagga District, on the Houlahan Creek, in the midst of a fine undulating country. It is 22 miles north of Wagga Wagga. Gold and limestone found in the vicinity. The Station at Junee is 286 miles 41 chains from Sydney. The station arrangements provided for, are: a timber station building, consisting of ladies' waiting-room, ticket-office, parcels office, and lamp-room; a goods-shed, 60 feet long by 30 feet broad; an outside loading platform, 60 feet long, and the necessary sidings. A Station Masters' House is built, and commodious cattle and sheep yards have also been erected. An extension from Junee to Narrandra—to the westward—has been authorised, and the works are shortly to be commenced.

Wallace Town Platform, 294 miles; 830 feet above sea-level.—This platform stands between Junee and Wagga Wagga—eight miles from the former place, and fourteen miles from the latter.

Wagga Wagga Station, 304 miles; 739 feet above sea-level.—This important town is on the banks of the Murrumbidgee, about 514 miles above its junction with the Murray. It is the centre of a rich pastoral and agricultural district, and numbers a population of about 2,500 souls. The principal streets contain numerous substantial edifices, including Hotels, Stores, Branch Banks, and Business Agencies. There are four Churches, a Roman Catholic Convent, a Masonic Hall, a Mechanics Institute, and a Public School. Proclaimed as a municipality in 1870. Wagga Wagga has already ratable property to the amount of £320,000. It has two local papers—the *Express* and the *Advertiser*. This is at present the terminus of the Southern Railway, but the Line is to be carried on to Albury, and is now in the course of construction. At Albury the N.S.W. Line will join the Victorian Line. A Trial Survey has also been completed, for effecting a junction by railway between the Line near Wagga Wagga and Deniliquin (*viâ* Urana and Jerilderie) to the westward. At Deniliquin the railway will also meet the Victorian Lines. From Jerilderie a Trial Survey is in progress to the N. W.; towards Hay, on the Murrumbidgee River. Coaches run from Wagga Wagga to Urana, Jerilderie, Conargo, Deniliquin, Albury, Narandera, Hay, and districts.

IV.—SYDNEY, *viâ* BLACKTOWN, TO RICHMOND.

(Subsidiary Branch of Western Line.)

Note.—The first 22 miles on the Railway from the Metropolis to Richmond are upon the Main Trunk Line, as far as Parramatta Junction; and then on the Western Line, properly so called, as far as Blacktown. The following stations and stopping places have therefore to be passed: Sydney, *Eveleigh*, *McDonald Town*, Newtown, *Stanmore*, Petersham, Ashfield, *Croydon*, Burwood, *Redmyre*, Homebush, Rookwood, *Auburn*, and Parramatta Junction. Then (on the Western Line) Parramatta, Seven Hills, and Blacktown. All these stations and stopping places have already been described elsewhere. The Itinerary for the Blacktown and Richmond Branch Line will commence at Blacktown.

Blacktown Station, 22 miles from Sydney; 183 feet above sea-level.—The Railway Traveller intending to visit Richmond (or any place on the Blacktown and Richmond Subsidiary Line) must change from his car in the Western Train into one of the carriages of the Branch Line at Blacktown. This Subsidiary Line leaves Blacktown in a north-westerly direction, and passes through a pleasant and diversified country, for 6 miles, until it reaches Riverstone Station.

Riverstone Station, 28 miles; 78 feet above sea-level.—Riverstone is a small agricultural settlement, whence wood is procurable in considerable quantities for firing. It is 6 miles from Windsor by rail.

Mulgrave Station, 33 miles; 42 feet above sea-level.—Mulgrave is a small agricultural settlement on the eastern bank of the South Creek, 1 mile from Windsor. It is principally used by the inhabitants of Pitt Town, and the farmers living to the south-east of that township.

Windsor Station, 34 miles; 41 feet above sea-level.—Windsor, "the capital of the Hawkesbury," is a very old town situated on that river, near its junction with the South Creek and the Rickaby Ponds. The soil of the country around is wonderfully fertile, and, but for the floods to which the low land is subject, would prove invaluable for farming property. As it is there is much wealth here accumulated by the industrious in favourable seasons. In regard to its relative position, Richmond lies 4 miles to the west, Wilberforce 4½ miles to the north-west, and Pitt Town 4 miles north of Windsor. Windsor was proclaimed a municipality in 1871, and has ratable property valued at £68,456. Amongst the Public Buildings are: a Court House, a School of Arts, a Hospital and Benevolent Asylum, Churches in connection with all the principal denominations, and a Public School. The Windsor Bridge across the Hawkesbury is constructed with iron cylinders. Here local newspapers are published. Population, 1,800. Several good hotels. The Anglican Church is a quaint old edifice in the "Georgian" style of architecture. In its churchyard are some curious and interesting tombs. There is a fine park at Windsor, and the town now contains many beautiful and commodious buildings. From Windsor the tourist may go by a small river steamer (starting usually at Pitt Town) down the Hawkesbury to Wiseman's Ferry and St. Albans—a most delightful trip. (*See route No.* 15.)

Clarendon Platform, 36 miles; about 50 feet above sea-level.—Clarendon is a Platform on the edge of the Richmond Common, 2 miles from Windsor, and 2 from Richmond. Here there are some cattle-yards, and a few houses. The train stopping here picks up only.

Richmond Station, 38 miles; 61 feet above sea level.—Richmond is a pretty township, 4 miles west of Windsor. It was proclaimed a municipality in 1872, and possesses ratable property to the amount of £88,000. Of late years (as in the neighbouring town of Windsor) there has been a great improvement in Richmond. The township contains several good buildings; including the Churches of the four principal denominations, the School of Arts, the Court-House, and the Railway Station. There are several good Hotels. Population, 1,000 souls. The surrounding flats are under cultivation. At Richmond the tourist can hire a car and drive (at a comparatively small charge) to the Kurrajong Heights, where the scenery is lovely in the extreme, consisting of waterfalls, gorges, dells, and forests. The Vale of Avoca (a meeting of the waters of the Grose and a fine mountain stream) can readily be reached from the road between Richmond and Kurrajong; turning off, to the westward, at Lamrock's. This picturesque locality should be visited by the tourist. At the Kurrajong there are several houses at which the tourist can board and lodge. Behind one of these ("Belmore Lodge") at the top of the Big Hill, there is a magnificent view of the County of Cumberland, and much of the adjacent country in the distance. The road from this spot is continued over the mountains to Mount Wilson's Station, on the Great Western Railway. This track, chiefly used for cattle, is known as Bell's Line of Road, and abounds with grand and beautiful scenery. The tourist had, however, much better not attempt to travel over it without a guide. The distance from the Kurrajong to the Mount Wilson Station is about 26 miles.

V.—NEWCASTLE TO TAMWORTH.

(Great Northern Trunk Line.)

Note.—The Great Northern Trunk Line, between the City of Newcastle and Tamworth, is at present unconnected with the Western and Southern Lines, and their Subsidiary Branches. The Assembly has, however, determined that these two Trunk Lines shall be joined by a Line of Railway so as to form one complete Railway System, in-

stead of two unconnected ones. The reader will observe that in this Itinerary for the Northern Trunk Line, the miles are measured from its Terminus at Newcastle. Newcastle time is observed at all Stations.

Newcastle Station, 2 feet above sea-level, and 182 miles from Tamworth.—Newcastle, the Second City in New South Wales, is situated on the southern bank of the entrance to the * Hunter River (formerly known as the Coal River), and is 75 miles north of Sydney. Population, within the municipal boundaries in 1871, 7,581 souls. If the mining suburbs are included the population will be found much larger. Newcastle was settled early in the history of the Colony, but has rapidly advanced as a city and seaport during the last few years. It is the well known port of a large coal district, unsurpassed in the Australian Colonies. The city—which is the seat of an Anglican Bishopric—is, for the most part, substantially built, and important works have been carried on for the improvement of the harbour, and to afford desirable facilities for its growing trade. The most remarkable buildings are the Custom House, the Post Office, the Court House, the School of Arts, the Banks, the Churches (6), the Hospital, the Asylums, the Grammar School, the Market House, and several of the Hotels. The Terminus of the Great Northern Railway is just opposite to the old custom-house, and within a few feet of the harbour—an arrangement not without its advantages and inconveniences. Proclaimed a municipality in 1859. Ratable property, valued at £720,000; with 16 miles of roads and streets. Communication by steamers and ships with Sydney, and by Railway with the Interior. Two Public Schools and three Denominational Schools. The local newspapers are: *The Newcastle Daily Pilot*, *The Newcastle Morning Herald*, and some others. Stockton is a suburb on the north shore of the harbour, opposite to the city. Other places in the neighbourhood of Newcastle, Lambton, Minmi, New Lambton, Pittsburg, Wickham, &c.

* The Valley of the Hunter—that extensive alluvial tract traversed by the Hunter River—appears to have been first explored about the year 1825. The following deeply interesting account of its first discovery (from the pen of Mr. G. T. Loder) recently appeared in the columns of the *Maitland Mercury*. Mr. G. T. Loder says:—"The late Mr. John Howe, of Morpeth, was the leader of the party who—starting from Windsor overland—first discovered the valley of the Hunter, then called "Camilaroy." His associates were the late Mr. Benjamin Singleton, a most enterprising man; the late Mr. George Loder (Mr. Howe's son-in-law); the late Mr. Thomas Dargin, two or three white men, and two blackfellows as guides and interpreters. They did not come over the Bulga the first time, but came down Douglas Creek, above Jerry's Plains, on to the Hunter, and followed it downwards for a few miles. On account of Mr. Howe's health not being good, and the blackfellows refusing to go any further, the party returned to Windsor. Some time afterwards Mr. Howe was leader of another party. His associates were Mr. Singleton, Mr. George Loder, Mr. Andrew Loder, and others, two or three servants, and two blackfellows. Instead of keeping their former track they left it at Howe's Valley, and came over the Bulga and on to the Hunter. They followed the river downwards and reached the level ground between Baroona and Neotsfield, on St. Patrick's Day—from which circumstance it was called St. Patrick's Plains. From there they followed the river down as far as where West Maitland stands. On their return home a horse belonging to one of the party, named Cockfighter, got bogged in the creek not far from Wambo, hence the name Cockfighter's Creek. Three places on the Bulga road are called after Mr. Howe to this day—Howe's Valley, Howe's Waterhole, and Howe's Mountain."

Honeysuckle Point Station, 1 mile from Newcastle; 2 feet above sea-level.—Honeysuckle Point is a station from which there is a small Subsidiary Branch Line to Bullock Island, for coal and other mineral traffic. Bullock Island is 1½ miles north of this Station.

Hamilton Platform, 2 miles; 3 feet above sea-level.—Hamilton is a thriving suburban (mining) township, only 2 miles west-north-west from Newcastle. Population, 2,000—Churches, Stores, and a Mechanics' Institute. Proclaimed a municipality in 1871. Ratable property in 1876, £219,000. A public and denominational school here.

Waratah Station, 4 miles; 13 feet above sea-level.—An important mining township, west-north-west of Newcastle, with a population of 3,000 souls. Industries—coal-mining, quarrying, and copper smelting. Coal shipped from private shoots at Point Waratah, to the north of the town. Proclaimed a municipality in 1871. Ratable property—£165,000. Near Waratah, to the west-south-west, there is a Branch Line turning off to the rising town of Wallsend, at which there is a population of 6,000 persons. [Between Wallsend and Sydney *via* Lake Macquarie

and Gosford, a trial survey is being made to connect the Northern and Western trunk lines.]

Hexham Station, 10 miles; 2 feet above sea-level.—An old mining township, west-north-west of Newcastle, with a population of about 500 souls.

Hexham Township Platform, 12 miles; 2 feet above sea-level.—A platform thus named stands 2 miles to the north-west of the Hexham Station.

Woodford Platform, 14 miles; 32 feet above sea-level.—A place with a few houses and a platform, near Alnwick, and 4 miles to the north-west of Hexham. (Not to be confounded with a Platform of the same name on the Western Line.)

Victoria-street Platform, 17 miles; 34 feet above sea-level.—A platform 1 mile to the east of East Maitland Junction.

East Maitland Junction Station, 18 miles; 34 feet above sea-level.—East Maitland, 93 miles from Sydney, was proclaimed a Municipality in 1872, possessed in 1876 ratable property amounting to £130,000. It was the original "Maitland" township, and is well laid out, with many good buildings. Divided from West Maitland (now much larger) by Wallis Creek, crossed by a fine bridge. Has 27 miles of roads and streets. Amongst its principal buildings are: the Mechanics' Institute, Banks, Gaol and Court House, Churches (4) and Public School. Population according to census of 1871—2,282. East Maitland is the seat of a Roman Catholic Bishopric. There is a constant communication between East and West Maitland which is greatly facilitated by the Railway. Places near East Maitland—Morpeth, Wickham, Woodford, and Hinton. There is a Subsidiary Branch Line from here to Morpeth, distant 4 miles.

High-street Platform, 19 miles; 34 feet above sea-level.—A platform between East and West Maitland.

West Maitland Station, 20 miles; 18 feet above sea-level.—West Maitland—nearly three times as populous as the neighbouring township—is the *entrepôt* of a large trade with the inland towns to the North of the Colony, and, in some respects considered to rank next after the Metropolis. Proclaimed a municipality in 1863; the present value of its ratable property is £360,747. Has 32 miles of roads and streets; the main thoroughfare being High-street, in which nearly all the business is done. Amongst its principal buildings are: the Maitland Hospital, the School of Arts, the Telegraph Station, numerous School Houses, and 24 Churches and Places of Public Worship. There are two local newspapers: the well-known *Maitland Mercury*, and the *Advertising Medium*. Maitland has several flourishing industrial establishments, and is lighted with gas. The country round Maitland is a rich alluvial tract, and for many years sedulously cultivated. The places near West Maitland—besides those elsewhere mentioned—are Anvil Creek, Creswick, Largs, Millfield, &c.

Wollombi Road Station, 22 miles; 44 feet above sea-level.—This is a station 2 miles west of West Maitland, placed where the Wollombi Road joins on to the Northern Line of Railway.

Lochinvar Station, 26 miles; 210 feet above sea-level.—This is a station 6 miles from Maitland, in a pastoral and agricultural district. Between the Wollombi Road and Lochinvar Stations there is a considerable rise in the Line; not less than 166 feet. The "Kaloudah" vineyards are in the vicinity of this station. Population between 500 and 600. Two churches (Anglican and Roman Catholic) and a Public School.

Allandale Platform, 28 miles; 200 feet above sea-level.—Soon after the Line leaves the Lochinvar Station it takes a turn to the north-west, and (allowing for sinuosities) maintains that direction generally as far as Singleton. Allandale is a platform 8 miles from Maitland.

Greta Station, 32 miles; about 150 feet above sea-level.—The Station at Greta (late "Farthings") is 12 miles from Maitland, and 17 miles south-east of Singleton.

Branxton Station, 35 miles; 136 feet above sea-level.—Branxton is in the centre of an agricultural district. Population, 1,200 souls. 3 miles distant from the Hunter River. Churches, a School of Arts, and a Public School. Large vineyards here, belonging to Mr. Kelman, and producing excellent wine. Four of the principal roads of the Maitland District converge at Branxton.

Belford Platform, 39 miles; 169 feet above sea-level.—After passing the Belford Platform the line turns first to the south-west and then to the north-west.

Whittingham Platform, 46 miles; 117 feet above sea-level.—The Whittingham Platform (late Faulkner's) is 3 miles south-east of Singleton.

Singleton Station, 49 miles; 136 feet above sea-level.—Singleton is the chief town of the Patrick's Plains District, situated on the Hunter River, and 123 miles from Sydney by the postal route. Musclebrook is 28 miles north of it; and West Maitland 30 miles south. It is the centre of a fine district of varied resources—agricultural, pastoral, and mineral. It contains several Churches, a Mechanics' Institute, a Hospital, a Court House, and other good Buildings. Proclaimed a municipality in 1866, and possesses ratable property to the amount of £100,000 value. Numerous prosperous industries. Other towns and settlements near Singleton—Jerry's Plains, and Bridgeman, Camberwell, Glendon Brook, Howe's Valley, Scott's Flat, Sedgefield, St. Clare, Vere, Warkworth, and Westbrook.

Glennie's Creek Platform, 58 miles; 245 feet above sea-level.—There is a platform at Glennie's Creek on the Line, on the north-west side of Singleton, 9 miles from that township.

Ravensworth Station, 62 miles; 245 feet above sea-level.—Ravensworth is an agricultural settlement, with a Station on the Railway, 13 miles from Singleton, on the Musclebrook side.

Liddell Platform, 65 miles; 250 feet above sea-level.—A Platform on the Great Northern Railway, 3 miles from the Ravensworth and 10 miles from the Grass-tree stopping places.

Grass Tree Platform, 75 miles; 597 feet above sea-level.—A settlement with a platform on the Great Northern Railway; 10 miles from Liddell, and 5 miles from Musclebrook.

Musclebrook (or Muswellbrook) Station, 80 miles; 475 feet above sea-level.—Musclebrook—on the Muscle Creek and the Hunter River—is a town containing (in 1871) 1,445 inhabitants, and ratable property assessed at £73,992. Local Hospital, School of Arts, and two Churches—Anglican and Presbyterian. The surrounding country produces wheat, maize, sugar, tobacco, and the vine. Other places in the district—Denman; and Goorangoola, Gungal, Kayuga, and Wybong. Coaches run from Musclebrook to Denman, Merriwa, Collaroy, Cassilis, and districts.

Aberdeen Station, 87 miles; 610 feet above sea-level.—Aberdeen is a town on the Great Northern Railway, between Musclebrook and Scone. Population, 200 souls. Anglican and Presbyterian Church, and Public School. Good agricultural land, but mainly a pastoral district. 7 miles from Musclebrook, and 9 from Scone.

Scone Station, 96 miles; 680 feet above sea-level.—Scone is a pleasant township on the margin of the Kingdon Ponds, 7 miles west of Page River, and 7 miles north-west of the Hunter River. It is a station on the Great Northern Railway, and is 76 miles from Maitland. Anglican, Roman Catholic, and Presbyterian Churches; a School of Arts, and a public school. Land chiefly occupied for agriculture. Settlements near Scone—Bunnan and Rouchelbrook.

Excursion to the Flat Rock.—At the distance of about 6 miles from Scone, out amongst the mountains, is a wild and picturesque spot known as the Flat Rock, which is spoken of by a recent tourist as well deserving of a visit. This Lady Tourist (an accomplished writer, whose description of the glen of the Flat Rock has been published to the world in the *Maitland Mercury* under the *nom de plume* of "Gipsy") says:—"Our way became tortuous and rugged, and to avoid too much climbing we kept in the bed of what has been—and will be again some day when there is rain enough—a creek. After walking in this for some distance the glen took an abrupt turn, and we suddenly came upon what seemed to me an enchanted region. As far as natural scenery is concerned it was one of the grandest sights I ever saw in my life. The sides of the glen rose to the height of several hundred feet, in some places sloping and in others abrupt, but everywhere covered with the most luxuriant vegetation. What seemed to me a most remarkable thing was that the vegetation on either side had its distinctive characteristics, and even the rocks appeared of a different nature and formation. On one side could be seen the Moreton

Bay fig tree, with its glossy leaves, the Stinging Tree with its graceful foliage, and the Acacia—besides several other beautiful trees, for which I could find no name, some of them having long slender stems crowned at the top with a tuft of foliage, and looking at a distance much like palms. Intertwined among these were several kinds of creepers, forming numbers of the most beautiful natural arbours one could imagine. In the undergrowth I noticed a species of holly, very like the English variety, and an elder bush with the berries nearly ripe. Among all this luxuriance the rocks were tumbled about in 'most admired disorder,' assuming all sorts of fantastic shapes, and covered with mosses, ferns, rock lilies, and cacti; while on the other side of the glen the iron-bark and the tea-tree reigned supreme, forming, with their sombre foliage, a complete contrast to the vivid green of the opposite side, and thereby adding greatly to the effect. At our left the ravine had widened, the surface being composed of smooth *flat rock* several yards in dimensions, which forms the lunching place for sightseers, and has suggested its rather unromantic name. The whole view formed a picture to go into raptures over, and once seen never to be forgotten." The writer of this lively description of a lovely spot named it the Fairy Dell, by which it will probably henceforth be known. The rocks in the neighbourhood assume quaint fantastic shapes; and amongst them there are pinnacles known as "Moses" and "Aaron," and a tall white one whimsically distinguished as "Lot's Wife."

Park Platform, 101 miles; 720 feet above sea-level.—Park is a platform on the Great Northern Railway, 5 miles from Scone.

Wingen Platform, 106 miles; 1,002 feet above sea-level.—There is a platform on the Northern Railway near the Burning Mountain, known as Mount Wingen, 10 miles from Scone and 14 from Murrurundi. Mount Wingen is 1,820 feet high.

Blandford Platform, 115 miles; 1,382 feet above sea-level.—Blandford is a pastoral and agricultural settlement on the Page River and Warland's Creek, about 3 miles south of the town of Murrurundi. There is a platform on the Railway here. The highest mountain in the district—Mount Murrulla—is 3 miles west-south-west of Blandford.

Murrurundi Station, 120 miles; 1,546 feet above sea-level.—Murrurundi is a fine little inland town, beautifully situated on the Page River at the foot of the Liverpool Range. Population, 350 souls. A Local Hospital, a School of Arts, Churches for the four principal denominations, and a Public School. *The Murrurundi Times* is the local newspaper. Haydonton is regarded as a suburb of Murrurundi, with which it is connected by the Arnold Bridge, opened in 1864. Places near Murrurundi: Blackville, Timor (noticeable for its caves), and Wallabadah.

Temple Court Platform, 121 miles; 1,609 feet above sea-level.—A platform 1 mile from Murrurundi. At ¾ of a mile from Murrurundi, a cutting of 14,000 yards and 24 feet deep, at its greatest depth, begins; and ½ a mile further on, after passing various small cuttings, there is one of some 10,000 yards.

Doughboy Hollow Platform, 126 miles; 2,070 feet above sea-level.—A platform 6 miles from Murrurundi. Passing Doughboy Hollow Platform the Line is carried through several small cuttings, and after running up gradients, varying from 1 in 40 to 1 in 50, at 2½ miles from Murrurundi, there is another cutting of close upon 14,000 yards.

Willow-tree or Warrah Platform, 134 miles; 1,438 feet above sea-level.—A small settlement on the Great Northern Railway, 14 miles from Murrurundi and 48 miles from Tamworth.

Braefield Platform, 140 miles; 1,275 feet above sea-level.—A platform on the Great Northern Railway, 4 miles on the Murrurundi side of Quirindi. Crossing the Page River the ascent of the mountain range to the Tunnel is commenced; and for a distance of 3¾ miles there is a continuous gradient of 1 in 40, passing through some very heavy cuttings and over some high embankments. One of these cuttings—at a place 4 miles from Murrurundi, and before the Tunnel is reached—is set down at between 80,000 and 90,000 yards, with a depth up to 51 feet. Another cutting of 12,000 yards is met a quarter of a mile further on; and before the Tunnel is entered a number of others—some of hard rock—are passed; showing on the plans 12,000, 14,000, 15,000, and 18,000

yards. The cuttings were enlarged in some places to provide sufficient stuff for the embankments; and in others to make the slopes safe, and prevent, as far as could be done, the blocking-up of the Line by landslips. The cutting where the Tunnel is entered is very steep, and of very considerable depth. The Railway here runs through a Tunnel 528 yards long, lined throughout with brickwork and set with Portland cement. This is the place where the Liverpool Range is pierced by the Railway. At the north end of the Tunnel the summit of the Range is reached; and as the train emerges from the Tunnel it passes through a very deep cutting, of the same nature as that on the Murrurundi side, and one that has had to be considerably increased to strengthen the soil on the slopes. The Line descends rapidly from the Liverpool Range on gradients of from 1 in 40 to 1 in 50 for nearly 4½ miles, passing through extensive cuttings, which in their construction presented great difficulties to the contractor, and over some heavy embankments. The foot of the gradient is reached at a place called Chilcott's Creek, which is crossed by a Timber Bridge of five 26-feet openings. Within 2 miles of Quirindi only are there any heavy cuttings and somewhat steep gradients to be met. At that point two heavy cuttings are situated, and the gradients are 1 in 40 and 1 in 50. 8 miles south of Quirindi the Line crosses Collie Creek. After leaving the gradients last-mentioned, the Quirindi Creek is crossed by four 26 feet timber openings.

Quirindi Station, 144 miles; 1,328 feet above sea-level.—Quirindi is a settlement on the Quirindi Creek, 24 miles north of Murrurundi. It is surrounded by good agricultural land. Breeza lies west of Quirindi Station, 25 miles; Tamworth to the north, about 38 miles; and Wallabadah to the eastward, 16 miles. The last embankment before reaching Quirindi Station is of great length, made up from side cuttings, and containing over 20,000 yards. Quirindi Station is then reached. From Quirindi Station the Railway commences to ascend on various gradients, the greatest of which is 1 in 66 for a distance of about 2 miles, passing through several cuttings, and then descends for a distance of about a mile and a half. For a quarter of a mile it again ascends, descending again for a mile and a half, and then making a further ascent for a distance of about 3 miles. Another descent for about 2 miles brings the Railway to the junction with the Werris Creek and Gunnedah Line.

Quipolly Platform, 150 miles; about 1,300 feet above sea-level.—A platform six miles from Quirindi, and five miles from Werris Creek Stations.

Werris Creek Station, 155 miles; 1,244 feet above sea-level.—Werris Creek Station is 11 miles north of Quirindi, and 27 miles south of Tamworth. Passing the Werris Creek Station another large cutting is now met with. It has been made through hard rock, and contains some 22,000 or 23,000 yards of stuff. Again the Line ascends for a short distance, and again descends on a gradient of 1 in 40 for about a mile. Then there is an ascent for a distance of between 4 and 5 miles on gradients varying from 1 in 40 to 1 in 80—1 in 50 being most frequent—through several hard cuttings, some of them representing as much as 20,000 yards of stuff. When this point is reached the Line again descends, passing through small cuttings for a distance of about 2 miles; and thence into Timbumbera the Line follows the natural surface of the ground as near as possible, and *there*, of course, few excavations are required. Timbumbera Creek is crossed by a Timber Bridge of four 26-feet openings; and from this point to Tamworth the intervening distance is about 11 miles. The Station at Tamworth is situated about a mile and a quarter from Tamworth proper, and south of the Peel River. This point is the limit to which the extension under the contract recently completed goes. The Line will be carried into Tamworth proper under the contract that will be entered into for the further extension of the Railway northwards, recently sanctioned by Parliament. From Murrurundi to Tamworth the rails are single-headed, fish-jointed throughout, weighing 70 lbs. to the yard, and secured to the sleepers by spikes and screws alternately. From Werris Creek (as already intimated) the Branch Line to Breeza and Gunnedah begins. There are two timber bridges over Werris Creek, each having five openings; one bridge to carry the Railway, and the other for the road approach to the Railway Station.

Currabubula Station, 164 miles; 1,408 feet above sea-level.—Currabubula station is 8 miles from Tamworth, on the Murrurundi side. Through Currabubula Station the Line passes by a 30-chain curve, crossing the road to Goonoo Goonoo at 165 miles; then another 30-chain curve brings it across Currabubula Creek, where there is a timber bridge of three 26-feet spans; thence round the base of the Sugar-loaf Mountain, whence its direction takes a north-easterly course and enters the estate of the Peel River Company, and so over Timbumbera Creek to Tamworth.

Tamworth Station, 182 miles; 1,242 feet above sea-level.—Tamworth — the present terminus of the Great Northern Railway to the northward, and one of the most progressive townships in the northern portion of this Colony—lies 182 miles north-west of Newcastle, and 251 miles from Sydney by the postal route; its least distance from the coast being 116 miles. It lies in a fertile valley, at the confluence of the Cockburn River and Goonoo Goonoo Creek, and is surrounded by a prosperous grazing and agricultural community. Tamworth is the centre of an eastern portion of the pastoral district of Liverpool Plains. It has Churches for the four principal denominations, Mechanics' Institute, a Temperance Hall, a Public School, two Denominational Schools, large Stores, Hotels, Branch Banks, and Business Agencies. It is a proclaimed municipality, with ratable property assessed at £146,897, and has 44 miles of streets and roads. An Agricultural and Pastoral Association are held here periodically; and there is a flourishing Jockey Club. The local papers are *The Tamworth News* and *The Tamworth Observer*. Population, about 2,600 souls. The nearest places are: Attunga, 10 miles north; Goonoo Goonoo, 15 miles south; Moonbi, 15 miles north; Manilla, 30 miles north-west; Carroll, 35 miles west; Bowling Alley Point, 28 miles south-east; Nundle (on the Liverpool Range), 36 miles south; Hanging Rock, 43 miles south; and Barraba, 60 miles north. The remaining places near Tamworth are Bective, Bundella, Colly Blue, Dungowan, Keepit, Pine Ridge, Quipolly, Tally-ho, Tambar Springs, Somerton. Gunnedah is 50 miles to the westward of Tamworth. The station arrangements at Tamworth consist of the station buildings, platform, and two carriage docks, a goods warehouse with uncovered platform, water-tank for engines, engine-shed and pits, coal stage, and extensive sheep and cattle yards. The Station is a brick building, 85 feet in length, and 24 feet wide, with verandahs to the platform and road fronts, and contains a general waiting-room, and every other requisite convenience. Should the proposed plan of further extension of the Railway in the direction of the Tableland be matured, some two or three years must elapse before the Railway spans the Peel River; and in view of the periodical floods, and the consequent overflowing of the low lands, to which the locality is subject, considerable difficulty has yet to be faced before the Line is completed into the Town of Tamworth. Should the Line follow in the direction of Armidale the main station of Tamworth will lie immediately under the range of hills which skirt the eastern boundary of the township. From thence the valley of the Cockburn River, a tributary of the Peel, and the Swamp Oak and Jamison Creeks (which are tributaries of the Cockburn) will be followed until the summit of the range is reached by easy gradients. The completion of this portion of the Trunk Line towards Queensland must necessarily be a matter of considerable time, and meanwhile Tamworth will be the emporium for the bulk of the north-western trade. Trial Surveys have been completed for the railway connection of Tamworth with Inverell and Tenterfield, and with Armidale, Glen Innes, and Grafton. The Railway extension from Werris Creek to Gunnedah (on the N.W.) is now in the course of construction, and a portion of the extension as far as Breeza, 15 miles, has recently been opened for traffic. From Gunnedah to Narrabri—in the same direction—a Trial Survey has been completed; and from Narrabri away to the Macintyre River (to the N.W.) a Trial Survey is in progress. The Line to the north of Tenterfield will join on to the Queensland Line of Railways; thus (eventually) connecting SYDNEY, and the other Australian capitals, with BRISBANE. Coaches run from Tamworth to Bendemeer, Uralla, Armidale, Glen Innes, Tenterfield, Warwick, Bundarra, Inverell, Vegetable Creek, Barraba, Bingera, Warialda, and districts.

VI.—MAIN BRANCH—NORTH-WESTERN LINE.

This Branch line which starts from Werris Creek is now in course of construction as far as Gunnedah, but it is ultimately intended to extend the line into the North-western interior. The only station at present on the line is Breeza, which is 170 miles from Newcastle and 951 feet above sea level and 15 miles from the Junction with the Great Northern Line. Breeza at present is only a small township, and the district is almost entirely a pastoral one. Coaches run from Breeza to Gunnedah, Narrabri, Pilliga, Walgett, Goodooga, Brenda, Millie, Moree, Mungindi, Kunopia, and districts.

VII.—SUBSIDIARY BRANCH LINES TO NORTHERN LINE.

(Between Newcastle and Tamworth.)

The three Subsidiary Branch Lines to the Great Northern Line of Railway do not appear to call for any particular description in the way of an Itinerary—being all very short. The *first*—from Honeysuckle Point to Bullock Island—has but one Station, 1½ miles fromthe Main Line, and is chiefly used for mineral traffic. The *second*—from the Waratah Tunnels to Wallsend—has also but one Station (Wallsend.) It is 4½ miles long, and connects Newcastle with the rising town of Wallsend, as elsewhere pointed out. The *third* Subsidiary Branch Line to the Great Northern Railway—from East Maitland to Morpeth—numbers three stopping places: East Maitland, Morpeth, and Northumberland-street; the first-named has been elsewhere described, but the last-named presents no feature calling for any special notice.

Morpeth Station, 22 miles from Newcastle by rail, is an important township situated on the Hunter, about 30 miles by river from Newcastle. A branch line 4 miles in length, connects the township, joining the Great Northern Railway at East Maitland. The navigation of the Hunter by ocean steamers is only practicable as far as this point, and it is this fact that mainly renders Morpeth such an important and thriving town. The greater part of the goods for the Northern Districts are consigned to this place, and it may be considered the shipping port for a large area of the Northern District. The droghers belonging to the steam companies convey the produce down the rivers to the Morpeth wharfs, where it is transhipped to the ocean-going steamers. The town and vicinity have a population of 2,500 souls, and boasts of a muncipality. The ratable value of property in 1876 was £88,284, and the revenue for the year £988 There are amongst the buildings a School of Arts, five churches and four schools. The Paterson, perhaps the most important of the tributaries of the Hunter, joins the main river at this point; and opposite Morpeth is found the pretty little township of Hinton. The country around Morpeth is chiefly agricultural, and is said to be the richest cultivable land in the Colony; and there is no prettier sight to be found in the district than that along the banks of the Hunter and the Paterson near Morpeth where the green fields, stretching for miles, may be aptly termed the garden of the Hunter. Unfortunately the lands here lie very low, and it has been the scene of many disastrous floods. Of late, however, the seasons have been good, and there have been no floods, consequently the district is in a very prosperous condition.

APPENDIX.

THE GEOLOGICAL FORMATIONS OF THE BLUE MOUNTAINS.

THE Blue Mountains of New South Wales have special interest for the geologist. In the precipitous ravines, and in the deep and widening valleys, are exposed, in splendid natural sections, some of the most interesting as well as important geological formations of New South Wales. Interesting are these rock formations as revealing momentous changes that have taken place in past geological times; and important as yielding, in some of them, vast deposits of mineral wealth—coal and iron.

Standing on one of the many ranges and looking down into the valleys which stretch out in various directions before us, we may see in their order of superposition, the different series of stratified rocks; indeed we may almost determine from the changing aspect of the land surface, from the flat-topped hills and precipitous cliffs, from the gentle slopes and steep inclines, the nature of the formations which give rise to such varied scenery.

From the crest of the range we now stand on is a perpendicular fall of more than 500 feet over a jagged cliff of yellow rock of the *Hawkesbury* formation; beneath which that thickly wooded steep declivity is formed of the *Upper Coal Measures* some 500 or 600 feet thick. Then descending we pass over 150 feet or more of sandstones and conglomerates belonging to the *Lower Coal Measures*, till we come to the bottom of the valley, and find the clear sparkling rivulet flowing over the hard shales and *spirifer* sandstones of the *Devonian* formation. In another valley we see suddenly rising up huge massive boulders of granite. Again, from base to summit, another range is clothed with a denser growth of vegetation than occurs elsewhere; the reason of this is, that a rich chocolate soil has resulted from the surface decomposition of a basaltic trap dyke, which has burst through all the sedimentary rocks, and in places overflowed them, as at Mount Tomah. Besides these formations there is yet another to be mentioned, the *Wianamatta Series*, which, though in the Blue Mountains it may only be found in occasional thin patches capping the *Hawkesbury* rocks, yet in other parts of the Colony attains a thickness of 700 feet.

We have therefore here seven different formations, which occur in the following order of superposition:—

Cainozoic or Tertiary—(*a*) Basaltic Trap.

Palæozoic or Primary—
- (*b*) Wianamatta Series.
- (*c*) Hawkesbury Series.
- (*d*) Upper Coal Measures (plant beds).
- (*e*) Lower Coal Measures (marine beds).
- (*f*) Devonian.
- (*g*) Granite.

(*a*) The *Basaltic Trap* may be seen in several parts of the Blue Mountains, as at Mount Wilson and Mount Tomah. Wherever it occurs the rich soil it produces supports a most luxuriant growth of vegetation—a harvest field for the botanist.

(*b*) The *Wianamatta shales* have little special interest beyond that of containing the remains of fossil fish, the *Palæoniscus*.

(*c*) The *Hawkesbury rocks* are seen in those rugged escarpments of yellow rock which form such picturesque mural precipices, as it were walling-in the valleys and cresting the ranges, and imparting such wild grandeur to the scenery. These rocks form *Govett's Leap*, over which the water falls perpendicularly 520 feet. This formation has also yielded a fossil fish—*Cleithrolepis granulatus*—obtained in a railway cutting over 3,000 feet above sea-level, by Mr. T. Brown.

(*d*) The *Upper Coal Measures* contain several seams of coal, the lowest, which is 10 feet 6 inches thick, is worked at the various Collieries in the Bowenfels district. Then there is the *Kerosene Shale* or Petroleum Oil Coal Seam worked in the Hartley Valley, below Mount Victoria.

Besides these all-important combustible materials, there are rich bands of brown hæmatite: this iron ore is now being smelted at Lithgow Valley. The fossils from the *Upper Coal Measures* are all plant impressions, of which may be mentioned the *Phyllotheca australis*, *Vertebraria*, *Sphenopteris*, *Conifers*, and *Glossopteris*; this latter is the most characteristic fossil.

(*e*) The *Lower Coal Measures* in the Western Mountains have no coal seams. Their chief fossils (marine shells) are the *Productus*, the broad-winged *Spirifer vespertilio*, *Euomphalus*, and *Conularia*.

(*f*) The *Devonian* beds form the lowest visible rock in parts of the Blue Mountains; they crop out in the bottom of the deep Wolgan Valley; but near Bowenfels they rise to a considerable height, and at Mount Lambie are over 4,000 feet above the sea-level, forming the south-west margin or lip of our great coal basin. The *Devonian* strata in this district I have ascertained to be at least 10,000 feet thick; they contain beds of sandstone full of *Brachiopoda*, chiefly *Spirifers* and *Rhynchonellæ*; the *Lepidodendron nothum* also occurs in the series. These rocks also yield extensive deposits of iron ore—the brown hæmatite and magnetic oxide of iron, and small quantities of gold.

(*g*) The *Granite* occurs chiefly in the valley of the Cox River, below Mount Victoria. It was in some of the granite debris near Hartley that the venerable geologist, the Rev. W. B. Clarke, M.A., F.G.S., F.R.S., discovered gold so far back as the year 1841.

The vastness of the depth and extent of the precipitous gorges and valleys of the Blue Mountains inspire one with feelings of silent awe and wonder, and impress the minds of some persons with the notion we hear so frequently expressed, that such enormous ravines in the mountains must have required violent convulsions in the earth's crust for their formation. But if we examine the rocks on all sides of the valley, we see no breaks nor signs of violent disturbance as suggested. The various beds of rock in horizontal strata may be seen to continue

uninterruptedly around the sides of the valley, and the succeeding layers of rock, as we descend one side of the ravine, gradually approach the corresponding layers on the other side, until at the bottom, in the bed of the watercourse, we find that they actually join, which they would not do if the sides of the ravine had been violently torn asunder. We perceive, therefore, that the various out-cropping strata must once have been continuous right across the valley or ravine, and that they have been removed by some agency without disturbance of the underlying beds. What then is this agency? Not *volcanic fire* but *running water*. Look at the sloping surface of any earth-cuttings or embankments that have been exposed to rain action; see the miniature ranges and intervening valleys that the water draining off it has furrowed out. Notice the miniature precipices left where the harder earth material has resisted the action of the running water, also at the bottom of the embankment, where the incline ceases and the water flows gently, how it deposits in miniature alluvial flats the earth it has scooped out and washed down from above. Now, could we look down from a considerable height, and, as it were, take a bird's-eye view of the Blue Mountains, exactly similar features would be presented to us as we observed in the earth embankment. Wherever the soft clay strata of the *Coal Measures* exist, there are sloping surfaces; where the harder *Hawkesbury* rocks appear, there are cliffs, while the easily disintegrated clay-beds have been washed away, even to undermining the over-lying sandstone. The latter has resisted to a great extent the denuding agencies and been left in projecting masses which, at last, having the supporting soft strata removed, break away and roll in great bosses down the sides of the hill, perhaps as far as into the bed of the stream below, a perpendicular cliff being left where they broke away from the main mass of rock. It may be objected that the effects of the present streams are not sufficiently powerful to have worked such changes; but then it must be considered that these forces have been operating through an immense period of time; and moreover that, in the later Tertiary epoch we have geological data indicating that this part of the Continent was subject to a much heavier rainfall; again, in the earlier Tertiary period a great portion of the Continent was covered by the sea. It was probably during this later epoch that these valleys first began to be marked out as the sea-water receded; and the subsequent draining off from the land of the rainwater gradually scooped out and deepened the drainage channels, till, after a vast lapse of time, they were shaped into the valleys as we now see them.*

* Contributed by C. S. Wilkinson, Government Geological Surveyor, L.S., F.G.S.

REMARKS ON THE FLORA OF THE BLUE MOUNTAINS.

As the traveller passes rapidly by train over the Blue Mountains, and catches here and there a glimpse of some stately tree or pretty shrub, he feels anxious to know something of the vegetation which meets his view.

Taken as a whole, the flora of the Blue Mountains, especially that part through which the train passes, is somewhat monotonous. The large orders *Myrtaceæ*, *Leguminosæ*, *Rutaceæ*, and *Proteaceæ*, are, however, well represented; but as the geological formation from Emu to Blackheath is for the most part of sandstone, there is considerable uniformity in the appearance of the plants. In the deep gullies where the sun scarcely penetrates, and in those places where the basalt rises above the sandstone, there is a marked difference in the vegetation. Graceful ferns, rare orchids, gigantic climbers, mosses, and lichens, abound in such spots; whilst the trees and shrubs differ materially from those prevailing in other parts of the range. Thus, for instance, at Mount Tomah, which rises 3,400 feet above the level of the sea, and also, to a limited extent, at Mount Hay (3,270 feet), and Mount King George (3,378 feet), where the basaltic formation lies above what the late eminent Geologist, the Revd. W. B. Clarke, F.R.S., termed the "Wianamatta beds," there is a striking peculiarity in the flora. At Tomah especially, such trees as "Sassafras" (*Doryphora sassafras*), "Light Wood" (*Ceratopetalum apetalum* and *Schizomeria ovata*), *Quintinia Sieberi*, and *Cargillia australis*, flourish in all their native luxuriance; whilst, amidst the dense foliage of the forest, or in the adjacent gullies, there may be seen epiphytal orchids (*Dendrobium* and *Sarcochilus*) and various species of ferns, including the splendid tree-fern *Dicksonia antarctica*, the climbing *Polypodium tenellum* and *P. scandens*, several species of *Lomaria* and *Asplenium*, and *Todea Fraseri*, one of the most delicate and admired of Australian ferns. Here also Allan Cunningham discovered the curious climbing rooting-stemmed *Fieldia australis*, a plant which adheres to the

Telopea speciosissima.
(Greatly reduced.)

trunks of tree-ferns and covers also fallen timber; and likewise a Jasmine (*J. simplicifolium*), which twines round the branches of trees. At the Kurrajong the cabbage-treen palm (*Livistona australis*), three species of tree-ferns (*Alsophila australis*, *A. Leichhardtiana*, and *A. Cooperi*), and *Panax Murrayi*, a fine slender tree growing to the height of 60 or 70 feet, and throwing out palm-like fronds, may be found closely associated together. Amongst the trees, which render the flora of the mountains interesting, the following may be mentioned, viz., the musk-tree (*Olearia argophylla*), the largest composite tree in the world; *Prostanthera lasianthos*, the only known tree of the Labiate family; *Atkinsonia ligustrina*, a terrestrial mistletoe; *Litsæa dealbata*, a fine tree of the Laurel family; *Alphitonia excelsa* of the Rhamneæ, a tall hard-wooded timber tree; *Elæodendron australe*, a graceful tree with bright red berries; *Olea paniculata*, a native olive; *Achras australis*, a fine tree, sometimes called Illawarra Apple, &c., &c.

As the traveller leaves Emu on his way to the Zigzag, he may notice on the mountain slopes several species of *Eucalyptus*, popularly known as gum-trees, iron-bark, blood-wood, and stringy-bark; but of these only one, the Mountain blood-wood (*E. eximia*), differs from the species near Sydney. The turpentine (*Syncarpia laurina*) occurs frequently, and also the tree called red-gum (*Angophora lanceolata*), both of which attain considerable size; and as the traveller proceeds, he may see two gums (*E. stellulata and E. coriacea*) and the mountain ash (*E. Sieberi*), which prefer elevated situations. To these also may be added three species of shrubby gums (*E. microphylla*, *E. stricta*, and *E. obtustiflora*), which form dense brushes on the higher parts of the mountains. Near Springwood, *Acrophyllum venosum*, a rare shrub of the Saxifrage family, was found by A. and R. Cunningham on some dripping rocks not far from the place where the railway now passes. This is an elegant plant with leaves in threes, and pinkish flowers in dense auxiliary clusters. It is described in the *Flora Australiensis* from Cunningham's specimens, and little was known of it for many years, until at length it was re-discovered by the writer of these remarks, and forwarded to Baron Müeller, the eminent Botanist of Victoria, for identification.

Boronia pinnata.

The flowers, which are most attractive on the way over the mountains, belong principally to the *Rutaceæ* and *Proteaceæ*. Of the former, some species of *Boronia*, *Eriostemon*, and *Corræa* are great favourites with collectors, particularly the "Native Rose" (*B. serrulata*), and the "Native Fuchsia" *C. speciosa*; of the latter, the "Waratah" or "Native Tulip" (*Telopea speciosissima*), the "Wooden Pear" (*Xylomelum pyriforme*), the "Honey-flowers" (*Lambertia formosa*), and numerous species of *Banksia*, *Grevillea*, *Persoonia*, *Hakea*, and *Lomatia*, appear in their protean character and present features of interest. *Symphyonema montanum* grows plentifully near the line between the Weatherboard and Blackheath, and here and there several species of *Conospermum* with blue or white flowers. Of the Myrtaceæ or Myrtle family, exclusive of *Eucalyptus*, *Melaleuca*, *Leptospermum*, *Calythrix*, *Bœckia*, and *Darwinia* are all represented by various shrubs or small trees; but *Backhousia myrtifolia*, *Tristania nereifolia*, and *Eugenia Smithii*, belong rather to the creeks and gullies, where also the rare straggling shrub *Palmeria racemosa* of the Monimiaceæ, and several climbers of the genera *Vitis*, *Sarcopetalum*, and *Marsdenia*, occur in wild profusion. In similar localities also the fine tree, called "blue-gum," rises above 100 feet and affords excellent timber for building purposes, such as scantling, battens, flooring-boards, and ships' planks. This species is now referred by Baron Müeller to *Eucalyptus saligna*. The Leguminous order prevails both in the gullies and on the ranges. *Gompholobium*, *Pultenæa*, *Dillwynia*, *Jacksonia*, and *Daviesia*, are all papilionaceous, and have yellow or orange flowers, whilst *Kennedya*, *Indigofera*, *Mirbelia*, and *Hovea* are of the same kind but with purple flowers. To these must be added many species of *Acacia*, which belong to another division of the Leguminosæ, and are very showy at certain seasons of the year. *A. elata* and *A. dealbata* are amongst the most admired species, but several of them yield a bark useful for tanning purposes. It is difficult in a short sketch to give an adequate idea of the extent and beauty of the mountain vegetation, or to particularise those smaller shrubs which abound even in the most unlikely soils. The Epacrids are very lovely, and in this part of the world occupy the place of

heaths. Some twelve species of *Epacris*, and many of the allied genera may be collected in different parts of the mountains. Of the Iris family, *Patersonia* and *Libertia* are very elegant with their purple and white flowers, whilst the lily family is represented by *Dianella*, *Arthropodium*, *Blandfordia*, and *Alania*. Some of the Goodenia family and several species of *Lobelia* are interesting objects for examination, but perhaps to strangers the grass trees, especially *Xanthorrhœa arborea*, appear amongst the most characteristic features of the mountain vegetation. *Veronica perfoliata*, which is considered to indicate the auriferous formation occurs near the locality in which the Rev. W. B. Clarke first discovered gold; and the little fern *Grammitis rutifolia*, which generally shows the proximity of granite, has been found in the same neighbourhood. Notwithstanding the exertions of enterprising botanists, much remains to be done in marking the limits of known species, and probably in bringing to light some which have hitherto escaped observation. Through the labours of *Cealey*, *Fraser*, *Sieber*, and the two *Cunninghams*, many of the most beautiful species on the Blue Mountains have long been known to science, and their specimens have been accurately described in the *Flora Australiensis*, the joint elaborate work of *Bentham* and *Müeller*, but the late researches of Mr. Fitzgerald, F.L.S., show that some of the tender and transient orchids have escaped observation. *Adenochilus Nortoni*, so named in honor of its discoverer Mr. James Norton, has hitherto been found only in one spot near Mount Victoria, within a mile of the railway; and from Mr. Fitzgerald's artistic illustrations of Australian orchids it appears that much is yet to be learned respecting the habitat and variations of the smaller kinds. The same remark is applicable to the cryptogamous botany of the mountains, for although the last volume of our Flora has given a fair outline of our ferns, yet the mosses, lichens, and fungi afford a wide field for investigation. These are abundant in some of the deep gullies and in the moist shady woods. A kind of *Sphœria (Pielus Swainsoni)* is known to exist at Mount Tomah, for it was found there some years ago by the late Mrs. Calvert, a lady who did much to illustrate the natural history of the Blue Mountains, and also recently at the Kurrajong by Mr. H. Selkirk, of the Survey Department. The prospect of finding something new therefore may serve to encourage naturalists in their rambles amidst the dark recesses of the mountains, and to cheer them with the hope of associating their names with the flora of a country which is destined to play an important part in the world's future history.*

Epacris longiflora.

*Adenochilus Nortoni.**

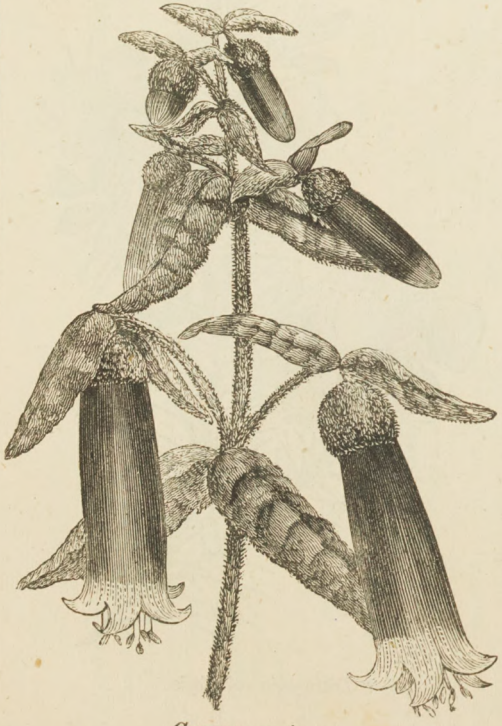
*From Fitzgerald.

* Contributed by W. Woolls, Ph.D., F.L.S., &c.

Boronia serrulata.

Xylomelum pyriforme.
(Greatly reduced.)

Dillwynia ericifolia.



Corræa speciosa.

Gompholobium latifolium.

Ceratopetalum gummiferum.

Boronia ledifolia.

Eriostemon salicifolius.

FERNS.

Pteris umbrosa.
Kurrajong.

Adiantum formosum.
Kurrajong.

Adiantum assimile.
Richmond.

Nemecium (sp.)
Kurrajong Heights.

FERNS.

Polystichum.
Pulpit Hill.

Doodia aspera.
Blue Mountains.

Lomaria procera (var.)
Mount Victoria.

Lindsæa linearis.
Kurrajong, South.

FERNS.

Lindsœa trichomanoides.
The Valley.

Asplenium polyodon.
The Valley.

Dicksonia antarctica.
Springwood.

Pteris comans.
Kurrajong.

FERNS.

Asplenium flaccidum.
Wentworth Falls.

Polypodium (sp.)
Mount Victoria.

Adiantum Cunninghami.
Lawson.

Cheilanthes tenuifolia.
The Valley.

FERNS.

Lomaria discolor.
Kurrajong.

Dicksonia antarctica (sterile).
Springwood.

Pteris tremula.
Kurrajong, North.

Gleichenia flabellata.
Wheeny Creek.

FERNS.

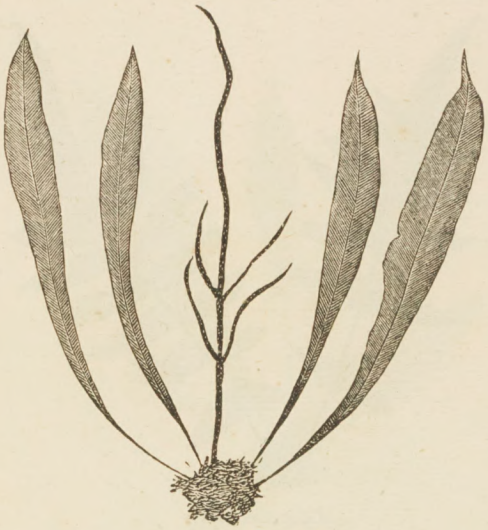
Adiantum hispidulum.
Wentworth Falls.

Lomaria (sp.)
Blue Mountains.

Polypodium billardieri.
Kurrajong Heights.

Disksonia (sp.)
The Valley.

FERNS.



Lomaria Patersoni.
Katoomba.

Davallia pyxidata.
Kurrajong Heights.

Todea africana.
Wentworth Falls.

Pellæa rotundifolia.
Lawson.

FERNS.

Aspidium (sp.)
Wheeny Creek.

Davallia dubia.
Pulpit Hill.

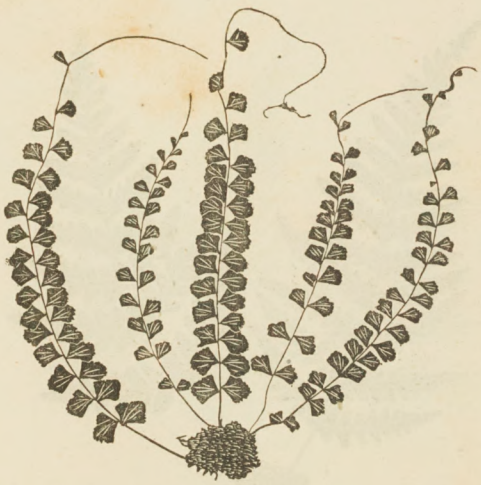
Todea Fraseri.
Katoomba.

Pteris incisa.
Springwood.

FERNS.

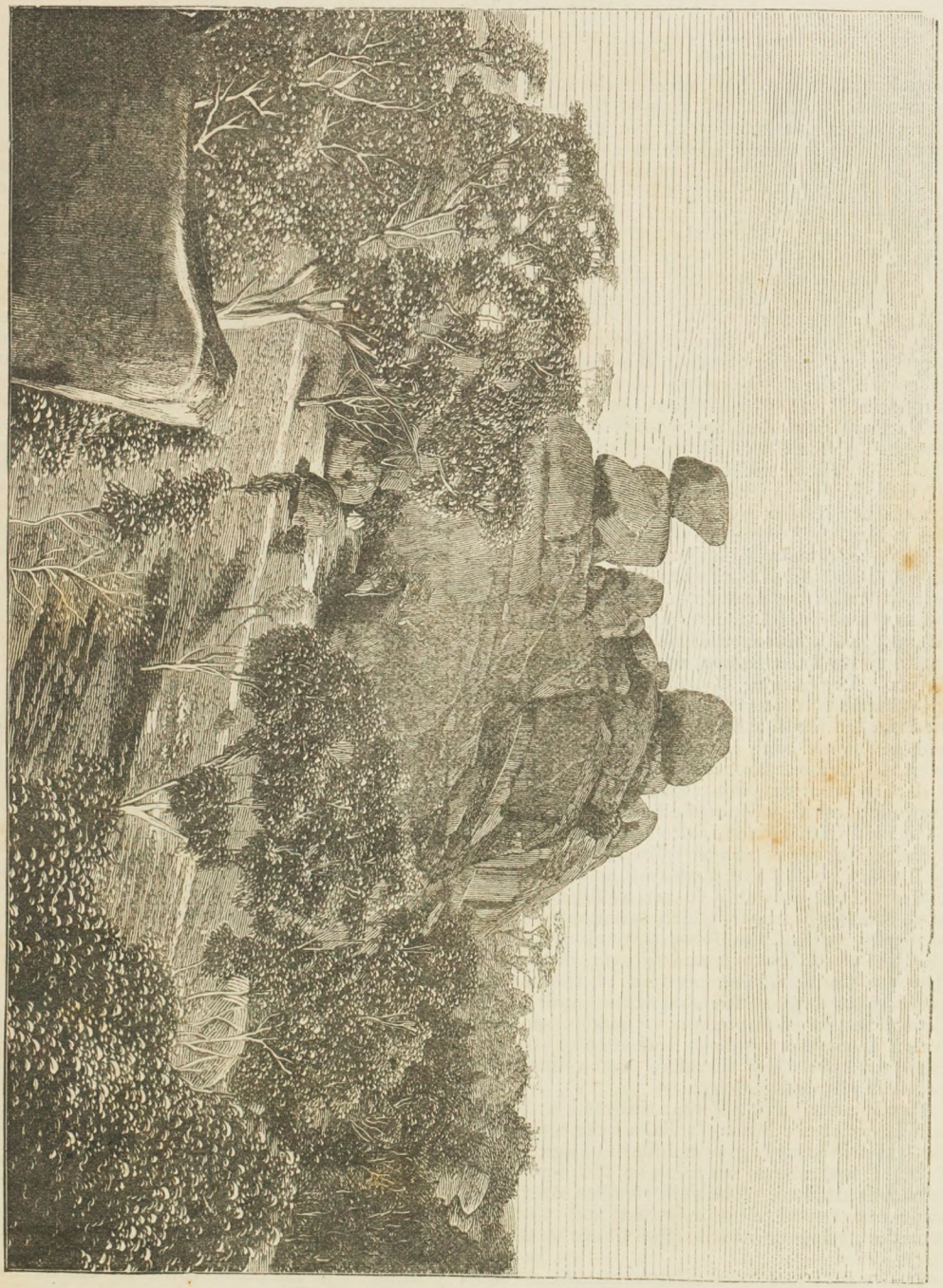
Hypolepis (sp.)
Lawson.

Gleichenia dicarpa.
Wentworth Falls.



Asplenium flabellifolium.
Mount Victoria.

Alsophila australis.
Katoomba.



EVANS' RIDGE, TARANA. (*See* page 73.)

THE FISH RIVER OR BINDA CAVES.

(By C. S. Wilkinson, L.S., F.G.S., Government Geological Surveyor.)

These limestone caves rank amongst the finest in the Colony, and as they afford some of the most interesting sights connected with the grand natural scenery to be obtained within accessible distance from the line of the Great Western Railway, it was deemed advisable in the public interests that an examination and survey of them should be made, not only to serve as a guide for the hundreds of tourists who yearly visit them, but also to ascertain what steps were necessary to be taken for the preservation of the caves, and for the convenience and safety of visitors.

The so-called "Fish River" or "Binda Caves," though only about 6 miles from the Fish River, are not on the falls to that river—a tributary of the Macquarie River which flows north-westerly to the Darling River—but are actually on the *eastern* watershed of the Great Dividing Range, and occur in a deep valley, which contributes its waters to the Cox River, an affluent of the Nepean and Hawkesbury Rivers which reaches the coast at Broken Bay.

The Caves are situated about 36 miles in a direct line south-east from Bathurst. But they are only about 35 miles by road from the Tarana railway station;* and though there is a well-made road from Bathurst *viâ* Oberon, tourists usually prefer the shorter route from Tarana, which also passes near Oberon. The greater distance, however, involved by taking the Bathurst road, is somewhat compensated for by the fine scenery to be obtained from the Macquarie Plains, the Fish River Valley at O'Connell, and the extensive view of the country, so diversified with plains and hills, to be seen towards the north when ascending the "Mount."

The road from Tarana is also not without natural objects of much interest. Within 2 miles from Tarana are some huge bosses of granite perched on the summit of the hill known as Evan's Crown. These remarkable rocks, which stand out very conspicuously amidst the forest-covered ranges, are splendid examples of atmospheric denudation. They are the remaining portions of the mass of granite that once surrounded them, and are the silent witnesses of the enormous denudation which eroded the present valleys and swept away that granitic mass: they therefore teach instructive lessons in physical geology.

Shortly after leaving Tarana the road crosses the Fish River at the Mutton's Falls Bridge, and then for 6 miles it ascends granite hills until an elevation of 3,511 feet above sea-level, or 950 feet above Tarana, is attained. The next 10 miles, over undulating country of silurian schist and sandstone formation, bring us near to the village of Oberon.

* There is also a good road to the Caves from Mount Victoria *viâ* Hartley and Bowenfells. This route has already been described by Mr. John Lucas, M.P., in his account of a visit to the Caves, which was published in the *Sydney Morning Herald*, June 5, 1863.

Just beyond this point, and where the road passes Mr. Charles Whalan's residence, there is a picturesque view looking down into the valley of the Fish River Creek. The grassy hills and alluvial flats here seen, afford rich pasturage, and mark the site of one of the earliest settlements in the district made about forty years ago.

If we except the scenery on the Fish River Creek and the Duckmaloi River (two clear running streams forming the sources of the Fish River), and the Great Dividing Range which is crossed at an altitude of 4,120 feet above the sea, there is little else than a forest of gum trees to engage attention, until the road suddenly comes to the end of a high range, at a spot called the "Top Camp." From this point looking towards the east a fine view may be obtained. Immediately in the foreground lies a deep valley, and in it, not a mile distant, are seen craggy masses of grey limestone, in which the caves are situated; beyond this the valley gradually widens, with wooded hills rising, as it were, one behind the other, up into high ranges on either side; whilst in the extreme distance appear the Blue Mountains marked with that horizontal line of yellow sandstone cliffs, which indicates the Hawkesbury sandstone formation overlying the Coal Measures. The finest view of the valley of the Cox (Kunimbla Valley), and one which cannot be seen from any point on the Blue Mountains, is obtained on the road from Hartley to Oberon, on the range leading up from the Cox River to Mount Binda. These are views instructive indeed to either artist or geologist.

From the "Top Camp," an excellent road has been formed down the side of the steep range to a running creek, where there is a small patch of level ground convenient for camping upon, just above the entrance to the Grand Archway; the actual descent in this distance is 1,200 feet, and we are here 2,450 feet above sea level. This creek—"Camp Creek"—is a south-western branch of McEwan's Creek, which latter comes from a north-westerly direction.

Only about 50 yards above their junction these creeks emerge from two large archways or natural tunnels. The arch, known as the "Grand Arch," under which the Camp Creek flows, is 450 feet long, from 35 to 180 feet wide, and from 40 to 60 feet high; its width and height vary according to the irregular projections of the sides and roof. On the floor are scattered here and there huge fallen masses of the limestone rock, some of the exposed surfaces of which have been highly polished by the traffic over them of wallabies and other wild animals, and exhibit fine sections of the fossil corals and shells of which the limestone is composed. It is not uninteresting to reflect that the limestone, now a compact grey marble, was once a mass of living corals, "stone lilies," and mollusks, revealing the former existence, in the Siluro-Devonian epoch, of conditions of marine life somewhat resembling those which support the beautiful living forms which build up the

reefs in the coral seas of the present day; and it is significant of the vast changes that this part of the surface of the earth has undergone, when we see fresh-water streams, at an elevation of several thousand feet above the sea, now flowing through rocks that were originally formed beneath the waves of the ocean at a very remote period of the earth's history. These silent rock-teachings give additional charm to the many interesting features of these caves.

The floor of the Grand Archway is in some parts of red earth, the thickness of which has yet to be ascertained. The above-mentioned worn and polished edges of the rocks indicate that, for a long time, this cave has been the resort of wild animals, and probably of man also, whose remains will doubtless be found here. Masses of breccia occur in places, consisting of large and small pieces of limestone and other rocks cemented together with carbonate of lime. Thin veins of nitre, or saltpetre, occur in this breccia, and also filling crevices in the solid rock of the walls. This nitre has been chemically formed, by oxidation of the ammonia given off during the decomposition of the excrement of animals. Nitric acid is thus produced, which, combining with some of the potash and other alkalies present in the earth and rocks, forms an impure variety of saltpetre.

There are several small chambers leading off from this Grand Archway, such as the "Bacon Cave" and the "Dormitory"—an opening high up in the eastern wall, in which visitors generally camp at night; but these are of minor importance. After very heavy rains the water of the Camp Creek flows through the Grand Archway, but at other times it disappears from the creek bed just above the upper entrance, passes through some unknown underground channel, and comes out again in the bed of the creek a few yards below the lower or north-eastern entrance. This entrance is much larger than the upper one and consists of a lofty and wide arch. Its dark gray roof and walls, with the huge fallen masses of rock piled irregularly on the ground, present a very imposing sight, especially when the early morning sun enters, and lights up the dark rocky recesses. There are very few stalactites in this cave.

The other great arch is the "Easter Cave," formerly called the "Devil's Coach-house." This is also a long natural tunnel, and through it the McEwan's Creek flows. It is of considerable height in its northern portion, but towards the southern it is divided, as it were, into two stories. The upper one forms a fine and spacious cavern; and on the western side there is a recess in which are some fine stalactites and stalagmites of very grotesque forms. Near these is a large and deep circular opening in the floor, of which visitors should beware. From the centre of the cavern an ascent is made by a wire rope-ladder to a height of 37 feet on to an overhanging ledge where there is a narrow entrance into another cave, known as the "Bell Cave," which, on the left hand, about 60 feet towards the south, has a wide opening on to the side of the hill; while on the right, a long narrow passage leads off to the "Belfry"—a small chamber in which are five or six singular stalactites hanging close together. These stalactites, when struck, give out sonorous musical tones resembling a chime of bells. In this cave there is an interesting thin stalactite, reaching from the roof to the floor, and of almost uniform diameter throughout its entire length. From the southern entrance a pathway steeply ascends the side of the range, and, before reaching the summit, passes under the Carlotta Arch, a beautiful natural arch, about 60 feet high and 40 feet wide, having its span ornamented with stalactites. It forms a narrow bridge connecting two prominent portions of the rugged limestone ridge which, like a huge stone dam, extends across the Camp Creek and McEwan's Creek valleys. One high point on this ridge is called the Pinnacle, and forms a conspicuous object in the landscape; its large craggy masses of white and grey limestone, with the various kinds of trees growing amongst them, give it a very picturesque appearance.

The limestone forms a belt from 200 to 400 yards wide, extending almost directly across the main valley; and we thus see that the two principal creeks which drain the valley, instead of cutting down this barrier of limestone during the erosion of the valley, found it easier to excavate subterranean channels for their waters, and so formed these natural tunnels.

The erosion of the present valleys took place chiefly during the Pliocene Tertiary epoch. There is no reason therefore why we may not expect to find in the loam and gravel deposits in the caves, remains of the Diprotodon, Thylacoleo, and other extinct animals of the Pleistocene period, together with the earliest traces of man on this part of Australia.

The limestone is of Palæozoic Siluro-Devonian age, and interbedded with strata of sandstone and shale; its strike is north 5 to 10 degrees west. Amongst the fossils which it contains are the genera *favosites*, *cyathophyllum*, *heliolites* and *othoceras*, besides *crinoids* and *bivalve shells*, too imperfectly preserved for identification.

Near Camp Creek, about 10 chains above the caves, an intrusive mass of porphyritic greenstone occurs between the limestone and shales; the latter are very indurated in the vicinity of it.

Mr. Charles Whalan states that the caves were discovered about the year 1841, when his father, the late Mr. James Whalan, and two mounted police, were in search of the notorious bushranger McEwan, whom they captured in a small hut not far from the caves.

The Lucas and Elder Caves are described as follows by Mr. Lamont, H. G. Young, C.E., F.G.S., Geological Surveyor, who, with Mr. Cambridge, surveyed them:—

The Lucas Cave, as will be seen by the plan, is the larger; the entrance to it is situated on the east side of the belt of limestone that runs in a north and south direction through the surrounding country. The entrance of the cave is spacious, but narrows almost at once, and then opens out again into a very large chamber. As the Lucas Cave is principally composed of a series of large chambers, connected by narrow passages, a description of this first one will apply to the others, which have all

CARLOTTA ARCH, FISH RIVER CAVES.

ENTRANCE TO LURLINE CAVE, FISH RIVER CAVES.

the same characteristics, more or less modified. The caves were at the time of our visit exceptionally dry; and from the stains on the stalagmitic formations and the scarcity of forms undergoing accretion, it would appear that in places some time has elapsed since the period when active growth was taking place. The limestone seems to have been quite washed out of situ, and carried to considerable distance before being at all liberated from solution, as but few stalagmites, and scarcely any stalactites are to be seen; only here and there are exceptional stalagmites, generally of very massive form, but still quite dwafted by the height of the roof above them. Round the walls however are numerous fringes and mantels of carbonate of lime, "curtain stalactites," and from their banded appearance when viewed by transmitted light, it is evident they have been deposited in long thin lines, and not as the pointed varieties by drop accretions; this would not be at all singular were the different coloured bands strictly horizontal or of unequal breadth throughout as then it would be easy to imagine a line of dependent moisture slowly depositing the lime it held in solution, but these bands are often in places quite vertical, gradually rounding off at their lower extremity, and of equal breadth throughout their entire length. For this appearance it may be supposed that the growth of the mantel is very slow, and that the edges were never laden with water, but merely moist. The various tints of the bands is doubtless due to the greater or less amount of iron held in solution by the water at different periods.

The floors of these chambers are more or less covered with blocks of limestone, often of considerable size, that have fallen from the roof and sides, and have afterwards been wasted, and cemented together by carbonate of lime deposited from percolating waters. In many places the ground is covered with a red clay-like substance, and in one instance, namely the Bride's Chamber, there is plainly to be seen an infall of red clay of extremely plastic nature, coming in from above, where it has doubtless been accumulated in some older fissure. Occasionally one meets with evident deposits of bat-droppings. At several spots, high above a man's height, are to be seen old water-lines, so strongly marked, that it is certain the level of the water must have remained constant for considerable periods of time. In the lowest portion of the Lucas Cave there is a pool of exceeding clearness; it appears to have little if any flow, and several experiments we made gave no satisfactory result.

The well-rounded but small entrances and exits to these larger chambers, the absence of proportionally large stalactitic growths, the waterlines high up on the wall, the large blocks, and fine mud on the floors, and the still pools in the lowest portions of the caves, all seem to show that these large chambers have been the successive reservoirs of pools of water, which while lying in them have rapidly deepened the chamber by taking up the limestone forming their bed into solution, at the same time that they heightened it by the water creeping into the natural joints of the rock, and causing large blocks to fall down from the sides and roof. As the lime-laden waters gradually found their way through those portions of the rock (forming their basin), which were most easily attacked, they must have enlarged these, and finally reached some fresh portion of the limestone deposit, in which, whether from its being less easily attacked, or some other reason, a fresh chamber has been formed.

In many places the floors of the chambers and galleries give a hollow sound on being tapped, and a proper inspection of these might lead to the discovery of organic remains. In reference to this it might be interesting to note the successive deposits laid open in the celebrated Kent's Hole Cave, near Torquay, Devonshire, England. "The cavern consists of a number of branching chambers of various shapes and dimensions. The complete succession of deposits from above downwards, is: *(a)* fallen blocks of limestone, cemented by carbonate of lime; *(b)* dark mud, chiefly composed of decayed vegetable matter (black mould); *(c)* a layer of granular stalagmite; *(d)* charred wood, &c. (black band); *(e)* cave earth; *(f)* crystalline stalagmite; *(g)* breccia. The series is not always so complete as is here stated; but wherever all the deposits are found in one and the same vertical section the order of superposition is clear and invariable, and elsewhere the succession, though defective, is never transgressed.

"The highest beds contain bones of animals still living in Devonshire; but when we reach the granular stalagmite, we come across the remains of animals which are no longer found in Britain. Here we find hyæna, rhinoceros, bear, lion, and a host of other animals, and with them the remains of man. In the crystalline stalagmite and the breccia the remains are often exclusively those of the bear, but occasionally bones of the lion and the fox occur. Here, too, remains of man are found, but his implements are of a decidedly ruder type than are those found in the hyæna beds above."*

There appear to have been two distinct periods during which stalactitic growth formed; one of comparatively remote age, and very local in character, being chiefly confined to the caves known as the Lurline and Bone Caves, and another but recent, and still in operation. The older growth is essentially of a stalactitic type, and the stalactites are remarkably thick; though, in one or two cases, as in Chamber No. I, a huge stalagmite is to be seen. The newer growth exhibits every fantastic and beautiful form known, from the thin hollow reed and transparent veil, to the snow-white dome stalagmites, the crystal-fringed pool, the wave-lined floor, and the crooked-fringed shapes that are turned in all directions.

Though on the plan the chief features of the caves are indicated, it is very possible that many other places exist of a size worthy of being represented, for the sides of all the chambers and galleries are lined with numerous cavities and cracks which might easily lead to large apertures, and even chambers. It is in these small crevices, and in some of the passages, that the newer growth above referred to is taking place, and as it is of a more

* Extract from the President's Address, British Association (Section C).

brittle and much whiter character than the older and more massive deposits, the official guide should pay particular attention to its preservation ; a small and beautifully white stalactite is much more attractive as a specimen than a portion of an old yellow one (that it takes two men to girth) ; and that such is the universal opinion is in places very practically demonstrated, still, as a whole, the contents of the caves have been properly respected as regards appropriation, though in many places the most beautiful of the growths have been sadly disfigured by having names written across them. It may be suggested that in one or two spots, removed from any stalactitic growth, spaces be reserved where those visitors who wished might inscribe their names.

In the cave known as the Bone Cave fragments of bones have been found. But the special bone, to which the guide Wilson generally calls attention, is so covered with a stalagmitic growth that it is impossible to say whether it is a bone or not. The Bone Cave, as before remarked, and the caves in its immediate neighbourhood, have a distinctive character, that is, they are splendidly draped and pillared by massive stalactites, and sheets of stalactitic growth. On the floor of this cave, which is the one in which Mr. Hart took his admirable photographs by the magnesium light, is a peculiar woolly-looking growth—tufts of carbonate of lime, so to say—which appear to cover an earthy deposit.

The prettiest spots in the Lucas Cavern are the Bone and Lurline Caves above mentioned. There is a pretty group in the Bride's Chamber, and though it is very small the forms are various and very perfect. It is in the neighbourhood of this spot that a profusion of the transparent hollow reeds and curling finger-like shapes are to be seen. Not far from the Bride's Chamber, and before coming to it, there is a place where, across a deep cleft, is to be seen a large white mantel, most beautifully folded. On leaving the chamber from which the Bride's branches off, there are, on the right hand, some fine sheets of stalactite, that can be lit up from behind and thus made to show their semi-transparency. Close to the entrance of the gallery leading from the first large chamber there stands an enormous stalagmite that is worthy of notice. Another spot that is unique in its way is the end of the passage that leads from the Bone Cave, where there are some very pretty pillars.

The entrance into the Elder Cave is on the crown of the ridge, about 70 yards north-west of the Carlotta Arch. This cave is highly interesting, as it is filled in places with a pebble drift of the most varied kind; the pebbles differ in size from ¼ of an inch to 1 foot in diameter ; they are in places covered with a deposit of carbonate of lime, and are cemented together very compactly by the same material. Some consist of quartz, granite, quartz porphyry, Lydian-stone, slate, and sandstone. The bottom of this cave is very difficult of access, but the drift is seen to be at least 30 feet thick. This drift should certainly be prospected. Near the bottom of this cave are some very white stalactites and stalagmites.

The sides of all the caves, where free from stalactitic growth, were much corroded, though not in the groved manner exhibited by the limestone where exposed to the rain ; they gave one the idea of having been kept constantly covered with a film of water, and doubtless the moist atmosphere of the interior of the caves, when they contain pools of water, is favourable to such a state. In many places numbers of fossil coralline forms stand out from the mass of the rock, no doubt from being less easily dissolved by the carbonic acid in the water, and in one place where there was a wallaby track occurs a most highly-polished surface of rock, it is almost startling to observe how crowded with fossil forms it is. This rock would make very ornamental and interesting paper weights, &c. If visitors wanted a souvenir of the caves they could desire nothing better than a piece of this beautiful rock, of which there is a boundless supply, and which can be so easily worked up into articles of virtu.

It is a difficult task to name the points of special attraction in these caves where there is so much both to interest and please; the more so perhaps as the relative excellence of a series of forms of beauty must always be decided by individual taste ; still one might point to the Easter Cave, as perhaps the most beautiful, as it certainly is the grandest. This cave too, possesses the double advantages of day-light, and an easy access ; and derives no small part of its charms, from the contrast between the wooded hillside, that is seen framed by one of the massive arches, which give this spot its grandeur ; and, the stalagmitic depositions which have been profuse, and which, whether as the pinnacled column of stalagmite, or the gracefully folded "curtain stalactites," and the boulders covered with ripple marks, that reflect a thousand jets of light from the facets of the crystals forming their surface, combine to form an harmonious and pleasing picture. At one moment the vastness and silence under the dome fix the attention of the observer on the mute but beautiful forms that Time has slowly amassed under it ; at the next the wild song of the lyre-bird re-echoes through the vault and draws the eye to the sunlit forest slopes without.

And here it is perhaps not out of place to trace some steps in the course of Time that are forcibly presented to us ; what a circle in the laws of nature is suggested by this scene : First, the decaying vegetation of some ancient forest is invisibly distilling the gas known as carbonic acid ; then a storm of rain falls, clearing the air of the noxious gas, and distributing a thousand streamlets of acid water over the surrounding country, and which as it drains off, not only wears the rocks it passes over, but dissolves them in minute quantities, especially such as contain much lime, and then, laden with its various compounds flows off to the distant sea, where reef corals, lying in fringing banks round the coast are slowly obsorbing the lime from the water around them, and building the fragile coatings that protect them during life : Slowly as the land sinks the coral bank increases in height, for

INTERIOR OF LUCAS' CAVE, FISH RIVER CAVES.

M'KEOWN'S ARCH, FISH RIVER CAVES.

reef corals can only live near the surface of the water; and soon a considerable thickness has been obtained; while below the upper zone of live corals lies a vast charnel-house of dead coral coverings; then comes a change: suitable temperature, or some other essential condition, fails, killing out all the corals, and through long ages other deposits accumulate over them, gradually crushing and consolidating the coral bank into a firm rock. At last a convulsion of the earth's crust brings it up from the buried depth in which it lies, leaving it tilted on its edge, but still, perhaps, below the surface of the ground; rain, frost, and snow slowly removes what covers it, until it lies exposed again to the sunlight, but so changed that only for the silent but irresistible testimony of the fossil forms of which it is composed, it were hard to believe that this narrow band of hard grey rock was once the huge but fragile coral bank glistening in the bright waters with a thousand hues. And now the process is repeated; the decaying vegetation of the surrounding forest produces the carbonic acid, the rains spread it over the ground, which is now the most favourable for being dissolved, and the consequence is that the acid water saturates itself with the limestone rock, and whenever the least evaporation takes place, has to deposit some of its dissolved carbonate of lime in one of the many stalactitic forms, before it can flow off to the sea and distribute its remaining contents to fresh coral banks.

Thus the old coral reef melts away far inland, and the lime that formed the coatings of its corals is again utilized for the same purpose. What a simple succession of causes and effects, and yet before the circle is completed long ages of time have come and gone; and what a fine example of the balance between the waste and reproduction that takes place in nature.

The huge arches under which the streams flow, and the airy span of the Carlotta Arch, cannot fail to excite the admiration of all observers.

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Sydney: Thomas Richards, Government Printer.—1879.

A&B *Holes from the surface into Easter Cave*

G&H *Holes in the floor of Crystal Cave being entrances into Wilkinson and Imperial Caves*

C "*Lurline Cave*"
D "*Bone Cave*"
E "*The Creek*"

**At this point the water of McEwan's Creek comes out from under a rocky ledge and joins the waters of Camp Creek*

McEWAN'S CREEK

SILURIAN SHALES

AND SANDSTONES

Easter Cave

Lucas Cave

Grand Archway

Very Rocky

Rocky Escarpment

Cambridge's

Old Track from Fish River to Caves

New Road to Caves

Zig Zag

MASSIVE

CRYSTALLINE LIMESTONE

SHALES

SANDSTONES

AND

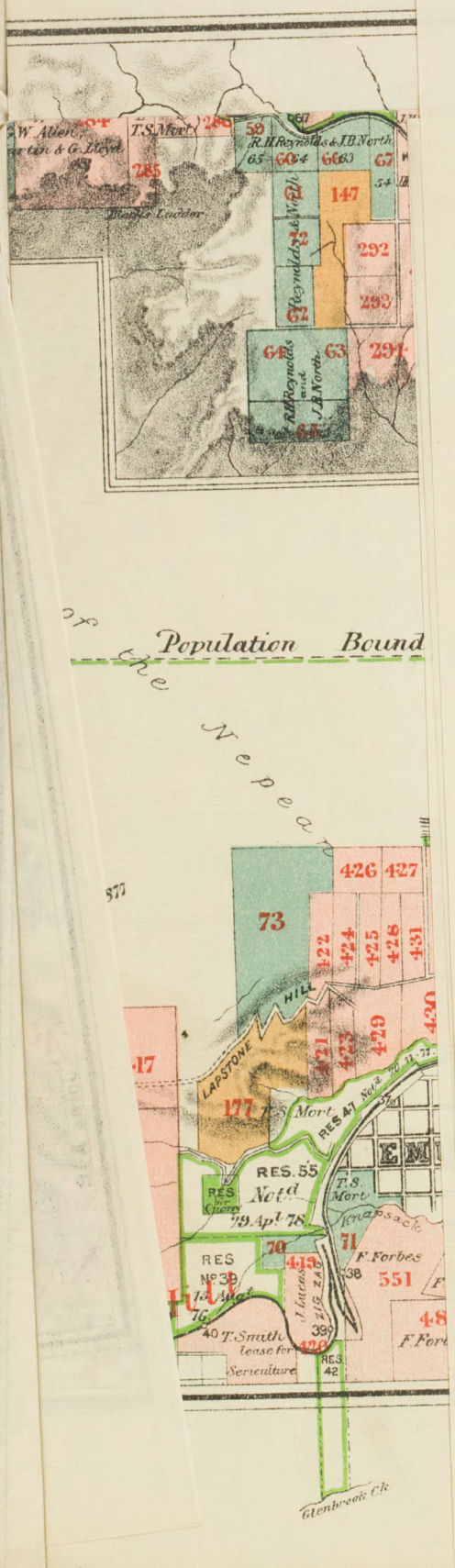
SURVEYOR'S

PLAN
OF THE
FISH RIVER OR BINDA CAVES
COUNTY OF WESTMORLAND

Compiled from Surveys made under the direction of P.F.Adams Esq.[r] Surveyor General, and C.S.Wilkinson Esq.[r] L.S. F.G.S. Geological Surveyor in charge.

Scale of Chains

Drawn by H.A. James, Department of Mines, Sydney, August 1879 under the direction of W.S. Campbell Esq.[r] Chief Draftsman


W. Allen
T.S. Mort
R.H. Reynolds & J.B. North
285
Bangle Loader
147
292
293
64
63
294
R.H. Reynolds and J.B. North
65
Population Bound
426
427
73
422
424
425
428
431
HILL
LAPSTONE
177
T.S. Mort
RES. 55
Notd
RES
No 39
70
71
F. Forbes
551
T. Smith
lease for
Serreulture
RES. 42
Glenbrook Ck

TOURISTS MAP
SHOWING THE
GREAT WESTERN RAILWAY
OF NEW SOUTH WALES
Crossing the
BLUE MOUNTAINS
FROM THE
NEPEAN RIVER TO BOWENFELLS,
ALSO THE LOCALITIES & NATURAL FEATURES OF GREATEST GENERAL INTEREST IN THE VICINITY OF THE LINE AND THE PRINCIPAL MEASURED LANDS.

The Natural Features have been taken mainly from Plans and Sketches made by Mr Surveyor Govett in and about the Years 1831-2.

Scale 1 Mile — 1 Inch.

Compiled by E. Du Faur

Drawn on Stone & Printed by S. T. Leigh & Co. Sydney

RES. 50 Notified 20th May 1878

THE GREAT ZIGZAG

Notified LITHGOW VALLEY 1st Granting 1876

MOUNT CLARENCE

Tributaries of the Cox River

Tributaries of the Colo River

Bowen's Creek

The Haystack

Mt Tomah

Road to Mt Wilson

Road to Richmond

Bald Hills

MOUNT BELL

Grose River

Bells Line of Road

Tributaries of the Grose River

HEADS OF THE GROSE

THE VALLEY OF THE GROSE GORGE

MOUNT HAY

MOUNT KING GEORGE

Wollangambe Creek

MOUNT WILSON

Farmers Creek

HASSANS WALLS

BOWENFELLS

LITHGOW

ESKBANK

HARTLEY

Jack Whites Ck

Cox River

Meadow Down

HARTLEY VALE

Measured lands of the New South Wales Shale & Oil Company Limited

RES. 48 Notified Augt 8th 1877.

and other Proprietors

DARLING CAUSEWAY

MOUNT VICTORIA PASS

MT VICTORIA

RES. No 41 Notd 25th Aug 1876

Mt Piddington

Victoria St

Bells Line of Road

Vacant Crown Lands lying between the Grose River and the Cox River

THE KUNIMBLA VALLEY

Kunimbla

Blackheath Creek

Canbenang Ck

Canbenang River

To Little Hartley

COVETTS LEAP

WATER RESERVE No 29 Notd 28th Mar 76

RESERVE for water supply to Sydney & Suburbs No 30 Notified 7th Dec. 1875

WATER RESERVE No 32 Notified 10th May 1876

RESERVE No 13 Notified 25th January 1870

Rugged broken Country

Watershed of the Nepean

Bathurst Road

Emu Plains

Lee One Tree

Railway Line and the

Population Boundary of Emu Census 1871.

Population Boundary

To Sydney

EMU

NEPEAN RIVER

Johns R.

NOTE

The portion of Map below the Double Line is intended to join on to Upper Portion as shown by letters A. B.

The Darker Shading illustrates the more remarkable Gorges and Cliffs, the Lighter Shading the broken but comparatively table land between them.

NOTE

Freehold and tinted thus	Special Purchases tinted thus
Mineral Leases and M.C.P's	
Conditional Purchases	
Volunteer and Orders	
Vacant Land	

No notice to be taken of the names or areas on Plan. Reserves edged & tinted Green.

(Errata, Blocks Nos 65 & 6 should be Pink being "Freehold")

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The railway guide of New South Wales : (for the use of tourists, excursionists, and others) : a convenient volume of referen