

soon come on the scene, and that we may at an early date have a few more mines working and yielding the return in the same ratio as the Broken Hill Proprietary has done and is still doing. Speaking of this mine, it might not be out of place to say that it has been working for the last five and a half years, and I am correct when I say there are very few mines in the world that have a plant equal to it; it has cost the Company the large sum of £364,456 19s. 5d., for this they have all the modern appliances that can be had, and the best men obtainable. They have paid the enormous sum of £2,152,000 in dividends, and the working expenses for one half-year amounts to £131,796 7s. 9d. It requires no words of mine to show you that there is an enormous amount of money drawn from the bowels of the earth. If it is essential with a magnificent property of this kind to have the best men and all the best appliances, the argument holds good in smaller concerns. Let us take another view of mining. We will turn to a mine which has boomed upon the Sydney Market, and is only a matter of eighteen hours travelling from the city: I allude to the Mount Costigan, in which the Directors, under the advice of their manager, have spent no less a sum than £80,000 in purchasing and erecting plant and opening up the mine, and to-day the whole thing lies dormant and valueless to the shareholders. Not that the mine is valueless in the true sense of the word, but the capital has been spent injudiciously, and the machinery bought not suitable for the work required. How different would it have been if a competent certified man had had the control of so valuable a property. It is things of this kind which prevent people putting their money into mining properties, and often induces them to say harsh and ungenerous words about directors, who in reality are guided by honorable motives, but are led into the mire by incompetent managers. Whilst on the subject of mining, the thought strikes me that at an early date an effort is to be made to establish the manufacture of iron and steel in our midst. To have an industry of this kind started here is of vital importance to the people of

Australasia, and who would be more pleased to see it flourishing than the members of the engineering profession. I have carefully weighed the circumstances surrounding the building up of this industry, and I fail to see that it can be a financial success, yet I am willing to admit, that I may not have all the information which may have been obtained by those who are making an effort to bring it about. As you are aware, one of our citizens is in England to-day for the purpose of completing the transaction, and it will indeed be a red-letter day for New South Wales if he succeeds in his mission and erects a plant of machinery capable of supplying the wants of the Colony—the many thousands of tons of steel rails, bar and plate iron brought into this Colony, to say nothing of the prospects of building our own ships should the works be established. I feel satisfied the event is worthy of the strongest effort being made to commence the industry, and the people to whom our worthy citizen is making application know far better than we do the enormous outlay in establishing works of this kind, and they know it is essential to get a return equal to a fair interest on the money expended. If those who are piloting the scheme can see their way clear without assistance from the Government, I must admit it is more than I do. In one of our Engineering Papers, dated January, 1891, which speaks of the Iron trade of Middlesborough, we are told, “that the Iron industry is doing little or nothing, and many have closed their works in consequence of the low prices existing. The ruling price of bar iron is £5 17s. 6d. per ton; ship plates, £5 10s.; steel plates, £6 12s. 6d.; steel rails are quoted as low as £4 17s. per ton, and the usual discount of  $2\frac{1}{2}$  per cent. is allowed from these prices.”

Gentlemen, you are practical men, you have had a fair amount of experience in your workshops with the employment of labour; you know the home markets; is it possible under existing circumstance? Or do they mean to reduce wages to the same rate as rules in the countries of Europe, or do they

mean to seek assistance from the Government? With the price of labour ruling in Australia I maintain it is impossible to manufacture iron when we have the whole world to compete against; however, if the industry can be started, every one of us here will do our very best to help them over their difficulties, and the man who succeeds in laying the foundation of this industry in Australia should be looked upon as a public benefactor.

Speaking of wages brings to my mind the very great difficulties that have existed during the past year caused by a misunderstanding between capital and labour. It is indeed a sad event when a difference arises between these two great factors. Labour without capital is comparatively valueless, capital without labour must diminish. We had many weeks of turmoil and trouble, which has created consternation and distrust in the minds of many who were investing money in different industries in the Colonies. It is only natural that these events should cause capitalists to be careful in investing in industries, and it is to be deplored that we have not yet arrived at a basis by which means the relative positions of capital and labour could be distinctly and definitely laid down. There is evidence that the Government seem disposed to render all the assistance they can to ascertain the cause of these differences which have arisen, and it is to be hoped that the Committee which at the present time is sitting will complete their work satisfactorily, and formulate some scheme by which means strikes can be obviated, and thus the public will derive a benefit from the action of the Government in appointing this Committee. At the close of their labours, no doubt the hands of the Government will be strengthened to such an extent as to enable them to introduce a Bill that will prevent for many years a recurrence of the late disturbances in the labour market, for how injurious it is to the manufacturing community and the general public that strikes should take place, first because it prevents capital being employed in opening up industries and employing the

masses, and, second, it creates an unpleasant feeling in the minds of both parties, one distrusting the other and looking upon each other's actions as though they were antagonistic and tending to a breach of some understanding already in existence. I don't mean to assert that the employés should accept every suggestion or offer made to them, as labour is their capital, and the labourer has a just right to do the best he can for the interests of himself and family. It has struck me that if a Council was formed consisting of a number of members—the Government appointing so many, the employés so many, and the trades so many—whose duties, by Act of Parliament, would be to deal with all questions arising, their decisions to be final in all matters coming before them. I am quite willing to admit that, although I have made an expression of opinion, I don't intend at the present time to elaborate it as many details would have to be gone into, and the whole Council would have to be guided and governed by Act of Parliament, imposing a penalty upon either side who declined to coincide with the judgment given. This is a vexed question, and one that is worthy of the consideration of every right-thinking man. Education is doing a great deal for the masses, and it is only reasonable to expect that every man will have a desire to rise, and that the race for position will be keen, and we can arrive at no other conclusion than that the fittest will survive. There is no denying the fact that for some time past there has been a great movement in the labour bodies throughout the world. We can hear in every part of England, Germany, and France—it matters not of what nation you read, labour difficulties are in existence, and it is a question which is agitating the minds of the most enlightened men of the earth, and one that can not be passed over lightly; it must receive the most careful consideration and adjustment, so that the nations can live and progress, and civilization advance. It has been written by some very eminent men that the kindred associations in connection with strikes are very active in every sense, that they

are in correspondence all over the world, distributing pamphlets in all languages, and men are especially appointed to visit various countries, use their influence and encouragement to carry out the ideas formulated with the object of changing the position of the working man. I trust the views of these men will never be realised in Australia, for they go so far as to say that the various schemes which are formulated are actuated by a Socialistic feeling. May we in Australia work out a scheme enabling the Trades Unions and the Employers' Unions to work together in harmony, the Labour Councils endeavouring in the event of any misunderstanding between capitalists and themselves to effect that equitable and peaceable solution of all difficulties, so that commercial difficulties and depression in one of the brightest lands the sun shines on may be a thing unknown. I have somewhat digressed from my path as originally intended, but in reviewing occurrences and circumstances surrounding them there is a tendency to allow one's mind to be carried further away into the distance than is warranted in writing so short a paper as this. It is a question that volumes might be written on and mankind benefitted.

I will refer once more to the proceedings of our Association. In the earlier part of my address I intimated that Mr. Smail had read a valuable paper on "Sanitation," there is no doubt it is one of the important matters deserving the consideration of all scientists and men who fill responsible positions and are accountable for the well-being of the people. Much has been said in our Civic Council and written in the press with reference to the best system of treating the refuse of the city. We have had some antiquated ideas laid before us, but I think the views that are held by most of the officers connected with the Sewerage Department are in accord with my own. We have had able exponents of conveying the refuse to sea, but it requires no very keen foresight to conclude that it would be simply distributed again upon our foreshores, creating a greater nuisance than before. The pre-

vailing opinion of many men, who have given the matter consideration, is that the only practical system is cremation. We have several furnaces at work in various parts of the world and we have the whole of the statistics as to the value of the plants, cost of maintenance, and the returns from them, in fact everything to guide the practical man when dealing with this question; unfortunately for our citizens, the civic body are unable to arrive at any definite plan to destroy the refuse. We have amongst us, one of our own members, who has by dint of perseverance succeeded in designing and constructing a plant which does remarkably good work, and, comparing cost in the first instance, results in the second, with the absence of any effluvia from the works, one would think that these would be sufficient evidence to induce our civic fathers to grasp the idea promptly and relieve the citizens from so great an incubus. Mr. Smail's paper I have said is worthy of consideration by every alderman in the Colony, and he deserves very great credit for the amount of time he has bestowed upon the various appliances for benefitting humanity, and I trust the aldermen of this city will soon see the necessity of doing something permanent for the purpose of destroying the refuse by cremation, and allow the ideas Mr. Smail has suggested to be carried out more extensively than they are at the present time. As a rule civic bodies are not proverbial for promptness, everything requires vast consideration, great arguments and many meetings before any definite conclusion is arrived at; even then I could forgive them if, when a decision was arrived at, it was carried out promptly and well. The question is often asked, when will the Electric Lighting of the Town Hall be completed? It is very many months since tenders were accepted, and I am informed the machinery is erected and ready for work, but there are circumstances surrounding it, over which the civic authorities have control, which have so far prevented the work being completed. One might ask, if it takes so many months in a city like this to erect a plant of machinery to instal a building like the Town

Hall, how many years will it take to erect an installation for lighting the whole of the city? However, if in this instance they are slow, we trust they will be sure.

I wonder what they would do with such a plant as that being constructed at Deptford, England. The dynamo and engines are calculated to be the largest ever made; the shaft for the dynamo was forged out of an ingot which weighed eighty tons, and when finished measured thirty-six inches in diameter. It is also estimated that when the motive power is in full play it will indicate twenty-three thousand horsepower. Facts such as these will make engineers ask, What will be the future of electricity? We have some of the greatest minds in the world concentrated on this great question constantly bringing forward some new idea by which means it can be made more useful to mankind.