



## PART II.

---

## PAPERS.

---

12TH MARCH, 1891.

---

### ADDRESS BY THE PRESIDENT.

MR. A. D. NELSON.

---

IN taking the chair to-night for the purpose of opening the twenty-first session of this Association, I have to thank you for the honour conferred in electing me as your President for the third year in succession. I must admit I have felt that there are members who could fill the position with greater advantage to the Association than I do, having more time to devote to the presidential duties, but since it has been your pleasure to re-elect me I will do my best to carry out in the future the duties which devolve upon me, as I have done in the past, feeling satisfied that I shall have the support of the whole of the members and the experience of the Council to guide me in matters of importance to this Association, and I feel sure the harmony which has existed in the Council during the past year will continue in the future, making it more a pleasure to attend Council meetings than a duty. In passing I must express my thanks to the Council for the unremitting attention to the duties they had undertaken, as a rule prompt in attendance, at all times careful in conserving your interests, and the existence of perfect harmony at our meetings, without which it would be impossible to conduct the business of the Association satisfactorily.

The Association has reached its twenty-first year, all the uncertainties of infancy and childhood have been safely passed, and it has grown into the full strength and vigor of manhood, thanks to the earnestness of purpose and good judgment which has been bestowed upon it by those who from time to time have held the reins of management. We have some of the members with us to-night who were amongst the original founders of the Association, and it must be a pleasure to them to see the result of their labours, to know that on the foundation which they laid twenty-one years ago a structure is being built to collect the scattered interests of the engineering profession, to disseminate knowledge, and to benefit mankind in general.

During the past year you have had the opportunity of listening to eight papers on various subjects, some of which elicited keen discussion, and from which members will have obtained considerable information; not alone from the papers read or the discussion which follows is information derived, you must admit that there are benefits which come from personal contact, the quiet interchange of experience and thought, the good opportunity to observe other men's ideas; even the few convivial events which take place during the year have a tendency to brighten the more serious hours of labour and extend our personal knowledge of each other—a very important matter in an Association of this kind, for I maintain we cannot do too much in our efforts to extend our knowledge of each other, and open avenues by which strangers who come amongst us may feel their privileges are equal.

I have said that various papers have been read before the Association, and I have shown you that from the individual efforts of one member we all derive knowledge; but there are members amongst us who attend regularly, and must derive knowledge from the papers that are read and the discussions which ensue, yet, I regret to say, they fail to see the necessity of strengthening the hands of the Council by reading a paper on

C  
mechanical or scientific subjects. I have been asked "Why do you not produce papers worth listening to?" Now, I think, members will admit that the papers read before this Association will compare favourably with kindred Associations, more especially when we take into consideration the small amount of engineering work done in the Colony compared with other parts of the world, and I think it an error to assume that the efforts of members who read papers before us are not appreciated. If there are members who rank higher in engineering knowledge than others who have not yet read a paper, I can assure them that the Council will grant them every assistance in their power, and I will ask members to consider that the continued success of the Association rests on their readiness in producing papers which disseminate knowledge amongst us, criticising papers read, and regularly attending the meetings. We have many young members who should begin to make their mark in the Association. We know there is ability amongst them, and with the wonderful improvements in the conditions which favour the increase of knowledge, the Council are justified in expecting papers from them. Books of reference current literature, and other means of reporting the progress that is made in engineering and science are easily obtained, these will render vast assistance to the man who has not the confidence to read a paper based on his own practical experience. To-day the printing presses of the world are busy with productions from the minds of the greatest engineers. The professional journals are kept supplied with contributions from the world's brightest workers and deepest thinkers, whilst the transactions of kindred societies fill the book-cases of professional men, and furnish valuable works of reference to the qualified engineer and stepping stones to fame and fortune to the rising generation. I trust members will see the necessity of strengthening the hands of the Council, for without their aid it is impossible for the Council to maintain the high position we have now reached.

I will now briefly summarise last year's proceedings. In April last, Mr. Seymour Wells forwarded a paper to the Council on "The prevention of damage to river banks by flood water and the regulation of river channels," a very interesting subject, and one of value in a colony like ours where the rivers in the interior are so liable to flood.

At the May Meeting, Mr. Van de Velde read a paper on "Van Rysselbergh's System of Electric Lighting," which created a very lengthy discussion, many of the members expressing a desire to become better acquainted with the machinery and system adopted. I am informed Mr. Van de Velde will have a plant of machinery on Van Rysselbergh's System in the Colony at a very early date, when I trust the members of this Association will have the pleasure of examining it.

At the June Meeting, Mr. Fischer read a very important paper on "Electric Traction." This question has occupied the minds of many engineers, consequently it created a very interesting discussion.

10th July Meeting was occupied in discussing Mr. Fischer's paper. 17th July, Mr. Smail read a paper on "Sanitary Engineering," and "The Public Health," which was a very valuable production, and one that the members of Municipal Councils would do well to peruse.

The August Meeting was occupied by listening to a paper by Mr. Walter Reeds, on "Delta Metal."

The September Meeting, Mr. Angus Mackay read a paper on "Clays used in dams, embankments, &c.," which was chiefly devoted to the clay used in the construction of the reservoir dam at Prospect. It was of very great interest to the members, as the cause of all the difficulties which had arisen since its completion were made clear.

We had several outings during last session, visiting works of interest to members. In this portion of the year's proceeding there is evidence that the members do appreciate the efforts of the Council to find food for the mind. While speaking on this

question, I will take the opportunity of thanking the Proprietors, Directors, and Managers of the different works we have visited, for their unremitting attention and desire to explain all their modern appliances and labour-saving machinery. I am sure members will re-echo my sentiments when I say that, had we been large shareholders in the different companies we could not have secured more attention. Unfortunately for this Association, the number of places of interest to the engineer is limited, consequently the social gatherings cannot take place as often as the Council desire, knowing the beneficial effect they have on the members.

Turning from the Association, and taking a glance at what is being done by the Government of the Colony for the purpose of increasing the facilities for educating the rising generation, we must all admit that great credit is due to them for the liberality shown to the educational question. At the present time the Government are building a new Technical College at Ultimo, expending no less a sum than £100,000. Here, it is the intention of the authorities to teach every branch of trade, giving the youth the opportunity of becoming efficient in his trade or profession, and so fit him to take his place in the walk of life he is intended for. But, whilst I appreciate all that is being done for education, I consider it is the duty of the Government to carry out suggestions that are made from time to time by men whose experience and integrity places them in a position to advise the Government. I trust they will at an early date take one step further in advance, and make technical education compulsory, by compelling all youths who are serving an apprenticeship to attend the classes held at the Technical College, thus the youths would be kept off the streets at night, and the knowledge they would acquire would make them useful members of society; and whilst the Government are making provision for extending the system of education, I hope the subject of Metallurgy will not be forgotten, for it is very important that our youths should be trained to treat ores, assay,

and learn the rudiments of mine-managing; it would open up a new avenue for them and cause the public to have more confidence in this branch of industry. Keen competition would arise amongst our young men for the high positions which are at times available, which would act as a stimulus to gain the highest certificates. It would save many hundreds of thousands of pounds of the people's money, if one had reliable men to report and advise speculations before investing. With the experience we have gained in this branch of industry, and with the knowledge that there are numerous so called refractory ores in the Colony, a wide field is open for the student to find out the best means of overcoming the difficulties which have caused many valuable properties to become worthless.

I am disposed to think that mining is one of the most important industries we have in the Colony. No doubt every one of you, more or less, has had experience in mine-management, or rather I should say in finding capital for others to work and manage, and I will undertake to say that the majority here to-night, through their experience in mining, have lost confidence in that very important industry. Why should this be? Is it because the mines are no good? No, it is because, in too many instances, you have employed men who knew nothing of the science of metallurgy. These men come from all parts of the world, their chief asset being a carpet bag full of documentary evidence of their ability as metallurgists and mine-managers. We take them by the hand and place them on our mines, give them our cheque book and allow them to play ducks and drakes with the capital we have subscribed; besides all this, for his own special benefit, we give him a salary of a thousand a year, for which he devotes a few hours occasionally in writing a report to please the Directors, and help him to keep firmly in his position so long as there is any cash left to draw.

Why is this? Simply because we have no personal knowledge of their practical experience or technical knowledge. We are bound to take their documentary evidence and patiently wait

results. I don't mean to infer this is always the case, for we have some good men connected with our mines, but very often we are obliged to place confidence in a man we know nothing of, and after he has squandered all our capital, we conclude we have not had the right kind of man to manage. My desire is to show that if we have men springing up amongst us of whom we have certain knowledge, or of whom we know where to apply for accurate recommendations, it would assist us in obtaining reliable good men, and would give the public a large amount of confidence, and induce them to develop the mining industry. I think you will agree with me, that it is advisable for the Government to make provisions for and grant privileges to the rising generation in this line, which in time would return vast sums of money to the revenue, create traffic on our railways, cargo for the ships trading to our ports, and increase the wealth of the Colony to a very large extent. I would further suggest that every man who fills the position of mine-manager, assayer or metallurgist, should hold a certificate of competency from a duly appointed board, who would be qualified to judge as to whether the applicant has the knowledge necessary to control the under-ground workings of a mine, or to be able to tell correctly the component parts of the various ores, and manage the various kinds of machinery used in mining. It may seem that I am prone to ask rather too much, but you must not forget that it is essential for them to be trained and qualified before they are placed in the position to control large sums of money subscribed by the public, and the fact of men having passed the various examinations would be sufficient for the public to judge of their bona-fides.

What a magnificent opportunity there is in this Colony for some of our young men who have the energy, ability and ambition to aim at the position of mines-manager. The salary often reaches £800 to £1,000, and in large companies much more than this. If this was generally known, one would almost think it sufficient inducement; however, I trust a change will