



PAPERS.

10TH MARCH, 1910.

ADDRESS BY THE PRESIDENT.

MR. EDWARD J. ERSKINE.

In taking the chair to-night for the first time as your President, I have to thank you for the great honour done me in placing me in this position; it was with a good deal of diffidence that I allowed myself to be nominated for the position. The Engineering Association of N.S.W. has now opened its fortieth session, and this Chair has in the past been occupied by the leading members of the engineering profession in Australia, men of high attainment and standing in the community, many of whom were very able debaters, capable of joining in the discussions on the various papers submitted. I felt that the task of following these gentlemen would be beyond my powers, but had not the moral courage to refuse the great honour offered me, and I must now rely on the good will of all members of the Association to put up with any shortcomings on my part during my term of office, hoping that by strict attention to the interests of the Association, and throwing into the business the whole of my energies, I may be able to show at the end of my term that, at any rate, I have not done the Association harm.

During the year we have suffered loss, by death, of three members—Messrs. T. Ferguson, P. Hunter, and John Reid; the first two were elected in 1870, and were therefore original members of the Association. They have at all times taken a keen interest in the deliberations, and it is indeed a great loss to the Association. During the year also we have lost six members by resignation, and nine members owing to absence or neglect to carry out their obligations, making a loss during the

year of 18 members. As against that, 12 full members have been elected, and seven student members, and therefore our membership practically remains at the same position as last year. This may not be considered very satisfactory, and I regret exceedingly that our membership still remains at only just over 200; so perhaps one should look at the reason for this. (Plate I.)

In a community such as Australia, engineers are liable to move about considerably, and in going through the resignations, etc., that have taken place during this year I find that a number of them are due to members leaving this State. At the same time, we should use every endeavour to get eligible engineers to join the Association, and it is hard to understand why more do not do so. It cannot be that the subscription is too high, and I do not think that it can be a lack of interest in their profession; it is probably due to a want of realisation that this Association could, were it numerically strong enough, have a big influence on the future of the engineering fraternity—not necessarily of this generation, but of the generation to come. I would ask is there any profession that has done, and is doing, more for the benefit of mankind than that of engineering? Whether in time of peace or in time of war, the engineers are an absolute necessity throughout the world; and I hope that the time is not far distant when the engineers will be strong enough to insist on some legislation which would give an engineer that status to which he is equally entitled as his brother professionals, the doctors and the lawyers. But if this Association is to be in a position to make itself heard by Parliament, it must be strong numerically, and I now ask every member of the Association to use every endeavour to get eligible engineers to come up for election. I have heard one or two engineers give as their reason for not joining that they cannot attend meetings, owing, in some cases, to having

to work at night. The answer to that is that by becoming members they are furthering the interests of their profession, and that by reading the papers which would be issued to them they will certainly receive ample consideration for their small subscription.

The Engineering Association of New South Wales, in taking up this subject of legislation, should they decide to do so, will only be following the footsteps of other institutions, both here and abroad; and while I am fully aware that the present members have no possible chance of benefiting personally by this legislation, as it will take years to accomplish it, a start must be made some day, and if we are to be selfish and not do the preliminary work because we do not see immediate gain to ourselves, or those coming after us take the same view, then legislation will never be accomplished. But do we not owe it to ourselves to make the necessary start, so as to give our sons a better chance in life than we have had?

The name "engineer" does not to-day convey what it did some years ago. In the past a fitter was called a "fitter," a turner a "turner," an engine-driver an "engine-driver," and so on; but the tendency of recent years is for all these men to be called "engineers," and that, I suggest, is not conducive to raising the standard of the profession. I trust that the Association will pardon my dealing with this matter in this place, but I feel very keenly that something should be done, and done quickly.

That the engineer has at all times had a difficulty in making himself recognised by the authorities in a manner befitting his importance is, I think, an admitted fact.

Take, for instance, in the Navy. Until quite recently the engineer officer did not hold the same position in the wardroom as the navigating torpedo or gunnery

officer, whereas an engineer on board a man-of-war is surely at least as important, and has equally as difficult duties, calling for high technical knowledge and long practical experience to enable him to detect defects and rectify them promptly. The disability of the engineering officer in the Navy has now been, to a large extent, removed, an engineer officer now being able to rise and take titles, which gives him equal standing with the other officers, and it is interesting to note the remark made in 1903 by Lord Charles Beresford to the following effect:—

“The executive officer of to-day should possess an intimate knowledge of all that relates to his profession. Up to now he has been fairly educated in the different professions, the most important, however, in that we depend entirely upon it—that relating to steam and machinery—has been neglected; the duties of this branch have been delegated to, and are loyally performed by, a body of officers existing for this special purpose, and there have been two results—the executive officer has remained ignorant of one of the most important parts of his profession, the engineer officer has never received that recognition to which the importance of his duties and his responsibilities should entitle him.”

A remark like this from an officer standing so high in the British Navy shows that, even so far back as 1903, the engineer was acknowledged to be a high-class professional man.

The engineer who desires to enter the Navy has to go through an education at Keyham and Greenwich, which is at least as good an education as that which the executive officers have to go through.

It is interesting to note that in the early seventies

our Association took a keen interest in the establishing of Technical Colleges, and there is no doubt that it was largely through their efforts that the Colleges are so up-to-date as they are. This was not done in a year; it took many years of hard pegging before a satisfactory conclusion was arrived at; but we all know that now the Technical Colleges are established, and we know that one of our oldest and most esteemed members, Mr. Norman Selfe, is recognised as having practically been the Father of Technical Colleges; and, having mentioned Mr. Norman Selfe in this connection, I have to say that your Council have thought it wise to offer Mr. Norman Selfe a life membership in the Association, which has been accepted. According to our Rule 4, the Association have the power of electing as honorary members persons who have been eminent benefactors to this or some other of the Australian colonies. Up to now, the Association has been very careful in this matter, feeling that this honour, which is practically the only honour which they have to bestow on distinguished members, must be zealously guarded; but they feel that every member will be satisfied with the elevation of Mr. Norman Selfe to the rank of honorary member.

In dealing with the financial aspect of the Association as at the 30th September, 1909, it is apparent that we are not making much headway. We do not require to have a large balance, but it is apparent that we are sailing very close to the wind, and it will be my duty during my term of office to see if something cannot be done to cheapen the expenses of the Association. The main expense is that of printing, which is a serious item, and seems to be on the increase; it is difficult to see how this can be curtailed, but it is a matter that the Council will have to take into their consideration and make sure that there is no extravagance in the matter.

Recently a number of members made a visit to the Barren Jack Dam, and spent a most enjoyable and instructive time. Thanks to the courtesy of the Minister of Public Works, we were franked over the Goondah Tramway, and, owing to the kindness and consideration of Mr. Leslie Wade, Chief Engineer for Water Conservation, and his staff, members were able to grasp the vastness of the engineering enterprise, and to realise what can be done in the way of conservation for irrigation if a proper site is selected and competent engineers put in charge. The point, however, that appeals to me is that the whole of the huge undertaking has been designed and is being carried out entirely with local talent. There has been no necessity to go to the other end of the world to find engineers, not only with the ability, but with the pluck to carry out works of this kind, and the Government deserve congratulations on having that confidence in their officers which has warranted entrusting the work to them.

Who can say that when we have engineers of this class among us we are not entitled to the same respect as other professions?

Another thing that must occur to us is that if this undertaking at Barren Jack succeeds—and I have no hesitation in believing that it will—there must be other sites of a similar nature in other parts of New South Wales; and it behoves our Government not to be satisfied with this one undertaking, not to look too much upon it in the form of an experiment, but, even if they are not certain that the Barren Jack scheme will be profitable, so long as they are certain that it is going to irrigate a large tract of country, making land which, in the past, has been of questionable value into land on which good crops can be grown—if, I say, they are satisfied on this point, then let them waste no time in starting similar projects in other parts of the State, it

being apparent that every 100 acres so supplied with irrigation water must assist in getting the land settled in a more populous manner than is possible to-day. Then again, it has been said that, with large storage reservoirs covering acres of ground, the probabilities are that the rainfall will be improved, owing to the moisture given off by evaporation by these areas. If this rainfall could be improved in this way, then the State would perhaps lose the unenviable notoriety that it now holds for long droughts, and, could these drought seasons be done away with, then the most optimistic of the present prophecies as to the future of this great State would fall far short of reality.

Recently, also, members of the Association, by the courtesy of our Honorary Treasurer, were given an opportunity of seeing, in practical use, the Oxy Acetylene process of welding. This is a comparatively new process, and it is to the credit of Messrs. Zollner and Company, who are, as usual, in the forefront of engineering, and are doing such excellent work with this latest invention. Those members who were present at the exhibition were all much surprised at the facility with which the welding was carried out, whether it were a cast-iron flange or a malleable cast-steel pulley; the ease with which the weld was made and the solidity of same called for eulogistic comment.

The Minister for Labour and Industry having signified to your Council that he would like their views on the draft Bill prepared by the State Government for the inspection of land boilers, a Committee was appointed, and this Committee held ten meetings and carefully went through the Bill, comparing it with similar Bills in other States; and, seeing that the Minister has authorised payment to the Association to cover the typewriting and other expenses, it is fair to assume that he is satisfied that the work done has been of service to the State,

and I hope that this will mean that in the future, when matters of engineering importance are being considered, the Minister for Works will call upon this Association for assistance, and he may rely on members giving the very best of their ability to assist him on any engineering subject.

I am glad to say that our Students' Section still continues to be a success, the student members showing a keenness for which they are to be commended. There have been three outings, which have been well attended, and no less than eight papers have been read during the session, the papers showing considerable improvement on their papers in the past; and I am hopeful that in the near future we may find a number of our student members coming forward at our general meetings, and either reading papers themselves or discussing those read by their seniors.

The tendency of late has been to reduce apprentices—that is to say, that the Unions are urging that fewer apprentices should be employed. This, I think, is a fatal mistake on the part of the Unions, and must in the end cause trouble. If a man is not going to be able to place his boy as an apprentice, what is to become of the lads? I think it is a pretty well acknowledged fact that only a small percentage of boys placed as apprentices in the engineering trade stick to engineering in later life; consequently, in order to get sufficient engineers—and by “engineers” I am now using the generally accepted definition of the term, namely, workmen as well as professional men—we must have a great number of apprentices in the trade, so that the weeding-out process may continue as it has in the past, and still leave sufficient competent tradesmen. If, on the other hand, the Unions carry the day and only a small number of apprentices are allowed, does it not follow that these apprentices will have to be kept on and turned out as

workmen, even though absolutely incompetent and in the wrong walk of life for their inclination? The average who joins as an apprentice takes a considerable time to find out whether engineering is his forte or no, and if it turns out not to be, the sooner he gets out the better, both for himself and the trade.

That manufacturing is progressing, so far as New South Wales is concerned, is evident on every hand. The Lithgow Iron Works, which for some years was worked at a disadvantage owing to inadequate and obsolete plant, have, under the able hands of Messrs. Hoskins, shown us what can be done with local minerals, the iron and steel being turned out of Lithgow being, I believe, quite equal in quality and as suitable for most purposes as any that was ever imported, and we can rest assured that Messrs. Hoskins Brothers will not stand still; their name has been synonymous with progress and adaptability for many years, and, given industrial peace and good health, they are sure to show us that they are capable of producing many requirements, which, at the moment, they have not been able to experiment upon.

Then the Federal Government are about to install a Small Arms Factory at Lithgow—a most important matter for the welfare of the Commonwealth—and there is no reason why these small arms should not be manufactured equal to the best that could be imported, although, possibly, the expense will be a little greater; and while in most commodities to buy in the cheapest market is the best policy, in a matter such as small arms or ammunition for use when the country is in danger there can be no question of the advisability of being placed in the position to manufacture these things and not be dependent on oversea carriage.

Another step in which all engineers must be interested is the proposed Australian Navy. Here again, in-

dividuals may question the policy of the Federal Government in importing ships in parts, and having them put together locally, but I am not going to touch on the political aspect, being satisfied to see an experiment such as this carried out in Australia. It will probably tax our engineers considerably to actually build warships here, for many years, but, by having the experience of putting these ships together, their capabilities of going further will be so demonstrated as to be a guide to our legislators when further action becomes necessary, and it does seem that the method adopted will serve as a good education, and, unless it proves a very expensive one, I am inclined to think that the country will benefit in the long run.

While all engineers must be pleased to see any new factory start in Australia, manufacturing goods which up to now have been imported, it would be a great mistake for enterprise of this kind to be gone into hastily. Far better wait until the conditions and demand are such as to warrant the establishment of an up-to-date factory, than to start in too soon and make a failure owing to the demand not being sufficient to keep a payable factory going. I am not now referring so much to the loss of the individual or company, but more to the fact that every enterprise of this kind which starts and does not, within reasonable time, show a profit must have a tendency to prevent other industries which might be a success securing the necessary capital for the establishment of the factory; and it should, therefore, be the duty of all engineers called upon to give their opinion on the advisability or otherwise of starting a factory, not only to see that the raw material is available at a reasonable price and that the necessary skilled labour is also available, but to look into the commercial prospects very carefully and ascertain, beyond any reasonable doubt, that the scheme will prove a payable one.