

OCTOBER 9th, 1919.

PRESIDENTIAL ADDRESS.

(D. F. J. HARRICKS.)

To-night I reach the end of my third term of office in the honourable position of President of this Association, and, in accordance with time-honoured procedure, it is my duty to present something of the nature of an address to members.

It is difficult enough at any time to formulate something of real interest and of value, but, having already addressed you twice, it is with an added amount of trepidation that I do so again. I am, perhaps, wrong in using the word "trepidation," because I am, indeed, grateful to say that no action on your part has ever led me to feel anything but the greatest appreciation of the patient and helpful way in which you have received my humble efforts in whatever direction they have trended during the past three years; years during which the nation has lived under clouds of doubt and anxiety, the greatest of which is now happily lifted, the recent pestilence in a fair way to oblivion, and industrial unrest at least temporarily stilled.

It is a splendid thing, and shows the attachment members have for their Society, that during such a period of distraction the work of the Association has gone steadily on its way, and useful work been done in many directions. As has been the case for so many sessions past, members have to thank Messrs. McNamara and Thompson very earnestly for their unremitting attention to the business offices they have held with such invaluable service to the Association and so great honour to themselves. We can, fortunately,

look back upon a year of almost complete immunity from loss of members, and also it is pleasing to notice that the membership of the Association has been increased by 33 during the year, with the result that we complete our last year as an independent Society with a membership of 300. What with the influenza epidemic, and that other trouble which has, unfortunately, become of such frequent occurrence as to assume the proportions of an epidemic, it has been found impossible to carry out certain excursions that had been arranged, but it is hoped that with the more settled conditions now prevailing this important phase of our activities will be once more resumed.

Next year, gentlemen, as the result of your unanimous vote in favour of the Association becoming a foundation member of the new Institution of Engineers of Australia, the Engineering Association of New South Wales will cease to exist, and from a position of independence it shall merge into a body which it is confidently expected will not only carry forward its original objects, but will add to their scope a finer and broader interpretation, and furnish the power of a nation-wide organisation for their more certain fulfilment. It is singularly appropriate that it also happens next year, 1920, this Association will reach its jubilee. Fifty years in the life of a nation which is itself only 140 years old is a long time, and there is so much of interest in the history of the Association that I am sure members would desire to see in the closing records of its transactions a brief historical sketch of its career, and containing memoirs of the many engineers who, under circumstances far from propitious, founded and carried on the work of the oldest engineering institution of the Commonwealth; men who sincerely and sturdily supported the spirit of mutually dependent interests, and helped to lay the foundation of the greater movement which has now become neces-

sary. A committee is to be appointed to take up this work, which, I am sure, you will appreciate as a memento of your old associations. By referring to your old associations, I do not mean to suggest for one moment that with the change taking place in our constitution you are going to part with your old interests—quite the reverse, for they will be maintained in every important respect, and to them will be added the closer co-operation and friendship of the members of the other hitherto independent societies. During the past year, it is needless to remind you that the most important question which has concerned us has been with regard to

Amalgamation.

This word has been used to represent the movement for the consolidation of the Engineering Societies, and, although it might not be the best, it is the one which has been most frequently adopted and most closely expresses what is arrived at. Looking back over the past two years, it occurs to me that the keynote of my previous remarks to members might, in regard to this movement, be expressed respectively by the words “expectation” and “deliberation,” whilst tonight it is with the utmost gratification that one can refer to the movement by the word “realisation,” for on the first day of August, such an overwhelming majority of societies had decided to become foundation members of the new body, that all doubts as to its successful formation vanished, and there practically came into being The Institution of Engineers of Australia.

When addressing you last year, the first complete draft of the Constitution, dated 19th July, 1918, had been completed, and placed in the hands of the members of the societies throughout Australia. Although this draft met with approval on general lines, it was realised that in some important respects there was room for considerable simpli-

fication. A fourth draft was then drawn up by the Committee in accordance with the wishes of the members of the Provisional Council. At the same time, the Committee, bearing in mind certain suggestions by the Provisional Councillors, and after its own intimate association with the draft from the beginning, came to the conclusion that a still simpler plan of organisation could be devised, and they, therefore, decided to draw up an alternative draft constitution, which was dated 29th October, '18.

This in no respect interfered with the general principles of the original draft, and upon submission of it, together with the one drafted in accordance with the Provisional Council's opinions, the Committee's draft was practically unanimously approved, and, after a number of minor corrections had been made, the final proposed constitution, dated 13th March, '19, was sent to the societies in April of this year, with a request that a reply be sent to the Chairman of the Provisional Council by the 1st August as to whether they were prepared to become foundation societies of the new institution.* A record of this constitution should, I think, be printed in full in your transactions. It then became necessary for this Association to take up the matter individually, and, in accordance with our constitution, two special meetings were called upon lengthy notice, and with the highly satisfactory result that unanimous approval was expressed. The position at this moment is that in ten days' time the first meeting of the First Council of the Institution will take place in this room, and the following societies will be definitely represented:—

Queensland Institute of Engineers.

Northern Engineering Association of N.S.W.

Institution of Local Government Engineers, N.S.W.

Institution of Local Government Engineers, Queensland.

* See Appendix.

- Electrical Association of Australia, N.S.W. Section.
- Electrical Association of Australia, Victorian Section.
- The Engineering Association of N.S.W.
- The South Australian Institution of Engineers.
- The Western Australian Institution of Engineers.
- The Tasmanian Institution of Engineers.
- Sydney University Engineering Society.
- Melbourne University Engineering Society.

Up to the present time only one Society has definitely decided against coming in, but there is no doubt whatever that, even though the two which are still doubtful do not approve, the Institution will enter upon its career with assured strength, and will represent every State in the Commonwealth. It will, indeed, be a National Institution.

At the Council meeting to be held on Monday week, definite action in many important respects will be decided, and, if one may judge by the fine enthusiasm so far displayed, it is certain that after the inaugural meeting of the Institution we will be able to say that its course is "set fair," and that it remains with the engineers of Australia to give henceforth their enthusiastic service to the building up of an edifice worthy of so great a profession. Let each one of us continually study its aims and enter into its activities, especially during the early stages of its development, and we shall the more quickly attain to the position we should occupy as one of the most powerful forces or groups contributing to the progress of this great Commonwealth of ours. There is much work ahead, and it is as well that it should be so, for it is in the early, constructive stages of an organisation that the interest of the members should be deeply stirred, and just as we overcome the difficulties that may arise will we the more thoroughly enjoy the benefits that accrue.

Gentlemen, we are now members of a National Institution of Engineers, and it is important that we should frequently

ponder over what these words mean. Do they not call for the unfoldment within each one of us of a broader mind and a deeper consciousness of the change that must take place in our relationship one with another, with those in kindred professions, and, indeed, with all those who go to make up the community? Divisions within the Institution will probably be necessary for organisation purposes, but it must be our business to deliberately break down anything in the nature of a barrier which may tend to hinder the fulfilment of the objects of the Institution.

One frequently hears it said that the successful work of most institutions generally depends upon the enthusiastic work of a few, and such a statement only requires to be repeated often enough to assume, in some minds, the shape of an accepted condition. The important point is, however, that it is a bad condition, because the only way in which unqualified success can be obtained in any institution is by every member placing whatever ability he possesses at its disposal, and by devoting willing personal service to help carry into effect the corporate work of the body. I feel it is somewhat unnecessary to appeal to members of this Association in this regard, for we may fairly claim to have demonstrated a very general desire on the part of members to assist in the carrying out of those activities that make for progress. But if in the future there should develop a feeling that, because the Institution has broadened its ranks there is less necessity for individual interest, I would appeal to members to dismiss instantly such a thought from their minds, for, as already stated, the earnest support of every member is wanted, not only for the Institution's welfare, but for that in which it can be but a factor, the nation's welfare. We must constantly realise that whatever benefits the engineering profession ultimately benefits the nation. No one will suggest that the engineering profession is sufficiently elevated here in Australia, and

the members of it are the only ones who can, or will, undertake to improve it. Don't let us hang on to "organisation" and "increased status" as merely catch words, but let us at the same time that we give them their true meaning invest in ourselves the vitality necessary to bring the results hoped for from the movement into reality. It matters very little what we profess if we fail to practise that which will carry the Institution through to complete success. It is unnecessary for me to enter into detailed consideration of the objects of the new body, for of these I hope you are all well aware. You have expressed your approval of the whole scheme; it now remains for you to hold it high and continually in your thoughts, and to contribute by action to the creation of an Institution fully worthy of the honourable profession it will represent.

There occur to me the words of Matthew Arnold: "It is undeniable that the exercise of a creative power, that a creative activity is the highest function of man, and it is proved to be so by man finding in it his true happiness." There can be no doubt that just as high as we determine to create the standards of the new Institution, just to that height can we expect to raise them.

In very many respects we are fortunate in having standards already set for us by the great British institutions, and those of America and elsewhere, and it is satisfactory to find that the great majority of the members of existing engineering societies agree that by a movement approaching closely to complete amalgamation far greater strides towards the attainment of our ideals will come about than if anything in the nature of a loose federation only had been adopted. The distance apart of the centres of engineering society activity in Australia renders it necessary that if anything like uniformity of conditions is to be obtained a complete standard or constitution must be available at every

such centre to govern procedure. The very essence of the movement is unity. It is not enough that there should be simply improved co-operation between a number of small and relatively unimportant sections; there must be an absolute bond, so that all may act as one. We look for better technical work, higher standards of classification, and finer ideals for the ethics of the profession. Anything less than a well-ordered national institution would not, I am certain, ensure the attainment of these aims. We do not want to go just one better, as it were; we want to aim at perfection, even though it may seem a long way off. Unity for the profession means the creation of a radiating centre for the proper organisation of all members, the setting up of uniform conditions for the improvement, not of a small section here or there, but of the whole body, and if time shows that the constitution in any respect does not operate fairly for every division or section, then, if it is humanly possible, the cause for such ill-effect must be swept away.

It has been inspiring to those who have been privileged to be identified closely with the drafting of the constitution to find so much understanding of the difficulties besetting them in their efforts, and in this spirit lies the hope that a generally acceptable constitution will be gradually evolved without much difficulty or delay. That the details of the constitution as it now appears would stand no one expected, but in the process of revision I sincerely hope that none of those important principles embodying the spirit of unity will ever be displaced. To obtain our present need of group strength, nothing less than the complete inversion of the great majority of our old and limited functions is absolutely necessary.

The importance of the development in our professional status we are now carrying through is my excuse for once more referring to the matter so fully to-night. You know,

gentlemen, what high hopes are centred in the movement, and I know members desire just as earnestly as I do the early fulfilment of them. It is my firm belief, however, that there remains but one essential requirement to ensure complete success, viz., for each one to hold more continually in thought the objects of the Institution, and to consider it nothing less than a call upon our honour to devote active service towards its welfare, a welfare which I hope will come about by the elimination of every sense of selfish desire for the advancement of any one person or section of the Institution, the elimination of every act that will unfairly affect anyone outside the Institution; and I would urge that we should attain our ideals by holding fast to the thought that the basis of our efforts to improve our own conditions is but part of the aim of contributing to the universal good.

The Engineer's Place in the Community.

The recent world catastrophe was literally enshrouded with horrors, but whilst our hearts are full of thankfulness that the supremacy of right has been established over might, let us hope permanently, the war lifted the world out of a state of lethargy in very many important respects, and it is each one's duty to assist in the solving of the problems now presented. It appeals to men as our particular duty as an organised body of engineers to see in what direction we can contribute to the successful direction of the transition of effort from the service of war to the service of peace, plainly the most pressing problem of the hour. During the period of reconstruction, and after, all those who can influence in any respect whatever the trend of industry, should give their services freely, and should do their utmost to organise production more efficiently, to develop scientific management, simplify and cheapen transportation, and in the infinite other directions into which engineering enters

as an important factor. Everywhere in the civilised world to-day there are calls for the engineer to come out more into the open in public affairs, and assume a more prominent place in the regulation of those community interests towards which he now so largely contributes in thought and action, but which have hitherto been very largely left for others to convey to the public. It is not efficient that others who do not, and cannot, understand engineering problems should be entrusted to do the interpretation. The engineers themselves are very largely to blame for the existing state of affairs, but if it is a wrong state of affairs it is no use talking further about it; definite action should be taken to change it. Engineers have been too prone to consider their task complete when the purely technical work was done. It is surely reasonable that the men who have complete knowledge of the design, construction, and working of undertakings should, in most cases, at all events, be the most capable of managing them. It is admitted by most engineers that the work of their associations has hitherto been too closely confined to purely technical discussions. There is, however, a growing inclination to enter into the discussion of business and social problems, because it is becoming clearer that the engineers are most deeply concerned in the evolution of methods that will help to solve those particular difficulties that practically confront the whole world, and yet, withal, to maintain a dignified attitude as members of scientific bodies, which from its nature must be absolutely non-political in its general demeanour.

There is a great tendency for the engineer in a modest and, in fact, somewhat indifferent, way to be satisfied with his present position. If he did not enter so universally into the industrial fabric of a nation, and into its almost every need and comfort, it might not matter much; but he *does*

enter into these things, and it is impossible that the greatest efficiency will be attained if he stands at the gate of the users' field and delivers his work there to others to interpret more or less imperfectly. By no means can it be suggested that the representatives of the profession of engineering are to use the popular word "Profiteers"; in fact, there is no group of professional men who, on the whole, are so inadequately recompensed for their services. There is, however, I think, a growing recognition of the value of properly trained men, and it is expected this recognition will steadily increase as we demonstrate more fully the importance of the engineers' work. So long as a community can obtain the services of its engineers at a low valuation, and the engineer himself is satisfied with his state, who is likely to bother? And how can any change be expected? How often does one see a community or body intelligently set out to value the component parts of its service and voluntarily elevate the status of any section without that section forcefully presenting its case for recognition? But if we have a just complaint, the first thing necessary is to present an absolutely unanswerable case. We must, in the first place, demonstrate our efficiency, and then educate the community up to a proper realisation of the nature and universal application of the engineer's work. Engineering does satisfy the soul of a man, perhaps because his work is as near to creation as is possible for a created being, and I hope that the happiness that his work brings to him will never become tarnished by too great a sacrifice of ideals to material gains. There is certainly a happy solution to all things. I would reiterate that an important point for us is to see that we do not leave our work unfinished, and by this I mean undemonstrated and not interpreted for the use of the community. The only one who

can do this appropriately is the engineer himself, and in doing so he must enter into fields that he has hitherto held aloof from by far too great a degree. It is my intention to refer briefly to certain of these matters.

Australian Industry and Labour.

Wherever one turns at the present time he is confronted with urgent appeals regarding industrial progress, the development particularly of Australian industries, and the greater application of science to industry, all of which are, of course, correlative. Far be it from my intention to attempt anything in the nature of an analysis of these questions, even in the brief form which would be enforced by the time at my disposal. I merely propose to refer to them generally and briefly just so far as it appears to me to immediately concern us as engineers.

It is as well to remind oneself occasionally of the general dimensions of Australian industry. Of the primary producing interests you no doubt have a very fair idea, and, of course, no one could possibly overlook the importance of their being developed to the fullest extent.

In connection with the secondary or manufacturing industries, nearly £40,000,000 per annum is spent in salaries and wages. In Australia, £110,000,000 worth of raw materials are handled, and nearly £70,000,000 worth is added to the value in the process of manufacture. Nearly in the value in the process of manufacture. Nearly £5,000,000 worth of fuel is supplied to the production of heat, light and power, and nearly £90,000,000 worth of land, buildings, plant and machinery are required in connection with these industries. The extent to which the technically-trained man enters into the manufacturing in-

dustries is quite clear, but it must not be overlooked that in connection with the primary industries, the creation of implements for the cultivation of crops, machinery for harvesting same, and the means of transportation, have a tremendous influence on the cost at which these can be sold. The Prime Minister, only a few days ago, remarked that the only enduring prosperity which could come out of our efforts would be by proving that we could compete with the world and hold our own in manufactures. He was referring to the iron and steel industry, and the fact that the plant now being erected at Newcastle would be capable of producing 400,000 tons per year, enough practically to meet the whole of the iron and steel requirements of Australia.

At the present time a veritable Niagara of causes of and cures for industrial unrest is pouring upon us, but it is seldom that from the plethora of argument one can find much original thought; in fact, it would appear that in very many directions we would make greater progress in the problem if there were much less talking and much more deep thinking upon such questions. Few people have any sound ideas of the cause of industrial unrest, and within sane limits it is not the terrible evil some think. The very nature of labour is unrest, but damaging unrest will continue until a better understanding of principle fills the minds of those who have to share the fruits of industry.

No fault can surely be found with the man who wishes to improve his condition by learning and earning more; in fact, his desire is praiseworthy, and we shall one day come to realise that there is enough of everything we really require in the Universe for everyone to enjoy comfort and prosperity, so long as we seek to interpret correctly the laws

governing our supply, and obey them. So long, however, as the spirit lasts of one person, or body of persons, setting out to earn more to the unfair detriment of his fellow man or men, so long is it certain that trouble will be with us, but when this spirit is replaced by one of endeavour to improve one's condition along with that of one's fellow, then trouble will cease. Matthew Arnold said that "democracy was a force in which the concert of a great number of men made up for the weakness of each man taken by himself." It is necessary for us to fully realise that times have changed, that the war has set up new values, and these are universally higher than five years ago, and we have to determine how industry can proceed without strangling enterprise on the one hand, and without having to retain the present condition of insecurity on the other. Industry will reach its highest plane when the ideal sought by its effort is the national interest. The ideal seems to many to be afar off, but in any case we should in the meantime always be searching for a way to reach it.

The responsibility of engineers in everything pertaining to the improvement of industrial conditions should not be shirked; the universality of the application of engineering to industry makes it a national necessity that we should closely identify ourselves with the human as well as the purely technical aspects of our work. It is a reasonable thing, and a sign of progressive thought, that labour the world over should desire to be freed from many vocations which at present are unquestionably objectionable. It is to dispense with such unpleasant manual tasks that the engineer must devise more and more labour-saving machinery, and in this respect is it not a splendid thing that in order to commemorate the centenary of Watt, there has