INSTITUTE OF MARINE ENGINEERS

INCORPORATED.

SESSION  1898-9.

President—JOHN INGLIS, ESQ., LL.D.

THE PRESIDENT'S ADDRESS,

DELIVERED AT

58 ROMFORD ROAD, STRATFORD,

ON

MONDAY, JANUARY 23RD, 1899.

CHAIRMAN:

SIR WM. H. WHITE, K.C.B. (PAST PRESIDENT).

THE CHAIRMAN, in opening the proceedings, said: I am always ready to do anything to meet the wishes of the marine engineers. I desire to say that it is a pleasure to me personally to be present again to meet you and hear such good news about the working of this institution. I am sure that everyone who has any knowledge of the institution and the actual working of it from the beginning must be gratified to find that its scheme, which was considered with so much care by

its founders, has in practice realised such a complete success. I have been asking the hon. secretary how it stood as to members, and I find that there is steady progress still, although from the very nature of the case there must be some names falling off the list by death and from other causes, and from the very circumstances of the professional employment of many members of the institution, which involve risks which are not of a common order, while long absence from home must necessarily affect the attendance at the Institute; but it is extremely pleasing to hear that, under all these somewhat difficult circumstances, this institution continues to flourish and do good work. The responsibilities of its members are continually increasing; the necessity for all engineers being better armed to meet those responsibilities grows greater and greater; and as the years go on there can be no doubt that the influence of this institution will be felt more and more, not merely in adding to the knowledge and the capability of its members, but in influencing and perfecting steam navigation throughout the world. I have particular pleasure in being present to listen to the address by Dr. Inglis, upon whom I will now call.

THE PRESIDENT'S ADDRESS.

At the annual dinner of this flourishing Institute in October last an opportunity was given to me of returning thanks for the honour done me in electing me to the office of President, an office which has been held by men whose names and fame are celebrated over the whole world. I desire now to repeat my acknowledgments and to crave your indulgence if I should fail or come short in the fulfilment of any of the presidential duties.

The difficulties which almost everyone must feel in connection with a statutory address are in no way diminished in my case, but rather increased on account of this being the third I have been called upon to deliver before an audience mainly composed of engineers.

The choice of a theme is more restricted from my having previously dealt with subjects considered appropriate to those former occasions, and therefore excluded now. The time and place, besides, wherein we find ourselves, impose further limitations.

The year of Jubilee has long gone by, and with it vanishes all temptation to enlarge on the achievements in engineering science and practice during the eventful reign of Her Most Gracious Majesty. The urgent necessity for improved and more widely diffused technical education in this country has served as a text for so many harangues that one might well establish a claim on your gratitude by consigning that subject to the limbo of neglect for a time. In any reference made to it in the course of the following remarks I may appear somewhat heretical as regards the results which it is commonly expected and indeed almost guaranteed to ensure.

Let me not be misunderstood, I am not seeking to arrest attention by the cheap and easy method of running counter to generally received opinions.

Nothing could be further from my intention than the discouragement of any effort to improve the means of instructing the young, or even the elderly, among us. I rather hold that the acquisition of knowledge is in itself an end, the attainment of which will repay all our exertions; and I wish to warn against the expectations which may not be realised when that wisdom, whose price is above rubies, is sought for merely as an instrument for the opening of some imaginary strong-box which shall disgorge itself upon us in golden showers.

Pecuniary gain does not always attend superior mental attainments any more than prosperity invariably follows piety. Not only the wicked, but occasionally also the ignorant, flourish like the proverbial green bay tree. This, however, is no more an excuse for ignorance than it should be an incentive to wickedness.

About a twelvemonth ago, at the annual dinner of a kindred society, I was privileged to hear the eulogy of James Watt pronounced by the illustrious Lord Kelvin. We were then reminded of the often told tale of the jealousy of the trades guilds which hindered the young instrument maker from commencing business in his own workshop within the burgh of Glasgow; of the refuge afforded him by the venerable University, and of the work entrusted to him—the repair of a model steam engine belonging to the apparatus-room of the natural philosophy class—and of how, while engaged in this work, he was so fortunate as to conceive the idea of the separate condenser, the first of the long series of contrivances which make James Watt the most famous inventor in ancient or modern times.

While listening to the eloquent address of the great philosopher, this somewhat irreverent question would keep intruding itself: Why did not the professor of natural philosophy himself invent the separate condenser instead of the young workman from Greenock? James Watt, with all his industry and capacity, cannot have been the equal of the Professor in knowledge of physics, and yet, for one person who has heard of his patron, the founder of the Andersonian University, tens of thousands are familiar with the name of the author of the modern steam engine. This brings us back to the proposition, already faintly indicated, that we cannot produce to order a genius or an epoch-making invention by any process of culture yet discovered, and it is vain and unprofitable to feel discouraged if such flowers do not always

spring up to adorn the fields under our various systems of tillage.

When the benefits of superior technical education are being proclaimed, the usual object-lesson and example held up for our imitation is Germany. The usual argument is that the Germans are running us hard in the pursuit of gain because of their excellent methods of instruction and the wide diffusion of technical knowledge throughout the German Empire. And it is urged upon us that if we desire to hold our own, or better still, to increase our distance ahead of all foreign nations, we also must have improved and more generally accessible technical instruction.

It is of course indisputable that the industrial development of Germany has of late years been prodigious, and that she is now a serious competitor with us in departments of industry where, not so long ago, we did not meet her at all. When we find, concurrently with this development, Germany being covered with laboratories and technical schools, it is natural to conclude that the industrial awakening is the direct consequence of the extension of scientific teaching. And there can be no doubt that there is a very close connection between the two, especially in those industries of which chemistry is the science. But there are other causes actively operating in Germany to stimulate industry. Among them (1) the rapid increase of population, nearly half-a-million yearly, equal to about one per cent.; (2) the decrease in the number finding employment in agricultural pursuits; and (3) the unification of Germany politically.

Among the causes of success attending industrial operations in Germany, I am inclined to give an important place to the habits of discipline acquired by young men while serving with their regiments; and many of those who are familiar with the military system of Germany consider that the gain in efficiency resulting from service in the army outweighs much of

the loss sustained by the country from the want of the labour of those who are temporarily taken from civil pursuits for national military purposes. With regard to the effect of military discipline upon industrial progress, I have never heard it advanced that the recruit suffers any mental, moral, or physical deterioration on account of the instruction he receives in habits of order and respect for authority, and from my own observation I am convinced that the substitution of the drill-sergeant for the foreman would produce a most salutary and lasting effect on any youth who has the misfortune to be possessed by a belief that there exists nothing in the heavens above or the earth beneath worthy of his reverence.

Nor must we omit to take account of the diligence, patience, sobriety, and frugality of the German people in all grades of society, the comparative absence of a desire to live a life of ignoble ease even when in possession of a competence, and the indisposition of the poorest to be content in the midst of squalor such as is too common in the great cities of the United Kingdom.

I have alluded to the falling-off in the number of those employed in agriculture. This decrease amounts to about one-seventh of the agricultural labourers in sixteen years, and it is much deplored in some quarters as indicating an increasing dependence on foreign nations for the food supply which, of course, must be paid for by the products of German industry in machinery, textiles, etc.

We have heard a good deal about the decline of agriculture in our own country, and the critical position in which we are likely to be found in event of war on any considerable scale, and there is something not altogether unpleasing in the thought that Germany also is tending towards a condition which would make war an extremely disagreeable state of

things in connection with her supply of bread stuffs. Possibly the peace of the world may be all the better kept the more nations there are who cannot afford to contemplate war without the greatest anxiety as to the disturbance of trade currents lest starvation should ensue. But the more their attention is diverted from war the more likely are they to contend with us in commerce and manufactures.

There is no immediate prospect of our adopting any of the continental military systems, and there is no scope within this kingdom for a political change like what we have seen in Germany as the result of Bismarck's machinations. Influences, therefore, which may be powerful abroad are with us inoperative, but we shall be wise to follow and, if possible, better a good example wherever found by increasing the opportunities of instruction in this country as well for the intellectual development of our nation as for the additional efficiency of our industries.

It appears from an announcement made last September in the suburb of Paisley, by Lord Balfour of Burleigh, that we may confidently expect to have before long, in Scotland at least, a system of science schools which will have all the good points and few of the drawbacks of any previous scheme of instruction in the fundamental principles that underlie our modern industries.

With regard to education in Germany it must be conceded that a system which seriously impairs the eyesight of three-fourths of the students is not without its defects. It may be that the blame lies in the crabbed printed and written characters with which practical Germany afflicts those who study in that somewhat cumbrous vehicle of thought, the German language. Whatever may be the cause of the damage to vision, let us hope it is peculiar to the country where its effects are already recognised by the Father

of his people, the German Emperor, who in his own emphatic manner has called attention to them.

Is it credible after all, that, without some great awakening among us, this nation, within whose limits the steam engine was brought to its present stage of efficiency, is in actual danger of being overtaken and distanced in the practice of the mechanical arts by others who, having started late, are making up for their original disadvantages by devotion to theoretical studies and the adoption of scientific methods? I trust I am not over confident in believing we shall keep our place yet awhile, or that, if we should lose our present advantage, it will not be for want of enterprise or sagacity among our captains of industry or their unreadiness to seize upon and appropriate improvements and inventions from whatsoever quarter these may proceed. Nor do I believe that the uncontaminated British workman is excelled or even equalled by the workman of any other nation in skill and endurance whilst he is employed at the particular handicrafts which we have hitherto made our own. He may be somewhat deficient in artistic feeling, and certainly has not done much towards the stocking of the world's toy shops, but in the departments of work demanding physical strength and a certain quality of conscientiousness, without which no important structure or mechanical contrivance can be properly executed, he is, when at his best, the most reliable in the world. And, when reading the heartrending accounts of calamities at sea, where the horrors of the scene have been intensified by the dastardly conduct of men whom it were gross flattery to call brutes, it has been a proud reflection that the records of our mercantile marine, as well as those of our Navy, abound with narratives of heroic sacrifice by our seafarers for the safety of the helpless, and that even the so-called "hard cases," often drunken and sometimes mutinous, have on many occasions gone unostentatiously to death rather than prolong existence

by contending with the weaker for the means of escape.

A race of men with the qualities of our islanders is not likely to lapse into the condition of hewers of wood and drawers of water to other and more fortunate nations; is there, then, any appearance of an influence for evil powerful enough to deprive us of, or weaken, our distinguishing attributes? There are those who profess to see one of quite modern growth which, if not checked, is likely enough to be most hurtful to our industrial supremacy, and that is the too frequent substitution of the joint stock company for the individual or the small group of partners.

Of course there are many undertakings so vast as to be beyond the powers of the wealthiest to finance single-handed. I do not allude to these, but now-a-days there is hardly a grocer with a good corner shop who does not invoke the aid of the company promoter to shift his responsibilities on to the shoulders of the investing public. It is not by boards of directors, even though they may be of noble lineage and so guileless as not to be able to distinguish a bribe from a legitimate profit, that our position among industrial communities has been won, and it is not by them that it will be maintained.

It will be found that when the joint stock manufacturing company has a great reputation for the excellence of its products, or is a conspicuous financial success, it is dominated by one or two strong men who infuse their own vigour into it and give it the characteristics of a private venture like those on which our commercial fabric has been founded. And in departments of industry other than manufacturing it is still the same—the bold man who assumes and is fit for responsibility is always to be found at the head of the successful company, and all devices for the evasion of the burden of administration are calculated to enfeeble enterprise and lead to speedy decay.

It is hardly necessary to reckon with co-operative production, which is a different thing from the joint stock variety. The difficulties attending it may be called insuperable, and any expectation of its establishment on a considerable scale as a permanent institution may be classed with the hopes of a millennium at one time indulged in by certain religionists of an emotional but unpractical turn of mind. Could we but conceive of a community with the qualities necessary to the successful working of co-operative production we could hardly set bounds to their possible achievements; but in the meantime, and I fear for many generations, we shall have to reckon with people who are lacking in many of the requisite virtues.

One would hardly expect to look upon Parliament as a possible danger to industry; but there is now a new jurisprudence, and departures from sound principles are openly justified on the ground of "expediency," which is but a short way of saying the continued existence as office-holders of a particular set of politicians. The men of industry are not a power in Parliament, and are generally too busy out of it to exercise upon it the influence they undoubtedly might possess, and the best that can be hoped for from the legislature by the working portion of the community is to be let alone as much as possible, being confident that no very beneficial effect on business is likely to be exercised by a body which regulates its own so badly as to have an uncompleted programme at the end of every session as regularly as the session comes to an end.

But, if legislative interference with industry is to be deprecated, there is good enough reason for interference with anything that acts in restraint of industry. I have named the increase of population in Germany as one of the stimulants to activity in manufactures. Our own population is not stationary any more than Germany's, still less is it declining like

that of France, but what about occupation for the ever-increasing number of hands? What care is being taken that none need be idle and therefore likely to find employment in mischief? It will hardly be believed by those unfamiliar with trade union policy that in certain spheres of employment it is stringently prohibited to take more than a limited number of apprentices, the limitation being at the discretion of the men who had themselves been lucky enough to find entrance within the privileged enclosure. As might have been expected, this limitation is a purely arbitrary one, that is to say, it is not based upon any ascertained laws followed by births or survivals of the inhabitants of this realm, nor upon the requirements of the various occupations affected. The maintenance of any industry is not considered, still less its expansion, in fact the restriction is wholly indefensible upon public grounds. In many cases it is possible to estimate the date of the actual extinction of a given industry by the operation of this check upon the entry of fresh hands, and in no case would any industry, where it is imposed, have attained its present importance had it been in operation during the earlier stages a generation or two ago.

Considering that the welfare of the wage-earners, who form the great majority of the people of these islands, is professedly the object of the greatest anxiety with most aspirants to parliamentary honours, there could hardly be anything more amazing than the utter apathy and indifference of the legislature with regard to this monstrous interference with the liberties of the subject. It is surely one of the first duties of good government to sternly repress any attempt to arbitrarily close the avenues to employment in any lawful calling; but, of course, legislation to that end, not being of the "popular" order, is not so likely to claim the attention of either old or new parliamentary hands. It will, however, be necessary before long, and it is probably not too much to expect that a govern-

ment which could be firm with regard to the muzzling of dogs, and at the same time tender with the conscientious objector to vaccination, may pluck up courage enough and possess sufficient tact to grapple with this important matter.

Amendments of the law are also urgently required to meet the case of the member of a trade union who, for reasons sufficient, decides to withdraw from a society which may have ceased to be useful to him or with whose policy he is no longer in accord. It is obviously a great hardship that many years' subscription should have been paid away, and that the benefits to which he has become partly entitled should be entirely relinquished upon withdrawal before superannuation allowance is fully earned. It would be more equitable that the law should ordain a certain surrender value to be allowed to every retiring member, calculated on the total subscriptions paid, and having regard to the allowances obtained while in full membership.

And as one of the most objectionable features of trade unionism is the secrecy with which its decrees are in many cases executed, I would have it enacted that all rules, bye-laws, fines and restrictions, in fact every ordinance that affects the members of any union, should have the sanction of a constituted legal authority such as a County Court judge in England, a sheriff in Scotland, or any equally competent and independent official. Such rules or impositions as will not bear examination of this kind are manifestly injurious to the State, and not to be tolerated by a law-abiding community which has got beyond the jurisdiction of Judge Lynch.

I touch on these matters before you, as many of you are familiar with workshop life, and may still bring your judgment and experience to bear on those whose interest it should be to remove all reproach from trade organisations, originally devised, it may be,

for the amelioration of their members' condition, but which may be converted into instruments of tyranny and oppression.

Let us have, at least, no impediments of our own making while we are striving to maintain the foremost place, and so long as our national endowments hold out, there is every likelihood of our efforts continuing to be successful. Our much abused climate is favourable to the growth of a vigorous race, and this is more than can be said of many parts even of temperate Europe.

There will, of course, be the great secular changes which no man can forsee or resist. An eminent authority has even told us that the whole human race may, within measurable time, perish for lack of nitrogen; but as this indispensable ingredient is likely to last our day and that of any posterity in which we can pretend to take a lively interest, we need not disquiet ourselves overmuch about the possibility of its exhaustion.

In these remarks, somewhat desultory, I fear, there has been an attempt to indicate that there is no single panacea for debility of the industrial body nor one mode of treatment for its invigoration. Our natural aptitude must be quickened by education, but we must add thereto foresight, perseverance, thrift and self-control. If these be in us and abound we may look without anxiety upon the progress of other nations, nay, be content to have prosperous neighbours rather than those who might not be able to look upon us without envy and covetous desire.

Mr. A. BELDAM (First President): I have very great pleasure in being present on this occasion, and when I look back upon the time when the idea was first sprung upon us that an Institute for Marine Engineers should be founded, and compare the result of that time with the present position of this Institute, I feel, highly gratified; and to those who have helped the work so well forward by their energy and per-

severing labour we owe much. My own experience of the first year of its history was a record of push in the direction of perfect organisation, and building a firm and safe foundation. I was surprised at the manner in which the idea gradually developed in the hands of the Committee, and the divisions and sub-divisions made in the work, so that each one had a share. One energetic member, whose interest never seemed to flag and who still continues to work hard for the Institute, cannot be forgotten for the lion's share which fell to him in those days.

The Institute in succeeding years has been exceedingly fortunate in the selection of its presidents; most of them are self-made men in the sense that they have carved their way through the world by dint of their own personalities to positions of honour and distinction. The roll of past presidents is, after the first, one to be proud of, and the recent distinction conferred upon the immediate past President, Sir J. F. Flannery, M.P., is also a subject of congratulation.

Our thanks are due to the office bearers who have carried on the work from year to year, and to the presidents who have held office, and while we may congratulate the members on the past presidents, we have the pleasure of adding another and a double congratulation to-night; in the first place, on the admirable and inspiring address delivered by the President, and in the second place, on the fact that in Dr. Inglis the distinguished roll of presidents has been maintained to its full strength. I met Dr. Inglis in Glasgow many years ago, and was impressed with the conviction that he possessed all those good qualities which go to make a thorough man, and I have very much pleasure in proposing that a hearty vote of thanks be accorded to him for the excellent words which he has spoken to us to-night in his presidential address.

Sir FORTESCUE FLANNERY, M.P. (Immediate Past President) said: It is with exceptional feelings of satisfac-

tion that I embrace the opportunity of seconding the vote of thanks. I never felt so much ashamed of being a member of Parliament as when I heard some of the strictures by the President. I hope for better things, and, as one of the members of the House of Commons, will take to heart and treasure and benefit by the excellent advice which has been given. This institution has, I believe, not only an important present, but an important future. The status and the education of mercantile engineers has increased by leaps and bounds within the memory of even the youngest man present. That improvement in education, as I have often had pleasure in bearing witness to, and will never cease to take pleasure in bearing witness to, is very much due to the influence of one man who is an honoured member of the institution, Mr. Macfarlane Gray. Whatever may be the opinion of engineers as regards education, whatever may be the opinion of political economists like the President upon the subject of education in Germany, and in this country in comparison, there can be no doubt that the social status, the professional status, and the financial status of marine engineers has been elevated by their education, and that education has been in a large degree forced upon them and fostered by wise discrimination—not pushing education too fast or too far in the first instance—that has been exercised by the Board of Trade in regard to examinations. In like manner the status of engineers in the Royal Navy has been improved and increased, so that we find now men who used to be looked down upon as a class by the executive officers as scarcely fit for association at the mess or in the ward room are now admitted, and deservedly admitted, on absolute social equality, and take their places not only in the engine-room but equally their places as officers and gentlemen in the society of the officers of Her Majesty's Fleet. I believe that this institution has some duty to perform in concentrating and in rendering practical that great progress that has been made by

engineers both in the mercantile marine and in the Royal Navy. It has been matter of regret, shared I have no doubt by the Chairman—certainly shared by others connected with Her Majesty's Navy—that a larger number of engineers in the fighting fleet have not enrolled themselves as members of this Institute, but I believe that ere long we will find that drawback gradually removed. I have for some time taken opportunity to inquire why this existed, and latterly at one of the dockyards made definite inquiry. Since then an engineer in the Navy has written to say that nine engineers have given their names as members, and promise to get others to join. These comprise two fleet engineers, one staff, one chief, four engineers, and one assistant engineer. I hope that the fact of the engineers of the Navy joining this institution will be regarded in no sense as even a sentimental breach of the discipline of Her Majesty's Navy, and that any member of this institution will be regarded as taking steps towards the better improvement of professional education, and therefore welcomed in the capacity as a member of this institution by the powers that be at the Admiralty. If it is possible for such an understanding to pass through the Navy, then I would make the suggestion that, as there is a centre in the Bristol Channel and at Southampton, we might have at an early date a centre in one of the dockyard towns for engineers in the Royal Navy. Under these circumstances such a centre, under the able guidance in the first instance of our indefatigable secretary, would have entire success, and contribute towards the progress of this institution, which we all love so well.

The vote of thanks was heartily awarded and was briefly acknowledged by the President.

Mr. J. Macfarlane Gray (Vice-President) proposed and Mr. Alderman G. W. Kidd (Vice-President) seconded a vote of thanks to the Chairman, who responded in a few words expressive of the pleasure he had experienced in the proceedings of the evening.