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# T. H. HUXLEY AND TECHNICAL EDUCATION

*A paper by*

CYRIL BIBBY, M.A., M.Sc., Ph.D.,

*read to the Society on Wednesday, 18th April, 1956,*

*with R. W. Holland, O.B.E., M.A., M.Sc., LL.D.,*

*Chairman of the Council of the Society, in the Chair*

THE CHAIRMAN: Some of us in these days are prepared to say, 'and who was Thomas Henry Huxley?' Dr. Bibby is going to tell us about one angle of Huxley's activities. Huxley was, of course, a great biologist. At the age of 22 he was a member of an expedition that explored the Great Barrier Reef off the coast of Australia, and there he found much to remind him of his college work, and much to use afterwards for his further researches. As Professor of Natural Sciences at the Royal School of Mines, the forerunner of the Imperial College, he had plenty to do and plenty to think about, but he devoted himself very largely in all his spare moments to the idea that education was not complete if it were merely 'education for life'. In consequence he, as a very forceful man, a man who got away with it better than any other man that I have read about, was really the father in this country of proper technical education.

He was born in 1825, and it seems a long time ago. Yet he and I overlap, because on my bookshelves I have a prize which was won at a Mechanics' Institution, one of those which, of course, evolved themselves into the technical colleges of to-day. It was presented to me at a prize-giving by Huxley. He was then 68 years of age and he died two years later—not cause and effect!

Dr. Bibby is going to tell us of another aspect of Huxley's life, and Dr. Bibby has a right to speak because he, too, is a biologist, and he has read deeply into the multitudinous works that Huxley produced. There was no more prolific writer on biology and the philosophies arising therefrom than Thomas Huxley.

*The following paper was then read:*

## THE PAPER

In his recent admirable study<sup>1</sup> of the aims, organization and future development of technical education, the Principal of Salford's Royal Technical College quotes from the address which T. H. Huxley gave in 1887 in neighbouring Manchester:

. . . it passes the wit of man, so far as I know, to give a legal definition of technical education. If you expect to have an Act of Parliament with a definition which shall include all that ought to be included, and exclude all that ought to be excluded, I think you will have to wait a very long time<sup>2</sup>.

But, unlike some who are always ready to use difficulties of definition as excuses for inaction, Huxley was impatient of procrastination.

There is a well-worn adage, [he remarked], that those who set out upon a great enterprise would do well to count the cost. I am not sure that this is always true. I think that some of the very greatest enterprises in this world

have been carried out successfully simply because the people who undertook them did not count the cost; and I am much of the opinion that, in this very case, the most instructive consideration for us is the cost of doing nothing<sup>3</sup>.

Perhaps, at a time when Britain is lagging in the technological race of the nations, it may be instructive to examine the endeavours of one whose work for technical education was ever instinct with urgency.

It was rather over a century ago that the young T. H. Huxley began his career as junior lecturer at the Government School of Mines in Jermyn Street. At this school, through its migrations and metamorphoses, he was to spend his working life, in a technical institution destined to grow eventually into the mammoth Imperial College of Science and Technology; but it is mainly with his activities outside the School of Mines that we are now concerned. When this Society of Arts organized its Educational Exhibition at St. Martin's Hall, in Long Acre in 1854<sup>4</sup>, Huxley spoke on the educational value of the natural history sciences<sup>5</sup>; and the Society's records show that, although he was never one of its leading members, Huxley's name keeps cropping up in its activities. Thus, we find him<sup>6</sup> interested in subjects so varied as submarine telegraphy, steamships, modes of preserving meat, and the fish supplies of England; and, more to our present purpose<sup>7</sup>, participating in the Society's 1868 Conference on Technical Education, helping to organize the Educational Division of the Exhibition of 1871, serving on the Society's Technical Examinations Committee, speaking at the first Congress on Domestic Economy organized by the Society in Birmingham, and taking the chair for Sylvanus Thompson's 1879 paper on 'Apprenticeship: Scientific and Unscientific'.

The two-day conference held in these rooms on 23rd and 24th January, 1868, proved to be an important milestone in the history of technical education. As far back as 1830 Charles Babbage, the inventor of the calculating machine, had lamented<sup>8</sup>

that a country, eminently distinguished for its mechanical and manufacturing ingenuity, should be indifferent to the progress of inquiries which form the highest departments of that knowledge on whose more elementary truths its wealth and rank depend.

And by 1865 a literary man like Ruskin was similarly complaining<sup>9</sup> that

We are glad enough . . . to make our profit of science; we snap up anything in the way of a scientific bone that has meat on it, eagerly enough; but if the scientific man comes for a bone or a crust to *us*, that is another story.

But, despite the early attempts at technical education in the Mechanics' Institutes (that of London founded when stage-coaches were still leaving the Saracen's Head for all parts of the land), despite the establishment of Queenswood as a technical school with Tyndall and Frankland among its teachers, despite the establishment of a Chair of Technology at Edinburgh University in 1855, there could be no real advance until the masses of the people were provided with some sort of general education by Forster's Education Act of 1870. Nevertheless, the 1867 Paris Industrial Exposition had underlined the lesson of the Great Exhibition of 1851; and when, following the conference of the Society of Arts,

the House of Commons appointed the 1868 Select Committee on Scientific Instruction, it was to ears well attuned that Huxley and many others played on the theme of the urgent need for technical education.

The immediate result of this Society's conference was the setting up of its Committee on Technical Education, and Huxley was one of the sub-committee appointed<sup>10</sup>, 'to prepare a Scheme for Technical Education calculated to promote the advancement of Arts, Manufactures, and Commerce in this Country'. Huxley seems<sup>11</sup> to have been but a poor attender at its meetings, but no one who knows anything of his genius for lobbying and string-pulling will imagine that this indicates any lack of influence on its proceedings. In 1870, when to avoid wasteful duplication the Society abandoned its examinations in subjects covered by those of the Science and Art Department, there was a move to give up examinations altogether; however, Donnelly and Huxley and others succeeded in establishing the technological examinations, many of which were eventually handed over to the City and Guilds Institute which still conducts them.

One of the agenda of the January Conference had been to consider 'how far technical education can be provided by the aid of existing endowments', and it was to the wealthy City Guilds that Huxley now turned his attention. In 1869, sensitive to the continual muttering that the vast endowments of the Liveries should be put to some useful purpose, the *City Press* admitted<sup>12</sup> that there was no good reason why they should not be devoted to education; and a year later<sup>13</sup> the Lord Mayor presided over a meeting in Common Hall, which unanimously resolved

. . . to continue its efforts to induce the Livery Companies to adopt measures for promoting technical education, exhibitions, and other means tending to advance the progress and well-being of the various arts and vocations, ostensibly represented by those companies.

In 1870 England was wide awake to its educational needs—to breathe the air of those days it is well to repair to the Royal Albert Hall, built originally not for Promenade concerts but<sup>14</sup> as 'a central point of union where men of science and art could meet, where the results of their labours could be communicated and discussed . . .', and read the words of the great frieze inscription: 'This Hall was erected for the advancement of the arts and sciences, and for the works of industry of all nations, in fulfilment of the intentions of Albert, Prince Consort'. Soon the Lord Mayor was receiving a deputation to urge Thomas Twining's scheme for a 'National University for Industrial and Technical Training'<sup>15</sup>, even Gladstone suggested that the Companies might use some of their wealth for technical education<sup>16</sup>, and the time was ripe for Huxley to capitalize those assets of goodwill which, as his diaries and correspondence show, he had long been accumulating in City circles.

Over a period of years Huxley's name had appeared<sup>17</sup> in the guest lists of Mansion House banquets, and it would be out of character if in conversation through the courses he did not tie a few strings for later pulling. After 1870, when the new and as yet homeless London School Board met in the Guildhall under Alderman Cotton of the Haberdashers' Company, Huxley's name figures

more prominently in the reports of City feasts; and, at the Haberdashers' banquet early in 1875 to 'upwards of 150 noblemen and gentlemen'<sup>18</sup>, only the Lord Mayor, the Vice-President of the Privy Council and the Senior Charity Commissioner had precedence over him. From then on, Huxley was *persona gratissima* to the Livery. So it is not surprising that, when in 1876 the City Corporation and Companies agreed<sup>19</sup> to pay attention 'to the promotion of Education . . . throughout the country, and especially to technical education', Huxley was one of those to whom the specially constituted committee turned for advice. When he spoke in this Society's rooms to the Working Men's Club and Institute Union on 1st December, 1877, on the subject of technical education, he was able to announce with some gratification<sup>20</sup> that 'Those powerful and wealthy societies, the livery companies of the City of London, remembering that they are the heirs and representatives of the trade guilds of the Middle Ages, are interesting themselves in the question'. And, remembering that the lead in this movement was taken by the Drapers and Clothworkers and Goldsmiths, we may perhaps see some significance in the fact that Huxley's diary for 1878 records engagements with these three very companies. It was not for nothing that, at the Drapers' banquet of 1878, Huxley's name was coupled with the toast of 'Science and Art', and he was thanked<sup>21</sup> for the 'very able advice' which he had given to the Guilds' executive committee; and five years later Sir Frederick Bramwell, Prime Warden of the Goldsmiths' Company, recalled<sup>22</sup> how 'When eleven of the Livery companies . . . selected six men of repute . . . and asked them to tell the companies how they could best accomplish their object . . . for good common sense and scientific instruction, Professor Huxley's report was the best'. The outcome of this advice was a recommendation by the executive committee<sup>23</sup>, that the Guilds should spend £30,000 in building a new central technical institution ('regard being had primarily—as Professor Huxley suggests—rather to what is wanted in the inside than what will look well from the outside'), £10,000 per annum on salaries, and £20,000 each year on exhibitions and other technical classes and schools. This was the beginning of a great work, and one of its leading members declared<sup>24</sup> that Huxley was 'really the engineer of the City and Guilds Institute; for without his advice we should not have known what to have done'.

Before long a battle was raging about the best situation for the proposed technical college, which had originally been envisaged<sup>25</sup> as being built somewhere in the City. It was at the request of Sir Owen Roberts, Clerk to the Clothworkers, that Huxley<sup>26</sup> prepared a report on the suitability of the site of Kensington House; and, when the press began to blame him for seeking to set the college far out in the suburb of Kensington, he insisted<sup>27</sup> that 'So long as the College is established it is all one to me whether it is at Mile End or at Battersea or at any intermediate spot'. Ever urgent, Huxley was not content to sit back and let events take their slow unaided course: when in December 1879 he presided for Sylvanus Thompson in this Society's rooms, he took the opportunity<sup>28</sup> to remind the Guilds that they 'possessed enormous wealth, which had been left to them for the benefit of the trades they represent . . . that they were morally

bound to do this work, and he hoped if they continued to neglect the obligation they would be legally compelled to do it'. 'If the people did not insist on the wealth being applied to its proper purpose', he went on, 'they deserved to be taxed down to their shoes'. Continuing his campaign by letters to *The Times*, he complained<sup>29</sup> that 'Whether the Guilds have adopted the recommendations of their own Committee or whether they have rejected them is unknown to the outside world', and he pointed out bitterly that

The inmost financial secrets of the Church and of the colleges of Oxford and Cambridge have been laid bare by those universal solvents, Royal Commissions; but no Government which has existed in this country for the last century has been strong enough to apply such *aqua regia* to the strong-boxes of the City Guilds.

Huxley, of course, knew perfectly well the way things were going, and it seems likely, if we may judge from a letter<sup>30</sup> to the old Chartist George Howell, that his communication to *The Times* was a carefully calculated provocation:

I suppose I have some ten years of activity left in me, and you may depend upon it I shall lose no chance of striking a blow for the cause I have at heart. . . . The animal is moving and by a judicious exhibition of carrots in front and kicks behind, we shall get him into a fine trot presently. . . . The (City) Companies should be constantly reminded that a storm is brewing. There are excellent men among them, who want to do what is right, and need help against the sluggards and reactionaries. It will be best for me to be quiet for a while, but you will understand that I am watching for the turn of events.

Huxley's watching was facilitated when early in 1881 he became Inspector of Salmon Fisheries and found new opportunities to lobby the Liveries. Apart from his continued attendance<sup>31</sup> at Mansion House dinners, he paid many visits, as his diaries for 1881 to 1883 show, to the Fishmongers' and Salters' Companies; and, since his correspondence at this time with Donnelly<sup>32</sup> and others refers frequently to technical education, presumably he did not confine his conversation to his formal business as Fisheries Inspector. At any rate, he must have been gratified, at the Fishmongers' banquet of 1881<sup>33</sup>, to hear the Lord Mayor refer to the forthcoming laying of the foundation stone of the Finsbury Technical College. And when, two years later, he was asked to accept the Salters' Freedom, the Master of the Company wrote<sup>34</sup> to say:

I think you must admit that the City Companies have yielded liberally to the gentle compression you have exercised on them . . . we propose to legitimise your claim for education, which several of us shall be willing to unite with you in promoting.

It was on 10th May, 1881, that the Duke of Albany laid the foundation stone of the Finsbury College, and on 18th July of the same year the Prince of Wales set the foundation column of the Central Institution at South Kensington. By autumn, the 'City and Guilds of London Institute for the Advancement of Technical Education' was advertising<sup>35</sup> courses of Technical Chemistry under Armstrong and Technical Physics under Ayrton at Finsbury; on 13th February, 1883, the Finsbury College was formally opened; on 28th June, 1884, the South Kensington College (on which some £95,000 had been spent) was opened; and



when Huxley delivered his Presidential Address to the Royal Society in 1885 he was able to announce<sup>36</sup> that 'About 250 technical classes in different parts of the kingdom are now affiliated to the Institute, and some of them are already developing into efficient technical schools'.

The subsequent history of the City and Guilds Institute and its technical colleges need not concern us here, but it is perhaps worth while to examine Huxley's hopes—in the event unrealized—for the Imperial Institute. The Prince of Wales suggested to the Lord Mayor<sup>37</sup> that Queen Victoria's Jubilee Year might be worthily marked by the foundation of a great central industrial institution in London, and soon the press was buzzing with rumours of what the Prince's committee was proposing. Everyone felt that the projected Imperial Institute should in some way cement the common commercial interests of the Empire's far-flung territories, but no one seemed to have any very clear idea of the form it should take. No one, that is, except Huxley, who soon became the centre of a riproaring controversy. It appears to have been almost by accident—if anything which he did was ever entirely accidental—that Huxley became involved. Being told<sup>38</sup> that the Prince of Wales would esteem it a favour if he would speak at a meeting in the City on 12th January, 1887, he agreed to do so although physically unfit. There seems<sup>39</sup> to have been some muddle about the resolution he was to speak on, and no intention that his part should be a major one in the proceedings, but it was his contribution which caught the public ear. 'With the exception of Professor Huxley, whose interesting speech we give in full elsewhere', the *Pall Mall Gazette* informed its readers<sup>40</sup>, 'everybody was dull, stale, and unprofitable'. Unlike most others, he knew exactly what he wanted and set about trying to get it.

Within the week he had written to *The Times*<sup>41</sup> that he had no enthusiasm for 'the establishment of a vast permanent bazaar', but wished for 'something which should play the same part in regard to the advancement of industrial knowledge which has been played with regard to science and learning in general, in these realms, by the Royal Society and the Universities'. As he had put it in his Mansion House speech<sup>42</sup>:

Within the last thirty years . . . there began, in the first place, a slight flirtation between science and industry, and that flirtation had grown into an intimacy, he might almost say courtship, until those who watched the signs of the times saw that it was high time that the young couple married, and set up an establishment for themselves. This great scheme from his point of view was the public and ceremonial marriage of science and industry.

Or, as he told Herbert Spencer<sup>43</sup>, 'the "Institute" might be made into something very useful and greatly wanted—if only the projectors could be made to believe that they had always intended to do that which your humble servant wants done'.

Huxley's letter to *The Times*—in which, incidentally, he argued that the Imperial Institute should be not out at South Kensington but in the City where it would be convenient for those engaged in commerce—envisaged the new institution as

a place in which the fullest stores of industrial knowledge would be made accessible to the public; in which the higher questions of commerce and

industry would be systematically studied and elucidated; and where, as in an industrial university, the whole technical education of the country might find its centre and crown.

But, although the committee issued a pamphlet officially adopting Huxley's definition of the functions of the new Institute, this was an occasion when he did not get his way. The cost of a City site proved prohibitive, the Imperial Institute was built in South Kensington where Huxley said<sup>44</sup> it had as much chance of serving the interests of commerce and industry as a fish had of thriving out of water, and history has shown how nearly right he was when he wrote to Michael Foster<sup>45</sup>: 'The thing is already a failure. I daresay it will go on and be varnished into a simulacrum of success—to become eventually a ghost like the Albert Hall or revive as a tea garden'.

But if 1887 saw the collapse of Huxley's hopes for the Imperial Institute, that year saw also the formation of the National Association for the Advancement of Technical Education, at whose preliminary meeting Huxley was one of the speakers<sup>46</sup>, and for which he spoke at the great meeting in Manchester Town Hall on 29th November. Only ten days before, to his own and his wife's ill-health there was added the crushing blow of the death of his daughter Marian, and his friends<sup>47</sup> tried to dissuade him from keeping the engagement. But, as Huxley explained<sup>48</sup>:

I am not proud of chalking up 'no popery' and running away . . . and, having done a good deal to stir up the Technical Education business and the formation of the Association, I cannot leave them in the lurch when they urgently ask for my services.

It is this Manchester speech, published in his *Collected Essays*, which is usually referred to for Huxley's views on technical education, but much more information is available from other sources, both published and unpublished.

In those days, as to-day, there was dispute about the extent to which technical education should include non-vocational general education. Sir Philip Magnus, for example, held that 'The special education, the object of which is to train persons in the arts and sciences that underly the practice of some trade or profession, is technical education'<sup>49</sup>, while Sylvanus Thompson asserted<sup>50</sup> that 'Education is technical only so far as it is directed to the training of the individual in and for his business in life'. With such narrow views Huxley would have no truck. Believing<sup>51</sup> that 'Although it was a great thing to make skilled workmen, yet it was much more important to make intelligent men', he was vividly aware that what could be achieved by purely technical instruction depended upon all sorts of wider educational and social circumstances. Perhaps the most succinct statement of his views is to be found in some notes which he drew up in 1887 for the Charity Commissioners<sup>52</sup>:

Technical education in its strictest sense, is only one of a number of conditions or operations on which the full development of the Industrial productivity of any body of men depends.

These are

- I. Elementary school education as a preparation for life in general.



- II. Technical education proper as a preparation for special callings, consisting of
  - A. Preparatory Instruction in Science and Art.
  - B. Special technological Instruction.
  - C. Training and providing teachers in A and B.
- III. Contributory agencies
  - A. Capacity catching apparatus.
  - B. Physical and moral training.

He therefore attached a very broad sense to technical education, which he took to cover<sup>53</sup> 'all those means by which the productive capacity of an industrial population may be fully and permanently developed'. It was for this reason that he urged on the Charity Commissioners<sup>54</sup>, 'the provision of baths, gymnasia, cookery schools, free libraries, reading rooms and of innocent amusements as a contribution to industrial development of prime importance'. It is as true to-day as when Huxley insisted on it at Manchester<sup>55</sup> that

Our sole chance of succeeding in a competition, which must constantly become more and more severe, is that our people shall not only have the knowledge and the skill which are required, but that they shall have the will and the energy and the honesty, without which neither knowledge nor skill can be of any permanent avail.

Holding such wide and liberal views, Huxley not surprisingly opposed those who would have introduced vocational instruction into the ordinary elementary schools. These, he held,<sup>56</sup> were 'already charged with quite as much as they can do properly'; and the attitude which he took with the Working Men's Club and Institute Union<sup>57</sup> anticipates the trend of recent years:

Well, but, you will say, this is Hamlet with the Prince of Denmark left out; your 'technical education' is simply a good education, with more attention to physical science, to drawing, and to modern languages than is common, and there is nothing specially technical about it.

Exactly so; that remark takes us straight to the heart of what I have to say; which is, that, in my judgment, the preparatory education of the handicraftsman ought to have nothing of what is ordinarily understood by 'technical' about it.

On the other hand, once the earlier stages of education were traversed and the worker was faced with the achievement of skill in his particular occupation, Huxley would have him concentrate his attention on that objective as closely as possible. He believed that a firm seat could be found on two stools, general education and special education, and he did not propose to fall between them. So at Manchester he urged<sup>58</sup> the value of schools attached to factories, 'where the employer has an interest in seeing that the instruction given is of a thoroughly practical kind', while the so-called 'trade school' he criticised as 'apt to be too amateurish' and as not preparing the worker 'for the real conditions under which he will have to carry out his work' Or, as he put it to the Easingwold Agricultural Club when it asked his advice on agricultural education<sup>59</sup>, 'practice can be learned only by practice. The farmer must be made by and through farm work'. Therefore—and the principle surely applies whatever the technicality—if framing an educational course for future farmers

I am not sure that I should attempt chemistry, or botany, or physiology or geology, as such [but would teach] the history of a bean, of a grain of wheat,

of a turnip, of a sheep, of a pig, or of a cow properly treated—with the introduction of the elements of chemistry, physiology, and so on as they come in.

When we come to consider the question of the higher technical, or technological education, we find again that Huxley's views have some relevance for to-day. Always intensely concerned for the achievement of high professional standards, he urged as early as 1861<sup>60</sup> that there should be established a corporate college which might 'stand in exactly the same relation to the Mining, Metallurgical and Geological professions as the Royal College of Surgeons to the Medical prof.'—a proposal repeated, in a rather wider context, in the recent suggestion of the National Advisory Council on Education for Industry and Commerce<sup>61</sup> that there should be instituted a corporate Royal College of Technologists. The analogy with the medical profession came very naturally to Huxley, who was so far free from the gentlemanly ideal of education as to be ever castigating<sup>62</sup> 'the mischievous delusion that brainwork is, in itself, and apart from its quality, a nobler or more respectable thing than handwork'. He has sometimes been criticized because<sup>63</sup> he regarded 'medicine, law and theology as technical specialities': however, it was not that he took a low and narrow view of professional education but that he took a high and wide view of technical education. For a long time, suspicious of the reactionary and clerical control of the universities, he opposed the handing over of higher technical institutions to them, but towards the end of his life he felt that the time had come when this could safely be done. There is in his remains a fascinating scheme for the reorganization of the University of London<sup>64</sup>, which envisaged the formation of federal institutions for giving professional education in law, medicine, the industrial professions, the scholastic profession, painting, sculpture and architecture and music. Each of these federal colleges would devise its own schemes of instruction and examination, and present its students to the university for the award of degrees on an *ad eundem* basis. More than half a century after Huxley penned this scheme, something very like it was devised in the new university institutes of education for the profession of teaching: is it possible, I wonder, that these same notes provide the answer to the much debated problem of the relationship of colleges of technology and universities? I know very little about technical education, but during the last few years I have learned a lot about T. H. Huxley, and it will surprise me greatly if he does not prove worthy of close study by those whose special concern is technical education.

## DISCUSSION

THE CHAIRMAN: In all that Dr. Bibby has told us about Professor Huxley, there is much upon which we could talk for quite a considerable time. We could point to Huxley's inconsistencies when he at first did not care whether his new college was in Mile End or at Battersea or anywhere in between, and yet at a later stage fell out with people because it had to be in Kensington and could not be midway because of the expense of building on City lands.

At the same time, Huxley's views were ahead of his time, and how refreshing it is to learn that technical education did not mean to him merely the teaching of techniques; that it meant a fundamental training, a knowledge of the world and the ability to

understand men and principles rather than of the practical mechanical techniques of business. Maybe there are some of you who would disagree, but I agree mainly with Huxley's point of view. You may say 'who are you to agree with Huxley?' He has been a long time dead; I think one is entitled to put it in that way. Again, one would be of the opinion that Huxley's views might very well be closely examined in relation to technological as distinct from technical education. There is no harm in examining things of the past to see if the future can benefit from them.

My memory goes back sufficiently far to know that the very things that Huxley suggested for his technical schools—that is that a man should not necessarily be taught in agriculture the chemistry of soils, but rather about the bean and how it germinated, and about corn and the oxen on the land—used to be taught in elementary schools. I went to one, and in the elementary school of my day they had something that was called an object lesson. They got a picture of a camel, and explained all about its various stomachs, the way that it lived and so on; they showed a picture of a wheatfield, and an illustration of the grain with a picture of the germ in the grain. So we might go on for ages to pick up little points in what our lecturer has told us and talk until we were at our starting point again.

DR. J. VARGAS EYRE: Notwithstanding a certain amount of canalizing to the chosen theme of this interesting paper nothing has been said to change the view that the greatness of T. H. Huxley rests more particularly upon his eloquence. He was, of course, a natural observer, who lived at a time when oratory was all the thing; indeed, his eloquence resulted from a painstaking cultivation. He was a preacher, not a doer, and like the physicians of his time he diagnosed but offered no treatment. His love of words often bewildered those who sought to be precise, and makes it difficult now to resolve his statements, yet easy to develop from them. Huxley's pioneering work in the field of education was particularly directed to a broadening of the instruction given in schools, to secure the inclusion of both science and art in the instruction given, so as to provide what he called a 'liberal education'.

It was Mr. William Gladstone who, during his second term of office as Prime Minister, being anxious to improve British trade, brought pressure to bear upon the Guilds of London to use their wealth for its original purpose, namely education and technical education. Some guilds refused to have anything to do with technical education for nobody could tell them what it was. But some of the more wealthy guilds understood the significance of the pressure and undertook to develop technical education without knowing what it was, or how to set about it. Huxley was one of the six eminent people who were consulted, and without doubt the general advice given in his report was of the greatest help in the remarkable and successful adventure of the City and Guilds of London into the unexplored field of technical education.

Although one or two matters of this kind do not seem to square with what the lecturer has said, Huxley was a great man, and it is appropriate to come together from time to time to consider the work and influence of great men. I am glad of the opportunity this paper has given us.

*A vote of thanks to the Lecturer was carried with acclamation, and the meeting then ended.*

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