THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE ABERDEEN MEETING

The 125th Annual Meeting of the British Association for the Advancement of Science was staged at Aberdeen (28 August to 4 September 1963). The Annual Meeting had taken place in Aberdeen on three previous occasions under eminent Presidents: first, in 1859, when the Prince Consort presided; in 1885 when a very remarkable man, Lyon Playfair (to whom reference is made later), presided; and in 1934, when the President was Sir James Jeans.

The Association was formed as long ago as 1831—with the disapproval of Oxford—to obtain a greater degree of national attention to the objects of science and a removal of those disadvantages which impede its progress.

It sought to appeal to a wider public than the Royal Institution, founded in 1808 to elicit support for 'science' from the Upper Classes of the day, a fact pleasantly reflected in the practice—still continued—of expecting members of that body to wear evening dress when they attend the lectures delivered at the Institution's handsome headquarters in Albemarle Street. The Association also aimed at promoting 'the intercourse of the cultivators of science with one another, and with foreign philosophers'. Annual Meetings have often served as occasions for the announcement of outstanding scientific discoveries. It was, for example, at the Annual Meeting at Oxford in 1894 that Sir William Ramsay announced the discovery of a new gas in the atmosphere which he named Argon. Its function as a scientific forum was exemplified at the famous meeting at Oxford in 1860 when Prof. T. H. Huxley crossed swords with Bishop Wilberforce about Darwin's recently-published Origin of Species.

Meetings of the Association are organized in seventeen sections, viz. A (Physics), A* (Mathematics), B (Chemistry), C (Geology), D (Zoology), E (Geography), F (Economics), G (Engineering), H (Anthropology), I (Physiology & Biochemistry), J (Psychology), K (Botany), K* (Forestry), L (Education), M (Agriculture), N (Sociology) and X (General). There is freedom to roam from section to section and it would be a very unusual individual who could find nothing of interest in the hundreds of subjects discussed. Apart from the Sectional transactions, there are Evening Discourses on questions of current interest. This year the subjects were Problems of Economic Growth by Prof. C. F. Carter, Vice-Chancellor of the University of Lancaster, and Science and the State by Prof. R. V. Jones, Professor of Natural Philosophy in Aberdeen University. Both are topical,
the latter being chiefly concerned with the means of incorporating scientific advice in the making of governmental decisions. Many of the Addresses and Papers are reproduced in the Association’s bi-monthly journal *Advancement of Science* (available in the Institute’s Library).

A latter-day development is a ‘Young People’s Programme’ which on this occasion included a lecture by Sir Raymond Priestley on *Antarctic Exploration Yesterday and Today*.

The proceedings at an Annual Meeting open with a Presidential Address, this year by Sir Eric Ashby, F.R.S., Master of Clare College, Cambridge. Its title was ‘Investment in Man’. It is significant of Lyon Playfair’s vision that Sir Eric should have said at the outset that his audience would have been well served, if he had simply read Playfair’s Presidential Address, in which, incidentally, there were mordant criticisms of the failure of Parliament to invest in science and education. This was in 1885. The central theme of the President’s address was the need for research in education. We do not know, he said, where the teachers are coming from to man the contemplated extensions of higher education; there should be operational research on teaching and learning in universities to ensure the best use of the available teachers and buildings. The staff–student ratio is about one teacher to ten students—a higher ratio than in any other country; should this ratio be maintained even if it involves the recruitment of mediocre teachers? Half the teachers’ working time is spent on research and this must not be eroded. The balance is spent on administration and teaching, and good management can always minimize the time spent on ‘administration’. There is evidence that the techniques of learning and teaching in universities could be improved. For formal lectures large classes are better than small ones, if only because the lecturer takes more trouble to prepare them. Again, a seminar of twelve is more effective than a tutorial of three. Modern techniques of instruction, such as language laboratories, films and taped discussions, are useful for some teaching, even at university level. After all, the President remarked, Professors once had to reconcile themselves to the invention of printing, just as centuries earlier they had protested against writing as a substitute for oral tradition. He went on:

Now after nearly 500 years without much change in the technology of higher education, professors will undoubtedly have to reconcile themselves to new inventions . . . Under the impact of research into techniques of teaching and learning, the whole pattern of education is likely to change.

The President also urged that technology should be accepted as a form of humanism; no man, he said, could ‘regard himself as adequately educated who does not understand something of the principles of technology’, by which he meant ‘the art and science of the application of systematic knowledge to work’. Finally, he stressed the need for sustained and systematic courses of re-education to counter the inherent ‘obsolescence’ of today’s degrees and diplomas—at any rate in science, technology and the social
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sciences. Education (as Prof. Carter has said) is 'not an act of salvation, after which one is safe for eternity'. Sir Eric remarked:

Perhaps the time may come when a degree or a professional qualification, like a passport, is valid only for a limited number of years, and is renewed only after attendance at a systematic course of re-education.

Here was 'an opportunity for the extra-mural departments of our universities (which are, in any case, seeking for a new inspiration)'.

There was a fascinating lecture in Section X by Prof. R. V. Jones, who had delivered the second of the Evening Discourses referred to above. His subject was Lyon Playfair, President of the Association at the Aberdeen Meeting in 1885, who tried more than any other man in the nineteenth century to make Britain realize the importance of science and technology. Playfair and his allies, notably T. H. Huxley, fought in the '60s and '70s for a complete revision of the secondary school curriculum. He attacked in his Address the large proportion of time devoted to classical studies, e.g. 12 to 16 hours a week, compared with two or three hours given to science. Although, as Prof. Jones pointed out, much of this bias has been swept away, there is still no paper on science in the Common Entrance Examination for Public Schools, although there is a compulsory paper in Latin and an optional one in Latin verse. However, the idea of a 'Minister of Science', adumbrated by Playfair in 1871, has now taken root—nearly a century later.

Section F (Economics) once again provided several papers in which actuaries, especially in their capacity as investment advisers, should be interested. It should be of some significance for the younger generation of actuaries to recall that nearly 100 years ago, the Presidential Address to this section was delivered by Samuel Brown, the reigning President of the Institute. 'Scope' is a latter-day re-discovery. On this occasion, there were two major papers on economic 'growth'—now a political cliché—namely, Prof. T. Wilson's Presidential Address on 'The Price of Growth', and Prof. C. F. Carter's Evening Discourse on 'Problems of Economic Growth'. The two papers to some extent complement one another, and it seems useful to consider not only the factors necessary for growth but also the real value of growth measured against the sacrifices to be made in obtaining it.

Prof. Wilson began by giving some of the reasons why 'growth' has been desired since the end of the Second World War. First, he said, it may help in the development of national defence. Secondly, the reduction or virtual elimination of unemployment drives the economy against the limits of available manpower and so turns thoughts to ways of increasing productivity. Thirdly, it achieves much more over the years than redistribution of income can to advance the standard of living of the poorer people. Prof. Carter made a similar point in relation to the world as a whole; he considered that America's economic growth, for instance, helps the less developed countries in some degree. Finally, there is the simple desire to
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'keep up with the Jones’s', and this may well outweigh whatever may be felt about the moral dangers of affluence. Prof. Carter went on to ask whether current economic advance is not being achieved at the expense of future generations, and mentioned the rapid exploitation of the world's readier resources. Although new ways of meeting man’s needs will undoubtedly be found, they may well prove to be more expensive and difficult than those we use today. 'Malthus may have cried “wolf” too soon, but his wolf is not an imaginary beast.'

What else may be sacrificed in striving for growth? Prof. Wilson believed that political influence overseas, and some freedom at home, may be lost in the process and that it may give rise to feelings of injustice both nationally and internationally. In the end, he tended to discount these hazards, but made it clear that in his view such factors should be borne in mind by economists, who should not limit their researches to technical issues about measurable factors influencing output.

Commenting on the various desiderata for economic growth, Prof. Carter adopted a similar approach. He devoted particular attention to the significance of (1) increased human effort, (2) greater skill and ingenuity and (3) better organization, and argued that their relative importance would vary according to the time and the place. He considered it true that, for instance, the British people do not work as hard as they could do, and asked why this could be so; while he gave no simple answer to this question, he provided a few possible pointers. Among these were that there might be an insufficient desire for more material wealth; or perhaps more likely there might be a feeling that additional effort would not bring a corresponding extra reward, owing to waste or maldistribution.

Prof. Carter applied a critical analysis to the supposed need for education, for research and development, and for organization as a basis for growth. He argued, for instance, that education is useful only if applied in the right way and in the right places. 'We are, I think, in this country in danger of getting too much instruction in technology and too little education in creative technological thinking.' Again, he said, we may benefit from the researches of others, without engaging in it ourselves, but the existence of research organizations is a stimulus to interest and activity which might otherwise be lacking.

Another interesting paper in Section F was Sir John Benn’s Finance for technical development in the United Kingdom, which told how a group of insurance companies, merchant banks and investment trusts had founded Technical Development Capital Ltd., early in 1962, to provide capital at the commercial stage of a technical development or innovation which had been indicated by research, thus filling a financial gap to which the Radcliffe Committee had directed attention.

At the forthcoming Southampton Meeting (26 August to 3 September 1964), a paper will be presented to Section F by F. W. Bacon on 'The Economic and Financial Impact of State and Private Pension Provision'.
Space precludes reference to a number of papers of general interest in other Sections, such as L (Education) and N (Sociology). Some of them will be found in the Association’s bi-monthly Advancement of Science.

Finally, it must be emphasized that Membership of the Association is open to all who are interested in science; no technical qualification is necessary. For many, attendance at the Association’s Annual Meeting is a source of intellectual refreshment. They can relax if they wish by going on some of the numerous excursions, whether ‘Sectional’, including visits to industrial establishments or maybe to archaeological sites, or ‘General’ to beauty spots. The Institute is a Corporate Member.

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