GEOLOGY AND THE BRITISH ASSOCIATION

by

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Summary

The Geology Section of the British Association for the Advancement of Science is at a critical stage in its development. The content and style of the annual meeting programmes require re-appraisal, so as to attract younger academics and research workers, without losing sight of the unique function of the Association in presenting comprehensible science to an educated lay public.

Introduction

In the late summer of 1966 the British Association for the Advancement of Science meets for the third time in Nottingham, the earlier occasions being in 1893 and 1937. The President of the Association for its 128th Annual Meeting is Sir Joseph Hutchinson, an eminent agriculturalist, but in the past this great honour has been bestowed on several distinguished geologists, including William Buckland (1832), Adam Sedgwick (1833), Archibald Geikie (1892), T. G. Bonney (1910), W. W. Watts (1935) and Sir Raymond Priestley (1956).

In the words of David Brewster prior to the first meeting at York in 1831, "The principal object of the Society .....(is) to make the cultivators of science acquainted with each other....and to bring the objects of science more before the public eye, and to take measures for advancing its interests and accelerating its progress". Although these principles have not been strictly adhered to, it says much for the organising forces within the Association that attendances at the annual summer meetings in recent years have been maintained at the 3,000-5,000 mark. This compares very favourably with the attendance of 2,000 at Nottingham in 1937. It is a remarkable post-war achievement and constant rebuff to a large proportion of the university world, which regards the Association as being somewhat redundant in these days of ultra-specialist groups and societies. Opinions of this calibre are easy to diagnose and basically reflect a lack of interest in the well-being and public image of science and scientists. The public have no right to be made privy to any new and exciting information regarding scientific progress, or so the argument seems to go. It is hardly surprising, therefore, that the image and professional status of certain subjects, more especially geology, continue at a low level in Britain, much lower in fact than in the earliest days of the Association.

Fortunately, the incomprehensible attitude of many people towards public relations is compensated for by the unstinting efforts of the officers of the Association, who invariably arrange a varied intellectual menu at each annual meeting. Not only do the officers of the 15 Sections try to appeal to specialist interests, but they also attempt to create programmes of interest to specialists and educated laymen of other disciplines. For instance, it would not be extraordinary for an Education Section audience to be composed predominantly of non-Education specialists. In fact, one of the fascinations of the annual meeting is the opportunity it offers to hear and meet people of other persuasions. This is accomplished in part in the lecture theatre, in part on a wide range of specialised and general excursions, and in part at numerous evening social functions.

The Geology Section

At the first British Association meeting the Geology Section (Section C) was combined with Geography and included among its committee members Buckland, Hutton, Murchison, Sedgwick and William Smith. In 1839 the Section name was altered to Geology and Physical Geography and in 1851 Geography became independent as Section E. Initially Mineralogy was a separate Section but it merged with Chemistry (Section B) in 1834.

It is interesting to look back on some of the great controversial issues of 1831. Lyell, for instance, was pouring scorn on the "extraordinary notion .....(of) Von Buch, who imagines that the whole of the land along the northern and western shores of the Baltic is slowly and insensibly rising!". This was hardly as forceful as Sedgwick on Lyell, however, who declared that "warped by his hypothesis (uniformitarianism) ..... in the language of an advocate, he sometimes forgets the character of an historian". Simultaneously, Taylor was rejecting the formation of vein ore-deposits by igneous injection and advocating a sublimation origin. The fixity and special creation of species was a widely held concept and there was considerable argument about the igneous origin of granite. Some petrologists even had the temerity to suggest that granites had a metamorphic origin!

The Geology Section is, or should be, a microcosm of the British Association as a whole in presenting new information to the public. The lethargy of certain academics is a serious handicap and makes the task more difficult than it should be but, by and large, the primary objective is achieved. In practice two complementary approaches are adopted at each annual meeting. First there are the morning sessions, given over to lectures on recent or near-recent research; and second there are field excursions, afternoon on weekdays and whole-day Saturday and Sunday, designed to demonstrate as far as possible new findings in the vicinity of the meeting centre. At Nottingham in 1966 a relatively wide range of field excursions is possible without excessive coach travel, whereas at Cambridge in 1965 this was not feasible because of the lack of variety and lack of suitable exposures in the immediate neighbourhood.

The ultimate responsibility for arranging topics and speakers at each meeting rests squarely on the shoulders of the Recorder of the Section, a position currently held by Professor F. Hodson. He in turn receives suggestions and advice from the Sectional Committee which is composed of two Secretaries and an annually elected series of senior and junior members drawn mainly from academic, civil service and commercial backgrounds. All ex-Presidents are ex-officio members.

The Recorder's role, though somewhat analagous to that of a General Secretary of a learned society, should be more than that of carrying out the wishes of successive Committees. Because the Committee membership is ephemeral, it devolves on him to initiate constructive policies designed to maintain and improve the well-being of the Section. Under certain circumstances, such as rapidly declining attendance at Sectional proceedings, he must be prepared to move away from traditional approaches in the presentation of subject matter to the public and other scientists. In this respect and for other obvious reasons, it is desirable that the Recordership of a Section should be in the hands of a person

senior in status, though not necessarily in years.

Current Problems of the Geology Section

Perhaps the greatest problem currently facing the Recorder and Committee is the declining interest in the Sectional Activities by younger people of pre-graduate and immediate post-graduate vintage. Less than 10 years ago, 20 to 30 people of this age group could be anticipated at the annual meeting, but nowadays if the number exceeds single figures it is unusual. The fault to a certain degree rests with the counter attraction afforded by the blossoming of specialist groups, which naturally siphon off many who might otherwise have attended; but it is also partly financial. Pursuing the former aspect a little further, the impression gained is that many post-graduate students were once satisfied to call themselves geologists and less prone to take a blinkered view of the subject as a whole. In contrast, most, these days would prefer to be called sedimentologists and such-like and to maintain ever-narrowing interests in ever-deepening ruts.

The fact that research students quickly adhere to specialist groups, each holding short meetings in the year, brings us to the second point, that lack of finance may give the British Association meeting a low priority. There is no doubt that the costs of attendance to the non-subsidized people, whether they be undergraduates, post-graduates or otherwise engaged, are becoming prohibitive. The Cambridge costs were of the order of £2 - £3 per day. To warrant this personal expenditure at any time would require a very attractive programme indeed to be laid on, not just by one Section but by many. In these days of value for money, the British Association meetings are not always considered the best buy.

The problems of non-attendance are considerable and complex, with no facile solution immediately obvious. Most Universities, Colleges and Local Education Authorities are willing to subsidize young people to a limited extent, but the subsidies are often consequent on an invitation to read a paper before a given Section. In addition, some University and College students receive bursary or special maintenance awards, but these are numerically restricted and, in practice, intellectually restricted. Perhaps if there were to be some marked increase in the number and variety of awards to people below 30 years in age, these being dependent solely on the wish of the applicant to attend, it might lead to improved attendance.

The wish to attend British Association annual summer meetings, financial considerations apart, may never mature into actuality if the programme put on by a Section or Sections is unattractive. The responsibility for this depends on the Sectional Committees, aided by Local Secretaries who arrange field excursions. As far as morning lectures go, experience shows that very specialized sessions are rarely successful. At Manchester a few years ago, the attendance at an ultra-specialised session reached an all time low of less than 5 members. In some ways it might be justifiably said that sessions of this type get the audience they deserve. Recent advances in certain by-ways of a subject are bound to be high-powered, but is the British Association meeting the right place for their airing? It is difficult to see how they can possibly appeal to the educated layman, undergraduates, school teachers or specialists in other fields.

There is also the point that the more specialised a topic is, the less likely is it that the lecturer will be able, or even prepared, to simplify so that it becomes generally comprehensible. Even brilliant expositors, admittédly rare birds, occasionally fall into the trap of incomprehensibility. However, it is doubtful if brilliant speaking as such concerns many people. All they require, or should require, is that the subject matter of a 20 to 30 minute address should be presented competently, that it should be spoken with clarity and that the facts and hypotheses should be presented logically. It is remarkable how a whole morning session can be clouded by lack of primary competence on the part of one or two speakers.

Geology is a subject in which illustration by lantern slides is feasible and indeed desirable. Unfortunately, not all speakers seem to be aware of the failings of their slides in quality, comprehensibility or aptness. There is a regrettable tendency, occasionally a function of inexperience, to illustrate a lecture with too many slides so that insufficient time is given to absorb the content of each one. More reprehensible, however, is the overloading of illustrations with excessive data.

The selection of speakers for the annual meeting is the responsibility of the Section Committee in theory but again, in practice, rests on the shoulders of the Recorder who works in the context of topics suggested at the preceding annual meeting. If he is very fortunate, the broad framework of themes and speakers is established by early November of the year preceeding the meeting. Theoretically it is at this stage that some positive attempt should be made to attract at least a certain number of speakers of known expository proficiency. However, more often than not the lecture programme is not completely established before January, or even later, and the availability of desirable speakers becomes much more unlikely. In particular, the more active younger research workers, who are an important reservoir of speaking talent, have probably completed arrangements for field work by this late date. As more of this age group are engaged in work abroad than a decade or so ago, the time is approaching when Section planning should involve looking ahead not just to the immediate forthcoming meeting but to the meeting one year ahead.

It has to be realised, of course, that some invited speakers may be deterred from lecturing by the possibility of non-publication of their paper in the "Advancement of Science". The journal is now published monthly, as compared with a bi-monthly production a year or so ago, and this theoretically enhances the chance of a paper being published. However, as is usually the case, the quality and interest of the paper is all important and a positive recommendation has to be made to the editorial board of the journal by the Section C Committee. Summary papers (as discussed in the following paragraphs) would be particularly appropriate for publication.

Summary Lectures

Perhaps the most important lecture given during all Sectional transactions is the Presidential Address, to be given this year by Professor L.R. Moore, in which the usual approach is to summarize recent findings in the particular field of interest of the current President. (In 1937 the Presidential Address of Professor L. J. Wills was on "The Pleistocene History of the West Midlands".) These addresses are invariably well attended, not only because of the eminence of the President but also because of the summary nature of the paper being presented. In the latter context it is worth mentioning that, prior to 1965, it was customary for the local geology to be described in the opening session of the annual meeting and this summary also was usually well attended.

Is it presumptuous to suggest that summary-type papers are more attractive than ultra-specialized papers and likely to draw larger audiences? Surely the answer is no. Neither can it be assumed that more lectures of this kind would drive away, rather than encourage, younger academics, research students and undergraduates. Rudolf Richter discussing "Problems of sedimentation and the advantages of a Marine Geological Laboratory" at the 1937 Nottingham meeting must have closely approached the style of lecture envisaged here. If someone could be prevailed upon to summarize recent work on sole structures and turbidites, goniatite palaeoecology, or acid-basic intrusives relationships, then there would be a certain degree of attraction for the partially fledged professionals where now there is virtually none. If one, preferably two, summary addresses (excluding the Presidential) could be arranged each year, and time allotted so that each lasted 45 minutes followed by a 15 minute discussion, then several current criticisms might be eliminated. 45 minutes should allow a competent speaker adequate time to cover his subject and avoid excessive compression; the 15 minutes discussion period would not only widen the scope of the lecture, but should also prove interesting to the lay members of the audience who, television apart, rarely have the opportunity of hearing and seeing scientists in active debate. As far as prospective

speakers are concerned, there ought to be no lack, providing they can be invited in adequate time. In the planning of these lectures it has to be recognized that the ability to summarize recent work in a particular field is not necessarily the prerogative of senior members of the profession.

Committees

Before concluding this general review of geology and Section C, reference should be made to two associated committees. One, composed of very senior members of the British geological scene, controls a research fund and periodically allots sums of money for work in any of the fields of geology. This used to be called the Critical Sections Committee and in 1937 was under the Chairmanship of Professor W. T. Gordon. The present Chairman is Professor L. R. Moore. The other, composed of university, museum and schools representatives, deals with matters concerning the teaching of geology in schools and usually confers during the annual meeting. The present Chairman is Professor T. N. George; in 1937 the Chairman was Professor W. W. Watts and the Secretary, Professor A. E. Trueman. Despite a slight under-representation of school teachers, the "Schools Committee" could be a very significant positive force in the current expansion of geology in schools. The time is rapidly approaching when this committee should not merely be a collator of information but also a disseminator of positive practical guidance to teachers and potential teachers on all aspects of the subject. To some extent Professor T. N. George has already given a lead in producing recently a comprehensive account and discussion on teaching methodology and course content in the Association Journal "The Advancement of Science" But consideration now needs to be given to items, such as handbooks and pamphlets on all aspects of geology teaching, including suitable field work. Anyone with knowledge of the rising tide of schools geology must be aware of the public relations problem that field work is, and will increasingly be, creating.

It is, perhaps, a commentary on the increase in specialist societies and groups that the number of committees linked to Section C has diminished. Now there are two, whereas at the time of the last visit to Nottingham there were eight in being, including one investigating the reptile-bearing oolite of Stow-on-the-Wold (Sir A. Smith Woodward as Chairman), another reporting on erosion of the Norfolk coast (Professor P. G. H. Boswell as Chairman), and another dealing with petrographic classification (W. Campbell-Smith as Chairman).

Conclusions

It is fitting to end this purely personal view of the problems of the presentation of geology in the British Association with some paraphrased words of a recent President of Section C. He was told more than 40 years ago that the Association was a dying useless thing; however, time had shown that the comment was not only ill-considered but also a grossly inaccurate prognostication of the future. The Association and its numerous Sections have continued to be living organisms since 1831 and will certainly continue to outlive their pungent critics. However, while destructive criticism can be safely ignored, it is necessary that Sectional Committees and Officers should be willing to hear and consider constructive criticism and ideas, so as to ensure virility of the Sections in their unique function.

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