

wistfully—to the period in the 'thirties when it was believed that an understanding of the dimensionless constant  $e^2/hc$  was just around the corner, and that with this understanding all problems of fundamental particles and nuclear forces would be solved . . . whereas to-day people don't know where to stop. . . .

The Physical Society and the organizers made the conference open without fee to all who were interested. Probably about half those present were Fellows or student members of the Society and rather more than half were visitors to Birmingham. The total attendance was 135. Among this large number, there must have been a few whose background knowledge was insufficient, but the interest and enthusiasm of the meeting was maintained throughout; the audience at the last lecture was not noticeably less than that at the first. Inquiries revealed a general feeling that an additional day or half-day to give time to assimilate the material would have been useful; but this statement was repeatedly accompanied by expressions of admiration for the excellence of the lectures. It was possible to treat so much material in a short time only because very great care had been taken to devise a treatment which avoided all purely mathematical difficulties while revealing the essential unsolved problems of physical understanding.

In concluding this report, it is reasonable to ask whether this meeting should form an example for some future meetings of the Physical Society. If specialists in some other fields are prepared to give as much thought to the problems involved in explaining their work to other physicists, then they may also succeed; for example, a similar treatment of problems of supersonic flow might be very interesting. Other scientific societies may also find occasional meetings of this type acceptable to their members.

R. W. DITCHBURN

## THE GEOGRAPHICAL ASSOCIATION

THE annual conference of the Geographical Association held at the London School of Economics during January 4–7 concluded a further eventful year in the life of the Association, although the year's activities were sadly clouded by the death of Dr. O. J. R. Howarth, the immediate past-president, and also of Sir John Myres, a trustee, past-president and very staunch friend of the Association.

A very successful spring conference was held amid delightful surroundings at Exeter; and the summer school, under the leadership of Mr. R. C. Honeybone and Dr. K. A. Sinnhuber, embarked on a new venture by meeting at Sistrans, near Innsbruck. A second party of members also attended in August the International Conference of Teachers of Geography held at Hilversum. As an outcome of this meeting the Geographical Association's office was adopted as the headquarters for the International Union of Associations of Teachers of Geography. As the central co-ordinating body, the Association has now assumed responsibility for the development and exchange of ideas among teachers of geography throughout the world. The Association has also sponsored courses for teachers in co-operation with the Norfolk Education Committee at Wymondham College, with

the Derbyshire Education Committee at Buxton, with the Lancashire Education Committee at Manchester, and with Institutes of Education at London, Nottingham, Leeds and Reading.

A lively branch activity continues, five new branches being formed during the year, thus bringing the total to forty-six, and the membership has risen accordingly and now approaches the four thousand mark. The Association has watched with care the status of geography in the schools, and one important matter upon which questions were asked in the House of Commons was concerned with the changing regulations of the Scottish Universities Entrance Board. Action was taken jointly with the Royal Geographical Society and the Institute of British Geographers in this instance. At present considerable interest is focused upon the position of geography in secondary modern schools, comprehensive schools and technical schools.

The three hundred and fifty teachers and lecturers who attended the annual conference were thus able to note with satisfaction a year of continuing vigorous activity under the presidency of Prof. S. W. Wooldridge. In a stimulating and provocative presidential address on the "Status of Geography and the Role of Field-work", Prof. Wooldridge directed attention to the need for a closer liaison between university and school practitioners of the subject, and to the problem of achieving balance between the presentation of matter and methods of teaching in the training colleges. The principles of field-work were enumerated and the need for local studies was emphasized, while the work of the Council for the Promotion of Field Studies was described together with the geographical facilities available at the four centres at Juniper Hall, Flatford Mill, Malham Tarn and Dale Fort.

The wide range of interests of the geographer was well illustrated by the supporting lectures: Mr. T. H. Elkins spoke on Liège and the problems of southern Belgium, Mr. D. J. Sinclair gave the results of a study in historical geography of some Surrey farms in the eighteenth and nineteenth centuries, Dr. F. G. Hannell lectured on the activities of the British Schools Exploring Society, and Mr. R. C. Honeybone presented an account of the summer school's alpine field-studies.

Educational aspects centred on a lecture by Mr. Charles Armour (of the British Broadcasting Corporation) on school broadcasting and the teaching of geography, the talk being enlivened by recorded extracts from programmes: and on three symposia arranged by section committees. One dealt with problems of geography teaching and their relation to preparation for the university, a second discussed the General Certificate of Education of the Associated Examining Board, and a third—supported by a demonstration class—considered techniques of diagram and map-making in class. A selection of recent geographical films was shown during the meeting, and Prof. P. W. Bryan once again contributed a 'Kodachrome' colour film, dealing on this occasion with the north-east Yorkshire moors, wolds and coast. The customary publishers' exhibition of books, maps and appliances for the study and teaching of geography, supported by nearly forty publishers, was also arranged. The Association's Standing Committee for Visual Aids, in collaboration with the National Committee for Visual Aids in Education and the Educational Foundation for Visual Aids, also mounted an exhibition of visual aids and

apparatus under the theme of "Ways of using Visual Aids in the Classroom".

Social activities at the conference included a summer schools reunion supper, a section luncheon, an Association tea, and the largest annual dinner yet held, at which Prof. P. W. Bryan, Mr. F. Spencer Chapman and Mr. Charles Armour were the guests. On January 6 the Association met jointly with the Royal Geographical Society to hear Mr. F. Spencer Chapman describe his "African Journey"; and this terminated the more formal part of the conference. On the last day, however, an interesting series of excursions had been arranged to places of geographical interest. Conducted visits were paid to St. Albans, Rothamsted Experimental Station, the Port of London, the Ordnance Survey and Messrs. George Philips Map and Globe Works.

The new year is entered upon with considerable changes among the officers of the Association. Mr. T. C. Warrington is now retiring after many years of service as honorary auditor and honorary librarian, and these two offices will in future be filled by Mr. W. R. A. Ellis and Mr. L. J. Jay. Mr. L. S. Suggate becomes president for 1955, while Mr. R. C. Honeybone takes over from Prof. W. G. V. Balchin the post of honorary conference organizer. Prof. L. Dudley Stamp, Prof. E. G. Bowen and Prof. W. G. V. Balchin have been elected trustees of the Association.

W. G. V. BALCHIN

## SCIENCE MASTERS' ASSOCIATION ANNUAL MEETING AT NEWCASTLE UPON TYNE

**M**ORE than four hundred science masters met in King's College, Newcastle upon Tyne, during the week between Christmas and New Year for the annual meeting of the Science Masters' Association. The world-wide reach of the Association is shown by the fact that teachers were present from Ceylon, Nigeria, Uganda and Natal; also present were Mr. Withers, secretary of the Education Section of the Federation of British Industries; Dr. Dewar, representing Imperial Chemical Industries, Ltd.; and Mr. Obourn, an American observer from the Paris headquarters of Unesco.

The first evening was the occasion of the presidential address by Dr. C. I. C. Bosanquet, rector of King's College. This was delivered to a crowded audience in the large lecture theatre of the new Chemistry Building, remarkable for the excellence of its acoustics and of its air-conditioning system. Dr. Bosanquet's address was entitled "In Praise of Natural Philosophy" and was a plea for the broadening of the school curriculum for both the science and the arts specialists; the scientist, he said, is at present given a training only in a series of unrelated subjects, and the arts specialist is deprived of any further acquaintance with the great processes of Nature. Dr. Bosanquet quoted figures which showed that while the number of pupils taking science in schools is steadily rising, the number taking arts is almost stationary; and there is still a considerable proportion of boys in the public schools doing little or no science at all. As an example of the synthesis involved in the term 'natural philosophy', Dr. Bosanquet dealt at some length with the life of

Thomas Young, who was equally good at so great a variety of subjects. Dr. Bosanquet wants it to be possible for a student on reaching the university to change over from an arts course to a science one and vice versa. He concluded by emphasizing the necessity for inculcating a sense of responsibility in the young scientist; he thought that wars are less likely to come from irresponsible rulers than from the apathy of those they rule; the young scientist should understand clearly that, in any future war, his chance of remaining unhurt is small.

Among its many activities, the Association administers a trust fund for the presentation of a lecture on science and citizenship, usually given every second year. This year the lecture was by Dr. Eric James, High Master of Manchester Grammar School, and it will live long in the memories of those who heard it as a great occasion in the history of the Association; an excellent speaker giving out constructive thought at white heat in a splendid theatre to another crowded audience made it a remarkable experience. Dr. James took the view that the scientist cannot be a neutral technical expert, and must take full responsibility for the consequences of his work. Even if that work be apparently without any practical application whatever, he still owes the opportunity to do that work to the social structure in which he lives, and he can therefore not afford to be indifferent to circumstances affecting that structure.

Dr. James expressed concern at the consequences of television, the "most politically significant invention since printing", since it creates masses of uncritical observers, and might prevent the heretic and the oddity, on whom progress depend, from having any public voice at all. He thought also that as more and more of the best brains become involved in scientific pursuits, there is a grave risk that the level of ability in political administration may fall; and it is therefore essential that the scientist should have an education making him capable of taking over the work of government.

The more strictly scientific activities during the meeting included lectures by members of the science and applied science faculties of King's College. Notable among these was one entitled "Demonstrations in Optics", by Prof. W. E. Curtis, who is an outstanding example of that not too common combination, high ability as a scientist and great skill as a showman; all his very large number of experiments were most beautifully presented.

On the same morning, Prof. W. F. K. Wynne-Jones gave a lecture on the presentation of physical ideas in chemistry, and Prof. A. D. Hobson followed up a lecture on the marine fauna of the British Isles with an afternoon visit for members to the Marine Laboratory at Cullercoats.

The second full day began with a lecture by Dr. R. McWeeny on the impact of quantum theory on the teaching of physics and chemistry; one by Prof. T. S. Westoll on "Living Fossils"; and one by Prof. G. S. Rushbrooke on some characteristic features of twentieth-century physics. Prof. Westoll's lecture, on a semi-palaeontological subject, marks a somewhat unusual departure for the Association, and indicates a steady broadening of its subject-matter. King's College has plans for a large new department of geology, in view of the importance of that study to the north-eastern area of Britain.

The two main afternoons were occupied by visits to many different industrial organizations, such