

and large hall beyond provide a display of specimens illustrating European art, Oriental art, primitive art and the civilization of Ancient Egypt. On the first floor are the main comparative series of ceramics, arms, coins, glass and medals. The silver is notable for some excellent Scottish examples. The Textile Gallery shows a representative collection of lace, Persian and Oriental embroideries and early pieces from Egypt and Peru. Upstairs, on the second floor, are galleries illustrative of comparative ethnography, with some outstanding Japanese prehistoric material.

Dr. A. C. Stephen stresses the association of the early natural history specimens with Prof. Robert Jameson, that outstanding personality who inspired so many Scots to collect in foreign lands. The exhibition galleries comprise fourteen rooms in the eastern half of the building and includes sections devoted to British and foreign birds, British mammals, extinct animals, beasts of prey, large ungulates, proboscideans, reptiles, fish and a recently arranged insect display. The Children's Gallery, with a fine diorama of the foreshore facing Bass Rock, is a striking feature. Mention must also be made of the Type Gallery and the Hall of Comparative Osteology, designed chiefly to meet the needs of students as distinct from members of the general public. The technical equipment of this Department is remarkably complete, and includes two studios for the skinning and mounting of animals, a large de-greasing plant and recently a freezing apparatus is being installed in the basement. The subject of botany is, of course, dealt with in the Royal Botanic Gardens.

Mr. A. R. Hutchieson, keeper, in describing the Department of Technology, naturally refers to the fact that it had its beginnings in the Industrial Museum of Scotland, and even some of its collections go back to the material acquired from world-wide sources following the Great Exhibition of 1851. These are augmented by industrial models and scientific apparatus derived from the Royal Scottish Society of Arts, the Royal Highland and Agricultural Society of Scotland and the University of Edinburgh. As early as 1866 a technological workshop was started in the Museum, and this in recent years has produced some amazingly accurate models, notably one of the Temple bascule bridge, Glasgow, complete with traffic controls, and equipped with a talking label, employing wire recording apparatus. In both World Wars the workshop became a small production unit for national purposes. The collections are housed in six galleries, devoted to power, shipping, mining and metallurgy, navigation and science. Adjacent to the Science Gallery is the Radiation Gallery, in which is a series of exhibits operable by the visitor and showing the properties of a variety of rays.

Dr. C. D. Waterson, assistant keeper in the Department of Geology, refers with natural pride to the historic nature of the collection under his care. They recall the great Wernerian-Huttonian controversy, the exploration of the North-West Passage, and the hobby of Hugh Miller, the stonemason. In common with the other Departments, the return of the material after evacuation for the War gave the opportunity for entirely new display methods in the four galleries at the east end of the top floor. The recent publication of a Catalogue of Fossil Fish recalls the name of Dr. R. H. Traquair, of international repute, who was at one time keeper of the Department of Natural History.

In a closing section, Dr. Allan rightly recalls that centuries are more than end-points, for they are

starting-points for a new period of endeavour. With other museums now in the City of Edinburgh, the Royal Scottish Museum still has as its main function the collecting, conservation, display and interpretation of material in art, ethnography, natural history with geology, physical sciences and technology. World-wide exhibits are used where necessary, and Scottish ones where possible.

It only remains to state that the format of this brochure is very attractive. Illustrated with half-tone blocks and plans, it gives a visual impression of the buildings at various stages of their development, and a genealogical diagram portrays clearly the composition of the present staff and their inter-relationships.

It is written and edited in that individualistic, factual but stimulating style which we now associate with the pen of Dr. D. A. Allan, and is not only interesting as a record of achievement in Edinburgh but also recapitulates faithfully much of the history of the museum movement in Great Britain.

THE MUSEUMS ASSOCIATION

THE sixtieth annual conference of the Museums Association was held amidst the capital splendour and beauty of Edinburgh during July 19-23, under the presidency of Sir Leigh Ashton, director of the Victoria and Albert Museum, London.

The conference coincided with the centenary of the Royal Scottish Museum, and members were privileged to attend the ceremony on this historic occasion and share in the greetings offered by distinguished guests. The Minister of State, the Right Hon. the Earl of Home, presided, and felicitations were expressed by those representing the City, the University and museums at home and abroad. Dr. Douglas A. Allan, director, replied and paid a warm tribute to the Ministry of Works and other colleagues who had brought the Royal Scottish Museum to its present high standard of display.

This year no overall theme was selected for the conference; but the individual papers were of a high level, and the discussions were stimulating and of interest both to the professional members and institutional delegates. Sir Leigh Ashton, in his presidential address on "The Functions of Museums", stressed the importance of conservation and enumerated the other functions as assistance given to the scholar, the child and the general public. He paid tribute to the Carnegie United Kingdom Trustees for their welcome help to the museum movement and the influence of their grants for improved presentation, and stressed the importance of imagination in dealing with the educational side of museums.

Mr. Ritchie Calder, in a paper on "Museums: our Wasting Heritage", felt that an artificial culture was replacing real values. He appealed to the museum profession to help in the preservation of our heritage and felt that they could study with advantage much of the publicity methods of the commercial world.

Dr. D. E. Owen (Leeds), speaking on "Making Friends for the Museum", considered that the needs of the museum were different from those of the art gallery. The former required workers both for the acquisition and identification of material, while the latter were in need of patrons to lend, give or buy works of art. A museum of archæology probably required both types. He considered that much help

could be given to folk museums by systematic circularization of those in close touch with the countryside.

For the first time in the history of the Association and as an experiment a session was given to sectional meetings. In that devoted to archaeology, ethnography and folk-life, Dr. D. B. Harden was chairman, and Mr. R. J. C. Atkinson gave a paper on "A National Index of Archaeological Collections". Mr. Atkinson sought the co-operation of museums in the compilation of illustrated indexes of British archaeological objects: (1) *Inventaria Archaeologica* of associated groups chiefly of the 2nd millennium B.C.—an international project of which some Belgian and German cards are published; (2) British Association card index of bronze implements, formerly in the British Museum, now at Oxford, in abeyance since 1939; (3) *Corpus of Bronze Age pottery*, being organized by the Council for British Archaeology; and (4) School of Scottish Studies, Edinburgh, neolithic and bronze age indexes. Mr. F. G. G. Carr (National Maritime Museum) and Miss Elspeth M. Gallic (Old Glasgow Museum) then dealt with the difficult problem of the purposeful display of personalia and historical relics. Both speakers stressed the need for proving the authenticity of personalia and historical relics and, if possible, for exhibiting them as part of a well-defined and general pattern. An endeavour must be made to re-create the person to the visitor.

In the section dealing with art and applied art, the president took the chair, and the first discussion was opened by Prof. A. F. Blunt, of the Courtauld Institute of Art, whose subject was "The Teaching of Art History, and the Museum Profession". He described the training in the history of European art provided at the Courtauld Institute. The Institute could not, he stressed, give instruction in the administrative and technical aspects of museum work—this came only with experience and specialized training; but it did provide education of a high standard of great value to entrants to the museum profession.

The other speaker was Miss Helen Gluck, who discussed "The Dilemma of the Painter and Conservator in the Synthetic Age". She showed how, since the commercial introduction of packaged paints, the quality of artist's materials had deteriorated. The situation had become worse since the introduction by the colourmen of synthetic materials. If the paintings of to-day were to survive, the most thorough investigation was required, and a centre, which would make it its business to see that standards were maintained, should be established. Miss Gluck's paper was the subject of lively discussion and the meeting agreed to recommend to the Ministry of Education, as the body responsible for most of the schools of art, that this matter be given serious attention.

The third section, under the chairmanship of Dr. W. E. Swinton, discussed two difficult but important fields for museum treatment. Mr. D. Chilton (Science Museum) defined the essentials of display for meteorology, which is becoming increasingly of public interest, recommending the exhibition of the standard instruments, in use, if possible, and a selection of cloud photographs. Dr. John Burton (medical director of the Central Council for Health Education) stressed the ways in which the local museum could play its part in the hygiene campaign and discussed the kinds of travelling exhibitions which were and could be prepared, and the part that the local medical

officer of health could, and probably would, play in co-operation with the museum.

Dr. F. J. North, chairman of the Education Committee, opened a discussion on training problems in the museum profession. After referring to the difficulties of the task and its consequent challenge, he said that it should be possible to induce at least one university to establish a department of museology, or better still, to create conditions in which the Association could have its own training institution. Subsequent speakers stressed that such a training should be in the nature of a postgraduate diploma course. The training needs of museum curators fall into two categories. First, instruction in some museum subject generally received in a university or equivalent institution, and secondly, the application of that knowledge to the needs of a museum. As matters are at present, training in the latter part can only be given in museums and several trainee-assistant schemes are in operation. Dr. North naturally summarized the diploma scheme of the Museums Association for curators and the more recently instituted technical certificate. Opportunity was taken at the end of the discussion to express the gratitude of the Association for his great services during his eight years chairmanship of the Education Committee and for his pioneer work with regard to the establishment of the diploma and technical certificate.

The hospitality of Edinburgh was extended to members by receptions at the Assembly Rooms, the Royal Scottish Museum and the Scottish United Services Museum, and the Association was honoured by the presence of the Lord Provost and other distinguished citizens at its annual dinner. Tours to Loch Lomond and the Loch Sloy scheme, Haddington and East Lothian and the Border Abbeys closed a stimulating week.

At the annual meeting of the Association, Sir Leigh Ashton was re-elected president, and Mr. E. C. Chubb, director of the Durban Museum and Art Gallery during 1910–51, was elected an honorary fellow. It was decided to hold the next conference at Birmingham during July 4–8, 1955.

THE UPPER ATMOSPHERE

AS part of its summer meeting in the University of Edinburgh during July 15–17, the Royal Meteorological Society held a symposium on "The Upper Atmosphere". Dr. O. G. Sutton, president of the Society and director of the Meteorological Office, presided.

The first speaker at the symposium was Sir Edward Appleton, principal of the University, who began by emphasizing the remarkable complexity of the structure of the upper atmosphere and proceeded to give a survey of the present state of our knowledge of the subject, indicating the regions that are the seats of the various phenomena which were to be discussed by subsequent speakers in the symposium. He likened the upper atmosphere to a vast laboratory in which the sun daily actuates a series of experiments at low pressures, in conditions and on a scale which we cannot hope to reproduce experimentally. Solar ultra-violet radiation creates, at different levels, the ozonosphere and the ionosphere by dissociating molecules and by ionizing both atoms and molecules. Further, the gravitational attraction of the sun and moon causes marked atmospheric tides at high