

The Conference was attended by about 330 delegates of whom eleven were from overseas. Except for the presidential address and the papers describing the policy and collections in the four museums in York, the theme centred about "Museums and the Public". The main subject for discussion was the methods of display or presentation for the various kinds of museum and art gallery material. The Conference early admitted that there have been radical changes in recent years, and lively discussion ensued as to whether the so-called 'shop-window technique' had not been over-stressed. Quite wide differences of opinion were also expressed regarding what should be shown in the exhibition cases. It was evident that scientific advances and new materials offer new solutions to the practical problems of exhibition, but that these are not without their dangers if attempted by those without adequate training.

Dr. North, in his presidential address, endeavoured to answer the questions: "Why Museums and Wherefore the Museums Association?". He felt that the irreplaceable contribution of museums is in their power to enable us to recapture the capacity to wonder. He also maintained that our understanding and enjoyment of common things can be greatly enhanced by what museums have to tell us about them. Museums can inspire a lively curiosity about the works of Nature and man, and provide a potential antidote to boredom, one of the greatest evils of modern life. Although by its articles of association the Association is precluded from trade union activities, it can advance the interest of its members and help them to render even better service to the community. The *Journal* and the annual conference provide for the interchange of views and the pooling of experience, while the diploma and training schemes seek to establish a recognized professional status.

Among the specialized papers, Dr. Mary Woodall (Birmingham) dealt with the display of paintings, and Mr. Ian Finlay (Edinburgh) with the display of other art objects. The former paper produced a lively discussion concerning the advisability or otherwise of glazing paintings. Although this is a difficult problem in which many factors must be considered, the balance of opinion veered to the elimination of glass protection. Dr. Woodall also advocated the use of small intimate rooms as well as the lofty and pompous galleries, and preferred textiles for background rather than distempered or painted walls.

Mr. H. Stansfield (Liverpool) described the difficulties of an effective display for botanical material and emphasized the importance of showing living specimens. He also stressed that there is more value in discovering new facts about common plants than in merely pointing out a rare one. He stated that illuminated dioramas can be used to link plants of the past with those of the present day, and advocated the presentation of the economic aspects of botany.

Mr. A. J. Butler (Geological Museum, London) said that it is possible to present geology to the public in a manner which gives pleasure to the emotions and the intellect; it is not a fusty academic discipline. Dioramas showing present scenery and reconstructions of the past, coloured relief models and photographic exposition have already proved their worth. Mr. Butler visualized an extended use of coloured photographic prints and colour films of scenery, and of the international exchange of special

photographic exhibits dealing with areas famous for their geology.

Mr. A. Hazelwood (Bolton) suggested an introductory exhibit in zoology illustrating the terms used in classification. He advocated modified habitat groups in which the display is produced with the minimum of scenic distraction and the use of plastic-embedded specimens displayed together with enlarged models.

Dr. Iorworth C. Peate (Welsh Folk Museums, St. Fagans) maintained that a folk museum should represent the natural setting and environment of the life portrayed through the exhibits. It should have a museum building for the systematic display of material and act as a centre for archives and research. It should also contain a lecture theatre for activities illustrating national or regional life. Around the folk museum should be displayed old buildings which have been carefully removed from their original sites and furnished as complete exhibits portraying the normal life of the particular period.

At the annual general meeting, the Association established the 'technical certificate' which will be awarded only to those who attain the required degree of proficiency and will provide official recognition for those who work in museum laboratories and workshops. It will be complementary to the diploma of the Association, which was established twenty years ago as the professional qualification for the administrative and curatorial staff.

At the same meeting the Museums Association Benevolent Fund was launched, the purpose of which is to help members and their dependants in financial difficulties in a profession that with few exceptions is inadequately paid.

Sir Leigh Ashton (Victoria and Albert Museum, London) was elected president for 1953-54, and the next annual conference will be held in Edinburgh during July 19-23, 1954.

## INTERNATIONAL RADIO CONSULTATIVE COMMITTEE

### FORTHCOMING PLENARY ASSEMBLY IN LONDON

THE seventh plenary assembly of the International Radio Consultative Committee (C.C.I.R.) will be held in London during September 3-October 7, inclusive. This assembly will discuss various technical problems encountered in the practice and development of radio communication, with the view of making recommendations to be submitted to the International Telecommunications Union (I.T.U.). The previous plenary assembly was held in Geneva in 1951; but three of the study groups of the Committee met in Stockholm in 1952 in order to give technical advice and assistance in the assignment of very high frequencies for broadcasting and television services in Europe (see *Nature*, 170, 185; 1952).

The work of the Committee is organized under fourteen study groups, the chairmen and fields of activity of which are as follows: (I) Dr. Ernst Metzler (Switzerland), transmitters; (II) M. Pierre David (France), receivers; (III) Dr. H. C. A. van Duuren (Netherlands), complete radio systems used by the different services; (IV) Prof. L. Sacco (Italy), ground-wave propagation; (V) Dr. R. L. Smith-Rose

(United Kingdom), tropospheric wave propagation; (VI) Dr. J. H. Dellinger (United States), ionospheric propagation; (VII) M. B. Decaux (France), radio time signals and standard frequencies; (VIII) Mr. A. H. Cannon (Australia), international monitoring; (IX) Mr. H. Stanesby (United Kingdom), general technical questions; (X) Mr. N. McNaughten (United States), broadcasting, including questions relating to single sideband; (XI) Mr. E. Esping (Sweden), television, including questions relating to single sideband; (XII) Mr. B. V. Baliga (India), tropical broadcasting; (XIII) Mr. J. D. H. van der Toorn (Netherlands), operation questions depending principally on technical considerations; (XIV) Prof. T. Gorio (Italy), vocabulary.

Many of the subjects under consideration by these study groups are of considerable scientific interest, particularly in the fields of standards and measurements, wave propagation, atmospheric noise, television, and the application of information theory to the improvement in the efficient and economical use of the radio-frequency spectrum. Adequate liaison arrangements have been established between the International Radio Consultative Committee and the International Scientific Radio Union (U.R.S.I.) for the discussion and exploration of subjects of mutual interest. The United Kingdom delegation to the Committee is formed under the auspices of the General Post Office, which is the administration responsible for telecommunications in Britain.

## RADIO-ASTRONOMY IN THE TROPICS

By PROF. H. E. HUNTLEY  
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**I**N January 1952, the Physics Department of the University College of the Gold Coast brought into operation a radio-astronomy observatory at Achimota, about seven miles from Accra. Its situation gives the station certain advantages. Unlike stations in higher latitudes, its proximity to the equator makes it possible to survey both the northern and southern celestial hemispheres and to observe the sun at zenith angles which are relatively small throughout the year.

The station's equipment includes a twin aerial array forming an interferometer, each array consisting of eight horizontal full-wave dipoles with ground screen, the spacing between the arrays being  $30\lambda$  ( $\lambda = 6.7$  m.). Preamplifiers are provided at each aerial array to neutralize attenuation losses in the cables and increase the signal/noise ratio. The line joining the arrays being in the east-west direction, the collimation plane contains the meridian. The interference pattern is such that the angular separation of the maxima or minima of central lobes is about  $2^\circ$  in Right Ascension.

The receiver and amplifiers incorporate the phase-changing switch described by Ryle<sup>1</sup>. This delicately adjusted unit was constructed by skilled African mechanics in the science workshops of the University College under the supervision of Fr. J. R. Koster, a lecturer in the Physics Department. The output of the receiver is recorded by an Evershed and Vignoles duplex recorder which employs a siphon pen writing on a clock-driven paper strip, the speed of which can be varied within wide limits.

The construction and maintenance of a radio-astronomy observatory in the tropics occasion certain difficulties which are not encountered in temperate climes. All wood associated with the aerials must be impregnated with creosote against the ubiquitous white ant. Tropical undergrowth which would speedily obliterate the ground screens requires frequent attention. To meet the danger of flooding as a result of tropical rain storms, the hut which houses the receiving equipment is built on piles. Thunderstorms are of such frequency and violence at certain seasons that the register shows little more than a continuous record of lightning flashes. The tropicalization of electronic apparatus is obligatory. Even so, there has been a disappointing series of failures of components, particularly transformers, followed by an unavoidable delay in repairs since replacements must be obtained from overseas.

In certain respects, however, this tropical station has advantages. Such excellent wood as African mahogany is immediately available and cheap. Unskilled labour is plentiful and inexpensive. The African 'lord of the manor' demands only a token rent for the land occupied by the station. There is, moreover, a latitude of choice of pitch which makes the avoidance of man-made electrical interference relatively simple.

The current programme of work in the observatory includes the hour-by-hour recording of ionospheric (*F'*-layer) disturbances of radiation received from radio stars. It has already become clear that at certain seasons the incidence of these disturbances is more frequent in tropical than in temperate latitudes. It was a cause of some surprise that they are often of such violence as to obliterate almost entirely the radiation of so conspicuous a radio star as that in Virgo. The sun's activity at noon is of course included in the daily record, so that sunspots and such solar flares as are active at midday are under observation. Less frequent events, such as the occultation by the sun of the radio star in Taurus (June 1953), are observed and should yield useful information. Since the situation of the observatory affords a favourable view of radio stars of low declination, it is hoped to initiate a programme for determining the co-ordinates of their positions.

The staff of the observatory owes much to the interest in it shown by Mr. M. Ryle, of the Cavendish Laboratory, Cambridge, who, recognizing the advantages of a site near the equator, has given valuable advice and encouragement.

<sup>1</sup> Ryle, M., *Proc. Roy. Soc., A*, **211**, 351 (1952).

## INITIAL SPREAD OF MYXOMATOSIS IN AUSTRALIA

By JOHN LE GAY BRERETON\*

**I**N spite of the fact that the time and position of the introduction of myxomatosis to wild rabbit populations in Australia are known, the course of the spread of this disease which gave rise to the first epizootics of 1950-51 was unknown. This happened because epizootic centres sprang up suddenly in unsuspected and far-distant places. This led to the supposition that the disease was spread by wind-blown mosquitoes<sup>1-3</sup>. This article advances another

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