(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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In 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 30λ ($\lambda = 6{\cdot}7$ 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° in Right Ascension.

The receiver and amplifiers incorporate the phase-changing switch described by Ryle[1]. 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.

[1] Ryle, M., *Proc. Roy. Soc.*, A, **211**, 351 (1952).

INITIAL SPREAD OF MYXOMATOSIS IN AUSTRALIA

By JOHN LE GAY BRERETON*

In 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[1–3]. This article advances another

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