

1959, 68, although the latter year is incomplete. A breakdown into broad subject groups showed that for biological and allied sciences the percentage without subject indexes was 53, and for physics, chemistry, engineering and technology, 60.

The report also notes the considerable time-lag between the holding of a meeting and publication of the report of its proceedings, and points out that publications which took more than two years to prepare were even less likely to contain subject indexes than those issued in the same year as the meeting. About a quarter of the reports were published by the organizers of the conferences themselves, and of these 79 per cent were without; about three-fifths of the remainder were issued by four publishing houses, and for these the percentages without subject indexes were 59, 96, 48 and 33. For the 22 reports issued by commercial publishers, the percentage without subject indexes was 35 per cent, and it is worth noting that all ten issued by one and seven out of eight issued by another had subject indexes. The risk that information sought in such reports may not be found is further illustrated by a more detailed example of a random sample of five publications, but this limited survey could not attempt to examine how far the contents of such reports are published elsewhere or caught up by abstracting organizations.

Leo III

AN impressive addition to the field of the automatic office is *Leo III*, a new all-transistor digital computer under development by Leo Computers, Ltd. The machine, which incorporates many of the latest advances in data-processing techniques, makes use of a micro-programming construction and can perform arithmetical operations directly on decimal, sterling or any other desired quantities. The time taken for a typical decimal addition is 44 μ sec. Perhaps the most interesting feature is that it is one of the first British computers to incorporate an automatic time-sharing facility. This enables two or more different programmes to be run on the computer at the same time and assists in obviating periods of waiting by (say) the arithmetic unit during the relatively slow operation of the peripheral equipment. Another feature is the large high-speed magnetic core store, which has a capacity of up to 32,768 words of 44 bits each. Further storage is provided by magnetic tape, each tape being capable of holding several million alpha-numeric characters, with a peak transfer speed of 90,000 characters per sec. A wide range of input and output devices is also available, and these include a line-printer with a maximum speed of 850 lines per min.

Radio Frequencies and Space Communications

THE increasing demand for frequencies for various applications of radio technique has led to a state of congestion in the radio-frequency spectrum. At its autumn meetings in Geneva, the International Telecommunications Union gave earnest consideration not only to the more orthodox uses of radio-waves, but also to the requirements of radio astronomy and space research; and these must include in the near future the frequencies to be used for communications with and between vehicles in space. For the information of the United States Senate Committee on Aeronautical and Space Sciences, a report, by Edward Wenk, jun., has recently been issued under the title "Radio Frequency Control in

Space Telecommunications" (United States. 86th Congress 2nd Session. Legislative Reference Service—Library of Congress. Pp. vii+235. Washington, D.C.: Government Printing Office, 1960). This report explains the dependence of the exploration of space on radio communication, reviews briefly the technical considerations which determine the selection of frequencies for various purposes, and summarizes the history of international agreements on frequency allocation. An outline is given of the organization of the International Telecommunications Union, with its technical advisory body, the International Radio Consultative Committee, and its relationship with the International Council of Scientific Unions, to which are affiliated the International Scientific Radio Union and the Committee on Space Research.

While most of the report is concerned with problems domestic to the United States in the allocation and control of radio frequencies for all purposes, some extensive appendixes include the report of the *ad hoc* Committee on the Peaceful Uses of Outer Space adopted by the United Nations General Assembly in 1959. There is also a world-wide summary of frequencies recorded by the International Frequency Registration Board of the International Telecommunications Union, and a copy of the Radio Regulations and Frequency Allocations adopted by the Administrative Radio Conference of the Union at Geneva in 1959. These appendixes make the U.S. report a very useful work of reference to those interested in international radio matters.

Tectonics of the Gobi Mountains

THE aerial and land survey of the fault and fissure zone in the Gobi mountain range, as resulting from the earthquakes of December 7, 1957, and April 7, 1958, is discussed by V. P. Solonenko and N. A. Florensov (*Priroda*, 2, 61; 1960). The disturbed zone stretches almost parallel to latitude 45° N., and extends for almost 300 km. from longitude 99° E. to 102° 20' E. The zone consists of a number of faults, one with a visible throw of 328 m., enclosing several horsts and rift-valleys, one rift-valley having dimensions 27 km. long and 800 m. wide.

Newly Discovered Rock Shelter Art in Malaya

WHY mankind should want to draw and paint in caves and rock-shelters cannot as yet be determined. Probably the reasons are multiple. In the case of palaeolithic man, it is likely that sympathetic magic in connexion with food supply was the motive, but such an urge cannot be adduced in the case of the South and Central African rock-shelter art, nor in the case of some newly discovered decorated rock-shelter walls near Ipoh, Perak, Federation of Malaya. These latest discoveries were made by Lieut. R. L. Rawlings, of the Gurka Rifles, and are described in *Man* for January 1960 by J. M. Matthews, curator of museums, Federation of Malaya. Animals, men and designs are depicted in various shades of hæmatite (red), and at least three styles can be distinguished. Most of the caves in Malaya have been dug for cave earth and guano, so there are few undisturbed deposits. No correlation of this new-found art with any known culture is possible. Comparison of drawings made in one area with others elsewhere on stylistic grounds is more than dangerous; most of these drawings are essentially simple, and any conventionalizations are what one might expect to occur anywhere independently. Some day the age of this Malayan art will become known, and also why it