hilly 1, has been electronically renovated, and shares duty with Goonhilly 2. The old Atlantic aerial now faces east and the new aerial serves the busier Atlantic side. The Goonhilly 2 terminal has a dish of 27·5 m in diameter and facilities to carry up to 400 telephone circuits and a television programme between Europe, North America, Africa and the Middle East. The web of countries which can communicate directly with Goonhilly will soon be extended to include Kenya, Bahrain and Hong Kong, where terminals are now under construction.

One novel feature of the restyled Goonhilly 1 terminal is the low loss elliptical waveguide which takes the signals from the central control building to the aerial site, a distance of 525 m. The use of a transmitter system with such a long waveguide makes it possible to concentrate the maximum amount of equipment in one place and to switch between the two aerials direct from the central building.

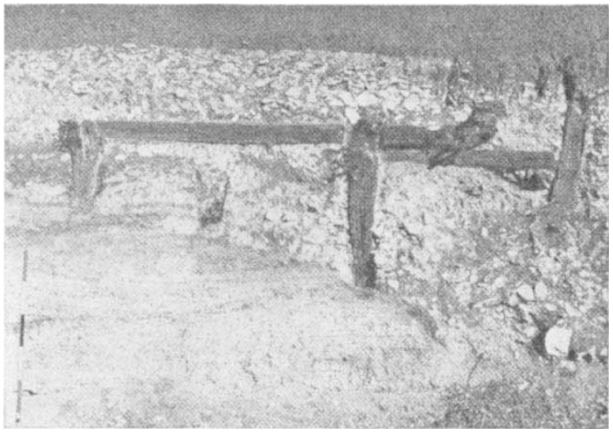
There have also been developments in the Soviet Union, which has been operating its own space communications system independently of Intelsat. The Molniya-1 satellite system has been beaming radio and television signals across the Soviet Union for about four years, and Professor Vladimir Minashin, head of the Space Communications Department of the Soviet Ministry of Communications, announced last week the linking of regular colour television broadcasts to the satellite network later this year. The distribution of populations in the Soviet Union is particularly suited to the use of communications satellites, which apparently relay newsprint and weather charts as well as television and radio programmes. Professor Minashin also announced the building of a station for the Orbita system in Ulan Bator, Mongolia. This is the first station of Soviet design to be built outside the Soviet Union.

ARCHAEOLOGICAL EXCAVATIONS

Ministry as Rescuer

BUSINESS at the ancient monuments division of the Ministry of Public Building and Works is booming too quickly for comfort. For the past half dozen years, the annual catalogue of rescue excavations mounted by the ministry at sites threatened with imminent destruction has grown fatter. This year is no exception and the catalogue for 1968 also has a new title, *Archaeological Excavations 1968*, a new price (7*s*, HMSO), and for the first time a glossy cover, which smacks above all else of putting a brave face on things. Like second sons of second sons, the ministry's archaeologists and those contracted to do specific excavations are expected to work with small budgets backed up by a conservation laboratory hopelessly overwhelmed by the amount of material dug up at the 91 sites excavated during the year. During 1968, according to the report, all the available resources were needed to meet the demand for excavating sites threatened with immediate destruction, which meant, of course, that numerous field monuments had to be left to the gradual erosion of ploughing and other agricultural activities.

Even the sites that are selected for excavation sometimes present problems beyond the resources of the ministry. One of the great ironies of the situation is that the larger the site, the less able the ministry is to



Remains of a Roman timber bridge across the River Nene at Aldwincle in Northamptonshire.

deal with it. "The heavy demand already placed on the ministry's services has given rise to problems of organization and staffing, particularly with regard to the excavation of larger sites where camps have had to be arranged to house the necessary labour and volunteers. Though it will be possible to continue to organize these operations through excavation committees the ministry itself has not staff available to mount camps of the requisite size and order." Given all the difficulties under which the archaeologists are forced to work, it would be churlish to be anything but grateful for the amount of material they rescue. But it is time that landowners and the Government accepted their responsibility for ensuring that archaeological sites are not neglected and that excavations are adequately financed.

NOBEL PRIZE

Chance for the Economists

Now that the Swedish Central Bank, to mark its tercentenary last year, has put up the money for a Nobel Prize for Economic Sciences, only the engineers are left in the cold. Why Alfred Nobel left engineering off his prize list at the turn of the century—a time when the public reputation of engineering was probably at its peak—is something of a mystery. Certainly engineers had then and for that matter still have as great a claim to be honoured by Nobel prizes as any of their contemporaries in other fields. Perhaps Saab or Volvo or some other Swedish engineering company will come to the rescue. Meanwhile, from this autumn onwards the world's economists will be able to join the intriguing game of spotting the prize-winners.

Already the economists' papers are speculating on the names on the short list for the first prize, worth £28,000 to the winner like all the other Nobel prizes. The Swedish economic weekly *Veckans Afferer* suggests that the field has been narrowed down to nine or ten from an original entry of about 200. It is strongly tipping Professors N. Kaldor and J. E. Mead of Britain, Professors M. Friedman and P. A. Samuelson of the United States, the Russian mathematician Professor L. V. Kantorovitch and Professor F. Parroux of France. Such detailed speculation contrasts with the surprise and secrecy that surround the awards to

natural scientists. The next few weeks will show whether it is more than an intelligent reading of the form book, and the next few years should show whether the prospect of a Nobel prize produces among economists the healthy competition or, as others would have it, bitter jealousies that are not uncommon among, for example, the molecular biologists who think they are in the running.

INFORMATION

More Reading for Geologists

An information service for geologists, GeoServices, has recently expanded its operations with the addition of two new current awareness publications—*Geotitles Weekly* and the bimonthly *Geoscience Documentation*—to add to *Geocom Bulletin* which has been published since January 1968. All three are published by Lea Associates, which claims that for the first time geologists, geophysicists and all those with interests in the Earth sciences have been offered a comprehensive information service. For speed, the service uses computer typesetting and indexing.

Geotitles Weekly lists in English the classified titles of all new geoscience publications. Publications scanned include the usual sources such as journals, trade magazines, books, theses, patents and standards and even conference announcements, trade literature, scientific papers accepted for publication and in the press, and broadcasts. There are weekly indexes of source publications and authors, and regular cumulative indexes are planned. Searching is carried out in London and by correspondents in different parts of the world, and it is claimed that the time lag between the date of publication of a paper in, for example, a weekly journal and its listing in *Geotitles Weekly* is between 10 and 14 days. All the titles are arranged by what is called a UDC-linkable GeoServices Decimal Classification (which might take some time to master), and they are available on library catalogue cards.

The first issue of *Geoscience Documentation* consists of a world list of about 2,000 current geoscience serial publications, "Geoserials 1969". Details of frequency, publisher and changes of title are given, and there is also a list of titles no longer published. New serials will be listed in future issues of *Geoscience Documentation*, as will analyses of geoscience literature, bibliographic news, information handling and the like. The monthly *Geocom Bulletin* concentrates on news of research methodology and exploration, with emphasis on mathematical and computer studies.

With its worldwide coverage of geoscience literature of all types (it is particularly strong on East European literature) the publishers of GeoServices are aiming for a worldwide distribution. If they can keep up the speed of publication of *Geotitles Weekly* in particular, they should have a ready made market, especially in America. One disadvantage is its price (an airmail subscription to *Geotitles Weekly* costs $350, reduced to $275 if it is for an educational institution), which, as with other comprehensive information services, puts it out of the reach of the individual subscription, but GeoServices receives no subsidy from an official source.

Despite appearances, GeoServices is not in direct competition with an OSTI supported project currently under investigation at the University of East Anglia. There, Professor K. M. Clayton, Dean of the School of Environmental Sciences, has been given a grant of £7,968 over two years to collect and prepare abstracts of current British geological literature as a basis for the UK contribution to the American Geological Institute's computer-based *Bibliography and Index of Geology Exclusive of North America*. At the same time, he is preparing a current titles journal and an abstract journal for British geology which would be less sophisticated than GeoServices, and would be more suited to individual pockets. Time will tell whether the overlap between Professor Clayton's project and GeoServices is GeoServices' gain.

TRAVEL FUNDS

To Europe with Ford

After the Johnson era, the United States Government seems to have rediscovered Europe, with the peripatetic President Nixon in the van. Now, thanks to $1 million from the Ford Foundation, United States academics will be able to join in the fun. The foundation recently announced grants to the American Council of Learned Societies, Harvard, one or two less numinous universities and the Social Science Research Council, which are designed to improve American knowledge and understanding of post-war Europe, including eastern European countries.

The American Council of Learned Societies is to receive $575,000 to finance the exchange of nearly 250 American, Russian and other eastern European graduate students and scholars in the coming academic year. On the European side, most of the scholars, about 80, will come from Russia, but all the other eastern European countries, with the exceptions of Albania and East Germany, will be represented. Harvard's $250,000 is for a coordinated programme of training and research in European studies, run by a newly formed Standing Committee on West European Studies under the chairmanship of Professor Stanley Hoffman. The programme stems directly from the west European seminar organized at Harvard during the past few years by people like Professors Hoffman and Henry Kissinger. It will be expanded to include two graduate research seminars as well as a summer programme including field research in Europe for some students. In addition the grant will provide several doctoral research fellowships and pay for European lecturers. The $249,000 going to the Social Science Research Council will enable it to increase the number of its fellowships for research in Europe from nineteen to twenty-eight next year and thirty-one by 1970–71. The Ford Foundation's grant is a timely replacement for Fulbright money which has been cut this year.

Yale's $400,000 is to expand the university's Economic Growth Centre which was established in 1961 with the aid of Ford money and which has become one of the chief US institutions researching into the economies of underdeveloped countries. The latest grant is earmarked for work in Cuba and the Caribbean. The International Division of the foundation has also made further grants for established projects in the other continents, ranging from $315,000 to the university of El Salvador in Buenos Aires for reproductive biology to $165,000 to the International Rice Research Institute for work in Ceylon.