

short period to experience the personal side of the work, although this is not as easy as it sounds, because of the tendency of GPs working near the teaching hospitals to refer to them all their difficult patients. But most people agree that medical education should not be determined by historical accidents, particularly as each doctor costs about £2,000 a year to train.

TRANSPORTATION

MOT Reorganizes

THE appointment of a new Director General of Research and Economic Planning and the setting up of a new Policy Planning Unit are the main changes in the organization of the Ministry of Transport which will come into effect in October. These changes have been stimulated partly by the need for overall direction of the rapidly growing research and economic activities of the ministry, and also by the recommendations of the Fulton Committee on Government policy planning.

Mr J. A. Jukes, who is at present a deputy Under Secretary of State in the Department of Economic Affairs, has been appointed Director General of Research and Economic Planning. Mr Jukes has spent most of his career in operational research and as an economic adviser to various authorities. There will be four main groups under his directorship: The Road Research Laboratory, the Directorate of Economics, the Directorate of Statistics and the Directorate of Scientific Studies. These groups have also been slightly reorganized in an attempt to increase the coordination between them. The Road Research Laboratory will continue to provide the major source of research, and it is hoped that the new organization will ensure that this is used to the full in solving transportation policy problems. The Directorate of Economics will work in conjunction with the Directorate of Statistics; the former will cover the expanding field of transport economics and provide general economic advice, and the latter will provide the statistical backing for the ministry's economic and scientific work. The Directorate of Scientific Studies will take over the work of the ministry's Chief Scientific Adviser and his staff, and will cover a number of studies in the area of operational research. The existing Mathematical Advisory Unit at the ministry will form part of this directorate.

The new Policy Planning Unit, under the directorship of Mr J. R. Madge, who is currently in charge of the Road Safety Group, will be responsible for longer-term planning and is a direct consequence of the Fulton Committee's recommendations. The committee was concerned that in all Government departments, long-term policy planning was being left to officials who were overburdened with more immediate demands. It suggested that planning units should be set up in every ministry in order that policy planning could be taken out of the everyday running of the ministry.

EXHIBITIONS

The First Geologist

WILLIAM SMITH is not called the "Father of English Geology" for nothing. He was not only the first

person to show that sedimentary rocks in different areas can be correlated and that each formation can be identified by the fossils it contains; he also constructed the first true geological maps and the first table of strata in England. This work established the branch of geology known as stratigraphy which revolutionized what was still an embryonic science.

To mark the bicentenary of Smith's birth, the British Museum (Natural History) has prepared a special exhibition. The most spectacular work on display is a hand-coloured geological map of England and Wales mounted as a single sheet drawn to the scale of 5 miles to an inch and measuring 8·5 feet by 6 feet. The map,



William Smith at the age of 68 (from a portrait by Fourau in the rooms of the Geological Society of London).

produced in 1815, is remarkable for its completeness and accuracy and was Smith's greatest work. This was not, however, his first geological map. His earliest attempts to construct them were probably made about 1793 and 1794, two or three years after he had started work as a surveyor in the coal mining district of northern Somerset, and by 1799 he had completed maps of the surroundings of Bath, the oldest geological maps of any part of Britain. For five years up to 1799, Smith had been occupied in surveying and superintending the construction of a canal linking the Radstock coalfield with Bath and, luckily for him, he was able to make extensive journeys up and down the country. During this time he made his geological observations and compiled for the first time a small geological map of the whole of England and Wales which he published in 1801. Other maps of increasing complexity were brought out in the following years, the best known being the large 1815 map. With this map, he also published a book which contained a short account of the geological formations to be found in each county and two tables of strata (one of which he had prepared in 1799). He followed these achievements with some more books, several charts of sections (the one on display shows a section from London to Snowdon),

and geological maps of twenty-one counties, published between 1819 and 1824. The map of Yorkshire has extraordinary detail for its time and is one of Smith's finest works.

Unfortunately, the cost of financing his publications proved too much for Smith, and in 1819 he was forced to leave London, where he had made his home since 1814. After a few unsettled years surveying in Yorkshire, Smith eventually settled in Scarborough but continued with professional engagements. For much of his life his work was unrecognized, but in 1831 he was rewarded by being the first recipient of the Geological Society's Wollaston Medal. In 1839, at the age of 70, Smith died while on his way to the meeting of the British Association in Birmingham.

This year, geologists also have the opportunity to celebrate the tercentenary of the publication of another important work in the history of geology—the *Prodromus of Nicholaus Steno*, a book first published in Latin and later in an English translation in 1671. In it, Steno records his ideas about the origin of rocks, fossils and minerals. One of the few copies of the original edition in existence and the translation are on display in an adjoining exhibit in the museum.

AUSTRALIA

Minerals Still Boom

MORE opportunities for export, and increasing domestic demand, caused the continued expansion of the Australian mineral industry during 1967. Although the world increase in mining production was only 2·6 per cent, the figure for Australia was above 10 per cent and reflects the continuing buoyancy of the Australian economy as a whole. The mineral success story is described in the 1967 *Review of the Australian Mineral Industry* (Bureau of Mineral Resources, Geology and Geophysics, Canberra, 1968).

Offshore exploration has continued to dominate the petroleum industry, and major discoveries—of both oil and natural gas—have been made during the year, mainly in the Bass Strait area. Completely new drillings are reported in the Gulf of Papua and on Ashmore Reef No. 1 in the Timor Sea. Total crude oil production in 1967 was more than twice that for 1966 and accounted for about 5 per cent of internal petroleum consumption.

As far as metals are concerned, the more important features of 1967 and early 1968 were the production of nickel and the regular export of iron ore from the Northern Territory—both for the first time. The discovery in 1966 of rich nickel sulphide ores at Kambalda, Western Australia, has led to nickel metal production which, combined with the expected outputs from other proposed developments, may soon allow Australia to become an exporter of nickel rather than an importer as at present. An added stimulus to this new venture is the present world shortage of nickel which shows little sign of changing.

The regulations governing uranium oxide export, which have always been strict, were changed in April 1967, mainly in anticipation of a tight domestic supply situation and because estimates made by the United States Atomic Energy Commission indicated that a three-fold expansion in world production to about 75 kilotons per year would be necessary by 1980. The

Ministry of National Development announced a scheme which gives permission in advance for the export of a certain proportion (depending on their size) of existing and new deposits; in this way supplies of uranium for future use in Australia will be assured and exploration simultaneously encouraged. The impact of fast breeder reactors on the market can only be guessed, but it will have to be taken into account when decisions affecting the supply of uranium after 1980 are made.

SOCIETIES

Mineralogists Integrating

THE Mineralogical Society, at a special general meeting to be held on November 6, will consider proposals put forward by its council which embody changes in the society's constitution, membership, publications and council. These proposals, although designed partly to increase income, are expected to enhance the coordination between the various branches of the society, and follow some changes which have already been introduced in publications and in the pattern of meetings.

At present, the society comprises ordinary and associate members, who receive the *Mineralogical Magazine*, *Mineralogical Abstracts* and the society's *Bulletin*, for a subscription of £5 per year. Membership of the Clay Minerals Group costs a further £1, and brings the group's Notices and *Clay Minerals*. Since the *Bulletin* includes Clay Minerals Group notices, separate publications of the group's circular will cease shortly.

It is proposed by the council that all subscription rates be increased to £6 per year, which will entitle every member to all the society's publications. This will have the double advantage of increasing income and promoting interest in the Clay Minerals section. In addition, there are proposals to revise the constitutions of the Committees on Applied Mineralogy and Geochemistry, together with that of the Clay Minerals Group, to place all these on the same basis.

Proposals for changes in the council, although not very sweeping, also highlight the trend in the society for integrating the various groups. The positions of retiring president, foreign secretary and managing trustees will be replaced by one representative from each of the Committees on Applied Mineralogy, Geochemistry and the Clay Minerals Group. The position of foreign affairs secretary will cease, and the management trustees, together with the treasurer, will constitute a finance committee.

The additional income from subscription charges will, it is hoped, be used in the reorganization of *Mineralogical Abstracts*. To this end, the council is proposing that the general meeting considers the appointment of a technical editor and an assistant, together with the establishment of an editorial office outside London. The council is concerned that if these measures are not taken, the publication of *Mineralogical Abstracts* may not be possible in the near future.

RESEARCH AND DEVELOPMENT

Ideas for Industry

THE growing interest of the National Research and Development Corporation in the sea and the sea bed