

## Japanese grants

# Once-in-a-lifetime chances

Tokyo

BIOSCIENCE and optoelectronics have pulled in most of the biggest and best research grants in Japan this year, according to figures recently released by Japan's Ministry of Education Science and Culture. But the search for the elusive heavy neutrino also gets a significant boost.

The Ministry of Education, Science and Culture has over ten categories of grants-in-aid for scientific research, ranging from run-of-the-mill general grants of a few thousand pounds to special research grants that can command a cool million. Amongst the latter, the *crème de la crème* are the "special distinguished research" grants awarded to individuals for 3 to 5 years to carry out "internationally recognized research that is likely to produce outstanding results".

Applications for these prestigious grants are made in December each year. After an initial screening, about twenty researchers are summoned to the ministry in April to present their research plan before members of the Science Council. Of these about half are selected and the grants are awarded in July.

This year, bioscience comes out on top, taking five out of ten of this year's awards. For example, Tasuku Honjo of Kyoto University gets Y251 million (about £1.1 million) over five years to continue his pioneering research on immune diversity

and in particular interleukins, while Mutsuo Sekiguchi of Kyushu University School of Medicine receives Y227 million to investigate the regulation of DNA repair and mutagenesis with the aim of unravelling some of the mysteries of cancer and genetic disease.

Optoelectronics also figures prominently with two awards totalling over Y400 million. But the biggest grant of all, at Y268 million (about £1.2 million), goes to Hiroyasu Ejiri of Osaka University for a five-year study of neutrinos. In an attempt to determine the mass of the neutrino and the amount of right-handed current in the weak interaction, Ejiri's group will monitor the neutrino-less double beta decay of a 70 cm<sup>2</sup> piece of molybdenum foil in a mine-shaft 1,000 m underground in the middle of a mountain at Kamioka in Gifu Prefecture. The mountain will filter out cosmic radiation allowing the observation of perhaps ten events per year.

Research is not all that these awards entail. Grant holders are inundated with requests to write scientific articles, and as these often come via members of the Science Council, they are hard to refuse.

Another drawback of getting an award is that under the "democracy" of Japanese science one can never get another one. In many ways it pays to be a co-researcher rather than the named awardee.

David Swinbanks

## Fairer grants system for 1987?

Tokyo

JAPAN'S Ministry of Education, Science and Culture is overhauling its system of "special" research grants in an attempt to make it more open, flexible and responsive to the needs of today. The new system will come into effect from fiscal year 1987.

At present the ministry has three categories of special grant, the special distinguished grants (see above), special long-term grants and special project grants. The special project grants are an unusual feature of Japanese science and allow participation of large numbers of researchers from various institutes under the banner of a single 3-year project. For example, Setsuro Ebashi of Okazaki National Institute for Physiological Sciences this year heads a team of 38 from 20 universities investigating vascular function. Funding for the project this year amounts to Y190 million (about £830,000).

The special long-term grants currently cover four major fields: cancer, natural disasters, the environment, and energy and fusion. Each field receives annual funding of between about Y500 million and

Y2,000 million (£2-8 million) dispersed among 100-200 projects.

The special grants, however, came under criticism because the project titles and leaders were designated by the Science Council of Japan, an advisory body of 210 scientists from all disciplines, and only well connected scientists tended to be selected. Further, only those scientists personally acquainted with the project leader could hope to join the project.

Under the new system, the special long-term and special project grants will be partially merged into a new category called "priority areas of research", although cancer and fusion research will remain separate. Grants will run from 3 to 6 years with annual funding of Y50-800 million. But the major change is in the selection of the projects and participants.

Although a few priority areas will be designated by the ministry, most will be selected from proposals made by researchers throughout Japan. And once project titles are selected, any researcher, even high-school teachers, can apply to participate.

David Swinbanks

## India's space programme

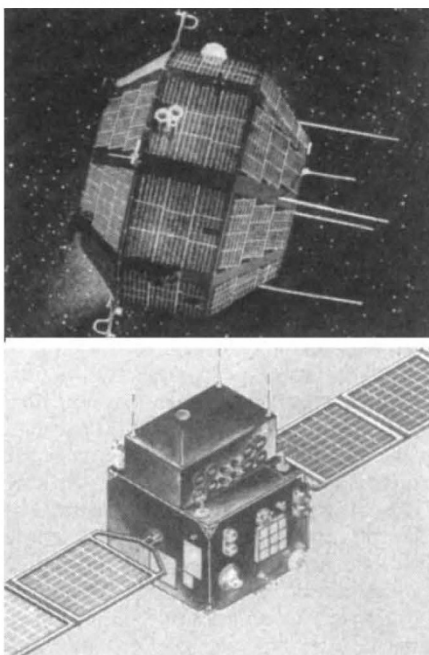
# Rising above forest decline

Bangalore

ALARMING results from the latest Landsat imagery suggest that deforestation in India is occurring at a much greater rate than was previously feared. The Indian Forest Department had believed that forests covered some 22 per cent of the nation's land area, but Landsat reveals only 10 per cent cover. To get some measure of the extent of the problem the Indian Planning Commission's task force on resource management has recommended that satellite images should be used to compile a vegetation map of the country, and a new Indian satellite to be launched next year will be able to contribute to the mapping programme.

The two Bhaskara satellites, launched in 1979 and 1981, have provided Indian space scientists with experience of sensor design and management of the data received by ground stations. Next year the Indian Remote Sensing Satellite (IRS) is to be placed into a polar/Sun-synchronous orbit by a Soviet launcher. IRS, now being built in India, will weigh 850 kg and is a fully-fledged remote sensing satellite stabilized on three axes and featuring deployable solar panels. After IRS, a series of satellites with greater resolution and more channels is planned.

The resources task force also recommends the setting up of remote sensing "cells" in the forest regions of all states so that the information gathered can be distributed to forest workers.



Two steps in India's remote sensing programme. Top, Bhaskara-II, launched in 1981; bottom, an artist's idea of IRS.