ARTIFICIAL ENVIRONMENT

Japan builds mini earth

TOKYO Japan's Science and Technology Agency (STA) plans to create a "mini Earth" within a large sealed concrete and glass building in the little village of Rokkasho on the remote northern tip of mainland Japan to study the global environment, to develop facilities that can create artificial environments for man to live on the moon, and to determine the effects that radiation leaks from nuclear power accidents will have on the natural environment.

The village of Rokkasho is famous for a huge $8,000-million facility for recycling nuclear fuel that is being built there much to the concern of some local people (see *Nature*, **345**, 285, 24 May 1990). The village of a few thousand farmers and fishermen has not until now been seen as a centre of global environment research. But STA thinks it soon will be.

Last week, the agency announced plans to build the mini Earth, or biosphere as it is otherwise called, by 1995 with a total investment of 4,000 million yen ($32 million). About 700 million yen ($5.6 million) has been set aside for the project in the fiscal 1992 budget announced earlier this month to buy land and to design the facility, which will be next door to the nuclear fuel recyling plant.

The idea is to build a sealed concrete and glass structure with a floor space of about 1000 square meters in which plants and animals will be kept in an artificially created and controlled atmosphere. Experiments will be carried out to try and understand the carbon dioxide cycle by constantly monitoring carbon dioxide and oxygen levels in the biosphere with computers.

In other experiments, trace amounts of radioactive substances will be released into the biosphere to see how they spread among living organisms. And by building the facility, planners hope to learn how to create artificial environments for man to live on the moon or under the sea.

The National Space Development Agency and the national radiological research institute will participate in the research, which will be run by a little-known new foundation in Rokkasho called the Environment, Science and Technology Research Institute. Agency officials admit that the institute, which only opened in December 1990, has very few researchers. But they hope to have many more in the future.

Whether top-class researchers on the global environment will want to go to one of the most remote and bleakest parts of Japan remains to be seen.

Observers say the prime purpose of the facility seems to be to appease local fears about the nuclear fuel plant and to convince the local people that everything that can be done to ensure safety of the plant is being done. In addition to the biosphere experiments, the institute will carry out experiments to determine the effects of low-level radiation on 20,000 mice.

David Swinbanks

DRUG DEVELOPMENT

Drugs tested for women

Washington

DESPITE the ethical, legal and safety problems of testing new drugs in women, particularly those of child-bearing age, a recent survey* by the Pharmaceutical Manufacturers Association (PMA) has identified 263 drugs that are being developed for use in women. The medicines, which are in human clinical trials or awaiting approval by the US Food and Drug Administration, are for diseases and conditions that either exclusively or mostly affect women, or are among the top ten causes of death in women.

According to the survey, the top three research categories are cancer, obstetric and gynaecological diseases, and cardiovascular/cerebrovascular diseases. The three leading causes of death in women — heart disease, cancer and cerebrovascular disease — are garnering 40 per cent of the research effort, the survey finds. In addition, the survey points out that more drugs, 37 in total, are being developed for the treatment of breast cancer — the second most common cause of cancer death in women — than for any other disease affecting women.

In a separate but related survey, pharmaceutical companies were asked whether they routinely test medicines in women and monitor data for differences in gender. Of the 33 companies that responded, 94 per cent said that they always collect data on the gender of participants in a clinical trial, six per cent said usually. When asked if they deliberately recruit representative numbers of women for clinical trials, 76 per cent of companies said yes.

Although the survey indicates that pharmaceutical companies and the biomedical research community are paying closer attention to the special medical needs of women, it urges that more progress must be made in understanding why women are more prone to certain diseases and why certain medicines work differently in men and in women.

Diane Gershon

* New Medicines in Development for Women (Pharmaceutical Manufacturers Association, Washington, DC, 1991).

DRUG POLICY

FDA panel backs Interleukin-2

Washington

AN advisory panel to the US Food and Drug Administration (FDA) has advised FDA commissioner David Kessler to approve the use of interleukin-2 for the treatment of patients with terminal kidney cancer. The panel's recommendation for renal carcinoma comes despite the fact that interleukin-2 is known to be toxic to the heart and other organs. The recommendation is consistent with a current trend to let patients decide whether to submit to dangerous therapy when no effective alternatives are available.

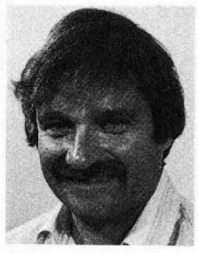
In the United States alone, an estimated 25,000 people are diagnosed with kidney cancer every year. In clinical trials, kidney tumors shrunk in 15 per cent of 255 patients, though none was cured.

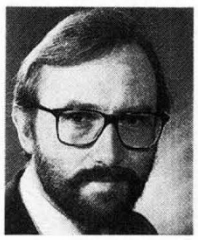
The panel's approval is good news for the Cetus Corporation of Emeryville, California which spent more than $100 million on the development of this drug. It is also good news for Chiron, which merged with Cetus last year. The drug, which is expected to get final FDA approval, will sell under the trade name Proleukin.

B.J.C.

RESEARCH PRIZE

Three share Jeantet award in medicine





Nurse (top), Townsend (middle), and Nüsslein-Volhard.

London

EUROPE'S largest award for medical research, the SFr2 million Louis Jeantet prize, has this year been shared by Paul Nurse and Alain Townsend, from the University of Oxford, and by Christiane Nüsslein-Volhard, from the University of Tübingen in Germany. Nurse is recognized for his discovery of the molecular components of the yeast cell cycle, Townsend for his research on recognition of viral antigens by T lymphocytes, and Nüsslein-Volhard for her developmental genetics studies in *Drosophila* and other species. All of them say they plan to use the money to expand their research groups.

P.A.