

IN BRIEF

EEC safeguards progress

The complicated checking agreement between Euratom and the International Atomic Energy Agency (IAEA), reached some time ago, is now in force. With the exception of France, EEC members are now coordinating the application of IAEA and Euratom safeguards to their nuclear plants, and routine IAEA inspections will take place at the same time as Euratom inspections. There is a possibility that France will enter into its own trilateral agreement with the IAEA and Euratom. The progress on safeguards, announced last week, is expected to reduce the threat to the EEC's supplies of enriched uranium from North America. Officials in Toronto were reported last week as saying that Canada may soon resume uranium shipments to Europe.

Spacelab choice made

The European Space Agency (ESA) and NASA have chosen the 77 scientific and technological experiments to be carried on the first Spacelab mission which is scheduled for the second half of 1980. Available resources will be shared equally by NASA and ESA—61 of the experiments are European, 15 are American and one is Japanese. The flight will test both the performance of the system itself and the capability for space research. Prime targets for research will be the stratosphere and upper atmosphere, but there will also be experiments on materials processing, plasma physics, biology, astronomy and thermodynamics and lubrication. NASA and ESA next have to choose two payload specialists to work in the pressurised module; they should be selected in mid-1978.

Low-cost technology prize

The Swedish Inventors' Association is living up to its name with the announcement that it is inaugurating a highly original prize of at least \$55,000 for innovations which will help to solve sociological and economic problems in the third world.

The prize will be given for their prospective, not retrospective, benefits; as it will be awarded on the hundredth anniversary of the Association's foundation, in 1986, the competition will last almost ten years. The inventors want to concentrate the competitors' efforts on certain subject-areas. The first one, announced in Stockholm recently was chosen with the firewood shortage in mind and concerns innovations related to reforestation and the rapid production and decentralised use of wood.

A book called *All Creatures Great and Small* has been on the best-seller lists for quite a while. I suppose that not all of its readers know that the verses from which the title is taken include the couplet: "The rich man in his castle, the poor man at his gate, God made them high or lowly, and ordered their estate." These lines are not best-sellers. The world is now a neighbourhood, and its inhabitants wish to shop at the same grocery as their customers whose material wants they supply. For, if manufactured products move all over the world, why should the food supply not be distributed more evenly? My tape-recorder was made in Singapore, its plug-in microphone in Japan, the cassettes in Mexico and Haiti. We grant that the race is to the swift, and the spoils to the victors, who do their best to hang on to the said spoils. However, it seems paradoxical that many people in the 'high income countries' are frantically trying to eat less, so as to live longer, and other people in impoverished lands are desperately trying to get enough food to stay alive.

Take a look at the harm done by over-eating, and at the problem of food shortages. In both cases, the central issue is calories. Too many calories lead to obesity whether they come from starch, sugar, fat or protein. Usually, however, it is carbohydrates and fats that produce obesity, with its frequent dividends of heart disease, adult diabetes and arteriosclerosis. There is a growing suspicion that risk of breast cancer and cancer of the large bowel may also be increased by high-fat diets. Obesity is not confined to inhabitants of de-

veloped countries; overeating is often one of the first responses made by people to increased availability of food in any country.

Students of diabetes have recorded that its incidence is low in populations consuming low-calorie diets, whether these are high in fat (Eskimos), high

Calorie-deficient diets in impoverished countries are characteristically low in protein, because the cheapest sources of calories are low in protein and high in starch. Cassava meal, with a dismal 1-2% of protein, is at the bottom of the heap. It is a mainstay of many African diets. The proteins in such high-starch foods are often deficient in essential amino acids. Plants are not in business to provide animals with the good life.

The 'big three' cereals, rice, wheat, and maize, will continue to dominate the world food supply. They are deficient in lysine, tryptophan and isoleucine. Rice and wheat lack vitamin A, but a million recommended daily allowances of synthetic vitamin A cost only \$250. The Economic Research Service of the US Department of Agriculture, counting calories, says, "about 0.15 kilograms daily of wheat, rice, corn, sorghum, or millet would provide 500 calories. If the estimated 460 million malnourished people in the world were each provided daily with additional grain equal to 500 calories, much of the world's malnutrition would be alleviated." Where is the grain to come from? Critics of the new, high-producing strains of wheat and rice have claimed that social upheavals resulting from disruption of traditional agriculture have sometimes followed the introduction of these strains. These upheavals are accompanied by requirements for more irrigation, chemical fertilisers, and pesticides. However, for a hungry person, there is no substitute for food and, as is painfully evident in California in 1977, for a thirsty plant there is no substitute for water.

Counting calories

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in protein (Masai) or high in carbohydrates (Indians, Zulus). Indians who move to Africa, and who then increase their caloric consumption, show a marked increase in diabetes. No longer can sleek-headed men of fat sleep soundly at night.

The diseases resulting from deprivation of food are grimmer than their counterparts in the overfed category.