Japanese conservation

War on war on migrating birds

Tokyo

JAPAN may not have much of reputation abroad when it comes to protection of wild life. But inside the country, conservation groups are growing stronger. In the coming weeks, volunteers from the Wild Bird Society of Japan will be taking to the hills in force to try to prevent the mass netting of migratory birds.

During middle to late November, migrating birds pour into northern Japan to escape the Siberian winter. In olden days, many were netted out of sheer necessity;

the farmers of the northern provinces were poor and the birds provided one of the few sources of protein in winter. Now that Japan is an advanced technological power, poverty has disappeared and there are not many people left in the bird netting business. But advanced technology has also made it possible for a few people to catch an enormous number of birds.

Nowadays, Japan makes the world's finest mist nets — light, strong and so fine that they are invisible to the bird's eye — and plenty of inexpensive audio systems that can be used to broadcast recorded bird calls. The result is that flocks of thousands of birds may be drawn into a large net and captured at one time. Those most frequently taken are *tsugumi* (dusky thrush, *Turdus naumanni*), *kashiradaka* (rustic bunting, *Emberiza rustica*) and *atori* (brambling, *Fringilla montifringilla*). Last year alone it is estimated that more than four million birds were killed and mostly sold to restaurants. And as a thrush can fetch as much as 1,000 yen (nearly US \$5) it is a profitable business. Recently it has attracted the interest of criminal gangs.

The setting of mist nets has actually been illegal since 1947, but as there is no restriction on their sale and fines for illegal taking of birds are small, the law has had little effect.

Increased concern for wild birds is now beginning to make inroads into the poachers' takings. The membership of the Wild Bird Society of Japan has increased

seven or eight times since the end of the 1970s to its present 16,000. This year, for the first time, volunteers from the society will patrol the hills all through the key November weeks, searching for illegal mist nets. If any are found, the evidence is guarded and the police called.

The society would like to take things a step further and ban manufacture of mist nets altogether. That would please environmental groups in Italy and Spain which are fighting a mass capture of migrating birds in their own countries. Mist nets are imported from Japan. The Environment Agency, which has been pressing local governments to crack down on the poachers, is also backing a ban on mist nets. But the agency lacks regulatory powers and has yet to move the ministry responsible, the Ministry for International Trade and Industry (MITI). So far, MITI has tended to take the manufacturers' side, for a variety of rather spurious reasons, including the possible effect of a mist net ban on the hair net industry.

Alun Anderson

New Soviet guidelines

THE new draft programme of the Communist Party of the Soviet Union, the first since 1961, includes not only a strong commitment to scientific and technical progress, but also a code of conduct for scientists.

The party, it is stated, "supports the bold quest, the rivalry of ideas and approaches in science, and fruitful debates and discussions". Contraindications for science therefore include: scholastic deliberations, the passive recording of facts without drawing bold generalizations, jumping on bandwagons, and severing oneself from reality. In view of the complex and interconnected nature of current problems, a deepening of the links between the natural, technical and social sciences is required. Forms of organization of science should be developed that will facilitate interdisciplinary study of topical problems and the necessary mobility of scientific cadres. The structure of scientific institutions and of research and development procedures must be made more flexible.

An "essential condition for the progress of science", it is noted, is the constant influx of fresh forces, including forces from the production sector, and the skilful utilization of scientists' creative potential.

Finally, and tacitly admitting that ideology is not enough to get and keep Soviet research working at full capacity, the programme specifically urges the provision of financial incentives for scientists "depending on their real contribution to the study of theoretical and applied problems".

Vera Rich

French ceramics

Plans for silicon carbide fibres

HERMES, France's answer to the US space shuttle, will be made of ceramic composite, and will thus avoid the sticky tiles that caused complications in the early days of the US craft. At least, those are the plans of Société Européenne de Propulsion (SEP), the company charged with preparing the curved nose, leading edge of the wings and underbody of Hermes, the parts that will face re-entry temperatures of up to 1,600 degrees centigrade for periods of some 20 minutes.

SEP has chosen for the task one of its most advanced ceramics, consisting of silicon carbide fibres bonded into a sintered silicon carbide matrix: "a kind of ceramic concrete", according to one British ceramicist. A major problem with such materials is to produce curved forms, and Hermes is of course full of aerodynamic curves. But SEP has been working on similar composites, including carbon-carbon matrices, for a decade, and has already produced trial curved silicon carbide/silicon carbide sheets some 50cm-1m across. This is a long way from the many metres required for Hermes sheets, but SEP reckons it has another ten years to develop the technology. If all goes well with the development, the ceramic will be more than mere cladding and will act as a structural part of the craft, although it may need support from more conventional stress-bearing structures underneath.

Meanwhile, according to M. Roger Lesgards, president of SEP, the company's first priority will be to establish French independence in the supply of the silicon carbide fibres, which at present come from Japan. SEP intends investing jointly with the French chemicals giant Rhône Poulenc in a factory to produce the fibres and the composite. SEP did the same with carbon fibres a year ago, in setting up a factory near Lyons to manufacture the fibres in concert with the steel company Alstom Atlantique.

Lesgards describes SEP as having a "really good position" in the world market for high thermal resistance composite ceramics. Japan asked SEP for samples of the silicon carbide/silicon carbide matrix, says Lesgards, and the US Department of Defense is interested in using the material for missile nose-cones. The composite is already in use as brake disks for Formula One racing cars, and is also being tested for use as vanes to direct the thrust of rocket motors.

SEP foresees three possible world markets for the material. The first, requiring production levels of a few tonnes per year, would be a market for space and military uses. The second, raising the market tenfold, would be in aeronautics (for example, in turbines). The third and largest,