

## Whaling nations come under fire over 'scientific' practices

London. Norway and Japan have come under pressure from the International Whaling Commission (IWC) to stop what many consider to be commercial whaling dressed up as scientific research.

At a meeting in Dublin, Ireland, last week, the members of the IWC passed a resolution calling for all research inside whale sanctuaries — including the controversial Southern Island Sanctuary — to be non-lethal.

This follows growing evidence, based on DNA analysis, that meat taken from whales killed in these sanctuaries for 'scientific' purposes is finding its way on to the open market, particularly in Japan.

The meeting also passed resolutions aimed at curtailing scientific whaling in general. These included the demand that such research should be non-lethal, except in exceptional circumstances, and that governments should either refuse or revoke permits for research 'culling' that fails to meet such criteria.

Under the rules of the IWC, permits can be issued allowing a limited number of whales to be killed for 'scientific research'. But many whaling critics feel that this is providing a loophole for the outlawed trade in whalemeat.

The minke whale population was declared 'protected stock' in 1985 when the IWC felt that the species was in danger of extinction because of excessive whaling. Norway, however, is still allowed by the IWC to kill a certain number of whales for 'scientific' purposes.

Thirteen countries — including the United States, Australia, New Zealand and most European member states — drafted a resolution which was passed by 21 votes to six calling on the Norwegian government to halt all whaling activities under its jurisdiction, and to reconsider its objection to the moratorium on commercial whaling.

Japan, like Norway, also reserves the right to import meat from whales killed for scientific research. But PCR tests on market-seized samples have apparently uncovered a pattern of widespread illegal whalemeat being traded in the north Pacific Ocean.

Following reports from its scientific committee, the IWC meeting passed a resolution requiring member states to introduce random DNA and isozyme testing, and to monitor, declare, register and dispose of whalemeat stockpiles. Despite its wide-ranging objections to IWC policy, Japan cannot afford to give up its membership, as that would mean losing valuable fishing rights in US waters.

Sara Abdulla

## Materials research unit to break the mould in Japan

Tokyo. Ten Japanese companies have joined forces with two research laboratories, in Japan and the United States, to set up a profit-making contract materials research centre. The International Center for Materials Research will aim to identify and solve industrial materials problems with the help of university researchers.

This unusual example of academic/industrial cooperation in Japan comes at a time when Japanese manufacturers, faced with the need to keep workers at their domestic factories busy while much production is moving elsewhere in the Pacific Rim, appear to have decided that diversification into high technology may yet be their best bet, particularly as cash-strapped companies are reluctant to increase their fixed costs and to employ more researchers.

One of the two laboratories that make up the new centre is located at the centre's headquarters at Kanagawa Science Park, Kawasaki, Japan's first venture business 'incubator', and already employs five PhD-level scientists. The other laboratory will be based in Lexington, Kentucky, and will begin operations with a director and two PhDs next month.

Half of the consortium backing the centre, which will have a paid-up capital of ¥30 million (\$353,000), consists of large, established companies such as the textile-makers Toray and Teijin, on the lookout for new business opportunities.

The other half are small, rapidly-growing companies that are strong in a particular technology but want to apply their expertise in other areas. They include Nitto Denko, whose speciality is sealing resins for microchip packages, and Dekko New Industrial, a microencapsulation specialist.

One of the attractions of the centre to the consortium members is its president, Tadashi Sasaki, who for more than 40 years has been one of Japan's most astute technological visionaries. In the early 1950s, for example, Sasaki was the first Japanese to license the transistor (for Kobe Kogyo, now part of Fujitsu).

As research and development director for the electronic appliance maker Sharp, Sasaki identified key technologies such as the liquid crystal display. Since his retirement from Sharp, he has been an adviser to SoftBank, a software distributor that is one

of Japan's fastest growing companies. Now, at the age of 80, the indefatigable Sasaki — his subordinates call him 'Dr Rocket' — has embarked on yet another venture.

Sasaki explains that the decision to focus on materials research is because materials such as steel and silicon are the platform on which Japan's industrial structure is based. "Marketing, assembly and components have all gone offshore because of the high yen," he says, "if materials go too, then our industrial structure will disappear."

His idea is to develop advanced functional materials that are too difficult for newly industrialized countries such as China to produce. Sasaki reckons it should be possible to manufacture high value-added materials such as conductive polymers in Japan for a few years "until the Chinese can catch up".

The centre will work on two types of development. One will be to develop materials likely to meet future markets; the second — more important — strategy will focus on developing materials specifically for existing market needs.

The centre's ten-person advisory board will be headed by two physicists, Mildred Dresselhaus of the Massachusetts Institute of Technology (MIT) in the United States and Harold Kroto of the University of Sussex, England, both known for their work on carbon 60. Their involvement explains why, in addition to conductive polymers, carbon 60 is the other material chosen by the centre for its initial project.

Peter Eklund, professor of physics at the University of Kentucky, and the director of the centre's new satellite Lexington laboratory, has been working on carbon 60 for the past five years. During the mid-1970s, Eklund was a postdoc in Dresselhaus's group at MIT, where he met and became friends with Nobuyuki Kambe, now senior managing director at the new centre.

Before helping to set up the centre, Kambe spent two and a half years as a strategic planner for new business at Nippon Telegraph & Telephone. "Up to now, research and development has been done within one company," Kambe says. "but that era is over." In future, he believes, small, collaborative outfits like the centre will become popular because of their potential to reduce research costs and shorten development time.

As the first such company in Japan, however, the centre faces novel problems as well as opportunities. One major concern is how to handle intellectual property rights. Patent royalties will be split four ways between the inventors, the centre, participating companies and universities that have helped to develop the technology. **Bob Johnston**



Sasaki: visionary now looking to materials.