

The view from the North

"SOME people are astonished to find that there is intellectual life north of the Arctic circle", says Are Johnsen, director of information at the University of Tromsø on Norway's northwest coast. The university was established in 1968 in a deliberate effort to develop the economic and social infrastructure of northern Norway. Situated at a latitude of 70°, Tromsø prides itself on being the most northerly university in the world.

Tromsø's distance of more than 1,000 km from Oslo, together with its relatively inhospitable climate — the snow that fell in October this year is likely to remain until next May, and the university campus does not see the Sun for more than two months in the winter — has not always made it easy to recruit either students or staff since the university was opened by King Olav V in 1972.

But with its academic record growing, and national unemployment now at record levels, students are queuing at the door. The university has increased rapidly in size over the past four years, and its current student body of more than 5,000 is almost twice the size originally predicted.

Recruiting research staff has been made easier by some of the special conditions that the university has been able to offer. For example, all faculty members are given 12 months sabbatical leave every four years, and travel grants are more generous than at other Norwegian universities. Both have helped the university to build up its current strength of 400 research workers, working on 700 projects.

Many of these relate to the specific conditions of the Arctic region. Tromsø has long been both a trading post and last port of call for fishing and exploration expeditions alike, and is proud of its reputation as the gateway to the Arctic. Its scientific importance has grown steadily as interest in the region's climate and environment has increased over the past decade, and the university has been keen to develop a role as "the university of the Arctic".

Much of this research is carried out under the aegis of the Roald Amundsen Centre for Arctic Research, named after the explorer who had close connections to the town. To celebrate the centenary of a famous exploit by the Arctic explorer Fridtjof Nansen, the centre will play a key role in plans drawn up by the Research Council for Science and the Humanities (NAVF) to mount a scientific expedition in 1994 that will, like Nansen's three-year voyage in 1893–96, involve freezing a research vessel into the ice and letting it drift across the Arctic Ocean.

The university has long been a centre for research into the biology of animals living in the Arctic region, and is in the process of

building a new Nkr 40 million (£4 million) research centre for its department of arctic biology, with funds from four separate government departments.

Physics is another field in which the university has been able to exploit its unique geographical situation. Tromsø's proximity to the Gulf Stream has made it a relatively comfortable location from which to observe the aurora borealis. The university's physics department has been built around an observatory set up by the meteorologist Kristian Birkeland in 1928.

The department's interest has grown to include fields such as optical astrophysics and molecular physics. But with pressure on all universities to focus on "centres of competence", it is now concentrating on building up its expertise in plasma physics.

"We would like a centre that has the capability to study the physics of the atmosphere from the ground upwards", says Asgeir Brekke, professor of physics, who says that he hopes the department will be selected as one of the nodes in the 'Network Norway' currently being established by the country's universities (see page 521).

The university is keen to use its research capacity to expand its role in regional affairs. For example, it is already preparing a report on the way in which joint research programmes carried out with scientific teams from the region of Russia which joins on to Norway's north-east border could help to cement political stability in the region. Potential topics for joint study include regional employment and the potential environmental effects of reopening the North-East Passage to Japan.

Looking in the opposite direction, the university intends to make the most of the

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Meteorologist Kristian Birkeland established an aurora laboratory in 1928, the cornerstone of Tromsø's physics department.

possibilities being opened up by Norway's likely membership of the European Commission's Framework Programme. Tore Vorren, director of the Amundsen centre, is quick to acknowledge the irony of the situation, as the local region is strongly opposed to Norway's application to join the European Communities.

"Two thirds of the local population are against such a move," he says. "But as scientists, we look upon this as an opportunity, and a chance to get in better contact with the European scientific community. This would certainly be a good thing, since at present many of us have better contact with the United States than with scientists elsewhere in Europe." □

EISCAT's place out of the Sun

NORWAY may have relatively few major scientific achievements to its name. But it does offer a number of unique locations for scientific experiments and observation. One is the Svalbard archipelago, half-way between Norway's northern coast and the North Pole, which has just been adopted as the site of a new radar to be added to the European Incoherent Scatter (EISCAT) system.

The new radar will initially include a 500-kW transmitter and a 32-metre diameter receiver. Provisional approval was given by the EISCAT council last month. The final outcome now awaits a decision from Britain's Science and

Engineering Research Council, which is being asked to provide 18 per cent of the construction costs of SKr106 million (£10.6 million).

EISCAT was established in 1977 as a collaborative effort by European scientists to investigate the interaction between the particles in the solar wind and the Earth's magnetic field near to the pole (the origin, for example, of the aurora borealis). With its present facilities, radio waves are transmitted into the ionosphere from Tromsø, and the scattered signals are subsequently picked up at receiving sites at Sodankyla in Finland, at Tromsø itself, and Kiruna in Sweden,