

Academic freedom

Promise for Poles

Poland is to introduce new legislation designed to meet the demands of the academic milieu for greater autonomy, according to Janusz Gorski, the Minister of Science, Higher Education and Technology. The first draft of the new bill should go before parliament in December, but many of its provisions regulating dealings between his ministry and the universities would come into force immediately. In particular, he said, the ministry would not appoint university rectors without prior consultation with the university senates.

Another development in the Polish academic world concerns the University of Warsaw, which has in the past couple of weeks had a sudden change of rector. The highly unpopular Dr Zygmunt Rybicki resigned shortly before the opening of the academic year, to be hastily replaced by historian Dr Henryk Samsonowicz. The significance of this change is not entirely clear — Polish academic life, like Polish life in general, is something of a melting pot at present. However, on 28 September, the university senate issued a statement which is, in effect, a blueprint for the restoration of academic autonomy.

The statement pays tribute to the new "self-governing" trade union movement, which has now spread to the university students, and makes a number of demands for the liberalization of society as a whole, including electoral and censorship reform. It then discusses the role of the universities which it says is, basically, to "carry out scientific research and to serve national culture and public education". Science, and the results of research, said the senate, should be implemented for the benefit of society a commission of experts should be established, and science should be involved in decision-making at all levels.

The statement advocates open and unhampered discussion and demands a basic reform of the higher education system. The main points of such a reform, said the Warsaw senate, should be:

- (1) Self-governing and democratic status of universities and colleges of higher education, collegiate bodies, senates and faculties to decide on directions of research; secret elections of these bodies, with students and the working staff of the institution also represented; curricula to be decided in consultation with the relevant ministries.
- (2) Free access to publications and sources of scientific information.
- (3) Proper means and conditions of work guaranteed to students and staff.
- (4) Freedom for students to organize their own lives.
- (5) Academic appointments to be made on the basis of qualifications only.
- (6) The Supreme Scientific Council to possess all necessary competence for

shaping academic policy.

(7) The awarding of academic degrees to be the business of the collegiate bodies, faculties and senates, the Central Commission for Qualifications and the Council of State.

The question is, of course, how far these proposals will be implemented in the new legislation. Minister Gorski suggest that there will be some reforms in the awarding of higher degrees by the Central Commission for Qualifications.

However, the proposals announced for improvements in the student grant system have clearly met with less enthusiasm than Gorski had expected. The majority of Polish students, who have flocked to join the new "self-governing" student unions, appear more concerned with the lifting of censorship restrictions.

One good omen for the future, however: Miroslaw Chojecki, the young chemist dismissed in 1977 from the Swierk Nuclear Institute because of his membership of the then Workers' Defence Committee and on trial earlier this year for participation in the "independent" publishing movement, has been reinstated under the terms of the Gdansk accords. At least half of the Swierk staff, said Chojecki, personally endorsed his application for reinstatement.

Vera Rich

Endangered species

Mediterranean acts

The fifteen or so well-managed nature reserves around the Mediterranean are around ten times too few, the International Union for the Conservation of Nature (IUCN) is arguing at an intergovernmental meeting in Athens this week. Papers produced by IUCN for the meeting specify dozens of threatened species of mammals, amphibians, fish and plants.

The principal threat is tourism — expected to reach 200 million tourists a year by the year 2000 — with its demands for coastal hotels, marinas, and baubles such as coral, sponges and tortoiseshell.

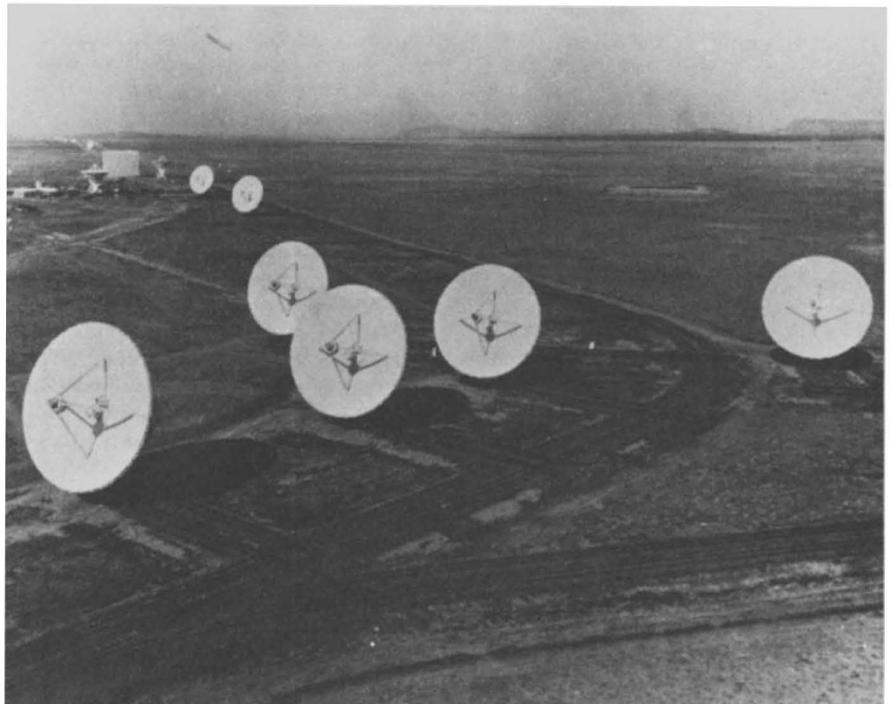
The most endangered species is the monk seal, *Monachus monachus*. Besides one colony on the coast of Mauritania in West Africa, there are just 1,000 monk seals around Turkey, Greece, Yugoslavia and Tunisia, and numbers are falling by a hundred or so each year. Numbers are now so low, and groups so dispersed, that the seals are threatened by restricted genetic diversity. The marine turtle is in similar danger, as the beaches where it lays its eggs are turned over to tourism. Other species at risk include the Iberian midwife toad, the Mediterranean spur-thighed tortoise, the

Biggest radio telescope in the world

The Very Large Array radio-interferometer was inaugurated last week in New Mexico by Dr Frank Press, the President's Science Advisor.

The array, which consists of twenty-seven steerable parabolic dishes 82 feet in diameter, has been brought progressively into operation since October 1975.

Individual dishes move along three double railway tracks at angles of 120 degrees — two of the tracks are 13 miles long and the third is more than 11 miles long. The array, operated as a national research facility by the National Science Foundation, is capable of greater angular resolution than any other instrument of its kind.



La Scuola wall lizard, the Israel painted frog, the smooth snake, the meadow viper and the spectacled salamander.

But it is not just a question of protecting pretty animals, according to Dr Pierre Hunkeler, the Swiss ecologist who organized the scientific side of the Athens meeting. Colonies of coastal plants and animals of great scientific interest need protection. Turkey and Greece have the richest coastal flora, followed closely by Morocco and Spain. Greece has 670 species of plants unique to the area (compared with Britain's 15) claim IUCN, and many of them are threatened.

Many of the ecosystems under attack are not yet well specified scientifically: in the wetlands, for example, like the protected Camargue (the Rhone delta), bird life is well understood but much less is known of the plants and water-dwelling animals. Ecologists and zoologists must have a chance to study these regions, argues Hunkeler, if only to give a baseline against which to measure the effects of pollution and development.

Representatives from ten Mediterranean nations had gathered in Athens by Monday: Greece and Turkey, France and Italy, Algeria, Libya, Tunisia, Israel, Yugoslavia and Malta were there. Representatives from Monaco and Cyprus were "on their way" from another meeting. The EEC was represented, but no sign had yet been seen of Spain, Morocco, Lebanon, Syria or Egypt.

The Athens meeting will avoid defining precise geographical regions to be protected. At that point, local political and development interests come into play, and costs and benefits must be worked out. If protected areas also mean protected fisheries, and increased amenities for the local populations and for tourists, then perhaps a deal can be reached which will satisfy both the ecologists and governments. But the Athens experts are leaving that to the politicians. **Robert Walgate.**

Electric cars

Win some, lose some

Washington

Plans for the development of a battery-driven electric car have taken one step forward and one step back. Scientists from the University of California's Lawrence Livermore Laboratory have announced the successful testing of a new aluminium-and-water battery which, they claim, can power cars for much greater distances than other batteries under development.

The announcement came only a few days after reports of tests by the Department of Energy (DoE) suggesting that Gulf and Western (G + W) may have been premature in some of the claims made for its new zinc-chloride battery, launched last June.

The Livermore results, presented at a meeting of the Electrochemical Society in Miami, are the products of research jointly

Plates in contact

Africa's slow movement towards Eurasia probably caused last Friday's 7.3-magnitude earthquake in El Asnam, Algeria, which destroyed 80 per cent of the city 20,000 killing perhaps people.

El Asnam, sits on a tectonic boundary between two plates — or so it appears, for the region is not seismically well characterized. The 1954, 6.7-magnitude earthquake in the same area, which killed 1,200, occurred before the world seismic monitoring network had been established. But measurements of magnetic anomalies between Africa and the United States, and between the United States and Eurasia, across the midatlantic ridge, indicate that the Africa-Eurasia boundary is closing.

The grisly event has one positive outcome: it will increase geological knowledge of the zone dramatically. Seismic stations can now pinpoint the epicentre to within 5 km, and by following the expected series of diminishing aftershocks (one of magnitude 6.2 occurred three hours after the main quake) determine the nature of the movement. This is expected to be a thrust, rather than strike-slip with Africa riding up over the Eurasian plate — the Atlas mountains themselves being part of the result.

Algerian authorities may not have a spot-on repeat of 1954; but they were criticized this week for not taking sufficient care to protect their buildings. The building codes for the El Asnam region call for stiffening to resist an extra 10 per cent weight static load, said Dr F.K. Farma of Imperial College, London, a civil engineer who made a study of the area. "But for that quake they needed 50 per cent".

Robert Walgate

sponsored by DoE and two large industrial corporations, Continental Group Inc. (working with the Lockheed Corporation) and the Diamond Shamrock Corporation.

The battery works by submersing an aluminium plate in a solution of sodium hydroxide. The reaction of the two with air produces an electric current and hydragillite, an aluminium compound which subsequently crystallizes out so that the aluminium can be recovered.

Unlike more conventional storage batteries which require overnight charging, the new battery is claimed to need only to be refuelled with tap water every 250-300 miles. The aluminium plates would be replaced every 1,000-3,000 miles, but the operation should take only 15-30 minutes.

One drawback is the cost. Operating the new battery — including in particular the need to replace the aluminium plates at regular intervals — would cost the equivalent of between \$2 and \$3 a gallon, about twice the present US price.

However, this may still be competitive with gasoline made from coal — and it

would be as efficient to use coal for making the aluminium plates as for producing gasoline.

Meanwhile, a report in the *Wall Street Journal* that G + W is encountering technical problems in developing its zinc-chloride battery has raised questions about the extent to which the announcement was designed primarily as a publicity exercise. The newspaper quoted DoE reports that although G + W had claimed that the battery could power a standard car for 150 miles driving at 55 m.p.h., technical difficulties with charging the battery suggested that these figures were over-optimistic.

A spokesman for DoE, which has invested more than \$15 million in the G + W project, accepted last week that the development of the battery had encountered several technical difficulties, and that as a result some of the claims made by the company last June were probably premature. But he denied that the department had lost enthusiasm for the programme. **David Dickson**

Nuclear wastes

Small disposals

Washington

Much to the relief of many east coast hospitals, universities and medical schools, the Nuclear Regulatory Commission (NRC) is proposing that liquid scintillation media used for detecting low levels of radioactivity in biological samples need no longer be buried in nuclear waste disposal sites.

At present, almost all scintillation media used in this way for biomedical research, as well as the carcasses of animals in which chemicals containing radioactive tracers have been studied, have to be transported in special drums 3,000 miles across the continent for disposal.

This expensive exercise — Harvard Medical School and its associated hospitals spent almost half a million dollars last year disposing of 3,000 drums in this way — has been necessary since the state of South Carolina announced a year ago that it was no longer prepared to accept low-level wastes from hospitals and research laboratories at its Barnwell storage site. Shortly afterwards, the nation's other two radioactive waste dumps at Richland in the state of Washington and at Beatty in Nevada announced that they too were closing their doors in protest at the poor way in which low level waste was being packaged and shipped.

Alarm spread quickly through the medical research community. Scientists said that many cancer research programmes would have to stop if liquid scintillation media and animal carcasses containing trace amounts of radioactive elements could no longer be disposed of in this way. Some medical schools claimed that storage space was so tight that research