council agreed to draw up a local ordinance setting out the conditions under which recombinant DNA research can be carried out in the city. Given the uncertainty, Genetics Institute has now withdrawn its application to build the laboratory.

Mr Hexner said last week that there would now inevitably be a delay in the company's plans. "It really depends on how long the deliberations go on and what the tenor of them is; if the tenor is favourable, then we would probably resubmit", he said. An alternative would be to look for a site in Cambridge itself. In sharp contrast with the debates of four years ago, when the then mayor Alfred Velucchi tried to ban all genetic engineering from the city, an ordinance passed in 1977 is being revised in relatively amicable circumstances.

The revisions have been precipitated by the decision of the Geneva-based Biogen Inc. to construct a new laboratory in Cambridge. Biogen's co-founder, Dr Walter Gilbert, is also a professor of molecular biology at Harvard and was a strong critic of the university's proposed involvement in Genetics Institute.

Biogen is now discussing with the local council the terms under which it will be allowed to operate its laboratory. And the Cambridge Biohazards Committee and the Cambridge Experimental Review Board are discussing a revision to the 1977 ordinance which would require, among other things, that any company or laboratory involved in recombinant DNA research should implement a medical surveillance scheme and a registry of its workers.

Such provisions have already been proposed by the Department of Labor's National Institute of Occupational Safety and Health, on the grounds that any long-term, relatively low-level effects could be traced only if adequate exposure records are kept of laboratory workers and the substances they handle. Biogen has said that it would have little difficulty in meeting such a requirement. More controversial could be the suggestion of a public debate on the acceptability of the site proposed for the laboratory.

Some members of the review board are also hoping to persuade the council to demand independent approval of the safety measures adopted by the company. This might be done by employing a consultant who would report to the city council but whose services would be partly paid for by the company.

A local ordinance including several of the proposed requirements has already been passed by the city council of Waltham, Massachusetts, home of the company Collaborative Genetics. As in Cambridge, the ordinance — which also covers research at Brandeis University — is primarily designed to ensure that all local recombinant DNA research is carried out under the safety guidelines developed by the National Institutes of Health.

In some respects, however, the ordinance is stricter than the guidelines. For example, it requires a formal medical surveillance procedure and the maintenance of work records and also prohibits the use of recombinant DNA products for trials on human patients.

With this model before them, other cities — including Newton, home of New England Nuclear — which are considering their own ordinances may find it difficult to adopt stricter rules. Mr Hexner, for example, says that Genetics Institute would be pleased to live with the Waltham ordinance and that if Somerville is too restrictive, "Waltham is there and waiting".

David Dickson

Lamont director quits

Washington

Columbia University in New York has forced the resignation of the director of the university's Lamont-Doherty Geological Observatory, Dr Mark Talwani, after complaints from senior faculty members about a lack of effective leadership.

Dr Talwani was asked by the university to resign shortly before Christmas. The university's decision was based partly on a report on the situation at the observatory, one of the world's leading centres of oceanic and seismic research, prepared by an outside committee under the chairmanship of Dr Karl K. Turekian of Yale University.

According to the university, the report praised a number of accomplishments of the observatory, but notes the existence of "serious problems" with Dr Talwani's leadership.

The committee itself did not recommend that Dr Talwani be replaced. But after further review and consultation with senior faculty members, including a meeting in October at which "almost all the senior faculty" is said by the university to have supported the search for an alternative director, Dr Talwani was asked to resign within two weeks.

Talwani himself vigorously protested at the university's decision, claiming that it had been the product of a "conspiratorial approach", and complaining to the university trustees that because no specific charges had been levelled against him, "I have had no opportunity to defend myself".

He eventually submitted his resignation as director two weeks ago, although he will remain on the university faculty as a member of its department of geological sciences. A search committee has been established to recommend a successor, and is expected to make its recommendation within a few days. Meanwhile Dr Paul G. Richards, associate director of the observatory, has been temporarily appointed its chief executive officer.

David Dickson

Soviet fishing

Whither whaling?

The Soviet Far Eastern Fishing Fleet has ceased whaling operations in the Pacific, it was announced in Vladivostok last week. The three factory ships serving the fleet are now being converted into fish-processing plants.

This is the first stage in the implementation of a pledge given at the International Whaling Commission (IWC) meeting in California in December 1978. On that occasion, the Soviet delegate, Vyacheslav Zemskii, pledged his country to phase out all whaling within five years, starting with the North Pacific operation.

The announcement that three factory ships are being converted is, however, somewhat surprising. According to a Moscow radio broadcast shortly before the July 1980 IWC meeting, the Soviet Union had only two factory ships left, the Sovetskaya Rossiya and the Sovetskaya Ukrayina, both sailing from Vladivostok. Both of these ships, the commentator stressed, carried the necessary international observers as well as Soviet marine ecologists.

A partial phasing out of the North Pacific operation began some years ago. In 1979, when the Soviet Union accepted the IWC's partial moratorium, in which fishing from factory ships would be confined to Minke whales, it had already closed down its on-shore whaling stations, and had to negotiate an exchange with the Japanese, ceding its North Pacific quota of 230 Bryde whales in return for 300 of the less valuable Minke whales from the Antarctic.

The closedown of the North Pacific operation does not, however, necessarily mean that the Soviet Union will support the idea of a total moratorium. Soviet commentators have always taken the line that such a policy is not in accordance with the ecological facts, being based on an emotionalism encouraged by some quarters for political reasons. Greenpeace observers have described the Soviet whaling flotillas as near derelict hulks which would cost many millions of rubles to refit. This suggests that the planners have realized for some time that pro-moratorium pressure might well force the Soviet whaling flotillas to disband, and that it was not therefore cost effective to keep the ships in trim.

With the recent drive for self-sufficiency in raw materials, stressed at the October 1980 Central Committee Plenum and in the Guidelines for the new Five Year Plan, what will the Soviet Union use to replace whale-oil? One possibility is the jojoba, which would probably thrive in the semi-arid steppes of Soviet Asia. Unfortunately, the jojoba plant is dioecious, and, in the natural state, male plants predominate. Jojoba culture is therefore highly labour-intensive, involving the vegetative propagation of large numbers of female

plants which then have to be bedded out with a sufficient number of males (the plant is wind pollinated.) With the problem of falling manpower, and the desire to make all agriculture more productive per man-hour, widescale introduction of the jojoba could pose considerable problems of organization.

Vera Rich

Pneumoconiosis unit

Dusty answers

Members of the staff at the British Medical Research Council's Pneumoconiosis Unit in Cardiff are alarmed about the unit's future. So too are the National Union of Mineworkers, the Agricultural Workers' Union and the Association of Scientific, Technical and Managerial Staffs, who say that they value highly the unit's work on industrial diseases. Their fears have been roused by a routine review of the unit's work, conducted by a subcommittee of the council's Physiological Systems and Disorders Board, which has apparently suggested changes at the unit. Last week, council employees and union representatives lobbied a meeting of the council at which the recommendations were to be discussed.

According to the lobbyists, the review has recommended that the unit should continue with most of its present work until a further review in 1987, but that its value should be measured increasingly by the number of contracts for research that it manages to win from industry. They also say that the review has recommended that targets be set for reductions in staff levels, that some work on allergic responses and lung function be relocated and that the unit should not receive a new high-voltage electron microscope, a replacement radiographer nor a replacement respiratory physiologist.

The subcommittee's review is a routine 3-year assessment, to which the work of all council units is subjected. Such reviews frequently lead to decisions to close some units and open others. What seems to have worried the Cardiff staff is that running down some of the work now may pave the way for closing the unit after 1987, when the present director and several other senior staff are due to retire.

Representatives of those lobbying the council's headquarters last week presented their case to the industrial liaison officer who distributed their statements among council members. Their arguments are that relocating some of the unit's work will undermine the multidisciplinary approach needed for many problems and that, by whittling away at the unit's structure now, the council may cause it to become unworkable before formal consultations on steps towards closure can be taken.

The Medical Research Council refused last week to discuss the report of the review committee or the future of the unit. It has still to inform the unit of the decision of the council meeting.

Judy Redfearn

Bulgar birthday

Two for one

"Bulgaria-1300", the unmanned space probe planned as a highlight of the country's 1300th anniversary of statehood, will now consist of two satellites. The first, Bulgaria-1300/1, will be equipped entirely with Bulgarian apparatus, and will carry out ionosphere and magnetosphere investigations. The second, Bulgaria-1300/2, will carry both Bulgarian and Soviet apparatus including several remote sensing experiments, using infrared and VHF wavelengths, and also a special Bulgarian-made multichannel camera. The experiments on Bulgaria-1300/2 will be combined with observations from a high-altitude aircraft and collated with terrestrial measurements.

No details of the experiments have yet been announced. However, according to Dr Kiril Serafimov, chairman of the Bulgarian National Committee for Space Research and Utilization, Bulgaria's "historical circumstances" are such that Bulgarian teams can take part in all five areas of space physics covered by the Comecon joint "Interkosmos" programme — space physics, meteorology, communications, biology and medicine, and remote sensing. New Bulgarian ideas, developed within Interkosmos, stated Dr Serafimov, have included Langmuir probes, ion traps and electrophotometric telescopes. During the past few years, his teams have paid particular attention to noctilucous clouds and have reported "very interesting data" concerning discharges of auroral type over the magnetic equator. A particular Bulgarian success has been the Spektr-15 multichannel camera, whose 15 channels compare favourably with Landsat's four channels and the East German MKF-6, which has six. (In addition Spektr-15 weighs only 15.2 kg as against the MKF-6 which weighs 158 kg.) The Spektr-15 will be a major feature of Bulgaria-1300/2.

So far, however, there have been no indications of any medical or biological experiments. This seems unfortunate, as the Bulgarian space medicine experiments scheduled for the visit of their Cosmonaut Georgi Ivanov to the Salyut-6 space station were abandoned when his Soyuz transport craft failed to link up with the station. (The other "Bulgarian" parts of the programme, such as the casting of aluminium "foam" using hydrogen as dispersant, were carried out by cosmonauts Lyaknov and Ryumin, who were already on board Salyut.) Nor are there any hints that Soviet birthday presents to Bulgaria will respond to the broad hints that the Bulgarian space planners have been dropping ever since Ivanov's mission was aborted — another, and this time more successful, flight of a Bulgarian cosmonaut. Other states have done better, but are not as old.

Vera Rich

Reef aggregation

A new society and a new journal concerned with research on coral reefs have sprung from the frustrations of a group of interested scientists at the difficulties of funding this interdisciplinary work. The new society, called the International Society of Reef Studies, was formed after a meeting held at Churchill College, Cambridge last month.

The first president of the society is Dr D.R. Stoddart from the Department of Geography at the University of Cambridge, who was the leader of the Royal Society's expedition to the Indian Ocean island of Aldabra in the 1960s. The council of the society includes members from mainland Europe, North America, Australasia and the Far East.

One of the objectives of the society — to provide a forum of coral reef research — has been met by the proposed publication by Springer-Verlag of a quarterly journal, *Coral Reefs*, due to appear next year. The new journal will be more concerned with the structure and dynamics of coral reefs than with the flora and fauna, and will thus be complementary to the *Atoll Research Bulletin*, published by the Smithsonian Institution.

The society also plans to take over the management of the international symposia on the subject, of which the fourth is due to be held in Manila in May. Its formation illustrates the difficulties of recruiting funds for the support of research in fields that do not fall squarely within the terms of reference of established grant-making agencies, which have been acutely felt in Britain in recent years. Feeling has run high that governments are interested in coral reefs only in crises.

Brazilian ecology

Polluting by decree

São Paulo

Economic pressures have caused the Brazilian government to postpone legislation banning the use of non-biodegradable detergents which was due to come into force in January 1981.

A decree signed by President Figueiredo last month puts back the starting date for the new law by two years. Industrial pollution is now a serious problem in Brazil. In the state of São Paulo all the rivers are biologically dead and the appearance of foam on rivers is now considered normal, according to the head of the Environmental Technology Agency. Several waste-treatment plants due to open in 1981 in São Paulo will have to be abandoned if the foaming persists.

Although the intended ban on non-biodegradable detergents was drafted four years ago, nothing was done to make it