The mix of ecosystems should make it possible to sustain life for two years in a totally enclosed environment. Such a project could be the prototype for artificial ecosystems on other planets.

Others have speculated on the macroeconomics of human activities off the surface of the Earth. The Space Studies Institute has considered using raw materials mined on the Moon for constructing Earth-orbiting satellites. One project of particular interest is constructing power satellites capable of converting sufficient solar energy to provide an economically viable supply of energy to Earth.

Eric Jones of Los Alamos National Laboratory has also studied how human settlements might make use of locally available resources on the Moon. Jones draws the analogy of early settlement of the American West and Australia. For these pioneers, their local environment was a rich source of raw materials, and so too could be the Moon, with its favourable gravity making transportation to Earth relatively easy.

Were it to stand alone, Brown's legislation would have little chance of passage. But Brown hopes to amend it to the NASA authorization bill. If he can infect other congressmen with his enthusiasm for settling space, NASA will have to start recruiting for settlers instead of astronauts.

Joseph Palca

Conflict continues between Armenians and Azerbaijanis

London

THE current conflicts between Soviet Armenians and Azerbaijanis over the autonomous region of Nagorno-Karabakh has highlighted one of the major faults of pre-*perestroika* planning; the ease with which mistakes and failures could be concealed by gross-figure 'achievements'.

Although the petition by the Armenian population of Nagorno-Karabakh to be administered from Erevan rather than Baku is also based on considerations of cultural identity, economic factors have a particular relevance. For Lenin's original decision in December 1917 was that, although not contiguous with Armenia, Nagorno-Karabakh was "irrevocably" part of Armenia. In 1923, however, the region was assigned to Azerbaijan, on the grounds that this would ensure its more rapid economic and social development. So, on 11 February 1988, when the petition was launched at a rally in Stepanakert, asking for the region to be returned to Armenia, the signatories were in effect challenging the legitimacy of the 1923 decision. They maintained that Nagorno-Karabakh was economi-

cally disadvantaged in relation to the rest of Azerbaijan.

The Azerbaijan authorities organized a high-level 'round table' to refute these claims. Their deliberations were eventually reproduced in the party daily *Bakinskii Rabochii* and indicated that the population of Nagorno-Karabakh was significantly better off in social amenities, not only than the rest of Azerbaijan, but also often Armenia, and even than the Soviet average.

Crude figures can, however, be deceptive. The table presented by *Bakinskii Rabochii* gives Nagorno-Karabakh the advantage over Armenia according to eight of the nine chosen indices, and over Azerbaijan as a whole according to seven indices. But a reading of the figures suggests that this is not the whole story. The excess of middle-level medical staff (Nagorno-Karabakh 122.7 per 10,000 population, Azerbaijan 93.5, Armenia 93.5) coming immediately after the figures for doctors (Nagorno-Karabakh 29.1, Azerbaijan 38.4, Armenia 86.6 per 10,000 inhabitants) suggests that extra nurses and paramedics may have been drafted in to make up for the shortage of doctors. And the figures for clubs, cinemas and libraries, more than twice the average for either of the two contending republics, may be due to duplication of language facilities.

By the time these figures appeared in print, however, experts in Moscow were speaking of "serious planning errors" regarding Nagorno-Karabakh. The *Bakinskii Rabochii* data were "precise", it was now explained, but did not give the full picture. Higher education in the region, for example, consists of a single teachers' training institute—which, in spite of the almost 80 per cent Armenian population, offers no courses in Armenian history or geography. (Reserved places at Armenian universities have now been promised to students from Nagorno-Karabakh.) Another problem in Nagorno-Karabakh, the lack of jobs for school leavers and the consequent drift of young people from the region, seems associated with the failure of the Baku planners to ensure adequate roads, water and gas supplies to Nagorno-Karabakh, without which local agriculture and industry are unable to expand. And the lack of understanding of the cultural-ethnic tensions which have developed between the Armenians and Azerbaijanis in the region are yet another symptom of the Soviet Union's acute lack of people trained in demography and associated disciplines (see *Nature* 331, 555; 1988).

Vera Rich

Congressional roasting for NIH critics

Washington

THE US Congress's love affair with the National Institutes of Health (NIH) reveals itself in the strangest ways. Last week, NIH director James Wyngaarden found himself under fire from Representative John Dingell, the chairman of a subcommittee that oversees NIH activities, for having yielded to arm-twisting when he downgraded the status of three of NIH's research administrators from "outstanding" to "excellent" status.

The person doing the arm-twisting, Thomas Burke, chief of staff of the Department of Health and Human Services (HHS), was roasted by Dingell at the same congressional hearing. Burke protested that he had simply been trying to reduce the number of people with the "outstanding" rating; some HHS departments had come to contain nobody who was not "outstanding"—a strange contradiction in terms. But Dingell clearly felt that such action would damage morale at NIH.

Dingell is among the congressional supporters of NIH who are deeply concerned, as he put it, that "top-level researchers and managers no longer find the NIH an attractive place to work". While many at the Bethesda campus might rate NIH's charms higher, there is no doubt that the difference in pay between NIH and the universities is now perceived by Congress

and Wyngaarden as a major threat to NIH's continued preeminence.

Wyngaarden produced figures showing that US medical school base salaries for department chairmen range from \$109,000 in basic science to \$179,000 in clinical science. Their counterparts at NIH receive \$82,000, and there are strict federal government limits on the amount of bonuses that can be paid. The biggest worry, according to Wyngaarden, is not that they will simply lose established researchers to the universities, but that they will fail to attract the brilliant young researchers needed to maintain NIH's reputation over the next 10–20 years.

NIH have suggested legislation that would create a 'senior biomedical research service', which would free federal biomedical research organization researchers from civil service pay limitations. The Office of Management and Budget has suggested going one step further and "privatizing" NIH Bethesda campus, turning it into a university or research foundation outside the government. Neither view is likely to prevail in the near future, according to HHS officials at the hearing. Instead, all parties are likely to wait for the results of a report on NIH's prospects commissioned from the Institute of Medicine and due to be completed in November. Alun Anderson