

Ecological warning

Threat of floods from saline lake

THE resort town of Muysaly in the Soviet Union's Kazakh republic is in imminent danger of being "wiped off the face of the Earth", according to an inspector from the Soviet water resources ministry. The threat of a major ecological disaster comes from the saline Balkuduk lake, which has received no less than 80 million cubic metres of waste water from the industrial area around the town of Pavlodar.

Speaking on Moscow radio, the ministry inspector Vladimir Denisov warned that the lake is now so overburdened with water that a heavy storm might be enough to release flood waters that would not only engulf Muysaly, but also cause severe problems of pollution, with the polluted water being drained in to the river Irtysh, the primary water source for Kazakhstan and West Siberia. The pollution would cause millions of roubles of damage which would take several years to repair.

The management of a tractor plant, the biggest user of the Irtysh water (10,000 m³ daily), pays no attention to the conservation problems said Denisov; nor does the Ministry of the Chemical Industry, which has a major responsibility for industry in the area. The officials who should be most concerned with pollution, Denisov said, put their efforts instead into telephoning Moscow to obtain a stay of implementation of anti-pollution measures. Directives on building dykes and installing anti-pollution equipment are being ignored.

Water supplies to Kazakhstan, and the whole of Soviet Central Asia, have recently become a sensitive political issue. Russian writers of the "Villager" school have condemned plans to divert the north-flowing rivers to irrigate the arid steppes on the grounds that it would entail the destruction of treasures of Russian archaeology. The peoples of Central Asia, on the other hand, see such criticisms as a Russian move to establish superiority over the other ethnic groups of the Soviet Union. The recent Politburo announcement that it has been deemed "expedient" to end work on the diversion scheme "in connection with the need for further study of the ecological and economic aspects of the problem" will undoubtedly increase this resentment.

Denisov's revelations, therefore, however firmly based, are likely to be treated with suspicion by the inhabitants of Kazakhstan. His attacks on the Pavlodar local authorities will almost certainly be interpreted by the locals as a ploy to suggest that, as the Kazakhs cannot manage their own water, they have no right to extra supplies from the heartland of Russia.

Vera Rich

Biological weapons

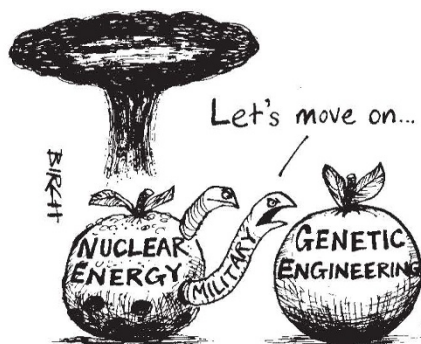
New view from the Pentagon

Washington

THE new possibilities offered by recombinant DNA technology seem to have led the United States to change its view of the threat posed by biological weapons. US representatives at the second review conference of the 1972 Biological Weapons Convention, which starts this week in Geneva, will argue that it is now possible to produce effective biological weapons quickly and clandestinely. The key problem of preventing them from affecting friendly forces seems to be surmountable.

Because the United States believes the convention cannot be made verifiable, it is likely to resist diplomatic initiatives to strengthen it. US officials stress that the United States has no intention of abrogating the convention, and that it opposes the production of biological weapons.

But it is likely to resist expected proposals to clarify key definitions, such as the



distinction between offensive and defensive research, on the grounds that to do so would probably lead to a two-tier regime. Officials say the United States will also raise again its charges that the Soviet Union has repeatedly violated the terms of the convention by using toxin weapons in Afghanistan and South-East Asia.

The convention was drafted in 1972 and has since been signed by 102 countries. It forbids signatories from producing, stockpiling or using offensive biological weapons, but allows defensive biological weapons research. Critics contend that much ostensibly defensive research — for example, into vaccines against biological weapons — could also help in the manufacture of more fearsome offensive weapons. The Pentagon estimates that the size of the defensive biological weapons programme will increase from \$31 million in 1984 to \$63 million in 1987.

The administration's changed view of the feasibility of developing biological weapons was spelled out recently in testimony by the Department of Defense to the House of Representatives' intelligence committee. The testimony is unusual in that it was not requested by the committee, but volunteered by the de-

partment. Douglas J. Feith, deputy assistant secretary of defence for negotiations policy, wrote that "new technology has exploded the standard ideas about biological weapons that prevailed ten or more years ago".

Feith says that although biological weapons had previously been considered of questionable value because of difficulties of control and storage, it is "now possible to synthesize biological weapons agents tailored to military specifications" by, for example, "circumventing immunogens or antigens that the other side is suspected to possess". Together with advances in scale-up technology, this means that "the prevailing judgement of years ago that biological weapons are not militarily sustainable is quite unsustainable". While some independent experts are sceptical about quite how easy it would be to produce an effective engineered weapon, the Pentagon is not in a mood to make changes.

Feith says that biological weapons favour offence over defence, because it is easy to produce new agents but difficult to develop antidotes. He also claims that the Soviet Union has built a "large organization to develop and produce offensive biological weapons", and repeated the US claim that the Soviet Union has used mycotoxin weapons banned by the convention in South-East Asia.

Although recent data question this claim (see *Nature* 321, 554; 1986), Feith says the fact that "mycotoxins occur in nature in certain colder areas ... has made it easy for states to refuse to come to the unpleasant conclusion that biological weapons have been used and that something should be done about it". Because of the controversy about "yellow rain", the Soviet Union "can hardly have failed to observe that the costs of biological weapons use have proven manageable, indeed virtually nonexistent".

US research into biological weapons has been hampered by a permanent injunction granted two years ago to Jeremy Rifkin's campaigning organization, the Foundation on Economic Trends, which prevents the Army from going ahead with its plans to build a \$300 million biological aerosol test facility at Dugway Proving Ground in Utah until an environmental impact statement has been prepared. Rifkin has filed suit again this week, this time seeking to halt the Army's entire biological weapons research programme pending environment impact statements. Rifkin has also established a \$100,000 whistle-blower's defence fund for microbiologists harassed or losing employment for publicizing illegal biological weapons research.

Tim Beardsley