

compared with our original estimate of 8 to 10 MBD. Only the rapid discovery of very large amounts of oil can avert this outcome." So, if the wolf is not gnawing at the door, he may be prowling in the forest nearby.

Goldman says he now agrees with the CIA's analysis of the Soviet oil industry.—**Elliot Marshall**

## Amniocentesis: Be Prepared

The new top-ranking physician in the Department of Health and Human Services says that an abortion should only be performed if the mother's life is in danger, even if amniocentesis reveals severe birth defects or if a woman becomes pregnant after rape or incest. Assistant Secretary of Health Edward N. Brandt, Jr., said at a meeting with reporters on 27 May that amniocentesis is "a justifiable procedure to know whether a child will have an abnormality." That knowledge, he said, could prepare parents to deal with the infant's problems. Brandt also commented at his first meeting with reporters since he took office in May that he favors a constitutional amendment that would outlaw abortion.

Prior to his appointment, Brandt was vice chancellor of medical affairs for the University of Texas medical system. He also has a Ph.D. in biostatistics. As assistant secretary, Brandt directs the Public Health Service, which includes the National Institutes of Health, the Centers for Disease Control, the Food and Drug Administration, and the Alcohol, Drug Abuse, and Mental Health Administration.

Although many scientists believe that current congressional efforts to define the beginning of human life should be left to private individuals or philosophers and theologians, Brandt, who is also a Church of Christ minister, takes no clear-cut stand on the issue. "It's a difficult and complicated issue," he said.

Brandt predicted that the controversial candidate for Surgeon General, C. Everett Koop, will be confirmed. Brandt seemed to try to allay fears that Koop's outspoken opposition to abortion, homosexuality, and women's rights will spill over into the formation of public health policy. Brandt said the job of Surgeon General was

largely "symbolic" and that Koop "would still have to report to me." Historically, however, surgeons general have been significant in shaping public health policy.

In response to other questions, Brandt said there would not be great shifts in priority at the National Institutes of Health. "NIH has set a record that's absolutely unparalleled, but it will have to adapt to economic reality."—**Marjorie Sun**

## Gene Therapy Pioneer Draws Mikadoesque Rap

Biologist Martin Cline, who in July 1980 performed the first known recombinant DNA experiments in humans, has been decreed by the National Institutes of Health to have broken both the federal regulations on human experimentation and the NIH guidelines on recombinant DNA research. Cline "has violated both the letter and the spirit of proper safeguards to biomedical research," NIH director Donald Fredrickson declared in an unwontedly censorious statement. The verdict marks the fourth known infraction of the recombinant DNA rules since 1976.

The NIH is asking various of its advisory committees to consider whether Cline should be denied his present or future research grants. Cline has already stepped down from his post of division chief at the University of California, Los Angeles, where he remains a tenured professor (see *Science*, 3 April, p. 24).

The NIH report on the Cline affair, released on 29 May, makes plain that Cline acted alone in performing the unauthorized gene therapy experiment. His colleagues at UCLA, who prepared the recombinant DNA molecules, and his collaborator at the Haddassah hospital in Israel, where the patient was located, were all informed only after the event that Cline had followed a version of the protocol different from that approved.

Cline is quoted in the report as conceding that he "exercised poor judgment" and that, despite the promise of the experiment for thalassemia patients, "I profoundly regret that I conducted these studies without adhering strictly to written guidelines."

The NIH committees that have to

consider further sanctions against Cline will find themselves weighing the seriousness of the political implications of Cline's disobedience against the triviality of its scientific consequences. As the first attempted gene therapy, Cline's experiment has gotten the morally fraught but medically propitious field off to a thoroughly muddled start. Moreover, flouting authorities in a foreign institution is a different matter from thumbing one's nose at those at home.

On the other hand, the significance of the infraction was almost purely formal. Cline had permission to insert two genes separately into his patient's marrow cells; his offense was to insert them in combined form. In both cases the genes had been manufactured by recombinant DNA techniques, but only when linked to each other were they deemed to constitute a recombinant DNA molecule, use of which had not been sanctioned. Cline has contended that genes inserted separately tend anyway to recombine within the cell, so that there is no substantive difference between the protocol which was approved and that which he actually followed.

In devising his experiment Cline had to negotiate with five separate committees, two at UCLA and three in Israel. Though each committee doubtless acted reasonably, the cumulative delay must have been frustrating to a researcher who believed he had developed a promising new approach to a painful and intractable group of diseases.

The NIH's response to previous infractions of its gene splicing rules has been to commute punishment to whatever discomfort the offender may already have suffered. Its more energetic reaction to Cline may perhaps have been colored by recent congressional hearings in which the agency's avenging roar against miscreants emerged as generally less than petrifying. For any who might sympathize with Cline over his entrapment with review committees, the NIH's verdict may seem as condign as if devised by the Mikado himself. In effect, Cline is to be suspended in red tape while yet another series of committees reviews both his and each other's works, at the conclusion of which the NIH will render an actual decision as to whether further sanctions are necessary.—**Nicholas Wade**