18. In this context the term "underutilized" refers to the practice of minimum management of privately owned forest for many millions of acres. (This is not to imply that minimum management is not rational given current economic conditions.) Some significant fraction of this area is never harvested, and mature trees, both merchantable and cull, topple and decay. For a larger fraction of the acreage, merchantable stemwood is periodically harvested but not replanted, the woody residues and dead stemwood are not removed, and growing cull trees are left to expand their area of coverage.
19. The basis for analysis used in the reference is 30 dry tons per acre-year.
20. S. H. Wittwer, *Science* **188**, 575 (1975).
21. Data from several studies are reported in (*6*).
22. National Research Council, *Guayule: An Alternative Source of Natural Rubber* (National Academy of Sciences, Washington, D.C., March 1977), p. 19; available from National Technical Information Service, Springfield, Va.
23. *Government R&D Report* (U.S. Government Printing Office, Washington, D.C., May 1977), vol. 7, No. 9, pp. 11–12.
24. However, these lands, especially without irrigation, are, in general, only marginally suited for other uses; thus, their harvest by livestock may represent a best use opportunity.
25. C. T. Nisbet, *Technol. Rev.* **79** (No. 7), 5 (1977).
26. The analysis—53 percent carbohydrate, 12 percent protein, 35 percent fat—including consideration of the adequacy of essential amino acids is given by W. C. Yee [*Middle East Study: Nutrition Economics in Desalination Agriculture* (Report ORNL-4489, Oak Ridge National Laboratory, Oak Ridge, Tenn., 1970)].
27. The results of several detailed analyses of the energy requirements to produce competing consumer products using either petroleum or biomass feedstocks are contained in (*7*), pp. 113, 153, and 202. No clear pattern of energy savings emerges. In many cases the energy differences are unimportant relative to product properties that are influential in determining consumer choice.
28. The Conference Board, *Energy Consumption in Manufacturing* (Ballinger, Cambridge, Mass., 1974), p. 266.
29. R. W. F. Hardy and U. D. Harelka, in *Biological Solar Energy Conversion*, A. Mitsui, S. Miyachi, A. San Pietro, S. Tamura, Eds. (Academic Press, New York, 1977), p. 305. Biomass energy is stored in the plant primarily as carbohydrate: cellulose, starch, and simple sugars. A weight ratio of carbohydrate used to nitrogen fixed of four to one corresponds to an energy ratio of about six biomass energy units used as carbohydrate for each biomass energy unit fixed as nitrogen.
30. A. L. Hammond, *Science* **195**, 564 (1977).
31. R. Dubos observes that there is a tendency for developing countries to emulate U.S. high technology regardless of its suitability to their circumstances, and that, if we want to help and encourage these developing countries to adopt and implement other energy policies that are more suitable to their particular economy, we should show them, by example, that these opportunities and related technologies are respectable candidates in the United States as well (René Dubos Environmental Forum, Seven Springs Center, Mt. Kisko, N.Y., 9 to 11 September 1977).
32. L. H. Hill and S. Erickson, in *Energy, Agriculture and Waste Management*, W. J. Jewell, Ed. (Ann Arbor Science, Ann Arbor, Mich., 1975), p. 109. My interpretation of the graph in figure 2.
33. Another approach to U.S. policy governing surplus corn production would consider reduced use of commercial fertilizers in place of restrictions on harvested acreage in exchange for crop price supports.
34. A. L. Hammond and W. D. Metz, *Science* **197**, 241 (1977).
35. P. A. Gnadt and C. D. Murphy, *The Use of Wood as an Alternate Fuel for the ORNL Steam Plant*, unpublished paper, Oak Ridge National Laboratory Continuing Education Program, Course S-600, spring 1977, Oak Ridge, Tenn.
36. W. L. Roller, H. M. Keener, R. D. Kline, H. J. Mederski, R. B. Curry, *Grown Organic Matter as a Fuel Raw Material Resource* (National Aeronautics and Space Administration Contractor Report, NASA CR-2608, October 1975), p. 8; available from the National Technical Information Service, Springfield, Va.
37. C. F. Baes, Jr., H. E. Goeller, J. S. Olson, R. M. Rotty, *The Global Carbon Dioxide Problem* (Report ORNL-5194, Oak Ridge National Laboratory, Oak Ridge, Tenn., 1976).
38. B. Bolin, *Science* **196**, 613 (1977).
39. Discussion at the René Dubos Environmental Forum [see (*31*)] suggests that high sugarcane yields in Florida are due to a one-time opportunity to mine rich muck soils.
40. J. A. Bassham, in *Biological Solar Energy Conversion*, A. Mitsui, S. Miyachi, A. San Pietro, S. Tamura, Eds. (Academic Press, New York, 1977), p. 154. The term C_4 applies to certain plants such as corn and sugarcane that have a special added metabolic pathway. Compared to other plants, the energy efficiency of C_4 plants is higher because they avoid wasteful photorespiration under conditions of high light intensity.
41. Roller *et al.* (*36*, p. 52) conclude, "There are no plant species that will produce biomass more abundantly or more efficiently in the U.S. than our common agricultural crops now grown and/or our forest species."
42. J. H. Martin and W. H. Leonard, *Principles of Field Crop Production* (Macmillan, London, 1967), pp. 1111–1119.
43. O. D. Lorenzi, Ed., *Combustion Engineering* (Riverside Press, Cambridge, Mass., ed. 1, 1952), pp. 25–27; C. D. Hodgman, Ed., *Handbook of Physics and Chemistry* (Chemical Rubber Company, Cleveland, Ohio, ed. 27, 1943), pp. 1238–1240.
44. N. A. Lange, Ed., *Handbook of Chemistry* (Handbook Publishers, Sandusky, Ohio, ed. 8, 1952), pp. 758–768.

NEWS AND COMMENT

The Criminal Insanity Defense Is Placed on Trial in New York

Ever since Daniel M'Naghten, a Scot, was acquitted for erroneously shooting the secretary of his intended victim, the British prime minister, on the grounds that his crime had resulted from a mental defect, courts have in varying degrees considered insanity to be a defense in a criminal trial. M'Naghten's acquittal, which occurred in England in 1843, gave rise to two things: a standard of legal insanity that became widely accepted by courts in the United States, and an immediate public outcry that eventually followed the standard across the Atlantic.

In recent years, opposition to the insanity defense has intensified among the public, presumably because of a perception of it as a means for a criminal to avoid punishment. For example, the initial finding by New York psychiatrists that David Berkowitz, the accused "Son of Sam" killer, was unfit to stand trial on the grounds of mental incompetence prompted unusually hot debate until a New York court partially defused it by accepting the contrary testimony of psychiatrists appointed to give a second opinion. Other recent cases, including that of Patty Hearst, whose lawyers unsuccessfully maintained that she had been brainwashed into helping rob a San Francisco bank, and of Peter Reilly, the Connecticut teenager who successfully claimed he had been brainwashed into confessing to the murder of his mother, have prompted similar debate about the definition of criminal insanity.

This interest has not been lost on lawyers and psychiatrists, who have done a lot of soul-searching recently about their abilities to either predict insanity or to establish it in court. The interest also has not been lost on politicians. Former President Richard Nixon called for an elimination of the insanity defense in the federal court system in 1973. Little was done about his proposal, according to most observers, because it came across as a purely conservative political issue. But the recent notorious uses of the defense have moved the debate out of a purely conservative arena. Last fall, Governor Hugh Carey, a New York Democrat, directed his state Department of Mental Hygiene (DOMH) to prepare a report on how the insanity defense had been used in New York and on the subsequent treatment received by those who used it. "In recent years, there has been widespread concern that the legal defense of insanity in criminal proceedings does not protect the public," Carey said in a message to the state legislature. "Specifically, I have directed the Department to consider the need for limits on a legal defense of insanity."

On 17 February, the DOMH report was released. It is bound to add more controversy to the long-standing debate. Already, it has reverberated throughout the psychiatric and legal communities far outside of New York State, primarily because of its conclusion that the legal defense of insanity should be abolished. Of even greater significance, however, is the 157-page study that accompanied the conclusion. Prepared by a lawyer, a sociologist, and two psychiatrists on the DOMH staff, the study presents a de-

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tailed analysis of the insanity defense on medical, legal, and social grounds. Several of its conclusions—that the defense has been used by certain segments of the population as a way of escaping punishment, and that psychiatric prediction of dangerousness is nothing more than "guesswork dressed up in the false cloth of reassuring pseudoscience"—are bound to raise hackles in the psychiatric profession.

The study also is notable because DOMH has gathered what apparently is the first hard evidence about how frequently the insanity defense has been used, and what the perceptions of it are in the legal profession. Noting that "legal tracts and psychiatric polemics abound, but solid empirical facts about the use of the insanity defense and the results of acquittal are rare," its authors undertook a survey of court records and 300 legal professionals. Their evidence shows that the use of the defense for acquittal in New York rose fourfold to 225 in the period 1971 to 1976, up from 53 in the period 1965 to 1971. It also shows that 60 percent of the survey respondents, including a majority of private attorneys, district attorneys, and public defenders, thought the defense worked poorly. Judges were the only group to express a majority view that it worked well. The main reasons given in the survey for disenchantment with the insanity plea were a lack of understanding of the statute by juries and the public, the vagueness of the statute, and the prevalence of incompetent or superficial psychiatric testimony.

Under the current system in New York (and many other states), psychiatrists are called upon to testify about whether a defendant, at the time of his crime, lacked substantial capacity to know or appreciate the nature, consequences, or wrongfulness of his conduct as the result of a mental disease or defect. If a defendant is found not guilty by reason of insanity, he is turned over to DOMH, which can hold him only as long as he poses a danger to himself or to society, and psychiatrists are called upon once again to testify about this.

In its report, DOMH recommended that the current insanity plea system be abolished and replaced by a rule of "diminished capacity." Under this rule, evidence supporting insanity would affect only the seriousness of the crime for which the defendant could be convicted, and not the broader question of guilt or innocence. In other words, were the defendant shown to have a mental disease or defect, the result would be a reduction of the charges brought against him to a crime that required only proof of recklessness or criminal negligence. The quotient of intent would be diminished, but the defendant still could be convicted. And, if convicted, he would receive a sentence, just as any other criminal, to be served in a prison. DOMH maintains that adequate facilities for the treatment of mentally disabled criminals already exist in the New York prison system.

In many ways, this recommendation, like the roots of the debate on the insanity plea, may be regarded as political. The survey of insanity acquittals showed, for example, that more than half of those acquitted in the last 10 years were charged with murder. When a defendant charged with such a sensational crime is released after successfully pleading insanity, it is the DOMH ox that is gored by the public; their psychiatrists are the ones who have affirmed that the defendant is not dangerous to society. Moreover, the public is not the only group that responds so negatively: Seventy-four percent of the judges and lawyers surveyed by DOMH felt that the DOMH standards for release of defendants are too lax. Under the new system of diminished capacity, the New York State department of corrections would bear the responsibility, plus the blame, for the fate of the criminally insane.

Criticism Hurts Other Programs

Also, when DOMH is gored over the release of a defendant, the other treatment programs that DOMH sponsors—such as its controversial program of community-based mental health treatment—may be subject to criticism. As William Carnahan, the DOMH deputy director and general counsel, noted several times in the report, "The use of the [insanity] defense in highly publicized criminal cases can foster an impression that all mentally ill individuals are dangerous, thus inhibiting community acceptance of a policy of providing care and treatment of persons . . . in surroundings less restrictive than secure facilities." Thus, to get a community's political acceptance for new treatment methods, the criminally insane must be extricated from the system and placed elsewhere. "Increasingly characterized by open atmospheres rather than locked wards, psychiatric centers today are no longer appropriate facilities for the containment of social deviants," James Provost, the DOMH acting commissioner, states in the report.

The rationale provided for this conclusion in the report also is bound to generate controversy. The authors state that they base their decision on a finding that "a loosening of the insanity defense . . . [has] resulted in the placement within our psychiatric hospitals of some individuals acquitted of bizarre sociopathic activities who cannot be 'treated'; and yet must and should be confined for the protection of society." Specifically, the report delineates four subgroups of those acquitted by reason of insanity "who are neither medically psychotic nor legally insane," groups which supposedly used the insanity plea as a means of staying out of jail. One of the groups consists of mothers who have murdered a child; "to preserve our illusions about 'mother love,' we categorize women who murder their children as 'insane'," the report states. Another consists of police officers; "we are reluctant to accept the increased probability of the policemen to utilize weapons and authority when confronted with a personal problem situation." A third group is made up of "I-can-feel-sorry-for-you" subjects, according to the report, meaning "individuals with no previous psychiatric or criminal history, whose crimes appear reactive to an immediate stressful situation." The final group "of questionable 'insane status' appears to be 'persons of responsibility' for whom citizens can feel considerable empathy," such as a professional man who committed robbery after being hounded by racketeers for payment of his gambling debts, the report said.

In suggesting that members of these and other groups may have abused the insanity plea system, the authors of the report also acknowledge that the testimony of psychiatric experts that led to the acquittals may have been faulty. Lawrence Kolb, who is a past president of the American Psychiatric Association and the author of a textbook on modern clinical psychology, suggested in the report that much of the psychiatric testimony about a defendant's state of mind at the time of the crime is incompetent. "It is beyond the capacity of a psychiatrist to comprehend the defendant's capacity to define the rightness or wrongness of his action taken at the time the act was committed," Kolb stated. "At best he has only the recollections of the individual—distorted as we often know they may be—on which to base his judgment."

Although such an assertion may seem startling, Kolb and the other authors of the report are merely agreeing with concerns already voiced by a number of lawyers and psychiatrists. For example, the tendency in recent cases such as the Berkowitz hearing for psychiatrists appointed by the prosecution and defense to

take opposing sides on the defendant's mental health is a growing problem, according to several attorneys. John Wright, a DOMH psychiatrist, states in the report that "courts are presented too often with the perplexity of defense and prosecution witnesses giving opposite interpretations of the same agreed-upon facts, symptoms, and observations. Who should be believed? The psychiatrist who uses the most scientific language? Who uses the least? Who looks and sounds most like a psychiatrist?" According to many lawyers and psychiatrists, such conflict is caused by disagreement within the psychiatric profession. In one case, well known in judicial circles, a psychiatrist from St. Eliza-

Briefing

Like Bank Robbers, Criminal Polluters Will Be Prosecuted

Where violations of pollution control laws involve criminal behavior such as surreptitious dumping of toxic substances or false reporting to the Environmental Protection Agency, the Department of Justice will react with the "same seriousness with which it must approach enforcement of the tax laws or the laws against bank robbers." So says the assistant attorney general for the department's land and natural resources division, James W. Moorman, who is one of the numerous practitioners of public interest law brought into the government by President Jimmy Carter.

Moorman, formerly head of the Sierra Club's Legal Defense Fund, is convinced that for the middle-class, white-collar professional or business person, the threat of prosecution is a more powerful deterrent to criminal conduct than it is for the hoodlum on the street. "Many of those who have chosen to violate or who will be tempted to violate the pollution control laws are professional and business people," Moorman said recently at an environmental law course in Washington sponsored by the American Law Institute and the American Bar Association. "These are people for whom an indictment alone, not to mention conviction or imprisonment, can be a catastrophe."

According to Moorman, the task of pollution control is so huge that it cannot be accomplished unless all actual or potential polluters accept responsibility for self-policing, just as taxpayers must accept responsibility for faithful compliance with the income tax laws. "It is illusory," he said, "to believe that the government can check every tax return or the effluent coming out of every pipe." The number of industrial and municipal discharges subject to regulation under the clean air and clean water acts runs into the tens of thousands, and a large but unknown number of them are not in compliance with abatement plans or discharge permits, Moorman noted.

Although billions upon billions of dollars are being committed to a vast and commendable pollution control effort, many companies and municipalities "have not been good soldiers," he said. "There is still substantial resistance to compliance in some quarters." For those merely engaged in "foot dragging," as in trying to throw up legal smoke screens for failures to meet compliance deadlines, the Department of Justice will seek civil remedies in the form of injunctions and fines.

But for those who perpetrate "willful, substantial violations . . . of a criminal nature," the department already has begun asking for grand jury investigations and indictments, Moorman said. There was, for instance, the recent prosecution and conviction of the sewer system manager and the Sanitation Commission in Little Rock, Arkansas, for false reporting. A successful criminal prosecution was also mounted in a case involving Tuck Industries in New York and its discharge of wastes that had not been reported at all.

"If properly enforced, [the pollution control laws] can be both a sword and a shield," declared Moorman, winding up his talk with a flourish. "A shield to protect society; a sword to chasten those who would bring misery on society. I want all to know and none to doubt that the Department of Justice intends to enforce those laws through criminal prosecutions."

Trouble Even in New Mexico for Nuclear Waste Disposal

The Department of Energy's troubled search for potential sites for the deep geologic disposal of nuclear wastes now seems to have run into serious political trouble even in New Mexico, which along with Nevada and Washington has been regarded by DOE as its ace in the hole (*Science*, 23 September 1977).

At a recent meeting with the New Mexico congressional delegation, Secretary James Schlesinger promised that the state would have the right to veto any DOE plan to establish a pilot waste-disposal facility within its borders. After the meeting, Senator Pete Domenici (R–N.M.) reported that the secretary had said that the state could, by whatever method of review its legislature should establish, say "yes or no [to] future nuclear [waste] projects."

Similar assurances have been given by federal energy officials to state officials across the country before; but Schlesinger's specific commitment to New Mexico was made under coercive circumstances. For, had the secretary refused to make this commitment, there was every likelihood that New Mexico—the state where DOE's efforts to identify a suitable disposal site are furthest advanced—would have reacted stormily and told DOE that any disposal facility would be unwelcome.

In Michigan last year Governor William Milliken went so far as to tell the Energy Research and Development Administration (ERDA), DOE's predecessor agency, that no exploration for geologic disposal sites for "commercial" wastes from nuclear power plants should be conducted in his state. In Louisiana, the legislature forbade the establishment of commercial waste repositories in any salt domes in the state, and, although it did not try to make ERDA stop its field studies, it left little hope of a change in the state's attitude.

The New Mexico legislature has made no effort as yet to try to stop DOE from proceeding with its plans for a Waste Isolation Pilot Plant (WIPP) near Carlsbad where some "military" wastes from the nuclear weapons program might be received. But the intense debate that arose in the state House of Representatives in January over whether to put this issue to the voters in November could well have been interpreted by Schlesinger and others at DOE as an ominous straw in the wind.

This ballot proposal, sponsored by the Democratic majority leader in the form of a constitutional amendment, came within three votes of receiving House approval. Furthermore, polls conducted by the Albuquerque *News* and the Bureau of Business Research at the University of

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beths Hospital in Washington, D.C., testified in court on a Friday afternoon that a person with a sociopathic personality was not suffering from a mental disease. On Monday morning, as a result of policy change at the hospital, administrators determined that a state of psychopathic or sociopathic personality did constitute a mental disease.

In addition, there is a growing concern that psychiatrists may be unable to tell when a defendant acquitted for reasons of insanity should be released from an institution—in other words, may be unable to predict whether the defendant is still dangerous to society. According to Wright, for example, "No matter how careful the procedures, observations,

Briefing

New Mexico have indicated that, if the question of whether a waste repository should be built in the state ever be put to the voters, the answer is likely to be no.

How has this situation come to pass in New Mexico, which, like Nevada and Washington, has had so long and intimate a familarity with the atom? Alamogordo was of course the site of the first atomic bomb explosion, and the Los Alamos and Sandia weapons laboratories are among the state's economic mainstays.

In part, the New Mexicans' hardening attitude about waste repositories may merely reflect the squeamishness that most people, wherever they live, seem to feel about radioactive wastes. Aside from this, however, there is also the fact that ERDA and DOE officials, who have a knack for making politically maladroit moves when it comes to waste management, have given plenty of ammunition to New Mexico environmentalists and have made skeptics even among their friends in the New Mexico congressional delegation.

New Mexico's two Republican senators, Pete Domenici and Harrison Schmitt, last fall found much ambiguity in DOE's plans for the WIPP project. At first, the WIPP had been intended as a pilot repository for low and intermediate level military wastes. Any radiologically and thermally hot "high level" wastes received would be used only for experimental or demonstration purposes.

But, then, late last summer, it began to appear that something much more ambitious was in the wind. Agency officials were now saying that ERDA (soon to be DOE) was "considering" having the WIPP licensed by the Nuclear Regulatory Commission (NRC) as a high level waste repository. In November Senator Domenici received a letter from a DOE official to that effect, only to discover later that 4 days before this letter was dispatched the same official had informed the NRC that the scope of the WIPP design was being expanded to accommodate high level wastes and that DOE definitely planned to have the facility licensed accordingly.

Meanwhile, environmentalists in New Mexico, with leaders of a Sante Fe group known as the Clearinghouse for Environmental Action in the forefront, were intensifying their efforts to block both the WIPP project and plans by Chem-Nuclear, Inc., to establish a burial ground for commercial low level wastes near Cimarron in the northeast part of the state. The level of citizen concern about the waste issue was rising rapidly.

Reflecting this concern, Senator Schmitt has observed that New Mexico, "the Land of Enchantment," would not like to become known as the "Nuclear Garbage Dump state." As matters stand today, New Mexico has not closed its mind to clear waste repositories, but the DOE clearly has a tough selling job to do.

United States and Bulgaria to Cooperate in Research

Détente and the Soviet Union's apparent desire to have the communist countries of Eastern Europe reach out to the United States to strengthen themselves in science and technology have led to another agreement for cooperative research activities in these fields. The latest one is between the United States and the People's Republic of Bulgaria and is part of an "umbrella" agreement calling for exchanges between the two countries over the next 5 years in cultural, scientific, technological, educational, and other fields.

Nacho Papazov, chairman of the Bulgarian State Committee for Science and Technical Progress, signed the scientific and technological cooperation agreement for his country at a ceremony held at the National Science Foundation (NSF) on 9 February. Richard C. Atkinson, the director of NSF, signed for the United States.

Papazov said that Bulgaria was most interested in working out cooperative research projects having to do with computer programming, chemical catalysts, seismology, and agriculture. As for the United States, Atkinson said that it would be particularly interested in projects related to agriculture, electronic microprocessors, computer science, and chemistry. But, except for those fields in which NSF has no authority to sponsor research (namely clinical medicine, business administration, and education), proposals will also be entertained for research in other fields.

Cooperative research projects are to be sponsored in the following way. After developing plans for a project through discussions with his Bulgarian colleagues, an American scientist will submit a proposal under which NSF would pay for his or her research and foreign travel and for the expenses incurred by the Bulgarian scientists while in this country. Simultaneously, the Bulgarians participating in the project would submit a similar proposal to the Bulgarian State Committee for Scientific and Technical Progress.

The two countries are to share the cost of the research projects on a 50-50 basis. Once the program is well under way, NSF expects to be spending a few hundred thousand dollars a year in support of the projects.

The United States now has cooperative research programs with all of the Eastern European countries except East Germany and Czechoslovakia, and negotiations looking to such a program are currently under way with the Czechs.

According to NSF sources, the programs have generally been quite fruitful. For instance, scientists at the Unversity of Akron and Hungary's Research Institute of Chemistry have developed some patentable chemical processes.

The cooperative program with Rumania, undertaken under a 1973 agreement that expires this September, is said to have made a good start but began to suffer about a year ago from a serious breakdown in communications. No new projects have been started since that time. The root of the difficulty, which may prove to be only temporary, is believed to lie in a reordering of research priorities by the Rumanian National Council for Science and Technology in keeping with the national objective of fostering economic growth.

Luther J. Carter

and tests used by [mental] facility staff to arrive at the opinion that an individual can be released without peril—and in New York they are remarkably elaborate—the fact of the matter is that the opinion can never be more than guesswork dressed up in the false cloth of reassuring pseudoscience." Alan Stone, the chairman of the American Psychiatric Association's commission on judicial action, told *Science* that "it is very hard for a psychologist, psychiatrist, or even a properly fed computer to decide who is dangerous." Another psychiatrist, Abraham Halpern, who is assisting a New York State senator with legislation to abolish the insanity defense, told *Science* that "a judge, a high school student, or a jury is better at predicting dangerousness than a psychiatrist."

If Halpern and DOMH have their way, testimony about dangerousness would not be needed because a defendant would be serving a sentence determined in advance. Kolb even feels that such a determination will have therapeutic value. "The likelihood of malingering of psychosis would be lessened as the party adjudged guilty would realize from the beginning that a determination of his sentence would be made by the court," Kolb said.

Testimony Still Allowed

The authors of the DOMH report emphasize that they are not attempting to exclude psychiatrists from the courtroom but are trying to restrict the focus of psychiatric testimony. David Bazelon, the chief judge of the U.S. Court of Appeals in Washington, D.C., and the author of a major court decision on the insanity defense, told *Science* that "Whether or not the defense is abolished, expert testimony by psychiatrists will still be taken into account under the rubric of a defendant's intent to commit a crime. You can't get rid of the need to establish intent."

Any move to restrict the testimony will not be universally popular among psychiatrists, however, and already it is known that many lawyers and judges in New York will not support it. The DOMH survey showed that, while most of the respondents were dissatisfied with the current insanity defense, most also favored alternatives other than the diminished capacity rule. Public defenders were the only group to express a majority view in favor of it. In contrast, abolition of the insanity defense was endorsed several years ago by the National District Attorneys Association.

If New York actually does abolish the insanity defense, this action probably will have an effect on the activities of other states, because New York is often a leader in setting judicial policy. Illinois and New Hampshire also are said to be considering a change in their insanity plea structures.

One factor that may influence action in New York was an incident that occurred in Buffalo on 19 February, two days after the DOMH report was released. On that day, a man who had been charged in 1974 with murdering two children and shooting three others, and who then was found not guilty by reason of insanity, disappeared from the DOMH psychiatric facility where he had been placed. The incident has caused a great stir there.

—R. JEFFREY SMITH

Fermilab Director Resigns: Cites Subminimal Funding

After a protracted struggle with scientific budget makers, the director of the country's largest accelerator has resigned over the inadequacy of current and upcoming research support.

Robert Rathbun Wilson, who became something of a scientific notable and congressional favorite for the speed, style, and economy with which he built the 4-mile accelerator at the Fermi National Accelerator Laboratory, in early February carried out his threat to resign if the fiscal 1979 budget did not meet his minimum terms.

Last fall Wilson wrote to James Schlesinger and others in the Department of Energy saying that he would not be able to continue in his post if a project to double the accelerator's energy were not given at least $30 million in funding for 1979. The funds are to build a new ring of superconducting magnets in the tunnel of the present accelerator and thereby raise the peak energy of the facility from 500 to 1000 giga electron volts (GeV). Money for such construction projects is usually spread over several years. In this case, Wilson argued, it was needed at once to meet the competition of the new European "SuperCERN" accelerator that has begun operating with comparable energy and more than twice the present operating budget of the Fermilab.

The fiscal 1979 budget approved the project, but contained only $15 million for the energy doubler, $5 million in research and development funds, and $10 million for the start of construction. (Wilson called the project the energy doubler/saver because the superconducting magnets would use less power, saving $5 million per year in the lab's electric bill.) After the budget was made public, Wilson, citing the "indecisive and subminimal" support for the doubler and "my concern that the future viability of Fermilab is threatened," resigned. He will, however, continue as acting director until a successor is named.

Norman Ramsey, president of the Universities Research Association (URA) which manages the laboratory for the Department of Energy, called Wilson's resignation a "tremendous loss" to the laboratory at this "critical time." Ramsey told *Science* that the URA had set up a search committee to select a new director as expeditiously as possible. Wilson, in his letter of resignation, highly recommended his deputy, Edwin Goldwasser, for the job. Wilson himself expressed a strong desire to stay at the laboratory in the capacity of head of the doubler project. In recent years he has devoted more and more effort to the project, spending about half his time on it in the past year, according to researchers at Fermilab.

In quite visible ways, Wilson put his personal mark on the laboratory in the Illinois plains near Batavia (*Science*, 6 September 1974). His style of management has been bold and aggressive and he became personally involved in the details of almost everything that went on in the laboratory. This included not only the physics of accelerator building, but also the graphic design of the laboratory logo, the architectural design of several of the laboratory buildings, and the importation of a herd of buffalo to graze in the middle of the accelerator ring. A

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