passed bill would have allowed spoil to be left on the downslope only "temporarily," but this was given up in the House-Senate conference.

Another major point on which the House yielded in conference, much to the disappointment of Dunlap and other environmental lobbyists, had to do with the protection of alluvial valleys in the West. In regions such as the Northern Great Plains, where a coal rush is under way, these valleys are an essential complement to the vast range lands in the ranching economy, even though they usually are only a small part of any given region. Without the hay and other forage crops grown in these valleys to tide livestock over the winter, the range lands that sustain the animals the remainder of the year become of little value.

The conflict here between mining and agriculture arises because under some of these valleys are thick seams of coal—an estimated 5 percent of the strippable coal in the Northern Plains' Powder River Basin is in alluvial valleys. Moreover, this coal can be particularly profitable to mine because it usually lies beneath an easily removable overburden.

The House bill had flatly prohibited all mining in alluvial valleys and had held that there must be no alternation of significant stream channels and no adverse effects on the quality or quantity of the ground or surface water flowing into these valleys. Taken together, these restrictions would have had the effect of forbidding strip mining over wide areas. Accordingly, all were dropped in conference in favor of more general language requiring the denial of permits in cases where there would be a "substantial adverse effect" on valleys of actual or potential agricultural value or where there would be a disruption of "essential hydrologic functions."

The environmental lobbyists' fear is that, in the lawsuits that will inevitably arise over these vague provisions, the ranchers will be at a major disadvantage, lacking as they do the money for prolonged and costly court battles. In fact, Dunlap's basic criticism of the bill is that, in her view, some of the provisions dropped would have made it much easier for citizens to obtain faithful implementation and enforcement. But Dunlap's chief concern at the moment is to see that the strip mining bill becomes law, whatever its present defects.

Indeed, the real question now is whether the President will sign the bill, and whether, in the event he does not, a two-thirds majority can be mustered in both the House and Senate to override the veto. To judge from the majorities that have been behind the strip mining legislation, such a congressional override would indeed be possible. The House approved the conference report by 293 to 115, or by 21 votes better than the majority necessary in a showdown with the White House.

To give the White House further pause in contemplating a veto, Senator Lee Metcalf (D–Mont.), manager of the bill in the Senate, will introduce legislation to continue the present moratorium on federal coal leasing until there is a strip mining law.—LUTHER J. CARTER

Prisons: Faith in "Rehabilitation" Is Suffering a Collapse

People are sent to prison for several reasons—punishment, restraint, deterrence, and rehabilitation. Rehabilitation means, in the narrowest sense, to effect some change in an individual that will reduce the likelihood of his running afoul of the law again.

The American criminal justice system, and the social scholars who concern themselves with it, are now in the midst of what one of them calls a "massive retreat" from rehabilitation. Disillusionment is such that there are no programs, either within prisons or in communities, whose worth has not come into question. But it is on in-house attempts at rehabilitation that the conflicts and frustrations are most sharply concentrated.

An apparent symptom of this trend away from rehabilitation is the recent resignation from the Bureau of Prisons (BOP) of psychiatrist Martin Groder, who was to be the warden of a new federal correctional facility now under construction in Butner, North Carolina (*Science*, 2 August 1974). The new prison, the Federal Center for Correctional Research, is, or was supposed to be, the proving ground for BOP's first large-scale effort at evaluating rehabilitation programs. BOP chief Norman Carlson says the prison's objectives haven't changed, but Groder believes that the circumstances that brought about his resignation (Carlson wanted to transfer him to Illinois) are all part of a turnabout in federal correctional philosophy that will make it impossible for Butner's mission to stay intact. Certainly the federal prison system is overcrowded and BOP is anxious to phase out antiquated facilities, so it is fair to question whether the bureau can afford to have a new institution entirely given over to the conduct of and research on treatment and rehabilitation programs. Besides, Groder, despite a tendency toward rash outspokenness, was a rare bird in the prison system—being talented, innovative, and committed to prison work. The Butner facility was Groder's show, and without him at the helm no one can be sure what form the new prison will take.

It should also be noted that the Butner facility got a lot of adverse publicity from the start, and BOP was never able to overcome certain assumptions widely held among people concerned with prisoners' rights and the rights of research subjects. These have been that Butner would be used for a variety of unsavory techniques that have been accumulated under the rubric of "behavior modification." In fact, behavior modification—which among professionals commonly denotes positive reinforcement for approved behavior—and not the opposite—negative reinforcement or aversive conditioning—was not among the programs planned for Butner. One authority believes Butner had simply become too much of an "embarrassment" to BOP and a change was in order.

At any rate, additional forces have been at work. Following the Attica disaster in 1971, corrections experts shifted in favor of prisons as places of rehabilitation. The President's Advisory Commission on Criminal Justice Standards and Goals made much of prisons as "schools for crime" and gave impetus to the development of community-based corrections programs. As for those who needed to be put away to protect the community, much was made of the "right to rehabilitation." Although state systems vary greatly, it has been common practice to evaluate prisoners and recommend appropriate courses for treatment—vocational, educational, and psychotherapeutic. The element of coercion is sometimes overt, sometimes

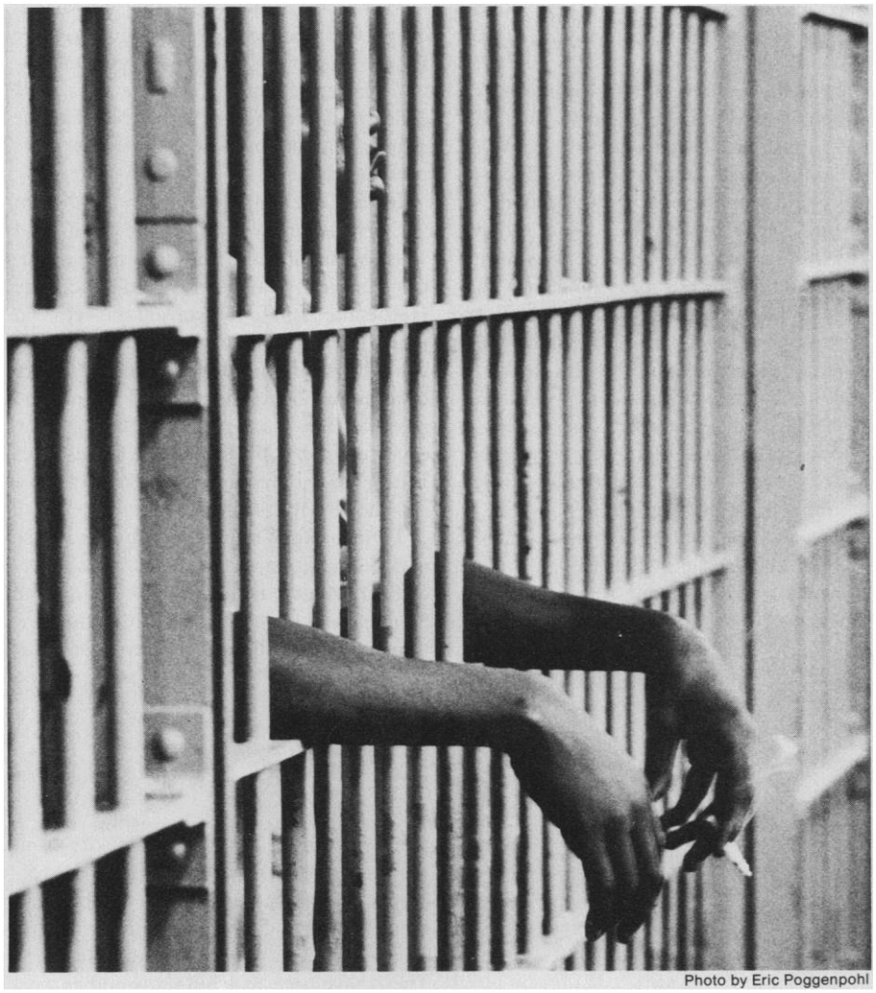

Photo by Eric Poggenpohl

implied; but every prisoner has known that his participation in some sort of program and giving the appearance that he has benefited in some way enhances his chances of getting out. Prisoners' motivations vary, but they are highly motivated when it comes to getting out. The disillusionment with "rehabilitation," at least in its present forms, has been so deep that it has caused many prominent social scientists and penologists to abandon cherished philosophies in a matter of a few years.

Carlson is one of many who have changed their minds. He has been the object of criticism over what some see as a new "hard-line" approach, which prompted him to circulate a memo last month to regional directors insisting that "we are not taking a hard-line approach but simply a more honest one . . ." with regard to what prison can and cannot accomplish. Carlson, like many others including former Attorney General William Saxbe, has been strongly influenced by an evaluation of rehabilitation research performed under a grant from the Law Enforcement Assistance Administration of the Department of Justice by Robert Martinson, sociology professor at the City University of New York. This study, which covered research from 1945 through 1967, concluded that no programs of rehabilitation provided solid evidence that such things worked. Another of Carlson's new philosophical underpinnings is a slim volume by prison expert Norval Morris of the University of Chicago, called *The Future of Imprisonment*. Both works have helped coalesce thinking along new lines, to wit: A prison can't set itself up as an agent for helping an individual (rehabilitation) when its reason for existing is to do violence (by robbing him of his freedom). Therefore, goes the thinking, let's cut out the hypocrisy and recognize prisons primarily as agents for "deterrence and incapacitation." Rehabilitation programs should be available in prison for those who want them, but no judge should sentence someone to prison for the *purpose* of rehabilitation. Sentencing and parole policies should be changed so as not to make a prisoner's release contingent on participation in such programs.

The dominant belief now among corrections experts is that rehabilitation should be put on the back burner for a while and that efforts should instead go toward making prisons more humane and equitable places to pass the time. To BOP this means phasing out antiquated facilities, building enough new ones to ensure that each prisoner has his own private cell or room, increasing protection of prisoners from assault, rape, and robbery (through better staff training, as well as privacy), and general improvement of facilities such as libraries.

The Academy for Contemporary Problems in Columbus, Ohio, last year published a set of principles that probably have as much support as any in this frustrated field. The principles, developed by a group that includes state corrections officials, are based on the few assumptions that now appear to be widely shared, namely that there are no methods of changing people that are both of predictable effectiveness and socially acceptable; also that some people really need to be locked up to protect society.

The academy group agrees with most other critics that the main evil of the system, which was, ironically enough, introduced a generation ago as a humane reform, is the indeterminate sentence. It proposes, therefore, that indeterminate sentences be discarded and that none of the present incentives prisons offer (such as time off or preferred treatment) be attached to participation in rehabilitation programs. The exercise of discretion on the part of judges and prison and parole authorities would further be reduced by establishing a flat maximum sentence and a system of time off for good behavior—one day off, for example, for each day spent abiding by prison rules. "There is general disillusionment with discretion at every stage," says James Vorenberg of Harvard Law School, another prominent thinker in corrections, by which he means the police, courts, prisons, and parole boards are all pretty poor at judging whether someone who has committed an offense is likely to do it again. Recidivism is far and away the prime criterion for judging the success of a rehabilitation program. So far, it appears, there is little correlation between a person's apparent success in performing in his program and the likelihood of his abandoning his antisocial ways.

So now the talk is of abandoning efforts to have the punishment (and rehabilitation) fit the criminal, and, instead, going back to letting the punishment fit the crime. "Just deserts" is the term that has been brought back into currency. Some, like Groder, believe this is a step back to the dark ages. "Policy-makers want to buy the idea 'nothing works' so they can get on with the grand old business of repression,"

he says. However, Groder (who has always believed in voluntary participation in treatment programs) seems to be about the only person around who believes he has found an approach that works. He is angry at BOP for failing to support him at a time when he feels enough is known to develop productive programs. He attributes failures of the past to the fact that programs have been too limited, too short-term, and run by people who have merely administered them rather than become personally involved. Groder has implemented parts of his scheme, which relies heavily on transactional analysis, in other prisons, but so few prisoners have been involved that he can't put up a decent statistical showing.

There are others who believe the rehabilitation ideal is being abandoned without having really been tried, but politicians are already latching on to the current attitude of retrenchment—fostered and fed by rising crime rates—to call for harsher penalties, particularly for violent crimes. President Ford jumped into the fray last month with a speech at Yale University, where he advocated that all persons convicted of crimes where violence or threat of violence is involved be sent to prison. (Most are not now because of clogged systems, plea bargaining, and the increasing use of community correctional facilities.) Even Morris called the speech "idiotic" and said no respectable expert would accept its reasoning.

The hope now, according to John Conrad of the Academy for Contemporary Problems, is that whatever new policies emerge will keep the best of old and new, and not "throw out the baby with the bath"—the "baby" being continued availability of rehabilitation programs for those who want them.

"This is a time of penological pessimism," says Conrad. Efforts to treat felons in a humane and understanding way has led to the adoption of a medical-social services model according to which crime is viewed as an illness, with diagnoses, treatments, and cures. The failure of the application of the medical model to antisocial behavior follows the usual fate of attempts to mold social science to the Procrustean bed of the scientific method.

While efforts continue to make prisons more equitable and comfortable, the gains may be offset by the fact that the toughest, angriest, and least repentant get locked up, while others are put on parole, probation, and in community-based programs. People are pretty much at a stalemate about what to do with this "hard core" of recidivists, except most would agree with Martinson that "If we can't do more for (and to) offenders, at least we can safely do less."

—CONSTANCE HOLDEN

NAS and NAE Elections

The National Academy of Sciences has elected 84 new members, bringing the total to 1134. The election of 12 new foreign associates to the academy brings that total to 147.

In addition, Courtland D. Perkins, professor and associate dean of the School of Engineering and Applied Science at Princeton, has been elected president of the National Academy of Engineering. He was elected to serve the remaining 3 years of the term of Robert C. Seamans. Seamans resigned last December to head the Energy Research and Development Administration.

The new academy members, with the 12 foreign associates at the end, are as follows:

Stephen A. Adler, Institute for Advanced Study; **Henry N. Andrews**, University of Connecticut; **Clinton E. Ballou**, University of California, Berkeley; **Gary S. Becker**, University of Chicago; **Earl P. Benditt**, University of Washington School of Medicine; **Brian J. L. Berry**, University of Chicago; **Herman S. Bloch**, Universal Oil Products Company; **Baruch S. Blumberg**, University of Pennsylvania School of Medicine; **Michel Boudart**, Stanford University; **Kenneth E. Boulding**, University of Colorado; **Frank A. Bovey**, Bell Laboratories; **Roscoe O. Brady, Jr.**, National Institutes of Health; **John R. Brobeck**, University of Pennsylvania School of Medicine; **Chandler McC. Brooks**, State University of New York, Downstate Medical Center; **John J. Burns**, Roche Institute of Molecular Biology; **Glenn W. Burton**, U.S. Department of Agriculture and University of Georgia; **Kenneth M. Case**, Rockefeller University; **Bruce Chalmers**, Harvard University; **Merrill W. Chase**, Rockefeller University; **Melvin J. Cohen**, Yale University; **Zanvil A. Cohn**, Rockefeller University; **James P. Collman**, Stanford University; **Leon N. Cooper**, Brown University; **Gertrude M. Cox**, North Carolina State University; **Edward C. Creutz**, National Science Foundation.

Frederica A. De Laguna, Bryn Mawr College; **August H. Doermann**, University of Washington; **Peter Elias**, Massachusetts Institute of Technology; **Wallace G. Ernst**, University of California, Los Angeles; **Herbert Federer**, Brown University; **Eugene Feenberg**, Washington University; **George Feher**, University of California, San Diego; **Hans Frauenfelder**, University of Illinois; **Dave Fultz**, University of Chicago.

Paul R. Garabedian, New York University; **Roy G. Gordon**, Harvard University; **Carl W. Gottschalk**, University of North Carolina and American Heart Association; **Hirsh Z. Griliches**, Harvard University; **Robert E. Gross**, Children's Hospital, Harvard University; **Felix M. Haurowitz**, Indiana University; **Werner Henle**, University of Pennsylvania School of Medicine; **Robert L. Hill**, Duke University; **Richard H. Holm**, Massachusetts Institute of Technology; **Dorothy M. Horstmann**, Yale University School of Medicine; **Leo M. Hurvich**, University of Pennsylvania.

Dorothea Jameson, University of Pennsylvania; **Robert W. Kates**, Clark University; **Kenneth I. Kellermann**, National Radio Astronomy Observatory; **Jack C. Kiefer**, Cornell University; **Donald E. Knuth**, Stanford University; **Arthur H. Lachenbruch**, U.S. Geological Survey, Menlo Park, California; **Edward N. Lorenz**, Massachusetts Institute of Technology; **Emanuel Margoliash**, Northwestern University; **Max V. Mathews**, Bell Laboratories; **Margaret Mead**, American Museum of Natural History; **Edwin T. Mertz**, Purdue University; **Manual F. Morales**, University of California, San Francisco School of Medicine, and American Heart Association; **James N. Morgan**, University of Michigan; **Erwin W. Mueller**, Pennsylvania State University; **David B. Mumford**, Harvard University; **Jack E. Myers**, University of Texas, Austin.

Arno A. Penzias, Bell Laboratories; **Van Rensselaer Potter**, University of Wisconsin; **Paul B. Price, Jr.**, University of California, Berkeley; **Calvin F. Quate**, Stanford University; **Roy Radner**, University of California, Berkeley; **Wallace P. Rowe**, National Institutes of Health.

Howard A. Schneiderman, University of California, Irvine; **Melvin Schwartz**, Stanford University; **Clifford G. Shull**, Massachusetts Institute of Technology; **Philip Siekevitz**, Rockefeller University; **Howard E. Simmons, Jr.**, E. I. du Pont de Nemours & Company; **Edward H. Spicer**, University of Arizona; **Charles M. Stein**, Stanford University; **Donald F. Steiner**, University of Chicago; **George J. Stigler**, University of Chicago; **George Streisinger**, University of Oregon; **Igor Tamm**, Rockefeller University; **Gregorio Weber**, University of Illinois; **John C. Wheatley**, University of California, San Diego; **Harrison C. White**, Harvard University; **Robert H. Whittaker**, Cornell University; **Kenneth G. Wilson**, Cornell University; **Rosalyn S. Yalow**, Veterans Administration Hospital, Bronx.

Wolfgang Beermann, Max Planck Institute, Tübingen, Germany; **Christian de Duve**, Catholic University of Louvain, Belgium, and Rockefeller University; **Robert Hill**, Cambridge University, England; **Niels Kaj Jerne**, Basel Institute for Immunology, Switzerland; **Kunihiko Kodaira**, Tokyo University, Japan; **Devendra Lal**, Physical Research Laboratory, Ahmedabad, India; **Ernst Julius Öpik**, Armagh Observatory, North Ireland; **Alfred Edward Ringwood**, Australian National University, Canberra; **Manuel Coelho Mendes da Rocha**, Technical University of Lisbon, Portugal; **Sir Martin Ryle**, Cambridge University, England; **Eugene Nikolaievich Sokolov**, Moscow State University, Union of Soviet Socialist Republics; **Geoffrey Wilkinson**, Imperial College, London, England.