

vast migratory herds of caribou? The studies needed to answer questions of this kind have not been made in depth, although NEPA would seem to require such investigations.

The court held that the haul road should not be considered separately from the rest of the pipeline project—an important point, for, if project applications are dealt with piecemeal, major environmental problems could arise before the question of whether (or how) the pipeline should be built

is ever decided. The ruling was based partly on the court's finding that TAPS' requests for rights-of-way totaling 289 feet in width appear in conflict with the Mineral Leasing Act of 1920, which limits rights-of-way to 54 feet. But the fact that the court also cited NEPA's requirements for environmental impact studies could prove to be a highly significant precedent, especially in view of the high financial stakes involved in the North Slope oil development.

Governor Keith Miller of Alaska be-

lieves that, under an 1866 statute, the state itself is entitled to claim the right-of-way for the haul road and that it can have TAPS build the road as its contractor. The Alaska legislature already has voted to appropriate \$120 million (which the oil companies would eventually repay) to this end, but even TAPS views this proposal dubiously and there is a real question whether the courts would not find it to be an illegal circumvention of the April injunction.

—LUTHER J. CARTER

## Colorado Environmentalists: Scientists Battle AEC and Army

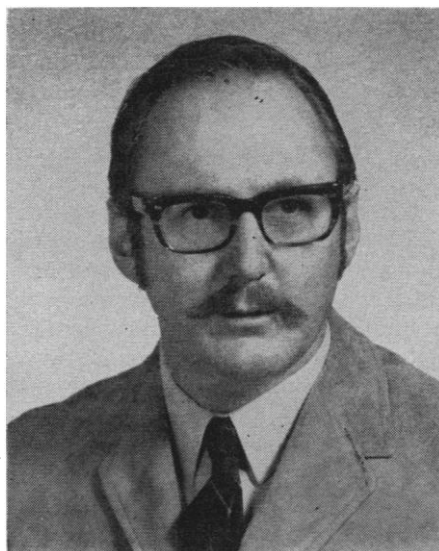
*Boulder, Colorado.* In the weeks that have followed Earth Day, many scientists and other citizens have asked: "How can we have a permanent influence in curtailing environmental pollution?"

One answer worthy of attention is found in the 2-year history of the Colorado Committee for Environmental Information (CCEI) which has had a major effect in this state in alerting the public, the politicians, and the press to environmental problems. CCEI is a small group; it has only 24 members, 20 of whom are physicists. It has no staff; its members are employed by the University of Colorado, by private research laboratories, or by federal laboratories here, such as the Bureau of Standards, the National Center for Atmospheric Research and the Environmental Science Services Administration. The best-known scientist in the group is Edward U. Condon, formerly head of the National Bureau of Standards.

The bulk of the committee's work, which consists mainly of the writing, critical review, and public distribution of scientific reports on specific environmental problems, is done by less than a half-dozen members. The group operates on a minuscule budget—less than \$1000 annually.

The Democratic Lieutenant Governor, Mark Hogan, is just one of many people who say that CCEI has had "a very definite public impact in Colorado" by exposing actual and potential

pollution from activities of the Atomic Energy Commission (AEC) and from the Army's storage of nerve gas at the nearby Rocky Mountain Arsenal. In calling attention to environmental questions, Hogan said in an interview that CCEI is "the one who has hit the mule across the head with the two-by-four to get his attention." CCEI has also been very skillful in attracting the attention of other politicians as well as that of the press. Anthony Ripley, the Colorado correspondent for the *New York Times*, is one of a group of reporters who have given the issues raised by CCEI national publicity.



Peter Metzger

Environmental issues in Colorado, which have to a great degree been shaped by the CCEI, have influenced the state's political campaigns. In his current race for the state governorship, Hogan is using some of the complaints developed by CCEI as campaign weapons against incumbent Republican Governor John A. Love. Love himself has been moved to display a greater attention to environmental contamination, including the controversial question of radioactive pollution.

CCEI's success illustrates the growing activity of the scientists' information movement. With its headquarters in New York City, the Scientists' Institute for Public Information (SIPI) now has particularly active chapters in Minnesota; in Missoula, Montana; in Rochester, New York; and in St. Louis, Missouri. (An account of the St. Louis group, which publishes the monthly magazine *Environment*, appeared in *Science* on 25 August 1967.)

Along with anthropologist Margaret Mead, a principal national leader of SIPI is Barry Commoner, a Washington University plant physiologist. Commoner's St. Louis organization is something of a model for SIPI, and Commoner has helped to persuade the Colorado scientists to adopt the SIPI philosophy. Walter Bogan, SIPI's executive director, also visited the Colorado scientists in 1968 to explain SIPI. Commoner and most of the other scientists in the information movement strongly believe that SIPI groups should avoid making political choices, but instead should concern themselves with discovering and publicizing the relevant scientific data on problems so that citizens can make their own political decisions. SIPI groups have, however, tended to be conservative about the introduction of new elements into the environment, and the Colorado group has participated actively in litigation.

One of the reasons why CCEI has been influential may be because it has directed its attention to specific polluters on an individual basis. CCEI has avoided making broad-scale attacks and has shunned activist types of protest. CCEI leaves the picketing to the many citizens' environmental groups which have sprung up recently in the state. CCEI is unusual in that it bridges the generation gap; those in its membership range from their early 20's to scientists well beyond the age of 60.

CCEI's current president and "spark-plug" is H. Peter Metzger, 39, a biochemist with Ball Brothers Research Corporation, who moved to Boulder from Columbia University in New York 4 years ago. A Boulder lawyer who has worked with CCEI says that "Metzger is as tenacious as a terrier after a rat."

All CCEI's members, Metzger indicates, are "transplants" from other states to Colorado. He attributes much of the intense concern about preserving the state's environment to the fact that many Coloradoans "made sacrifices to come here because they liked the environment; they'll fight to keep it from being destroyed."

#### **The Seven Deadly Perils**

CCEI has focused its aim on the federal government as the polluter which most endangers Colorado's mountain paradise. Metzger complains about the "seven deadly perils" which the U.S. Army and the AEC pose to the state. A sarcastic bumper sticker seen here reads, "Come to Colorado—Playground of the Atomic Energy Commission."

What has motivated many of the scientists here to energetic, investigative activity is their belief that government agencies have been duplicitous. "What really gets you going is their lying to you," Metzger says. "The agencies don't even credit you with the intelligence to find their evasions. They pick their standards to fit the available technology rather than health. Their first considerations are economic."

The AEC has particularly angered the Colorado scientists. "It took the AEC three years to acknowledge that strontium-90 appeared in milk and was a hazard to human health," Metzger says. "They allowed uranium miners to leave radioactive tailings lying around that could be blown around Colorado. . . . The AEC is always saying things are 95 percent safe. We worry about the other 5 percent."

Along with other CCEI members, Metzger makes the argument that "the AEC has responsibility for both the promotion and the regulation of atomic energy; that is a recipe for corruption."

Edward A. Martell, of the National Center for Atmospheric Research, a former scientist for the U.S. Defense Department and one of CCEI's most active members until his recent resignation from the organization, argues, "How many nuclear scientists can you find that aren't on the AEC payroll, in the AEC labs, or on AEC university grants? The AEC has budgetary power over most of its potential critics who have expertise. It is almost impossible to find alternate sources of information."

One of CCEI's organizers, physicist Michael McClintock, now a senior scientist at the space science center at the University of Wisconsin at Madison, says, "Scientists are kind of funny people. They're frightened little rabbits. They shy away from things. A SIPI organization lets the scientist do his research in a 'sciency' way and protects him from individual public exposure."

CCEI began as an academic group—"the Crossfield Seminar"—3 years ago in Boulder. Metzger now dismisses such discussion groups as "mental masturbation societies." He adds, "Scientists are so possessed of their own importance that they think it is enough to get together to talk to each other." The seminar switched to a more active role 2 years ago when Metzger and other members became concerned about the killing of 6000 Utah sheep by nerve gas at the Dugway Proving Ground on 14 March 1968.

#### **Nerve Gas Dispute**

In a report in August of that year, CCEI pointed out a similar danger at the nearby Rocky Mountain Arsenal, where nerve gas was stored in the open immediately under the flight pattern into Denver's International Airport. In addition to receiving national press coverage, the CCEI report stimulated both the Republican and Democratic candidates for Congress in this district to make the Arsenal a major campaign issue that year.

The dispute about nerve gas at the Rocky Mountain Arsenal ultimately triggered a National Academy of Sciences report on the disposal of toxic gases and subsequent Army reforms in the methods and patterns of storage at the Arsenal. CCEI is considering another report critical of the Army for failing to provide adequate separation of

the lethal clusters of M 34 nerve gas bomblets still stored at the Arsenal. Physicist Robert H. Williams, one of CCEI's most active members, says, "Rocky Mountain Arsenal is still potentially the most serious environmental hazard which ever existed."

#### **Plutonium Incident**

The second major environmental threat that CCEI investigated was the \$70 million plutonium fire at the Dow Chemical Rocky Flats atomic plant, an AEC weapons production facility, which occurred on 11 May 1969. The committee raised the questions of whether both the fire and the dangers from everyday operations were not sufficient reasons to remove the plant from the rapidly growing Denver-Boulder area, the largest metropolitan region between the Missouri River and the Pacific Coast.

A CCEI subcommittee led by Martell has made soil measurements around the Rocky Flats plant and has concluded that there is already between 100 and 1000 times more plutonium in the local environment than there would be if good containment practices were continually maintained at Rocky Flats. Individual CCEI scientists argue that the inhalation of tiny plutonium particles into the lungs poses a possible danger of cancer to humans in the area. CCEI members have been pleased that Dow Chemical Company and the State of Colorado have finally agreed to establish off-site radioactive monitoring near the plant.

"Our considered opinion is that Martell is a good, competent scientist and that he represents his science accurately," commented Maj. Gen. Edward B. Giller, the AEC's director of the Division of Military Application. (Giller terms himself head of the AEC's "bomb factory"). "I can agree with his numbers but I think he reaches some pretty far-reaching conclusions," Giller said. "I don't think that the evidence justifies moving the Rocky Flats plants from the area."

CCEI's most recently initiated program is an examination of Project Rulison, a combined AEC and private industry venture to stimulate a higher natural-gas yield from underground formations in western Colorado by use of nuclear explosions. CCEI has argued that such AEC projects pose a threat to the milk and water supply of the Denver areas, as well as to irrigated farmland and to water supplies as far west as Los Angeles, through contam-

ination of the Colorado River. "The United States is the AEC's laboratory, and its people are the experimental animals," Metzger complains.

Along with the American Civil Liberties Union and the Open Spaces Coordination Council, CCEI members played a part in a suit in federal court to stop Project Rulison and to stop flaring of gas from the resultant wells. Although the suit was unsuccessful in stopping Project Rulison, CCEI members feel that they were partially vic-

torious for the following reasons. (i) A right to sue the government in this matter was established. (ii) Citizens established that they had legal standing to sue in such a case. (iii) The suit forced the AEC to reveal much information on the project. (iv) The Federal judge, Alfred A. Arraj, said that additional testing and flaring would take place under his supervision. (v) CCEI members believe that the AEC has backtracked from its original plan of firing several hundred underground

nuclear explosions in western Colorado.

Several of those in government who were interviewed expressed respect for the scientific work done by CCEI. "In our direct discussions with Peter Metzger," said Lee Aamodt of Los Alamos, scientific adviser to the Plowshare program, "I have not found any discrepancies. Metzger is concerned that if there are hundreds of underground shots, control should be exercised over these shots. We would agree that controls should be exercised."

## Finch Leaves HEW for Advisor's Post; Yolles Out at NIMH

President Nixon announced last weekend that Robert H. Finch would give up his post as Secretary of the Department of Health, Education, and Welfare (HEW) to move to the White House staff as a counselor to the President on domestic affairs. This announcement of the first major change in the Nixon Cabinet overshadowed news of the departure a few days earlier of Stanley F. Yolles from the directorship of the National Institute of Mental Health (NIMH) in the most public display, to date, of differences between the Nixon Administration and a top career health administrator.

As successor to Finch at HEW the President has nominated Elliott L. Richardson, currently Under Secretary of State and chief administrative officer at the State Department. Richardson served in HEW in a subcabinet post during the Eisenhower Administration and for a brief period was Acting Secretary. (Stresses within the HEW hierarchy over policy and administrative issues will be discussed in an article in this section in a forthcoming issue.)

The Yolles flare-up occurred when the NIMH director sent a letter of resignation dated 2 June to HEW assistant secretary for health and scientific affairs Roger O. Egeberg, in which Yolles wrote, "it has become very clear to me that there are totally fundamental and basic differences between my philosophy, hopes, aspirations and goals for the national mental health program and those of this administration."

Finch responded the same day with a statement in which he called the letter "intemperate" and charged that Yolles had "consistently shown a complete unwillingness to cooperate in [the] Department's planning for more effective mental health programs." Finch announced the dismissal of Yolles as director and the naming of Bertram S. Brown, NIMH deputy director, to succeed Yolles in the job immediately.

Word that Yolles would be replaced has been circulating in Washington in recent weeks. Reportedly, Yolles was particularly concerned about the prospects for the financing of community health programs and mental hospital improvement programs, with the development of which he had been personally associated. He is known to have felt, also, that medical decisions on dangerous drugs were being made in the Justice Department rather than in NIMH.

Inside NIMH, misgivings about Department of Justice influence on a new omnibus narcotics and dangerous drug law were generated even before the Nixon Administration took office (*Science*, 13 December 1968), and these misgivings have grown. Some observers feel that Yolles's standing with the Administration was fatally impaired last September when he testified before a Senate subcommittee on drug abuse control. Yolles made it clear that he was testifying as a professional and not representing HEW. The controversial portion of his remarks was a section in which he discussed marihuana and, in effect, questioned whether penalties for offenses involving marihuana should be so severe when scientific knowledge about the effects of marihuana is inadequate.

In his letter to Egeberg last week, which was apparently triggered by discussions over his replacement, Yolles listed ten areas of serious difference with the Administration. Included were charges that the Administration was damaging the mental health program by curtailing research and training funds, encroaching on the administration of the grants award system, and introducing political considerations into the appointment of individuals to scientific positions within the federal government. So far he has not elaborated on these charges.

Yolles, 51, indicated he would retire from government on 1 November after 30 years of federal service, 20 of it in the Public Health Service. On Friday it was announced that Yolles would be assigned to serve as assistant for mental health to Vernon Wilson, recently appointed director of the Health Services and Mental Health Administration, and Yolles's immediate superior when he was NIMH director. Yolles will have no further responsibility for NIMH. He has not announced his plans for after November.

The new NIMH director, Bertram S. Brown, is, like Yolles, a psychiatrist. Brown joined NIMH in 1960 and has been deputy director for the past 4 years.

Egeberg was quoted in the HEW release as saying that Brown's selection was made after "extensive consultations with highly regarded professionals throughout the nation." HEW officials go to some lengths to head off suggestions that the appointment was politically motivated, and the generally high estimate of Brown's abilities by NIMH officials and the fact that he is a registered Democrat seem to support the contention.—J.W.

The three major concerns of CCEI so far—possible danger from nerve gas at the Rocky Mountain Arsenal, plutonium pollution at the Rocky Flats plant, and radioactive contamination from underground nuclear explosions—will continue. The committee is also taking up two other questions: (i) the large piles of radioactive mill tailings in the Colorado River watershed and the use of these tailings for house construction in Western Colorado; and (ii) the effects of the high-temperature, gas-cooled, nuclear reactor for generating electricity planned for construction 30 miles north of Denver.

At least partly due to the activities of CCEI, pollution of the environment has become a major political issue in this state. For Metzger, "Perhaps the most important change is the realization by the public in Colorado that they no longer are forced to rely on information about pollution from the polluters alone."

Metzger and others in CCEI believe that scientists must make a much greater effort to make their knowledge available to the public on environmental questions. "Why is it that scientists in proportion to their numbers and prestige influence society less than any other comparable group?" Metzger says, "The challenge to the scientist is to get off his arrogance and to get over his feeling that his position will be understood and believed by all reasonable men. Scientists have to learn to make an effective case in public."

Metzger believes that the national trend is for science information organizations to spring up across the country which will feed their information to groups of lawyers who will file anti-pollution suits. Both groups will give information to the press and to politicians seeking power, thus eventually changing the actions of those holding governmental office.

Metzger looks to the development of more sophisticated conservation groups: "Many of the current conservation organizations are defenders of wildlife, the people interested in those cute little racoons. It's impossible to get money out of these establishments for more serious conservation work."

According to Barry Commoner, "CCEI has beautifully exemplified the effectiveness of digging up facts. SIPI is hoping to expand its activities to provide the kind of services developing in Colorado to every community in the country."

Although some criticize the environ-

mentalists' effort as detracting from a proper focus on such issues as the size and direction of the U.S. military establishment, Robert Williams does not agree. "The Nixon Administration is wrong if it thinks it's going to take our attention off other problems by focusing on the environment. There are a lot of environmental problems associated with U.S. military plants and bases. Certainly there are serious questions about any installation connected to nuclear weapons."

Buoyed by the rising tide of concern over environmental pollution, Metzger predicts, "I see what is happening in Colorado on the environment as a microcosm of what's going to happen throughout the country in the 70's. We cannot let the introduction of new technologies affecting our environment be decided in secret by a government technological elite any longer—these questions must be decided by informed citizens after full public debate."

—BRYCE NELSON

*Bryce Nelson, a former member of the News and Comment staff, is a roving national correspondent for the Los Angeles Times.*

---

## APPOINTMENTS

---

**Rufus E. Miles, Jr.**, director, mid-career program, Princeton University's Woodrow Wilson School of Public and International Affairs, to president, Population Reference Bureau. . . . **Richard de Neufville**, associate director, Urban Systems Laboratory, M.I.T., to director, Civil Engineering Systems Laboratory at M.I.T. . . . **Paul E. Torgersen**, chairman of industrial engineering, Virginia Polytechnic Institute, to dean, College of Engineering at the Institute. . . . **Frederic de Hoffman**, vice chairman, Gulf General Atomic, to chancellor, the Salk Institute. . . . **J. Alan Thomas**, professor of education, University of Chicago, to dean, Graduate School of Education. . . . **Robert L. Saunders**, associate dean, School of Education, Auburn University, to dean, College of Education, Memphis State University. . . . **Warren T. Morrill**, professor of anthropology, Bucknell University, to chairman, anthropology department, Pennsylvania State University. . . . **Jon V. Straumfjord**, chairman, clinical pathology department, University of Alabama to head, pathology department, Marquette School of Medicine. . . .

**J. H. U. Brown**, an associate director, National Institute of General Medical Sciences, to acting director of the institute. . . . **David T. Clark**, university science development program, National Science Foundation, to dean, graduate studies, Portland State University. . . . **William L. Reitmeyer**, staff associate, astronomy section, National Science Foundation, to head, new department of astronomy, New Mexico State University. . . . **Stanley F. Patten, Jr.**, acting chairman, pathology department, University of Rochester School of Medicine and Dentistry, to chairman of the department. . . . **Paul Berg**, professor of biochemistry, Stanford University School of Medicine, named chairman of the biochemistry department. . . . **John W. Eckstein**, professor of internal medicine, University of Iowa, to dean, University of Iowa College of Medicine. . . . **Allan Barnes**, director, gynecology and obstetrics department, Johns Hopkins University School of Medicine, to vice president, the Rockefeller Foundation. . . . **David P. Shoemaker**, chemistry professor, M.I.T., to chairman, chemistry department, Orgeon State University. . . . **Luther W. Brady**, professor of radiology, Hahnemann Medical College and Hospital, to chairman, radiation therapy department at Hahnemann. . . . **Eugene N. Parker**, professor of physics and astrophysics, University of Chicago, to chairman, physics department.

---

## RECENT DEATHS

---

**D. Craig Affleck**, 41; associate dean of allied health programs, University of Nebraska College of Medicine; 29 April.

**Hugo Boyko**, 78; president, World Academy of Art and Science and agricultural researcher; 26 May.

**Robert P. Brecht**, 71; emeritus professor, industry department, Wharton School, University of Pennsylvania; 21 May.

**Roy A. Seaton**, 86; dean emeritus, engineering department, Kansas State University; 23 May.

**Donald R. Theophilus**, 71; president emeritus, University of Idaho; 10 May.

**Walter P. Thompson**, 80; president emeritus, University of Saskatchewan; 30 March.

**James E. P. Toman**, 54; chairman, pharmacology department, Chicago Medical School/University of Health Sciences; 13 May.