in the United States. Kopin, one of NIMH's researchers, has a still different view of the Russian's position on the biochemistry of schizophrenia.

> They know the literature, but they're at least 2 or 3 years behind. They ask good questions, but they are the same questions that should have been asked 2 years ago, and were asked. . . . There are no procedures they can do that we can't do. We can do more because we are better equipped. Not that we're brighter, we're just better equipped. . . .

Aside from differences in equipment and familiarity with the current literature, joint research in schizophrenia between the United States and the Soviet Union is difficult because of the gulf that separates the two countries' definitions of mental illness in the first place. The Soviets' great contributions to the field were made through the behaviorist I. P. Pavlov, and the ideological confines of Marxism have prevented Freud from being widely accepted. Hence, Soviet definitions of schizophrenia, for example, are oriented around the externally observed behavior of the patient, and do not consider his interpersonal relationships —information which would be crucial to an American psychiatrist. Hence the two cultures, each of which has its own concept of mental illness in general and schizophrenia in particular, disagree on who to call schizophrenic—although there is a core group common to both.

Differing concepts of schizophrenia complicate the question of misdiagnosis of political dissenters. The Soviets define schizophrenia as a coherent, recognizable disease with a predetermined course, much as a physical disease follows a predictable course in the body. Hence, once a person is diagnosed as schizophrenic, he is considered schizophrenic for life. Many cases of alleged abuse have involved political nonconformists who are diagnosed as being in the early, or mild, stages of schizophrenia. A Russian psychiatrist can argue that these people will inevitably become sicker, and hence should be treated by confinement—while an American clinician would be much more cautious about diagnosing schizophrenia in the first place—let alone ordering confinement. In addition, the Soviet psychiatry and law enforcement systems tolerate much less deviance of all kinds than do their Western counterparts.

The American psychiatrists say that one of the most interesting aspects of the Russian work on schizophrenia has centered around their theory that it is genetically induced—a notion which an increasing number of Western psychiartists are beginning to explore. Hence the Soviets have collected, they say, a wealth of information about patients' family histories, which is of great interest. However, they add, the gap between the two countries' diagnostic criteria has to be bridged somehow before all this genetic information can be really useful to American researchers. Nonetheless, this is one area where the exchange has been interesting and rewarding to the Americans.

What then has held the exchange agreement together and kept the Americans receptive? All of those interviewed mentioned the personal contacts they had made with what one termed the "third group" of middle level and younger psychiatrists, who were repeatedly described as "hungry" for new information and discussion in their fields. "They seemed so grateful to us for coming over there and talking to them," says one.

On the political level, too, the psychiatrists made compelling cases for remaining in the agreement for the sake of individual scientist-to-scientist contacts. Brown and others cited the fact that prominent Russian dissidents, such as Andrei Sakharov and Solzhenitsyn, in their writings have urged Western scientists to continue to attend meetings and stay in touch with their colleagues in the Soviet Union. "Many people there feel their contacts with the West are a form of life insurance," explained one. Another added, "The more contact there is, the more visits there are, the better. There they have a tremendous effect, like throwing pebbles into a lake."

So the American researchers are proceeding with the mental health exchange agreement for the time being. But they are doing so only with great doubts and hesitations. Of all the science and health accords, this agreement appears to be the one where the professional and political differences between the two sides are most evident. As one of the participants summarized: "It's a microcosm of détente."

—DEBORAH SHAPLEY

Sterilization Regulations: Debate Not Quelled by HEW Document

The release of regulations on sterilization of minors and mental incompetents by the Department of Health, Education, and Welfare has not resolved the controversy surrounding the practice. Since last summer's disclosure of the sterilization of two Alabama teenagers, the argument has extended beyond the immediate issues into a full-dress debate over informed consent, medical ethics, and the rights of patients. The charge that Minnie and Mary Alice Relf, ages 14 and 12, had been sterilized without their own or their parents' understanding thrust the special issue of the sterilization of minors and the mentally retarded, long controversial with civil libertarians, onto the front pages of the nation's newspapers. Senator Edward Kennedy (D–Mass.) immediately called the Relf family to testify as part of his health subcommittee's ongoing investigation of the ethics of medical experimentation. After the hearings, Kennedy deplored the lack of any guarantee that patients are fully informed about medical procedures to be used upon them.

Meanwhile, HEW, faced with criticism from public interest groups and a law suit from the Relfs' attorneys, has temporarily suspended until 8 March the regulations which it brought forth for public view on 6 February.

Since the disclosures about the Relf case, a score of other cases of unin-

formed sterilization have been discovered, most of them involving operations on black teenagers or women on welfare performed by doctors in the South. The Relf family has sued the local family planning officials and federal health officials for $5 million and American Civil Liberties Union (ACLU) lawyers on the national and local level have entered a number of cases. Statistics on sterilizations are incomplete. HEW says that 25,000 adults were sterilized in federally aided birth control clinics from mid-1972 to mid-1973. The North Carolina State Eugenics Board reports that between 1960 and 1968 1620 persons (1583 were women, 1023 black) were sterilized in North Carolina; 55.9 percent were under 20 years old. Twenty-six states have eugenics statutes permitting the sterilizations of minors or mental incompetents, or both, but they vary widely.

On 6 February, in response to the growing controversy, HEW issued a set of regulations that would permit federal funds to be used for nontherapeutic sterilizations of minors and mental incompetents only if certain protective procedures prescribed in the regulations are followed. These procedures must be followed even if parental consent is granted. Sterilizations in these cases will have to be approved by a review committee of at least five members appointed by "responsible authorities of the program or project"; two of the members must be representatives of the population served by the project. The regulations require that "no member of the Review Committee be an officer, employee, or other representative of the program under which the procedure is proposed." According to the regulations, both sexes would have to be represented on the committees. Besides committee approval of the sterilization of a minor or mental incompetent, a court must determine that the operation is "in the best interest of the patient." An amendment to the Social Security Act will also make the regulations apply to any sterilization financed by Medicaid or Social Security.

For HEW's critics, the new regulations seem to raise more problems than they have resolved. Criticism of the regulations ranges from opposition to any federal aid at all for sterilizations, to technical points about the review committees and how they are chosen. The regulations are being issued at a time when debate about state regulation of reproduction and contraception is at a fever pitch. Roman Catholic and "right-to-life" groups, hard at work trying to reverse the recent pro-abortion trend, oppose any state or federal aid for sterilizations. At the other extreme is an increasingly growing minority, some of them state legislators, who are

Briefing

Pentagon's R & D Clients Include MIT, El-Azhar

Massachusetts Institute of Technology is still the largest university recipient of Department of Defense (DOD) funds, according to a DOD analysis of its top 500 R & D contractors in fiscal 1973. With $124 million in military contracts, MIT ranked 15th, a notch below IBM and one above Westinghouse. Top industrial contractor is McDonnell Douglas which performed $431 million of R & D work.

Other nonprofit organizations sharing in Pentagon largesse were Johns Hopkins University ($76 million), Stanford Research Institute ($26 million), Stanford University ($6.5 million), Pennsylvania State University ($6.5 million), and the University of California at San Diego ($6 million). El-Azhar University, Cairo, the world's foremost Islamic center of higher learning, received $365,000 in DOD funds from the Office of Naval Research to develop a method of discriminating among closely related strains of pathogenic bacteria by their susceptibility to viruses.

Also billed among the Pentagon's top clients are six government agencies. The National Academy of Sciences (classified as a government agency by the Pentagon comptroller) received $3 million in contracts, some of it performed at Aberdeen Proving Ground, Aberdeen, Maryland, and Picatinny Arsenal, Dover, New Jersey. (The academy's work at these locations consists of the employment of a handful of postgraduate students who work on nuclear investigations at Aberdeen and "general physics," including explosive materials, at Dover.) The Commerce Department executed DOD contracts at its locations in Boulder, Colorado; Coral Gables, Florida; and Gaithersburg, Maryland. Other small-time U.S. government employees of the Defense Department include the Smithsonian Institution and the Small Business Administration.—N.W.

ORV's in California Desert Inspire Court Suit

The Bureau of Land Management's plan for regulating off-road vehicles (ORV's) in the California Desert (*Science*, 1 February) is now under legal attack by the Environmental Defense Fund, the Sierra Club, and the Society for California Archeology. A suit filed recently by the three groups in the U.S. District Court in Los Angeles alleges that this BLM interim management plan for ORV's violates several presidential executive orders and federal laws, including the National Environmental Policy Act (NEPA), the Antiquities Act, the National Historic Preservation Act, and the Endangered Species Conservation Act.

The plaintiffs seek an immediate ban on off-road travel by vehicles on the BLM desert lands. These lands would remain closed to such use until the BLM shows that the management plan has been revised to conform to the aforementioned acts and executive orders. The California desert receives heavy use from motorcycles, four-wheel-drive vehicles, and dune buggies. The BLM has not yet prepared the environmental impact statement required by NEPA, and, in the plaintiffs' view, this alone is enough to make the new management plan unlawful. Less than 4 percent of the BLM lands are closed to ORV's under the plan, although off-road use is restricted in most of the desert.

Assisting the plaintiffs is an informal scientific steering committee of about 3 dozen members who will provide technical advice and, when the need arises, expert testimony. Among the

proposing laws requiring the sterilization of welfare recipients and mental incompetents, in order to relieve what they term is the burden on the taxpayer and the state of caring for their children. Members of this latter group are worried that the guidelines will create too many obstacles to sterilization.

Still another group is mounting a serious challenge to the regulations and federal sterilization policy. Led by the ACLU and including such groups as Ralph Nader's Health Research Group, the Mental Health Law Project (another patients' rights group), and 14 other women's and civil rights groups, the civil libertarians oppose sterilization of anyone unable to consent himself or herself. In effect, they oppose any sterilization of minors or mental incompetents. (The ACLU also questions about whether prisoners and welfare recipients, because of the institutional pressures to which they are subject, can give voluntary consent.) In a 29-page policy paper on the proposed regulations issued last fall, the ACLU stated "that while some minors may still get pregnant or impregnate, the net cost to society is much lower than the possible abuses which would continue to flow from provision by the government for the sterilization of unwitting minors." HEW firmly rejects this view, holding "that it is the conviction of the Department that outright prohibition on federal financial participation in sterilization of such persons could result in an unfair denial of services to the medically indigent."

Beyond these objections, most civil libertarians have questions about HEW's review committees. In fact, they wonder whether *any* review committee would be safe from abuse. Brenda Fasteau of the ACLU's Women's Rights Project points out that there are many similarities between the HEW review committees and North Carolina's State Eugenics Board, which approved the sterilization of 18-year-old Ruth Nial Cox in 1965 without her or her mother's understanding. (Miss Cox is suing state officials for $1 million.) Charles Halpern of the Mental Health Law Project says he doubts that a review committee appointed by local officials of a project will be truly independent. "It would be easy for them to choose community people they know would follow their recommendations," says Halpern. Senator Kennedy, whose Protection of Human Subjects Act passed the Senate last fall, supports the concept of review boards but wants them created by the act's independent National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, not by HEW or the project directly involved. Critics are also troubled by the power given

Briefing

more active members are Robert Stebbins of the Museum of Vertebrate Zoology, University of California, Berkeley, and Sylvia Broadbent, head of the Department of Anthropology, University of Califronia, Riverside. The Environmental Defense Fund hopes to begin putting out a newsletter regarding environmental problems associated with ORV's, in the California Desert and elsewhere.—L.J.C.

Institute Scrubs Three Committees

In an unusual act of organizational renunciation a few weeks ago, John R. Hogness, president of the Institute of Medicine of the National Academy of Sciences, did away with three committees on the grounds that they turned out to be somewhat less than useful. Each had been appointed for 3 years; he did them in on their first anniversary.

The committees were "overview" panels, instructed to survey developments in their assigned areas, identify problems in need of solution, and propose ways of solving them. The areas were education in the health professions, science policy for medicine and health, and national health care plans. Like the institute itself, the committees' members were drawn from a variety of disciplines. Given their broad charge and diverse make-up, the overview committees apparently just never managed to zero in on their target.

"As a result of . . . evaluation and consultation, I have come to the conclusion that the overview committees are not an effective means of gaining the ideas and guidance of Institute members," he wrote persons who had been on them, acknowledging that the committees had been given "an almost impossible job."

The response to his letters has been, he says, "almost uniformly enthusiastic."—B.J.C.

Salk Worth $2.4 Million to March of Dimes

The National Foundation/March of Dimes is probably unique among medical charities in having conquered the disease it was set up to combat. Polio overcome, the foundation has gone marching on, now with birth defects and the Salk Institute at La Jolla, California, as its principal raisons d'être.

Last year the foundation collected $42.7 million from the public, of which $10 million was saved, $11 million absorbed by fund raising and overhead, and $22 million spent on scientific research. From the last category the foundation still contributes heavily, at the rate of $2.4 million a year, to the Salk Institute. The foundation's trustees have insured Salk's life for this amount, which they say is because of the asset of his name in fund raising. The annual premium paid on the policy is $93,700. The premium is based on a rate of $40 per $1000 of insurance which, foundation officials note, is the normal rate for a man of Salk's age.

Could not the Salk Institute stand on its merits in asking the public for money? "Scientifically yes, but in terms of appealing to the individual, of course not, no more than MIT could," says trustee Melvin A. Glasser.

The Salk Institute is devoted to basic research of interest to its members, although lately financial pressures have forced a drift toward cancer. So far, the foundation has contributed more than $30 million to the institute, of which some $18 million has gone to the construction of the building. About $2 million remains to be given before the last mortgage payment is made in 1975.—N.W.

the review committees and the courts to approve sterilizations of minors and mental incompetents even if the parents or guardians do not consent.

In response to criticism of an earlier draft of the regulations, HEW strengthened the requirements for informed consent in all federally aided sterilizations, including those performed on adults. The requirements for informed consent in sterilizations follow the new procedures developed by HEW for human experimentation. These specify that the consent form show that the patient understands the operation, its effects, and alternatives as well as giving consent. Officials of HEW hope that this requirement will prevent the sort of thing that happened in the Relf case—when Mrs. Relf signed a consent form for her daughters' sterilization, but thought that it was for "shots." The new regulations also require a 72-hour waiting period between the signing of the consent form and the operation.

In a number of the lawsuits involving sterilization, critics have raised the question of whether a signed consent form means that the consent is voluntary. A recent study by the Health Research Group found that pressuring poor and black women to consent to sterilization is a widespread practice in American hospitals. In Ruth Nial Cox's case, and in a number of other cases that have been discovered in the South,

The Presidential Prize Caper

The announcement and subsequent silence of the White House on the subject of the Presidential Prizes for Innovation is among the more mysterious episodes in the Nixon Administration's stormy relationship with the science community. Some light was thrown on the subject in February, when the director of the National Science Foundation (NSF), H. Guyford Stever, announced that the prizes program was dead, and the money realloted to other uses. More illumination came when the near-winners of the $50,000 prizes, contacted by *Science*, told their versions of this peculiar tale.

The prizes were announced in March 1972, during a period of warming relations between the White House and scientists; they were to "be awarded by the President for outstanding achievements by individuals and institutions . . . primarily to encourage needed innovation," according to the President's technology message. But last month, almost 2 years later, Stever wrote to Senator William Proxmire (D–Wis.) that the $300,000 set aside for the prizes will be used for other projects. He added that new funds for prizes will be sought from Congress "when needed," but one NSF source advised that: "One should not hold one's breath" waiting for another program. The innovation prizes, it appears, just slipped away, out of sight of White House planners, and died, without even a conspiracy to kill them.

For the record, *Science* obtained the names of the seven winners, or near-winners, of the prizes. Five of them were to receive $50,000 apiece and two of them were to share a sixth prize, thus receiving $25,000 apiece. They are: **John W. Backus**, an IBM fellow, who invented the computer language Fortran in the mid-1950's at IBM; **Edward F. Knipling**, a long-term government employee, formerly science adviser to the Agricultural Research Service of the U.S. Department of Agriculture, who dveloped nonchemical means of controlling pests and successfully applied them to screwworms in the 1950's; **Willem Kolff**, head, division of artificial organs, University of Utah, who invented the artificial kidney machine and other artificial organs but until 2 years ago held no patent protection on his inventions; **Harold A. Rosen**, Hughes Aircraft Corp., who invented the synchronous satellite in 1959, making possible low-cost global television, telephone, and radio communications, but who, like most industry inventors, holds no patent on it; **Samuel Ruben** of Ruben Laboratories, inventor of the mercury tube battery and other devices key to radio development. Finally, the co-inventors of the childrens' program "Sesame Street," **Joan Ganz Cooney** and **Lloyd A. Morrisett** of Children's Television Workshop, Inc., were to share a sixth prize.

Most of these near-winners received calls in the fall of 1972 from the White House, indicating that they might receive such a prize and asking them if they would be "willing" to come to Washington to accept it. Some of those who were called suspected that the White House was trying to learn if any of the winners were so disaffected with Nixon, or the war, that they would publicly refuse the prize and embarrass the President. They then heard nothing. As to why nothing happened, opinions vary. Sources on an outside review panel which whittled 500 candidates down to 16, state that in the weeks preceding the election, Nixon was minimizing all public appearances in order to retain his huge lead over McGovern. Others state that the tentative award date for the prizes conflicted with a scheduled presidential meeting with some ethnic group deemed more important.

But aside from the circumstances of the campaign, another force came into play. Apparently some members of the National Science Board (NSB) were fretful that the National Medal of Science (which is after all only a medal) would pale beside the lucrative innovation awards. That old bugaboo—that the prestige of basic research would be threatened by giving visibility to applied work, surfaced on the question of the prizes. Herbert E. Carter, chairman of NSB, says that the board never took up the prizes formally, but he added: "I am not too enthusiastic about alternatives that would seem to be competing with, or more lavishly endowed than, the National Medal of Science."

As for the future of the prizes, one source described the present situation—with responsibility for them resting with NSF, which is guided by NSB—as having "the fox in the chicken coop." It would seem unlikely for Stever to try to get the White House to resurrect the prizes over the opposition of members of his own board. As one of the near-winners sighed when he learned he wouldn't get the award: "I guess I'm happy; I won't have to worry about the prize anymore."—DEBORAH SHAPLEY

welfare recipients were told they would be cut off unless they agreed to be sterilized. The four black women representatives in Congress sent a letter last summer to HEW Secretary Caspar Weinberger asking for clarification of federal policy on sterilizations. The proposals "raise serious questions about the government's ability to prevent involuntary sterilization of poor people and minorities," the letter said. The ACLU has suggested that, to avert "institutional pressures" on welfare recipients, each patient to be sterilized be assigned an "advocate," much in the way legal services programs provide free legal counsel for the poor. But HEW specifically rejected this approach in announcing the regulations.

With civil libertarians dissatisfied with the regulations and HEW firmly behind them, the controversy seems headed for resolution in the courts. Lower court decisions have given both sides some encouragement. In Montgomery, Alabama, recently, a federal judge issued a stringent set of guidelines that must be followed before the mentally retarded in state institutions can be sterilized; these guidelines parallel the new regulations. On the other hand, there is the landmark Michigan decision, which held that an involuntarily detained mental patient is not capable of giving voluntary consent to psychosurgery and that the consent of his parents and approval of the project's review committee are not sufficient. In the Relf case and the Cox cases, ACLU lawyers are making a series of constitutional arguments that they hope will lead the Supreme Court to strike down many of the states' eugenics statutes and the new HEW guidelines.

There is probably no mechanism that can completely protect each and every patient from an overzealous or venal public official or doctor. Even the critics agree with HEW on that. But in this situation, the civil libertarians prefer to err on the side of overprotection, while HEW appears most worried about limits on patients' access to sterilization. Until a Supreme Court decision (and perhaps after), the fact is, as Kennedy put it at his hearings last summer, "Time after time we have seen that the patient's only remedy is malpractice litigation—after the fact."—JUDITH COBURN

Judith Coburn is a free-lance writer based in New York City.

APPOINTMENTS

Robert W. Hiatt, former vice president for academic affairs, University of Hawaii, to president, University of Alaska. . . . **Paul F. Romberg**, president, California State College, Bakersfield, to president, California State University, San Francisco. . . . **P. Roy Vagelos**, chairman, biological chemistry department, Medical School, Washington University, to director, new division of biology and biomedical sciences at the university. . . . **Alfred A. Cave**, dean, College of Humanities, University of Utah, to dean, College of Arts and Sciences, University of Toledo. . . . **Tom Sills**, chairman, education department, West Georgia College, to dean, School of Education at the college. . . . **Joseph P. Buckley**, associate dean, School of Pharmacy, Universiy of Pittsburgh, to dean, College of Pharmacy, University of Houston. . . . **Edward L. Hogan**, associate professor of medicine, University of North Carolina, to chairman, neurology department, Medical University of South Carolina. . . . **Samuel F. Hulbert**, associate dean, College of Engineering, Clemson University, to dean, School of Engineering, Tulane University. . . . **John D. Broome**, professor of pathology, New York University School of Medicine, to chairman, pathology department, Downstate Medical Center, State University of New York. . . . **Jules V. Hallum**, associate professor of microbiology and immunology, Tulane University, to chairman, microbiology department, University of Oregon Medical School. . . . **Benjamin Bederson**, professor of physics, New York University, to chairman, physics department at the university. . . . **John Buettner-Janusch**, professor of anatomy, zoology, and anthropology, Duke University, to chairman, anthropology department, New York University. . . . **William C. Langworthy**, associate dean, School of Letters, Arts and Sciences, California State University, Fullerton, to chairman, chemistry department, California Polytechnic State University, San Luis Obispo. . . . **Gene Budig**, vice president, Illinois State University, to president of the university. . . . **Trevor Colburn**, dean, Graduate School, University of New Hampshire, to vice president for academic affairs, California State University, San Diego.

RECENT DEATHS

Carl C. Eckart, 71; former director, Scripps Institution of Oceanography; 23 October.

Marvin J. Feldman, 51; professor of psychology; State University of New York, Buffalo; 29 September.

Harvey A. Feyerherm, 54; former chairman, physiology department, Northern Illinois University; 24 September.

Frank R. Gutting, 64; associate professor of mathematics, St. Mary's University; 17 October.

Ruth F. Hill, 56; professor of biology, York University, Toronto; 3 November.

Harold W. Iversen, 60; professor of mechanical engineering, College of Engineering, University of California, Berkeley; 12 November.

Robert F. Loeb, 78; professor emeritus of medicine, College of Physicians and Surgeons, Columbia University; 21 October.

John T. Metcalf, 83; professor emeritus of psychology, University of Vermont; 14 February.

Duncan E. Reid, 67; professor emeritus of obstetrics and gynecology, Harvard University; 7 November.

Hortense Rickard, 87; professor emeritus of mathematics, Ohio State University; 10 October.

Alfred S. Romer, 78; former director, Museum of Comparative Zoology, Harvard University, and former president, AAAS; 5 November.

W. J. Merle Scott, 79; professor emeritus of surgery, School of Medicine, University of Rochester; 25 October.

Eugene Van Cleef, 86; professor emeritus of geography and foreign trade, Ohio State University; 7 November.

Artturi Virtanen, 78; former professor of biochemistry, University of Helsinki, 11 November.

William J. Walbesser, 45; professor of electrical engineering, State University of New York, Buffalo; 22 October.

Paul D. White, 87; former clinical professor of medicine, Harvard University; 31 October.

Jacob Yerushalmy, 69; professor emeritus of biostatistics, University of California, Berkeley; 15 October.

Jesse Zizmor, 65; assistant attending psychologist, New York University Post Graduate Hospital and Bellevue Center; 29 October.