national commission give priority consideration to the Southwest's water needs.

For Secretary Udall, who must feel some anguish at the criticism he has received from his friends in the conservation movement over the dam proposals, the National Water Commission might well prove a blessing. The commission, if it ever receives House approval and is set up, could search for ways to loosen the regional and institutional rigidities that now bind water resource development planning. It is a large task, but the commission might even discover a solution to the Southwest's water problems that would keep dams out of the Grand Canyon and allow Colorado basin politicians to keep their heads above water.—LUTHER J. CARTER

International Science Activities: Some New Vistas Open

The axiom that science knows no frontiers seems to have been respected in a literal way until the Napoleonic era, at least in the Western world. During the American Revolution Benjamin Franklin was playing by the accepted rules when he wrote a safe-conduct letter addressed to captains of American naval vessels and privateers in behalf of Captain Cook, who was sailing off to explore the South Seas.

England and France were at war with each other as often as not during the 18th and early 19th centuries, but British and French men of science corresponded freely, passed through the lines to visit one another and conduct scientific business, elected each other to their academies, and mutually deplored the work of the politicians.

But the rise of the national state, the increasing importance of science and technology in warfare as the long day of the musket and massed formation passed, and the growing efficiency of communications and police techniques blurred the old civilized distinction that science is strictly the affair of scientists and war the affair of politicians and professional soldiers.

For most scientists in the United States today, however, the spirit of the Enlightenment still, in some form, survives. The credo that science is international owes something as well to the practical belief that there can really be no secrets in basic research and that more is to be gained from the open exchange of ideas and mutual cooperation than from scientific isolationism. A good many scientists unquestionably also see the international dialogue among scientists as one way open to them in the nuclear age to help prevent catastrophe.

It is unquestionably much more difficult now than it was 200 years ago to separate science from politics. Old-fashioned nationalism has been exacerbated by ideological differences which complicate relations particularly between the United States and Western European nations on the one hand and Communist countries on the other. Forces which propelled a generation of great theoretical scientists to the United States from Germany, Italy, and Hungary also produced Pontecorvo, Klaus Fuchs, and the fictional Dr. Strangelove.

The Soviet Union, with its old academic ties to Western Europe, coexists with the West more comfortably scientifically than it does politically. Mainland China, with its cultural pride, its sense of outrage over injuries and insults inflicted by the West, and its special hatred of the United States for being the most powerful Western nation and so deeply involved in Asia, is something entirely different.

In the United States, the international activities of American scientists have been to a major degree institutionalized. The apparatus, however, has not yet fully developed, although it is clear that the most important organizations, from both the policy and the administrative standpoints, are the State Department, the Office of Science and Technology (OST) in the Office of the President, and the quasi-governmental National Academy of Sciences.

The United States does not have the equivalent of the minister of science found in the cabinets of many European countries. Our closest approximation is the director of OST, who is also the President's science adviser and often represents the President at international meetings. But the OST staff is currently small and fully occupied with domestic problems. A committee now, however, is looking into the possibility of OST's engaging in greater activity in international scientific matters.

For at least a decade the State Department has been seeking, without great success, to acquire the scientific competence it needs in the second half of the 20th century. State's difficulties in this sphere have been dramatized by a failure over the past year and a half to fill the top scientific job in the department, that of director of the Office of International Scientific and Technological Affairs.

One difficulty is that the role of the science director has not been well defined. The department badly needs to be able to understand the significance of scientific and technical developments, in this country and abroad, relevant to foreign policy decisions. Lately, the department has taken steps that indicate it is more serious about increasing its competence than it has been before. But it is still not clear whether the science director, who is also science adviser to the Secretary of State, is to be an administrator running the science attaché program and overseeing our activities in international organizations and other functions of the department in which science is involved, or whether he is to act primarily as a policy adviser and scientist-diplomat. Problems of science in the State Department and recent developments will be discussed in another article in this space.

The scientific community has not rallied energetically to the aid of State, perhaps because of a feeling that science has, up to now at least, not been taken seriously in Foggy Bottom. It is probably true that in international matters scientists have preferred to work through the Academy, which the scientists regard as their own and as essentially nongovernmental despite the federal source of most of its funds.

Historically, the academies have been the instruments of international activities. The Royal Society and the French Academy of Sciences, both founded in the 1660's, set the style. And our own National Academy of Sciences, established 200 years later, followed the lead zealously from the start, since the Unit-

ed States was then a developing nation with a lot to gain from scientific contacts with scientists in the more advanced countries.

While the distinction between the Academy and government agencies may seem less sharp to scientists from countries with other arrangements, the Academy does have a prestige and an operational flexibility in international scientific affairs which give it definite advantages.

Academy members have been deeply involved in international scientific organizations and cooperative "international years." Almost all of the Academy's divisions are implicated in international projects, and in recent years there has been a marked increase in concern among American scientists with the problems of developing nations.

Charged with promoting and coordinating the international activities of the Academy is the office of the Foreign Secretary, Harrison Brown of Caltech. Brown, an energetic occupant of the post, was reelected this year for a second 4-year term.

In a report on the work of his office, published earlier this year, Brown gave emphasis to bilateral efforts being made to establish sustained contact through home-and-home meetings between American technical experts and their opposite numbers in Brazil, Peru, the Philippines, and Nigeria.

In his report Brown said, "This modest social and scientific innovation bears great promise for the strengthening of scientific ties between America and these nations and for creating an American competence in the problems of scientific and technical growth in new and developing lands."

Rapid Reconciliation

Scientists have demonstrated a capacity to pick up the pieces rapidly after war or an era of particularly bad feeling between countries. Academy scientists, for example, are making special efforts, which are apparently being reciprocated, to establish closer contact with Indonesian scientists, after a period during which the U.S. and Indonesia have been politically estranged.

Science in the United States and science in Western Europe are similar enough so that transatlantic barriers have been falling rapidly. But in the case of developing countries, American scientists have sometimes simply not known enough about a nonindustrialized, non-Western country to contribute very concretely, or have given advice in a way that grated on the sensitivities of their opposite numbers in the developing nation. To come to grips with these problems, the Academy has taken pains recently to be sure that Americans knowledgeable about particular areas are included in the working groups formed by the Academy. Social scientists with relevant experiences are often added even when the problem under study might be regarded as strictly technical.

In dealing with the Communist nations another dimension of difficulty is added. In the case of Soviet scientists, contact with Americans has occurred fairly regularly at international meetings and the sessions of international scientific organizations. There has been a certain amount of correspondence on a fairly normal basis between American and Russian scientists, but other contacts have largely been regulated by a carefully negotiated and closely regulated formal exchange program. A similar program, in recent years, has applied to scientists from Eastern European countries.

The U.S.-Soviet exchange program negotiated this year reflected a reduction of about 25 percent in the overall level of exchange activity in science. This reduction was proportional to the cut in the broader intergovernmental program which covers cultural and educational exchanges—a cut attributed to Soviet reaction to American involvement in Vietnam.

A chill breeze was also generated recently when the Soviet press carried charges that American scientists act as intelligence agents. Such charges about tourists and students have been fairly common, but this was the first time in recent years that scientists had been singled out. Some observers here think the accusation may actually have been a warning to Soviet citizens not to relax their cautious attitude toward foreigners in a year when the Soviet Union is the site of an unusual number of scientific meetings which foreigners will attend.

In the case of American relations with mainland China, science has been overwhelmed by politics. The Chinese have cast the United States in the role of an international enemy of the people, and contact of any kind is anathema.

Even on the traditionally neutral ground of international scientific organizations American scientists have had no significant contact with their counterparts from the People's Republic. Mainland China has withdrawn systematically from these organizations, usually in protest against participation of the Nationalist Republic of China, and blames the U.S. for championing the Nationalist cause.

Especially since the deterioration of its relations with the Soviet Union in the early 1960's, mainland China has been largely isolated from the international scientific community.

Other Western nations, particularly Britian and France, however, have not been so rigorously shunned as the U.S. Since the late 1950's the Royal Society and the Chinese have exchanged delegations and have made visits to main centers of research in each others' countries.

A Friendly Reception

The British received a friendly reception and, as a result of talks, two dozen Chinese are now in English universities and government research establishments such as the National Physical Laboratory. The arrangement cannot yet be called an exchange, although there have been a few British students, mostly in Chinese studies, in universities of mainland China. The British Foreign Office has approved the program and is watching it attentively, and there is hope that the traffic in scientists and science students will go two ways.

Recently the United States has taken unilateral steps aimed at modifying the virtual boycott on travel by American journalists, scholars, doctors, and scientists to Communist countries with which we do not have diplomatic relations.

Late last year both Secretary of State Rusk and Presidential science adviser Donald F. Hornig made statements which did more than hint that a reappraisal was under way. In March it was made known, although with little fanfare, that permission for American scholars and scientists on legitimate business to visit countries on the proscribed lists would be more easily obtainable than in the past; presumably Albania, Cuba, North Korea, and North Vietnam, as well as mainland China, are included in the list. In April, several universities were informed by the State Department that scholars and scientists from mainland China would be permitted to visit the United States.

While the number of passports validated for Americans has increased markedly under the new dispensation—a dozen physicians and scholars received permission between 30 April and

6 June—no visas have been issued by the Chinese. And this is a reminder that it takes two to coexist.

American scientists have wanted, for pragmatic as well as fraternal reasons, to open up relations with scientists on the Chinese mainland. There has been a rudimentary kind of communication between scientists here and there in the form of exchanges of publications and society proceedings. But there have been no visits and the barest minimum of correspondence (on testing of drugs in a few cases, for example).

The National Academy of Sciences, in concert with leading scholarly societies in other fields, has now formed a group to explore ways to improve communications and promote scholarly interchanges between scientists here and in mainland China. As Brown puts it, "We are looking forward to doing everything we can to extend the hand of friendship to colleagues in Cuba and mainland China and other countries with which there has been no regular contact."

Informed observers see no prospect of an immediate transformation in scientific relations. Certainly no encouragement has yet come from the Chinese.

One underlying difficulty may be the fact that the Western attitude that science is separable from politics goes against the ideological grain in mainland China. The view that science might be placed above class and above politics is regarded there as pernicious, in fact as reflecting a bourgeois taint. The Chinese teach that the scientist's first duty is involvement in the class struggle. Individualism and liberalism, characteristics which in the West seem to be held as virtues in a scientist, are viewed as the opposite in mainland China. Scientists are classed as intellectuals in China, and intellectuals at the moment seem to be in for a stiff course of "correction." Some observers, however, draw hope for better relations in science with mainland China from the precedent of the improvement in scientific relations with the Soviet Union from a near-zero point in the late 1940's. However frail the analogy, there is evidence that the United States is engaged in a general and apparently serious reappraisal of our China policy. This great diplomatic glacier is not likely soon to melt, but some think that science, and particularly medical science, is the area where it might recede a bit. At any rate, in view of the evolving official view toward scientific contacts and the acknowledged urgency of the need to strengthen scientific ties with developing countries, it appears that international scientific activities for this country are entering a period of greater emphasis and importance.

—JOHN WALSH

Public Health Service: Reorganizing the Doctors

When John F. Kennedy became President, he was reported to have been warned by advisers that he could expect the worst embarrassments of his administration to arise from activities of the Department of Health, Education, and Welfare. The warning turned out to be wrong: under Kennedy that distinction went to the CIA; HEW produced no disasters as spectacular as the Bay of Pigs. But the agency has been an albatross to successive presidents since its creation in 1953. Lyndon Johnson, who is reportedly anxious to prevent the substance of his Great Society programs—many of which are administered by HEW—from becoming lost in its bureaucratic wilderness, has been the first to authorize a serious effort to do something about it.

Johnson's prefect in this effort is HEW Secretary John Gardner, a man with his own ideas about organizational "renewal," and Gardner has been busy since his appointment tangling with the separate fiefdoms within HEW, whose independence has left previous Secretaries more slaves than masters of their turf. Now, having given the Social Security Administration and the Office of Education at least light goings-over, and giving James L. Goddard a pretty free hand at the Food and Drug Administration, Gardner is turning to the most independent fiefdom of all—the military-structured Public Health Service. The PHS is about to undergo a major reorganization that amounts to far more than an administrative facelifting. The reorganization reflects a new concept of what the government's role in health care should be. And its implications extend beyond health workers and the public to the biomedical research community. whose fortunes are linked to the PHS through the National Institutes of Health. Unless Congress objects, an unlikely possibility, the reorganization plan will go into effect next week.

The reorganization plan, formally proposed to Congress by the President on 25 April, follows the recommendations of Surgeon General William H. Stewart. Stewart, who was known to advocate reforms in the PHS before he became Surgeon General, in turn leaned heavily on the advice of a committee, headed by John J. Corson of Princeton, that studied the PHS last fall.* While the specifics of the plan appear to reflect the views of the new team of health officials at HEW (*Science*, 3 Dec. 1965) that the government should begin to exercise initiative in the health field, the influence of Gardner, who has frequently stressed in a general way the desirability of departmental unification and integration, is also discernible.

The heart of the reorganization plan is the strengthening of the department by transfer of authority over the PHS from the Surgeon General to the Secretary. The transfer of power does two things: First, it gives the Secretary the same direct authority over the PHS that he has over the other units of his agency. In the past, this has not been so: the Surgeon General has operated with a more or less independent charter from Congress, which meant that in many instances the highest departmental authority rested in a subordinate official. On the whole, this peculiarity was handled in a gentlemanly fashion,

* Other members of the committee were Robert Aldrich, former director of the National Institute of Child Health and Human Development; W. Palmer Dearing, executive director of Group Health Association; James P. Dixon, president of Antioch College; Harold Enarson, vice president of the University of New Mexico; Herman M. Somers, professor of political science at Princeton; and David Stanley, a senior staff member of the Brookings Institution. The committee's report has not been made public.