lawyers who banded together in 1966 to protest the use of DDT for mosquito control in Suffolk County, Long Island. From this community squabble, the EDF has since grown to the stature of a national organization, with 32,000 paying subscribers; a pool of 700 scientists on call as expert witnesses; and offices in New York, Washington, and Berkeley. The EDF is currently a party to 40-odd court cases running the gamut from air pollution to water resource litigation.

As the organization grew, it escalated the fight over DDT to the federal level. In October 1969, the EDF, representing itself and four other groups, petitioned then Secretary of Agriculture Clifford Hardin to halt interstate sales of DDT. Under threat of court action, Hardin did eliminate home use of DDT and some 50 other minor applications. When federal pesticide authority changed hands to the EPA, the EDF redirected its petition for a complete domestic ban—this time successfully.

During the public hearings that ensued, environmental groups coalesced with the EDF and joined the EPA's Pesticides Office as an equal partner in defending the proposed ban; the Agriculture Department, as if to substantiate Ralph Nader's characterization of it as the "Department of Agribusiness," joined the case on the side of the industry.

With appeals to federal agencies now exhausted by the industry, the action has shifted to two federal courts. One is the Fifth Circuit Court of Appeals in New Orleans, where the industry is now seeking to have the EPA's ban set aside by a panel of judges it apparently hopes will be more sympathetic to the cotton industry than to federal agencies and environmental groups. With the opposite strategy in mind, the EDF is seeking to make the ban immediate —and to keep the case in Washington —by a motion pending before the Court of Appeals of the District of Columbia. Few observers, however, see much chance of either court reversing the EPA, particularly since the ban does not affect public health applications of DDT—which have dwindled almost to the point of nonexistence in the United States anyway.

It may still be, of course, that DDT's proponents fear that its use in the United States is only the first of the dominoes to fall and that a hasty worldwide ban may follow. Such fears may be exaggerated, though, if the views of EDF's Butler are any indication. He says that he personally accepts the World Health Organization's argument that DDT is still essential for controlling disease in less developed nations. "What we hope will happen," Butler says, "is that other nations will begin to question for themselves the advisability of using DDT in agriculture. We think that a combination of less persistent pesticides and proper crop management can be more economical than DDT."

—ROBERT GILLETTE

Soviet Science: Levich's Delayed Emigration Stirs Concern

An issue that has stirred concern in some scientific circles in the United States and Israel over the last month has been the case of a well-known Russian physicist and electrochemist, Veniamin G. Levich, who has expressed a wish to leave the Union of Soviet Socialist Republics (U.S.S.R.) to take an appointment at Tel Aviv University. Subsequently, he is said to have lost one of his two jobs and to have been demoted in the other. His family are alleged to have suffered some setbacks, too.

Levich, a corresponding member of the Soviet Academy of Sciences, decided to go to Israel early this year. Then, on 28 March, he was apparently fired from his post as professor of mathematical physics at the University of Moscow. On 11 April, he was allegedly demoted from his position as head of the theoretical electrochemistry group at the Institute of Electrochemistry. In addition, one of his sons, an engineer, lost his job, and the other was "refused the right to apply for an emigration permit."

Levich, 55, has written a number of textbooks on physics and physiochemical hydrodynamics, a field with applications in fuel cells, batteries, and electrolysis. At least one of his works is recommended reading in graduate courses in the United States. Levich's main work, as head of the theoretical group in the Institute of Electrochemistry of the Soviet Academy of Sciences, has been considered fundamental, and the institute is said to be one of the most outstanding of its kind. He is also vice-president of the International Society of Electrochemistry.

Levich's story has been publicized principally by three professors of chemistry at the Tel Aviv University: E. Gileadi, J. Jortner, and E. M. Kosower. A series of interviews with scientists in the United States, particularly those in chemistry and chemical engineering who are familiar with the Levich case, confirmed that the Tel Aviv group's version of what has happened to Levich is probably correct.

According to this group, Levich had been offered a position as professor of chemistry at Tel Aviv University both by telegram and in a telephone call. He accepted the offer by phone, but never received the telegram.

The first public appeal to other countries seems to have been a statement dated 24 April and signed by Levich and another Academy corresponding member, Aleksandr Voronel. It has been circulated by the Tel Aviv group. Addressed "To the presidents of the Academies of Science of the U.S.S.R., of the Royal Society of Great Britain, of the United States of America, Israel, and to the presidents of International Unions of Pure and Applied Physics and of Pure and Applied Chemistry," the statement spoke of "official persons in the U.S.S.R." as "denying Jewish scientists and qualified specialists their right to go to Israel."

The statement did not mention Levich personally, but appeared to describe what might befall him and what would motivate the Soviet authorities to act in an oppressive manner:

> It is well known that a Soviet scientist who announces his desire to go to Israel is automatically deprived of the possibility to continue his scientific activity and feels his high qualifications are a superfluous

burden. Evidently, nobody is interested in using him. On the contrary, there is a tendency to lower him in the social ladder and to make difficult in every way his admission to his profession and to the society of his colleagues. The conclusion is reached that, speaking of the value of scientists, the Authorities have in mind not us, but those of our colleagues whom they suppose to frighten with the sight of our outcasting and, so to say, fall. The scientists must see in our example what awaits them in case of disobedience—the loss of work, the end of the scientific career, personal insecurity and a quite doubtful possibility of emigration.

Even though the desire to live in the Jewish State might be connected with national, family or religous motives, our forcible detention in the U.S.S.R. draws us into this political game, the winning stake in which is the uncontrolled use of the creative potential of obedient scientists.

On 12 May, the *New York Times* printed a letter from the Israeli scientists, Gileadi, Jortner, and Kosower, saying, "It is urgent that everything possible should be done to aid Professor Levich to make a free choice concerning his scientific career. Past experience has shown that the authorities of the Soviet Union are quite sensitive to public pressure on matters of scientific freedom."

The most direct appeal to an American institution on Levich's behalf occurred when Alan Bard, professor of chemistry at the University of Texas, presented a possible motion to a 11 May meeting of the board of directors of the 4000-member Electrochemical Society. The statement urged that the board "strongly endorse the principle of scientific freedom and the right of scientists to choose the location where they practice their professions. . . . We strongly urge that Professor V. G. Levich and other scientists of the U.S.S.R. requesting emigration permits be granted these and be allowed to leave when they desire. . . ."

However, after what Bard and the president of the society, C. W. King of American Gas and Chemicals, Inc., describe as a "friendly" discussion, all agreed that the motion would not be taken up or formally considered, both because the facts of the Levich case seemed uncertain at the time and because it might not be the proper subject for consideration by the technical group. In addition, a board member said later, the Electrochemical Society's membership in Eastern European countries ruled out any official action on the case of the Russian.

Aside from the Tel Aviv group, a number of U.S. scientists have written letters to National Academy of Sciences officers concerning the Levich situation. According to spokesmen at the Office of the Foreign Secretary of the academy, the subject was mentioned at a June meeting of the academy council at which it was decided that private action would be preferable to any public, official moves.

Debate over How to Help

The Levich situation illustrates the delicacy of American scientific relations with the Soviet Union. While many scientists want to aid Levich, there is considerable disagreement as to what will help or hurt.

One view is that the harassment of Russian scientists by their own government—by such alleged means as visa denials, mail censorship, demotion, firing, and so forth—cannot properly be the business of another country. Another view is that all cases are individual, that no blanket policy can be made.

However, some American scientists believe that giving wide publicity to cases of harassment, and public protests outside of the U.S.S.R. will prove effective. They cite the widespread alarm generated by the news that biochemist Zhores A. Medvedev had been confined to a psychiatric ward with a diagnosis of schizophrenia based on some of his statements. They argue that the publicity surrounding Medvedev's treatment caused embarrassment to Soviet authorities and ultimately helped bring about his release.

Other U.S. scientists are equally adamant, but insist the opposite—that only discreet, private contacts will help colleagues in Russia. The less publicity these contacts receive, the better.

Standing between these two views is physicist Bernard Feld, a long-time participant in the Pugwash conferences, who is not adverse to publicity for these situations. However, he says, "One is caught not knowing what pressures are most useful. . . . Loud public protest may have a tendency to harden the bureaucrat. . . . What seems most useful is individual letters to people in the field in the Soviet Union." A few weeks ago, the United States and the U.S.S.R. agreed to a joint commission for science and technology. While it would appear unlikely that the commission will be able to take up the case of any individual, the very existence of such a cooperative body could signal freer movement of Russian scientists in the future.—DEBORAH SHAPLEY

RESEARCH NEWS

Stable Isotopes: Expanded Supplies May Lead to New Uses

The stable but uncommon isotopes of carbon, nitrogen, oxygen, and other biologically significant elements have interested chemists for a long time. Unprecedented amounts of these isotopes, hitherto available only in gram quantities, are now being produced at the Los Alamos Scientific Laboratory (LASL) in New Mexico as part of an Atomic Energy Commission (AEC) effort to increase their use and lower their cost. This effort, the prospect of still larger quantities, and improvements in the instruments used to detect stable isotopes have stimulated renewed interest and applications in structural chemistry, biochemistry, and clinical medicine.

Like the now widely used radioactive isotopes such as ^{14}C, the greatest potential value of the stable isotopes appears to be associated with their use as tracers that enable scientists to follow chemical transformations and to study the interactions of labeled compounds within complex biological systems. Among other proposed uses, these nonradioactive tracers might make possible