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Cover: If this plant looks like it's been sprinkled with acid, it's no wonder. Sulfur dioxide and "acid mist" in the air of a large U.S. city caused this damage. Acidified rain is falling on many parts of the United States and spotted leaves is just one of the effects. See p. 76. (Photo courtesy of Environmental Protection Agency).

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SCIENCE NEWS OF THE WEEK

Sakharov: Internal Exile

"Down with Euclid." "Viva la revolución." The first quote is supposed to be from the French mathematician Jean Dieudonné commenting on the effect of modern geometric research. The second is the consequence feared by an Argentine admiral. According to Elena Sevilla, a young physicist who spent three years in Argentine prisons, he said that modern mathematics was subversive of the junta's trinity of family, nation and faith because it overthrows the traditional rules of logic. Einstein (for relativity), Freud (for poking into private matters of behavior) and of course Marx were also for burning.

On the other side of the world the devil list may vary—though Freud and, to some extent, Einstein are both on it—but the attitude is the same. Irene Gildengorn Lainer, who emigrated from the Soviet Union after six years as a "refusenik", stresses the likelihood of conflict between scientific minds, which have been trained to analyze situations and make objective judgments, and the guardians of ideology. Even if the scientists don't raise the banner of revolution, the party is always afraid of them. Sevilla's experience in Argentina bears this out. She was found innocent by a judge, but retained in administrative detention. The only reason she was ever given was that since she was a physicist, the military couldn't believe her innocent.

In this context the arrest of Andrei Dmitrievich Sakharov, possibly the most prominent living physicist in the Soviet Union, seems to have been a matter of when not whether. Sakharov was the leader of the research that gave Russia thermonuclear bombs. After a crisis of conscience some years ago, he began to devote much effort to campaigns for international peace and internal reforms in the Soviet Union. That he got away with it for so long, in Lainer's opinion, is due to his international prominence and his wide acquaintance abroad. There was propaganda value in letting him go on. Now that seems to be sacrificed to harsh new policy. Lainer is afraid it means a wave of arrests of less prominent dissidents.

Sakharov is now in internal exile in Gorky. Internal exile could symbolize the condition of many people: They remain within the society but are not allowed to influence events. Sakharov is forbidden contact with foreigners or "criminal elements." This definition is worldwide. Even in the United States judges frequently forbid contact with classes of people the prosecutors consider dangerous. Sakharov is prohibited from leaving the city limits of Gorky, a provision reminiscent of South African banning orders.



Andrei Sakharov

Whether Sakharov can do any meaningful scientific work in Gorky remains to be seen. Erwin Friedlander, a former member of the Romanian Academy of Sciences now working in California, relates a tale of saving some members of a mathematical institute that was disbanded for arbitrary reasons. "Here were some of the best modern algebraists and differential geometers working as computer programmers—but it was better than the collective farm."

Sakharov's arrest came, perhaps coincidentally, in the middle of the American Physical Society's annual meeting in Chicago. It gave added point to a symposium on the plight of dissident scientists at which Sevilla, Lainer, Friedlander, and Arno Penzias of Bell Telephone Laboratories were speakers. And it caused an uproar and a rallying round. Outgoing APS president Lewis D. Branscomb issued a statement deploring the arrest. From Washington, National Academy of Sciences President Philip Handler did likewise. Individual scientists are writing letters and petitions. At the APS meeting many subscribed their names to Branscomb's statement.

This is all to the good, say the panel participants. Pressure on behalf of individuals can persuade the totalitarian authorities. Sevilla credits it with her release from prison. Lainer says it got her and her family out of the Soviet Union. Friedlander's family was exchanged for some concessions in most-favored-nation status for Romania. Although some want to be gentle about pressure, Lainer and Friedlander stress that it should be strong and continuous. Because a concession is made for an Orlov or a Scharansky, she says, westerners should not conclude that all has become sweetness and light, and the Soviets are now good guys. Friedlander concludes lugubriously, "Any pious appeal to their better feelings won't work, because there are no better feelings." □