Harvard Genetics Researcher Quits Science For Politics

Boston. Last November a team of Harvard scientists announced that it had isolated a pure gene from a strain of bacterial virus for the first time in history. Now, one of the principal members of the team has decided to give up science and become a full-fledged political activist. The scientist is James Shapiro, who is 26 years old and a research fellow in bacteriology and immunology at the Harvard Medical School. He is a handsome young man, with a medium-length sandy beard and warm and mischievous eyes. Nobelist Salvador E. Luria and other experts in Shapiro's field consider him one of the most promising molecular geneticists in the nation.

Shapiro discussed his three main reasons for quitting science in a recent interview. First, he believes that the work he does will be put to evil uses by the men who control science—in government and in large corporations—in the way that atomic energy, for example, was put to evil uses. Second, he refuses to contribute to a system that does not allow "the people" to have a say in deciding what work scientists do. Third, he thinks that the most important problems the country faces, such as health care and pollution, need political solutions more urgently than scientific ones.

Two Political Projects

Last month Shapiro began to devote all his time to two political projects. One is organizing scientists, students, and community members in opposition to the Affiliated Hospitals Center—a Harvard-sponsored project linking three of its Boston teaching hospitals. The site of the center is black Roxbury, near the medical school. The project has been the focus of protests against Harvard's "expansionist" policies ever since last April's disorders on the Cambridge campus. The original site was abandoned, largely because of student protests that use of the site would mean displacement of 180 black families.

Shapiro's second project is more general. It is simply to educate scientists concerning their political role. He argues that scientists are ultimately responsible for the political consequences of their work, and that it is in their own best interest to join with non-professionals and work for political change. Shapiro has been making this point in public, in television interviews, and before small groups of scientists, during his talks on the gene research. It is the same point that was made by other young Harvard and M.I.T. scientists in demonstrations at the annual meeting of the American Association for the Advancement of Science held here last December. Like the demonstrators, Shapiro does not have an ideology that can be identified with that of other radical student groups, such as Students for a Democratic Society. His ideology appears to be his own. He argues that "scientists are workers," that their position in the class structure is no different from that of "the guy on the assembly line," but he seems defensive about his terms being considered too rigidly Marxist.

Several other members of the youthful team (only one was over 40) that worked on the gene isolation study agree with Shapiro's politics, but none of the others plans to end his research. Some believe they can accomplish the same goals while remaining in science; others intimate that financial requirements keep them from devoting all their time to politics. Shapiro admits that it is because he is living off an inheritance that he was able to stop his scientific work. Jonathan R. Beckwith, 34—who, with Shapiro, has been the team's main spokesman—has also been active in opposing the hospital center. Rita Arditti, 35, another member of the team, was one of the leaders of the protests at the AAAS meeting. She drafted the resolution demanding equality for women in science, which the AAAS Council refused to consider at the Boston meeting.

Shapiro has another supporter in Luria, the M.I.T. geneticist who, with Delbrück and Hershey, won the 1969 Nobel prize for physiology or medicine. Luria said in a recent interview, "I think it is important that there are scientists like Shapiro who point out the misapplications of science." Luria also backed Shapiro's decision to quit science and devote himself to politics. When asked whether he thought Shapiro's action would be a loss to science, Luria laughed and said, "There are enough scientists as it is. . . . He's a very bright boy and whatever he does he will do with enthusiasm."

Shapiro's decision was foreshadowed by statements he made when isolation of the gene was announced. With Beckwith and Lawrence Eron, a third-year Harvard Medical School student, he warned that the work could be perverted and used for evil purposes, such as genetic manipulation in human beings. Shapiro said at the press conference, "We did this work for scientific reasons, also because it was interesting to do. But scientists generally have the tendency not to think too much about the consequences of their work while doing it. But now that we have, we are not entirely happy about it. This is a problem in all scientific research, the bad consequences we cannot control. Many of us are upset that science and technology have been used, as in Vietnam, on innocent people. I don't think we necessarily have the right to pat ourselves on the back."

Harvard, Cambridge, Paris

As the statement implies, Shapiro began to recognize the consequences of his work and to form his political ideas only after his research was finished and he had started to describe it to the public. In fact, up until last year he was never very much involved in politics. He spent 4 peaceful and, as he puts it, "very alienated" years as a Harvard undergraduate, graduating in 1964. He went to England to study genetics at Cambridge University and at the Microbial Genetics Research Unit in London under William Hayes, then to Paris for a year's study at the Institut Pasteur, under François Jacob. He returned to America, with his Ph.D. in genetics from Cambridge, in October 1968—just after the Chicago Democratic Convention and just before Richard Nixon was elected President of the United States. He had learned very little about politics in Europe, but he had gained what he calls a "good perspective" on the problems of his own country. He also learned that "life doesn't have to be aggressive and violent."

When he began to express his political ideas at press conferences and on television, he was criticized by other scientists for being "anti-scientific" and "anti-intellectual" (one scientist also

rebuked him for not wearing a tie on the "Today" show). Those criticisms disturb Shapiro. He replies that the real "anti-scientific" people are those who "dump pesticides on Vietnam . . . perform heart transplants without first learning about rejection, and give masses of antibiotics to people who don't need them." In fact, he believes that his political work is "more scientific than most work in the labs." Solution of the real scientific problems of the nation, he says, requires, not more laboratory research, but more political work. His main example and concern is health care: the cures are there, the problem now is to make sure that everyone, including the poor, has access to them.

Shapiro says he still finds science "interesting" and is keeping up with developments by reading the journals and talking with his friends. He still maintains an office in a medical school laboratory building. He does not do any scientific work, but, just before our interview, he gave Beckwith some advice on an experiment. "I suppose if I were really absolute about this, I would not even talk about scientific work, but these are my friends and I am willing to help when they ask."

Another opinion of Shapiro's that others consider "anti-scientific" is the view that almost everyone in society, not just the trained scientists, has enough knowledge to decide where funds should be committed for research. "The shibboleth of technical expertise is preventing people from making decisions that are not beyond their intellectual capacity to understand," he says. He believes that it was government and big-business interests that were responsible for the decision to spend billions on the space program, and that, had the decision been left up to "the people," it (the program) would never have been started; the money would have been spent on what Shapiro considers more meaningful research—on pollution, for example.

The idea of having all of society decide what work scientists will do is part of Shapiro's political scheme. Sweeping changes, he says, are needed to end the "concentration of power in the hands of the few." In fact, he believes that "the people" should determine the work he himself should be doing. "It's not entirely up to me," he says.

This kind of radical sentiment will probably sound extreme—or perhaps even trivial—to most older scientists. But more and more younger scientists and scientists-to-be believe, with Shapiro, that American society is destructive and that scientists, often unwittingly, are responsible for some of its destructiveness. Even the older, more conservative scientists will have to agree that Shapiro has made a large sacrifice in an effort to get the word across.

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Government Labs: Britain Weighs Plan To Make Them Earn Their Way

London. One of the natural laws of research administration is that old government laboratories never die; they just live on, protected by Civil Service tenure, professional lobbies, local economic interests, and the very real difficulty of sifting reality out of their claims of productivity. In Britain, where most major research centers are government-owned and operated, there is a strong feeling that something should be done both to cut down the scale of the government research enterprise and to link it more closely to the country's economic and social problems. In nibbling fashion, both have been done; budgets and staffs have been reduced at many research centers, and the taking on of research jobs for industry has been encouraged (*Science*, 7 March 1969). But now, Britain's Ministry of Technology—the parent agency for the bulk of the government's applied research facilities—has put forth a radical proposition, one that merits the attention of other governments burdened with aging research establishments. Basically, what the Ministry is proposing is that a major segment of its research centers be cut off from the comforts of regular Treasury appropriations and sent into the competitive world of contract work for government and industry, very much on the style of the private consulting research organizations, such as Arthur D. Little and Battelle, that are well established in the United States but barely evident in Britain.

Put up for consideration in a "Green Paper"*—a format for presenting a position for debate, in contrast to a "White Paper," which states a settled government position—the Ministry's proposal calls for establishing a non-Civil Service public corporation, tentatively titled "The British Research and Development Corporation." To be headed by a government-appointed board, the BRDC would administratively pull together some dozen research facilities that currently employ approximately 4750 professionals, with an annual budget of nearly $170 million. The largest single group, 3200, are in the research and reactor centers of the Atomic Energy Authority, a self-contained entity within the Ministry of Technology empire. Included in the proposed corporation would be the AEA research establishment at Harwell, whose 1200 scientists and engineers handle many of the research responsibilities that the U.S. Atomic Energy Commission has assigned to its national laboratories at Oak Ridge, Tennessee, and Argonne, Illinois. For several years Harwell has been working its way into the field of industrial consulting and has served as a prototype for the program proposed by the Ministry. The Culham Laboratory, Britain's center for fusion research, would also be included, as would three reactor development centers, plus a few other facilities within the AEA.

In addition, the BRDC would encompass three major centers that the Ministry describes as "industrial research establishments." These are the National Physical Laboratory, roughly the equivalent of the U.S. National Bureau of Standards; the National Engineering Laboratory, for which there is no single U.S. government counterpart; and the Warren Spring Laboratory, responsible for many of the research functions that are handled in

* "Industrial Research and Development in Government Laboratories, A New Organization for the Seventies" (Her Majesty's Stationery Office, London), 30 cents.