

would happen." Now, Schmidt admits that he was wrong.

In light of these fundamental questions about the way biomedical research in this country is going, a controversy over the NCI's Virus Cancer Program [formerly the Special Virus Cancer Program (SVCP)] seems trivial. Nevertheless, it is central to questions that are being raised about the ways in which big league, targeted efforts are being run. The answer, in this case, anyway, seems to be not very well.

Virus Program Criticized

For one reason or another, the Virus Cancer Program has provoked controversy ever since it began in 1964 as an organized, coordinated effort to determine whether viruses cause human cancer, and, if so, to do something about it. The VCP is operated with research contracts, rather than grants, and, according to its defenders, supports a large scientific corps for the money—1000 researchers and 1000 technical and secretarial personnel. Within the VCP, several groups have contracts for \$300,000 or more. Some top \$1 million. Today, the VCP gets 12 percent of the total budget for the war on cancer and is one of the largest contract programs within NIH.

It is not very surprising that there are a lot of people whose feelings about the VCP are anything but generous. And, although unofficial, those feelings have been well chronicled in an article by Nicholas Wade (*Science*, 24 December 1971). Last March, the cancer advisory board decided that it was time to take an official look at the virus program, and it agreed that a committee would be appointed to do so.

Appointing the committee turned out to be rather tricky when initial efforts to find cancer virus scientists without ties to the VCP, or known feelings about it, were unrewarding. In the end, the committee consisted primarily of men who are not working directly in cancer virus research.* Norton Zinder of Rockefeller University is chairman.

The so-called Zinder report, which probably will not be released for several months, was presented to the cancer board in closed session at its recent meeting. Members of the committee, the board, and the VCP were present.

The report begins by stating that the

committee fully accepts the probability that viruses cause at least some human cancers and that it believes studies in virology can lead to a basic understanding of a tumor cell. It concludes that the VCP is, therefore, a perfectly sensible kind of program to have and states quite explicitly that it should be continued. Just the same, the report, in the committee's own judgment, has a decidedly "negative tone."

"Should this single funding instrument [the VCP] as it currently operates have so large a fraction of the resources that support cancer virology at its disposal? It is the view of this ad hoc committee that the answer to this question is 'No.'" Among other quarrels it has with the VCP, the Zinder committee challenges the assumption that the time is, or was, ripe for the program's goals to be attained. "It is now 10 years and a quarter of a billion dollars later, and the same two objectives remain. It was the assumptions that were wrong. There did not, nor does there, exist sufficient knowledge to mount such a narrowly targeted program," said the committee, which then proceeded to take issue with specific ways in which the VCP functions.

Its main bone of contention is that the Virus Cancer Program is a closed shop. Too few scientists participate. Too few people, all on friendly terms with each other, are in charge of handing out large sums of money to each other. It's too exclusive, too incestuous.

It was only natural that when the SVCP was formed a small group of investigators was involved—an "in group." It now rep-

resents a somewhat larger "in group" of investigators. Administratively its procedures lack vigor, are apparently attuned to the benefit of staff personnel, and are full of conflicts of interest. Because the direct targets have become fuzzy since 1964, although available funds for the program continued to grow, the program seems to have become an end in itself, its existence justifying further existence.

Virtually everyone, including NCI director Frank J. Rauscher, Jr., and John Moloney, who heads the VCP, acknowledge that there is room for improvement. Moloney told *Science* that he thinks the idea of opening the program up to more scientists is well taken, within limits. "They have a point. We could open up. But you have to remember, this is a targeted program with specific goals, not a general granting agency." In addition to opening the shop to more scientists, by advertising contracts more widely, for example, Moloney says he was already planning to include more outside researchers on VCP review groups and that he is preparing to assemble a group of outside scientists to constitute an advisory body to his office. They will give general advice on the program and be available to advise specifically any of the various VCP divisions, or segments, as necessary. Whether such moves will quell criticism or satisfy the complaints of the Zinder committee is uncertain.

Another major issue raised in the Zinder report is the matter of contracts versus grants as a mechanism for funding science. Last June, the committee held a meeting in New York at which many persons associated with the VCP

Sea Law Conference Opens

The Third United Nations Conference on the Law of the Sea opened in New York on 3 December, with 150 nations participating. The 2-week organizing session will not negotiate substantive issues, but will decide on rules, procedures, and officers for the conference, which will reconvene on 20 June for 10 weeks, in Caracas, Venezuela. Later, Vienna may be the site of yet another session.

The Law of the Sea Conference, which follows similar meetings held in 1958 and 1960, will affect the course of oceanographic and geologic research, pollution control, energy policy, and mineral resource development. It will also affect national defense policies and ordinary commercial shipping and fishing activities. Although the meeting was first scheduled for Santiago, Chile, next summer, that country withdrew its invitation in the aftermath of the coup which toppled the government of former President Salvador Allende.

The positions of the various nations on the Law of the Sea have been put forth and debated during six preliminary negotiating sessions since 1971. Thus the New York meeting will be limited to matters of procedure. It is expected to elect Hamilton S. Amerasinghe of Sri Lanka, Ceylon, who presided over the preliminary negotiations, as conference president.—D.S.

* James Darnell, Vittorio Defendi, Robert A. Good, Keith Porter, James Price, Wallace Rowe, Aaron Shatkin, Chandler Stetson, Richard Tjalma, Norton Zinder, and Maurice Guss, executive secretary.