Scientists Probe Russian Viruses

Last November, American and Russian scientists met in Moscow to trade cancer viruses. Among other things, the Russians gave their American guests a gift of six different lines of human cells which, they said, produce particles that look like known tumor viruses. The Americans brought their hosts a collection of viruses that clearly cause cancer in animals, as well as a few viruses that are merely suspected of being carcinogenic.

Although the virology that is being done in this joint program is of interest, many persons close to the situation believe that the cordial ties that are developing between scientists of the two countries will be far more significant in the long run than any single research endeavor.

This exchange of viruses initiated a cooperative program among scientists from the two nations for the study of "leukemia and tumor viruses of animals and man." (Although the majority of the American viruses had already been given to the Russians throughout the years on an informal basis, the formal exchange may mean that Russian virologists, who are said to be "hungry" for viruses with which to work, will have easier access to these agents than they had before.) The opening for this cooperative effort had been made earlier, in the spring, when Richard Nixon and Leonid Brezhnev concluded a round of summit talks with agreements designed to improve relations.

In addition to exchanging viruses and other scientific materials, the American and Russian cancer researchers agreed to exchange individual investigators in virology, and related immunology and molecular biology, for periods as long as 1 year. This part of the agreement, known officially as a "memorandum of understanding," has yet to be put into effect, but, according to John B. Moloney, a National Cancer Institute (NCI) scientist and administrator who headed the American delegation, efforts are being made now to bring a few Russian researchers to the NCI. Moloney is particularly hopeful that young Russian scientists will be permitted to come to this country, and certain researchers have been singled out already. One of them is a woman who has been described as a "highly talented, bright virologist" named G. I. Deichman. Ms. Deichman is a Jewess. American scientists are reportedly anxious that she come here to work for a few months, but it is not clear whether her government will allow her to leave.

While efforts to deal with this side of the American-Russian venture are being pursued, work in the laboratory is moving forward, although it has not gone without a hitch. For one thing, the cell cultures contained organisms other than the viruses and there have been problems growing enough virus material to work with.

In this country, researchers associated with the NCI's Special Virus Cancer Program (SVCP), working in high-containment facilities, have been studying the Russian viruses with what they believe to be the most sophisticated techniques available anywhere. (As far as is known, Russian scientists are not yet in a position to use immunological techniques, for example, for the identification of viruses.)

Thus far, preliminary characterizations have been made, and scientists from both countries are preparing a manuscript for joint publication, according to their agreement. Although all the data are not yet in, preliminary indications are that the Russian viruses are neither classic B- nor C-type particles, but that they may be part of some other class of viruses. According to one of the researchers who has been working with them, each of the Russian viruses appears to be similar to the others. Whether any of these viruses originated in the human cell line that is producing it remains unresolved. It is, of course, possible that the virus entered the human cell culture as a contaminant.

The viruses given to the Russians included the Mason-Pfizer monkey virus, which may induce tumors in primates, and a virus called RD-114B, which, some persons thought at the time, might cause cancer in human beings. (It has since been shown to be a cat virus.)—BARBARA J. CULLITON

6 months, but the total volume of professorial exchanges is "not to exceed 50 man-months for each side." An unspecified number of professors may lecture in the other country for up to 1 year.

Atomic Energy, signed 21 June. The agreement provides for cooperation in the fields of controlled nuclear fusion, including design and construction studies, at all stages up to industrial-scale operations; fast breeder reactors; and research on the fundamental properties of matter. In the last item, the possibility of a U.S.-U.S.S.R. accelerator is raised by language which says that cooperation "may be undertaken on the design, planning, and construction of joint facilities." A Joint Committee on Cooperation on the Peaceful Uses of Atomic Energy will be established.

Strategic Arms, signed 21 June. The agreement is not a treaty, but a joint directive to the SALT negotiating teams to come up with a new limitation on strategic arms by 1974. A feature of the directive is that it calls for limitations on the qualitative aspects of strategic arms as well as on their mere numbers, raising hopes of reducing the technological contribution to the arms race. Another clause, however, builds into this aspiration the loophole that "modernization and replacement" of strategic arms would be permitted under conditions yet to be agreed upon. The directive also bids the negotiating teams to work toward a reduction in offensive weapons, not just a limitation. Proponents of arms control find little that is new or significant in the document. "There is even less there than meets the eye, and there is not much that meets the eye," says Thomas A. Halsted, director of the Arms Control Association.

Apart from the agreement on cultural exchanges, the various pacts signed during the summit week are notably bereft of precise numbers or figures, which means they guarantee nothing more than good intent. As such, they may be jeopardized by such frictions as the Soviet treatment of their own scientists (see box, page 38). That is not to say that the agreements will necessarily be a useless exercise. Last year's exchange of cancer viruses, for example, seems to have assisted friendly relations between scientists in the field, even if the viruses themselves have not been the basis of any spectacular advances (see box, this page). —NICHOLAS WADE