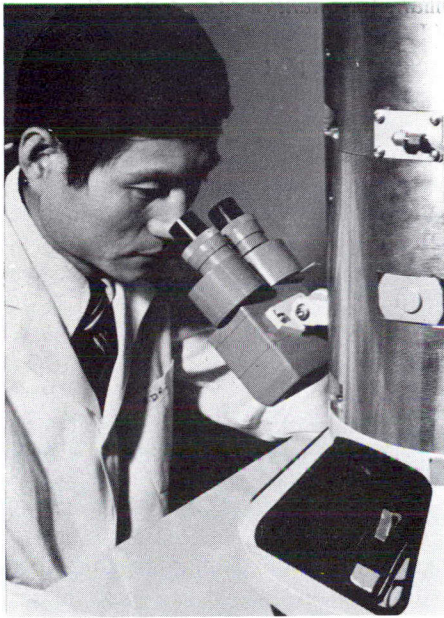


### Isolated animal virus may help multiple sclerosis research

A virus in sheep, causing scrapie disease, which has eluded scientists for decades, has been isolated by a veterinary scientist at the Agriculture Canada Research Station in Lethbridge, Alberta.

Dr. Hyun-jo Cho says the procedure he used may be worth applying in the search for an infectious agent in certain human diseases such as multiple sclerosis.



Dr. Hyun J. Cho looks through the electron microscope he used to photograph the sheep scrapie virus he recently isolated.

Scrapie disease, although rare, is always fatal and was believed to be hereditary until 1935. At that time, a vaccine made from sheep brain for use against another disease, was inoculated into many sheep, the majority of which contracted scrapie. With this evidence, scientists started to believe scrapie was an infectious disease.

#### Method used

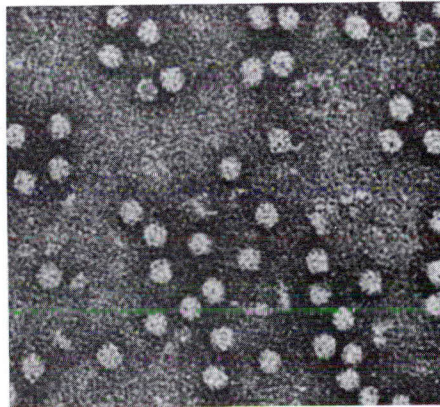
Dr. Cho began his work in August 1974. Later that year he injected scrapie agent from infected sheep brain tissue into the brains of mice. When, after 18 to 23 weeks, symptoms of scrapie began to show, 130 grams of brain tissue from the mice were homogenized. A high-speed blender was used to reduce the cellular structure to a fine suspension.

Purification was the next step and then the virus was concentrated in a pellet.

In collaboration with fellow Agriculture Canada veterinary scientist, Dr. Andrew Greig, the virus was photographed by an electron microscope at the Animal Diseases Research Institute in Ottawa.

While studying Aleutian mink disease for his doctorate, Dr. Cho had succeeded in isolating the virus, and had shown it to be 23 nanometers (23 one millionths of a millimeter) in diameter. This contributed significantly to the success in isolating the virus of scrapie, which is the smallest virus ever reported, having only a diameter of 14 nanometers.

"Using lots of material also greatly helped the study," he says. "When you start with a lot of brain tissue, the chances of isolating the disease-causing agent are multiplied."



The elusive sheep scrapie virus, magnified 250,000 times through an electron microscope.

Dr. Cho confirmed his first results by putting the brains of scrapie-infected hamsters through the same process. The scrapie virus was again visible with the electron microscope.

Dr. Cho's final proof was the ability to induce scrapie by inoculating mice and hamsters with the virus from the test animals.

The main thrust now is to develop a fast, simple immunological test to detect scrapie in infected animals.

Dr. Cho says scrapie is very similar to kuru, an ailment associated with the people of New Guinea, and another slow-virus disease in humans called Creutzfeldt-Jakob.

### Canada/U.S. environment talks

During a recent meeting in Ottawa, Russell Train, Administrator of the United States Environmental Protection Agency, and Canada's Environment Minister Jean Marchand agreed that each country should give the other early notice of proposed developments that might affect the other's environment. Advance assessment of such natural effects is the essential feature of the domestic environmental policies of the two countries, and Mr. Train and Mr. Marchand concurred in the adoption of this approach to transboundary problems.

The two representatives stressed the commitment of their governments to the Great Lakes Water Quality Agreement. Mr. Train stated: "The steps being taken to abate pollution of the Great Lakes are extremely important, and Mr. Marchand has agreed (that) we should visit key environmental-protection installations round the Lakes as soon as possible." Mr. Marchand added: "It is essential that Canadians and Americans begin immediately to plan future development, so that water-quality objectives are met."

The U.S. negotiator expressed the conviction that the current view of U.S. federal pollution-abatement legislation would result in a continued high level of funding for programs necessary to attain the objects of the pact.

#### No pollution frontiers

"It is well to remember," Mr. Marchand commented, "that Canada and the United States share natural environments, and that frontiers don't halt the movement of pollutants." The negotiators agreed it was therefore important to take account of each country's interests and experience when shaping domestic programs.

There was considerable discussion of the complex problems involved in implementing Canada's Environmental Contaminants Act and the proposed U.S. Toxic Substances Act. "It is clearly the responsibility of governments to protect the public from the effects of the ever-growing number of chemical substances in general use," Mr. Marchand declared. "The effective handling of this important matter is a