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Environmental issues

Like resource and economic policy, environmental questions have a direct and immediate impact upon the populations of both countries. Perhaps for this reason, Canada and the United States have for over 65 years been innovators in dealing with bilateral environmental problems. From the Boundary Waters Treaty of 1909, through the Great Lakes Water Quality Agreement of 1972, our two nations have worked out responsibilities, obligations and courses of action that are precedents in international terms. As technological capability grows, and as resource requirements increase, there is an accompanying need for new measures to protect our physical and ecological environment. The examples are many: weather-modification projects in one country that could affect the other; transboundary air-pollution problems; tanker traffic along our coastlines; pipelines through the tundra; the proposed flooding of the Skagit Valley; the Garrison Diversion Project. These challenges require answers on the part of government. It is not unexpected that in the realization of certain jointly agreed goals, such as the cleanup of the Great Lakes, we will face difficulties.

In summary, we are in a new phase of our relations with the U.S. in which both countries are adjusting to new conditions abroad and more affirmative national policies at home....

Foreign investment regulations

The Federal Government has introduced stringent regulations on foreign investment in Canada, spelling out who can take over what companies. The 25-page list of regulations, tabled in the Commons by Industry Minister Alastair Gillespie, will provide working rules under the Foreign Investment Review Act, which is expected to be proclaimed and become law this spring. The three-part list defines foreign investors subject to the law, sets forth rules for deciding which Canadian firms are subject to the act, and lists detailed information that must be provided about both the foreign purchaser and the Canadian firm to be purchased. A takeover is subject to review if the business to be taken over has gross assets of more than $250,000 or gross revenues of more than $3 million a year.

Arteriosclerosis: new theory opposes established one

A major contribution in discovering how arteriosclerosis (hardening of the arteries) begins may have been accomplished by a medical researcher at the University of British Columbia (UBC). Dr. Paris Constantinides, professor in UBC's Department of Pathology, has discovered major evidence supporting a new theory he advanced on the mechanism behind arteriosclerosis. His theory opposes the established explanation.

According to the established theory, arteriosclerosis is a "spin-off" of a natural process.

Cholesterol molecules combine with other fat and protein molecules from food digested in the intestine to form huge lipoprotein molecules, the largest molecules in the blood stream.

Lipoproteins, continuously percolate out of the blood stream through pores in the arterial wall into the tissues surrounding the arteries. But if the concentration of lipoproteins in the blood is abnormally high, according to the established theory, more lipoproteins enter the arterial wall then move out and some of the giant molecules accumulate and become permanently embedded in the arterial wall.

Dr. Constantinides, finding this difficult to believe, advanced a theory a few years ago that cholesterol-carrying lipoproteins entered the arterial wall only if it has been injured.

Testing of new theory

To test his theory he fed one group of rabbits a diet with normal amounts of cholesterol which had been tagged with radioactive atoms so that they could be traced through the body.

After the cholesterol had been given time to disperse through the bodies of the rabbits, sections of their artery and capillary walls were searched for traces of cholesterol. The arteries examined were the aorta, the major artery of the body; the coronary arteries that branch off from the aorta and feed the heart muscle itself; and arteries in the liver, where reserves of fat are stored.

The sections were about 1/50,000 of an inch thick. Strips of specially thin, transparent photographic film were laid over the capillary and artery sections in a darkroom and the film was exposed to the radioactivity of the cholesterol in each lipoprotein molecule underneath.

So weak was the radioactivity from each lipoprotein molecule that had invaded the capillary and arterial walls that exposure time had to be at least six weeks. At the end of this time each radioactive cholesterol molecule had blackened a tiny spot directly above it on the film. By counting the spots using an electron microscope, Dr. Constantinides could tell how many liproprotein molecules were present in each section.

In 20 consecutive sections in the aorta of normal rabbits he found an average of 1.2 lipoprotein molecules embedded in the arterial wall compared to 40 in the capillary walls of the heart and 100 in the capillary walls of the liver.

The same procedure was repeated on a second group of rabbits whose arteries had been damaged. The number of lipoprotein molecules in 20 consecutive sections of the damaged aorta averaged 100, about 85 times higher than the level in the normal aortas.

Dr. Constantinides is satisfied that he has produced strong evidence that only damaged arteries are susceptible to arteriosclerosis.

Dangerous pathogens import check

Health and Welfare Minister Marc Lalonde has announced the establishment of a team of medical scientists to investigate ways and means of controlling importation of infectious agents that might present a health hazard to Canadians.

Mr. Lalonde noted that the personnel of clinical or research laboratories handling potentially dangerous pathogens are exposed to danger not encountered in other laboratories. He added that the risk is not only to such personnel but to those with whom they come into contact, at home or in the public at large.

Although no problems related to these exotic pathogens have been reported recently in Canada, some deaths have occurred in other countries.

The minister emphasized that it was not the intention of his Department, as far as possible, to restrict importation of pathogens for legitimate or necessary research conducted by qualified scientists with adequate facilities.