Acid rain — silver clouds can have black linings

by Don Munton

Acid rain seems to have emerged suddenly and out of nowhere as a major issue in Canadian-American relations. It has become, an observer remarked, one of the most "corrosive" problems in the bilateral relationship. Indeed, environmentalists and even some Canadian officials are beginning to use the terms "unpremeditated chemical warfare" and "environmental aggression".

Although acid rain has only recently attracted considerable scientific attention, many aspects of this complex environmental problem have been observed for decades and some for centuries. It was well recognized at the time of the Industrial Revolution that coal burning and industrial processes produce extensive air pollution. The high acidity of rain around industrial centres was discovered by the late 1800s. Scientific evidence of the long-range atmospheric transport of some substances was provided in the early 1900s. The general assumption which prevailed until the 1970s, however, was that the harmful effects of these air pollutants, such as acidic rainfall, were localized and the distant effects negligible.

Scandinavian research

The scientific research largely responsible for challenging that assumption first emerged in Sweden and Norway during the late 1960s. Based on data from a network of precipitation sampling stations in Europe, these studies showed that the acidity of rainfall and the extent of the affected areas was increasing in Europe, especially in Scandinavia. The researchers traced the problem using meteorological data to often very distant emissions of sulphur and nitrogen oxides. The effects, though still unproven, were deemed to be far from negligible. There were warnings of serious damage to lakes and rivers, fish and other aquatic s cies, plants and trees, soils, buildings, and of possi dangers to human health. Although a number of sci tists had for some time been probing various aspects the acid rain problem (particularly Eville Gorham Nova Scotian working in the United Kingdom), Scandinavians were the first to provide hard evide of a worsening, long-range emission transport p nomenon.

Air pollution issues are not unknown in Canadi American relations. One of the landmark cases in ternational environmental law grew out of the disp during the 1920s and 1930s over "fumes" from large smelter at Trail, B.C. A long-standing prob has existed in the Detroit-Windsor area, where ab 90 percent of the smoke and air pollutants come f the United States side of the border. Neither of th issues, though, prepared the public or policy mak for early perception of, or action on, acid rain. Rat North American scientists and officials appear to h become aware of the problem only as the result of dia reports on the Scandinavian studies, a 1969 Sw ish initiative within the Organization for Econo Cooperation and Development to establish an acid r research program, and a background paper prep by Sweden for the 1972 Stockholm conference.

Government attention

Scientific studies and substantial government tention and research funding in Canada and United States were slow in coming. The first men by a Canadian government official of long-range tr port of air pollutants, as a Scandinavian problem, pears to have been made by then Fisheries Mini Jack Davis in late 1969. Some early Canadian rese was done in 1970-71 but it focused on heavy metal osition, not on acidity. The first relatively compre sive article on acid rain, *per se*, in a North Amer

Professor Munton teaches political science at Dalhousie University and is with their Centre for Foreign Policy Studies.