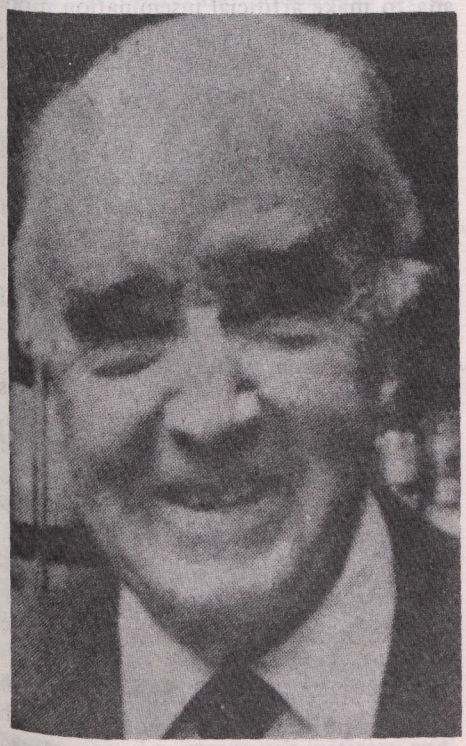
Co-discoverer of insulin dies

Dr. Charles Herbert Best, co-discoverer of insulin and one of the world's most honoured medical researchers, died in a Toronto hospital on March 31 at the age of 79.

Dr. Best and Dr. Frederick Banting, a surgeon from London, Ontario, who was killed in a plane crash in 1941, discovered and developed insulin to control diabetes in 1921. (Insulin, a substance produced in healthy people by the pancreas, stimulates the body to metabolize sugar. Before the discovery, countless diabetics died, as their bloodstreams filled with unused sugar.)



Dr. Charles Herbert Best

Dr. Banting and Professor J.R. MacLeod (as head of the University of Toronto's physiology department), were awarded the Nobel Prize in 1923. Banting immediately shared his half with Charles Best. MacLeod said later: "I did not win the Nobel Prize for my discovery of insulin, but for my discovery of Best."

Charles Best, who was born in West Pembroke, Maine, U.S.A., of Canadian parents, graduated from the University of Toronto. His ancestors had come to Halifax, Nova Scotia in 1749. He met Frederick Banting shortly after graduation.

It was on May 17, 1921 that Banting outlined his theory to Best that he believed something in the pancreas of animals could be used to control diabetes. They began work and, two months later, succeeded in an experiment with dogs. They tied off pancreatic ducts and extracted the accumulation of the partly-degenerated pancreas, which was purified and administered to other dogs. "We were overwhelmed by a multitude of ideas which demanded investigation but we persisted until on 75 occasions, without any failures, we secured a material potent in lowering blood sugar," Best wrote later. It is reported that a moribund diabetic dog, after an injection of insulin suddenly sat up and licked the hands of the men who had saved it.

Experimenting with this dog, Marjorie, Frederick Banting (right) *and Charles Best demonstrated that insulin could control diabetes.*

Shortly after, Leonard Thompson, a 14-year-old dying diebetic in the Toronto General Hospital, became the first human to have the disease controlled with insulin. Purification techniques were refined and a centre was established for the production of the serum for export to hospitals and clinics throughout the world.

Banting and Best turned over the patent to the University of Toronto for $1, with the stipulation that no royalties be charged for the manufacture of insulin.

Charles Best was also honoured for his work later in developing the anti-allergic enzyme histaminase and heparin, which is vital in heart surgery as an anti-blood clotting agent. But it is for his contribution to the discovery of insulin, however, that Best will be remembered. In a statement issued following his death, the Canadian Diabetic Association said:

"Today all diabetics...will once again realize their great debt to Charles Herbert Best and Frederick Banting.

Their monument survives in the lives of thousands."

Canada and U.S. co-operate in agriculture research

Canada and the United States have agreed on expanded co-operation in agricultural research, including crop-forecasting from data supplied by space satellites.

Agriculture Minister Eugene Whelan and U.S. Secretary of Agriculture Bob Bergland signed a memorandum of understanding on March 14 under which Canada and the United States would exchange crop-forecasting strategies, methods and "on-site" crop information. The technology involved will include data from the U.S. Large Area Crop Inventory Experiment (LACIE), as well as jointly-conducted research.

In addition, they agreed on an expanded effort in more traditional research, which will involve the exchange of research managers and senior scientists between the two countries and exchange of information on the evaluation of pesticides.

The co-operative efforts will extend to research on land-use, soil salinity, waste-disposal, energy, atmospheric pollution, and soil-reclamation. Bilateral research meetings are also planned on integrated pest-management and the control of wild oats, golden nematode and biting flies.

The U.S. agencies taking part are the Department of Agriculture, the National Aeronautics and Space Administration and the National Oceanic and Atmospheric Administration. The Canadian agencies concerned are Agriculture Canada and the Department of Energy, Mines and Resources.

The new agreement continues work begun under a 1971 agreement. The U.S. and Canada have co-operated in developing techniques to estimate acreage, yield and vigour of crop-growth using satellite imagery, current weather information and ground observations from test-sites in both countries. Since 1975, the U.S. has used ground observation from Canadian test-sites in the LACIE project.