PHOTOS: COVER, BRUCE WETZEL AND HARRY SCHAEFER, NATIONAL INSTITUTES OF HEALTH;
PAGE TWO, LOU SCAGLIONE, THE HOSPITAL FOR SICK CHILDREN

Medical Research

Researchers have been working on the causes and cures of disease and painful death since Hippocrates took his oath.

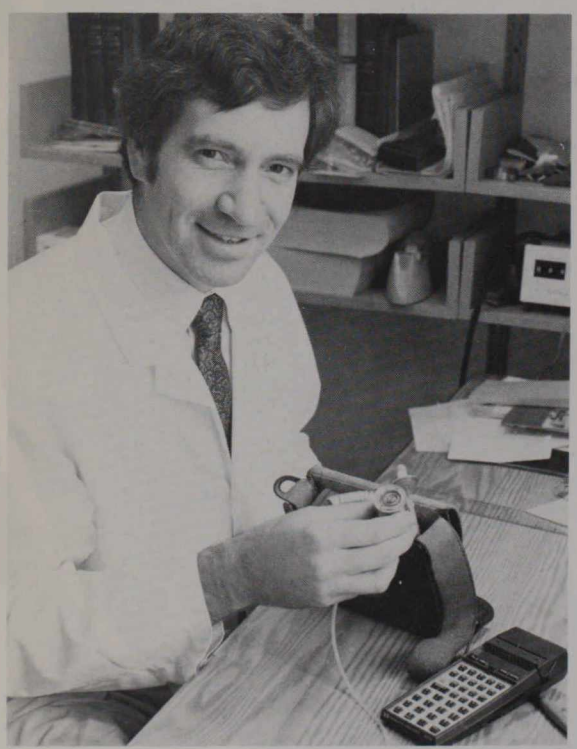
This century there have been dramatic discoveries that have had swift and broad applications.

The insulin isolated in Canada in 1921 has saved millions around the world, and the vaccine developed by Dr. Salk in 1952 has saved children everywhere.

Since the early 1970s the advances in medical knowledge and technique have been coming rapidly, and scientists in Canada and the United States are in the vanguard. They have also developed a striking level of intra-continental cooperation. The breakthrough in one country is complemented in the other, the surgical technique developed in one hospital is refined someplace else.

In this issue of CANADA TODAY/D'AUJOURD'HUI we focus on the achievements of a few of the Canadians who are productively involved.

Diabetes



Dr. Michael Albisser and his insulin pouch.

Front Cover:
Normal circulating human blood, seen under a scanning electron microscope. Blood is made up of red blood cells (rbc); white blood cells including lymphocytes (l), monocytes (m) and neutrophils (n); and platelet cells (p) suspended in plasma, a straw coloured fluid composed of proteins, water and salts.

In the summer of 1921 Dr. Frederick Banting and Charles Best extracted insulin from the pancreas of a healthy dog, and the following winter they and two associates used insulin extracted from a beef pancreas to save the life of a young diabetic. (See box on page five.)

Insulin controls the level of blood sugar in the body and its use has saved tens of thousands of lives, but many diabetic patients have found daily single injections difficult and some have found them dangerous. The dose must be adjusted constantly since the blood sugar level can change from hour to hour. Each time the patient eats, for example, it goes up.

The problem of matching insulin dose to blood sugar level more easily and accurately is now being tackled with energy, ingenuity and some success by Dr. Michael Albisser and his colleagues at the Hospital for Sick Children in Toronto. Under a contract with the National Institutes of Health in Bethesda, Maryland, they have developed a computer-controlled pump which sends insulin into the bloodstream at measured intervals. The patient adjusts the dosage by pressing an appropriate button. As he sits down to a full meal he pushes one button; if he is about to eat a light snack he pushes another. There are twelve buttons in all.

Each pump has a dosage ceiling appropriate to the particular patient, and, in Dr. Albisser's

The 9:82 issue contained an error on page seven, under the heading "Burn Your Own Smoke." The first sentence of the third paragraph should read: "It sits on a chamber on top of the stove and reduces the ignition point of smoke from 1200° F to about 450° F."