

#### WORK OF BIOCHEMISTRY LAB

The Biochemistry Laboratory's research on antibodies focusses on their structure and function. Dr. Perry and Dr. Young are using transplant tumors in mice to produce antibody-like molecules (myeloma protein) which react with specific sugar molecules playing the role of antigens. By using synthetic sugar molecules that can be chemically activated by light they are able to tag the active sites of the antibody. When the tagged molecule is broken down by enzymes and the sugar-bound fragments are analyzed, the order of the amino-acid units in the binding site is discovered. Similar binding-site studies are being made on "pure" antibody produced in rabbits by immunization with highly purified polysaccharides. It is hoped that knowledge gained in these studies will lead to further understanding of the precise way in which an antibody combines with its antigen and may also, in some measure, assist in explaining how the body is able to make such immense numbers of different antibodies of specific action.

#### ANTIGEN STUDIES

Complementary studies to those on antibodies are being made on antigens. In particular, the program is directed towards the isolation of specific antigens from pathogenic fungi, yeasts and bacteria, followed by the determination of their complete chemical structures. Dr. Bishop and Dr. Perry, together with Professor F. Blank of the Skin and Cancer Hospital of Philadelphia, have completed one study of a group of fungi causing skin diseases and are now investigating the capsule antigens of different types of *Diplococcus pneumoniae*, a causative agent of pneumonia in man. Dr. Bishop and Dr. Jennings, in collaboration with Dr. Baruch Diena and Dr. Paul Kenny of the Communicable Diseases Centre of the Department of National Health and Welfare, are involved in examining the antigens of *Neisseria meningitidis* and *Neisseria gonorrhoeae*, causative agents of meningitis and gonorrhoea, respectively. A group of specific protein antigens has been prepared from one type of *N. meningitidis* which has been demonstrated to produce active immunity to other types of *N. meningitidis*. Dr. Adams has worked out the structures of endotoxic lipopolysaccharides found in the cell walls of many bacteria. These molecules are very complex in structure and are made up of many unusual sugars and a lipid rich portion.

Knowledge of the structures of antigens assist in determining what features make a "good" antigen; it clarifies many of the complexities surrounding the classification of bacteria by serological methods; it leads to the preparation of purer antigens for use in immunization, and may possibly by chemical modification, lead to an increase in the effectiveness of natural antigens or even to the production of entirely synthetic antigens.

#### NATIVE ARTISTS TO OWN COMPANY

Steps to transfer ownership of Canadian Arctic Producers Limited (CAP) to the Eskimo and Indian people were announced recently by Jean Chrétien, Minister of Indian Affairs and Northern Development, at the official opening of the company's new headquarters at Uplands Airport in Ottawa.

The steps referred to by Mr. Chrétien, which have been approved by Cabinet, include payment of patronage dividends by CAP to Eskimo co-operatives and other organized producers doing business with the company, on the understanding that these dividends will be used to buy out Government shares in the company, and transfer of CAP control to northern producers of arts and crafts when they own 51 per cent of the shares.

#### HISTORY OF CAP

Canadian Arctic Producers Limited was established in 1965 at the request of the Federal Government to provide an efficient marketing agency serving Eskimo and Indian producers of arts and crafts in northern Canada. These producers, it was hoped, would eventually become owners of the company.

The Department of Indian Affairs and Northern Development encouraged expanded production of arts, crafts, and gourmet foods, and the emergence of producer co-operatives. The Department also provided the company with sufficient operating funds each year until 1970, when Mr. Chrétien announced that the Government was financing the company through a purchase of 400,000 redeemable preferred shares valued at \$1 each, plus a loan of \$250,000. This money allowed the company to pay cash on delivery of products from co-operatives and expedited payments to producers. Since this capitalization, CAP has operated without Government subsidy and has consistently shown a profit. Producers today carry the full cost of the marketing service.

Commenting on the plans to transfer ownership, Mr. Chrétien noted that the goals envisaged in 1970 were now close to attainment. "The steps taken to transfer ownership are in line with Government policy, which intends to give northern natives more say in decisions affecting them," he said.

#### CONTINUING GROWTH

CAP has a network of 900 dealers in 11 countries; its sales have increased from \$60,000 in 1965 to \$1.3 million in 1971, and are expected to increase to \$2 million within three years. The company provides market information, conducts market research and assists in the development of new products for 20 existing co-operatives and 20 project areas now in the process of becoming co-operatives.