

such investigations many results of fundamental importance for chemical physics and quantum theory were obtained. The work on the hydrogen molecule is especially outstanding”.

#### FOURTH CANADIAN TO WIN PRIZE

Dr. Herzberg, former Director of NRC's Division of Physics and now a Distinguished Research Scientist at NRC, is the fourth Canadian to be awarded a Nobel Prize. Previous prizes were awarded to former Canadian Prime Minister Lester B. Pearson in 1957 for his effort to bring peace to the Middle East and to Dr. Frederick Banting and Dr. John Macleod for their role in the development of insulin in 1923.

The 66-year-old NRC physicist was on a lecture tour in the Soviet Union when the announcement of the award was made in Stockholm. The Academy also announced that the 1971 Nobel Prize for Physics had been awarded to Dr. Dennis Gabor, Professor Emeritus at the Imperial College of Science and Technology, London, England.

Dr. Herzberg first learned that he had been awarded the Nobel Prize in Chemistry after he had boarded a train in Leningrad for a trip to Moscow. He was informed by the Foreign Secretary of the Soviet Academy of Sciences.

Following the announcement, Dr. W.G. Schneider, President of NRC, said “this is indeed a proud moment for Canadian science and the entire staff of the National Research Council of Canada. It is international recognition of a Canadian research effort spread over many years – a research effort which is being continued by Dr. Herzberg. I feel that this recognition of Dr. Herzberg is well merited”.

Dr. Gerhard Herzberg was born in Hamburg, Germany, on Christmas Day in 1904. He received his early training in Hamburg and subsequently studied physics at the Darmstadt Institute of Technology, where he obtained his Dr. Ing. degree in 1928. From 1928 to 1930 he was engaged in postdoctorate work at the Universities of Gottingen and Bristol. In 1930 he was appointed lecturer and senior assistant in the Physics Department of the Darmstadt Institute.

After Hitler came to power in Germany, Dr. Herzberg went to the University of Saskatchewan on a Carnegie guest professorship in 1935. He later was appointed a research professor of physics, a position he held until 1945. From 1945 to 1948, Dr. Herzberg was Professor of Spectroscopy at the Yerkes Observatory of the University of Chicago.

In 1948, Dr. Herzberg joined NRC's Division of Physics. He was appointed Director of the Division in 1949, a position he held until his retirement in 1969. On his retirement he was appointed a Distinguished Research Scientist to permit him to continue his work at NRC.

Dr. Herzberg is the author of more than 200 papers and five books. His three-volume series entitled *Molecular Spectra and Molecular Structures* is considered as the basic reference text in molecular spectroscopy.

#### IRON ORE TRAVELS THE SEAWAY

Iron ore, the largest single commodity moving on the St. Lawrence Seaway, is an essential raw material in the making of iron and steel products that are consumed largely by the construction, manufacturing and transportation industries. In 1970, iron-ore traffic on the Seaway accounted for 30 per cent of total tonnage on the Montreal-Lake Ontario section and 26 per cent on the Welland section.

Of the 15.1 million tons of ore shipments on the Montreal-Lake Ontario section, in 1970, 98 per cent moved upstream, originating from the Quebec-Labrador mines and destined for U.S. steel-production centres on Lake Erie and Lake Michigan and Canadian steel mills on Lake Ontario. On the Welland section, the iron-ore traffic is more balanced, with 12.5 million tons, or 77 per cent, upbound and 3.6 million tons, or 23 per cent, downbound in 1970. The upstream movement through the Welland is actually the same traffic that transits the St. Lawrence section, excluding the 2.3 million tons dropped off, in 1970, in Hamilton on Lake Ontario. The smaller downstream Welland movement originates on the shores of Lake Superior and is destined for the same consumers on Lake Ontario of the Quebec-Labrador ore.

#### TYPES OF VESSEL

Iron ore on the Seaway is shipped in large “laker” vessels with a draft of up to 26 feet and capable of transporting up to 30,000 tons of ore. This method of shipping the ore is in sharp contrast to that employed prior to the opening of the Seaway in 1959, when ore moving by way of the old shallow draft canals on the St. Lawrence River had to be trans-shipped above Montreal onto small “canallers” with a carrying capacity of about 2,000 tons.

An important consideration that enhances the competitive position of the Seaway in the transportation of Quebec-Labrador ore is the presence of a backhaul movement; iron-ore shipments upbound from the Quebec-Labrador mines to steel mills on the Great Lakes complement the downbound grain movement from grain-loading ports on the upper Lakes to lower St. Lawrence trans-shipment ports.

Traffic in iron ore to date this year has been sluggish in comparison to 1970 traffic, owing principally to a late start of the navigation season. Totals to the end of August show a decline of 17 per cent on the Montreal-Lake Ontario section and 21 per cent on the Welland section from last year's total for the same period. The extent of these declines, however, is expected to diminish in the latter months of the navigation season as iron-ore consumers begin to build up sufficient inventories to sustain them through the winter.

The Canada Post Office is conducting a market test in the Toronto area to determine public response to a booklet containing 50 cents worth of stamps.