Library receives Venezuelan books

Venezuelan Ambassador to Canada, Jesus Carbonell, recently presented a collection of books to Ottawa's Carleton University. The books, published under the auspices of the Universidad Central de Venezuela, are a gift of that University to Carleton by arrangement with Miguel Angel Giella, teaching associate in Spanish at Carleton, and A.W. Urello, assistant professor of Spanish at St. Patrick's College. Professor Urello conducted a course in Venezuela last summer.
Seen in the picture (left to right), *are University librarian G.H. Briggs, associate professor of Spanish Ross Larson, Venezuelan Ambassador Jesus Carbonell and professor of English A.T. Tolley.*

Cattle feed from natural gas

While natural gas now is used as fuel in industrial furnaces, to produce plastics, artificial rubber and petrochemicals, to heat buildings and cook food, a chemical engineer at the University of Toronto is using it to make feed components for cows and sheep. As another raw material to produce protein he uses previously useless wastes from the pulp and paper industry.

Professor Morris Wayman, who has already made major contributions to the wood pulp industry, is producing a nitrogen-rich, white powder from natural gas called urea formaldehyde, which he says could have an impact on agriculture similar to the invention of artificial fertilizer 60 years ago. Nitrogen is needed by animals for the production of protein and amino acids, necessary for life and growth. Cows and sheep get their nitrogen mostly from grains.

The notion of a factory providing cattle with feed components might seem strange, but then the manufacture of artificial fertilizer was also at one time considered by some people foolhardy and unnecessary.

The idea of using urea derivatives as a synthetic source of nitrogen is not new, but making it work has given scientists problems, since large doses of urea are usually dangerous because urea breaks down quickly in the digestive system and enters the blood stream as toxic ammonia.

However, with funds provided by Canada Packers, Professor Wayman has modified urea to prolong this breakdown from about 30 minutes to six hours. He says he hopes to increase the amount of modified urea in ruminant feed to completely replace protein nitrogen, which would be nearly four times the amount now possible.

Although everything is in the test stage, small amounts have been fed to some sheep at the Canada Packers Research and Development Laboratories in Toronto. The animals are thriving. After this initial safety screening is completed, the new compound will be fed to cows.

Benefits

The main reason for making animal feed components from natural gas is because of the tremendous amount of agricultural land taken every year for urban development.

But diminishing farm land is not the only concern. "Our aim is to find cheaper and more readily available feed-components not dependent on the whims of nature," explains Professor Wayman. "Modified urea is made in a factory and is unaffected by bad climate, unfavourable weather conditions and other infestations that plague traditional sources of livestock feed – corn, hay and oats – and ruin many other crops every year."

The time will come says the professor, when land alone will not be able to supply all the world's food.

European scientists examine Canadian oceanographic data systems

A group of European ocean scientists last month studied a new oceanographic exploration system developed by two Canadian companies with assistance of the Department of Industry, Trade and Commerce.

Sea trials of the new system, developed by Huntec '70 Limited and Fathom Oceanology Limited of Toronto, were held off Halifax, Nova Scotia, from August 16 to 23. More precise data can be gleaned from the ocean bottom using the new system as it operates underwater. Previous systems were towed on the surface.

Heart of the system is a large wing-shaped device that contains highly sophisticated electronic oceanographic measuring equipment. This is towed underwater and records data required to solve ocean engineering problems such as offshore oil-rig placement, the laying of pipelines underwater and design of new port facilities.

The visitors came from England, Scotland, France, the Netherlands, the Federal Republic of Germany and Norway as guests of the Department of Industry, Trade and Commerce, which seeks to promote Canadian oceanographic systems and services in overseas markets.

In addition to the group attending as guests, many scientists from other nations attended the trials, which were held in Halifax in conjunction