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Cover: Early farmers seeking the security of a permanent food supply had little idea of the vast influence their plant breeding talents would have on later history. Today, as exemplified by artist Jean-Pierre Langlois' graphic, the skills of science have been harnessed to the continuing task.

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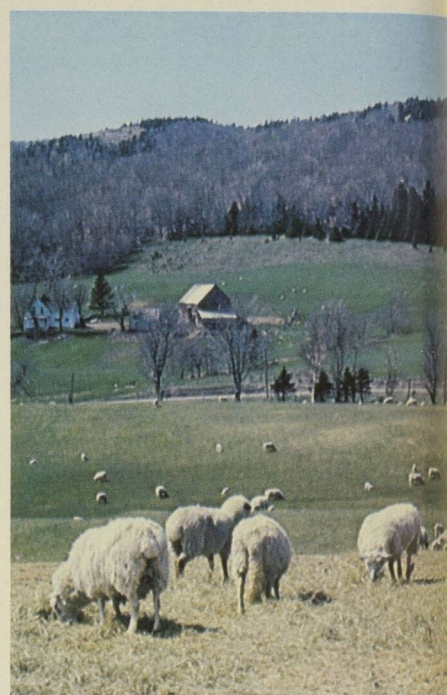
When the first Europeans landed in North America, so recent historical evidence suggests, the continent was already overpopulated. Because the native peoples were nomadic, relying primarily on hunting, fishing and the gathering of wild plants for sustenance, the food base was simply not broad enough to support their numbers. Today, however, with a population many hundreds of times larger than in pre-Columbian times, North Americans are the world's principal exporters of food. The vital difference that led to this dramatic turn-around has been agriculture, perhaps the most profound of humanity's cultural innovations.

As this special issue of *Science Dimension* attests, the struggle to extend and enrich the food supply, begun in antiquity by men with a talent for selectively breeding plants and animals, continues.

The first two articles deal with the development of quite different crops for Canada's food industry, field peas in the Prairies and the marine plant Irish Moss in the Atlantic region. These are "down the line" projects, now out of the laboratory and into the hands of industry.

The third outlines one of agricultural science's most conspicuous successes — the development of the rapeseed crop in western Canada.

Articles about NRC-supported research in industry range from a revolutionary method for extracting sugar



Grant Crabtree

from cane, through to studies of bacteria that spoil meat products and a new disease-monitoring technique to aid dairy farmers.

Projects that either have had or appear close to having practical pay-offs for consumers and farmers include the work of NRC's Food Technology laboratory, the production of "sex attractants" for insect control, and the search for the causes of a wasting disease that afflicts Maritime sheep and cattle.

The remaining three stories are in the realm of curiosity-oriented or basic research and take place, fittingly, in the NRC division primarily committed to food and agricultural science, the Prairie Regional Laboratory in Saskatoon, Saskatchewan. One project seeks to better understand the process of photosynthesis in green plants and how this is linked up to nitrogen fixation in the roots of legumes. The other two projects explore the possibilities of what may prove to be one of the most revolutionary developments in agricultural science — the use of tissue cells to create new plant hybrids.

Space does not allow for inclusion of other, equally important programs in this issue: the fundamental work on nitrogen fixation; the studies of gas mixtures and meat preservation; and the advances in fermentation technology. All have their place in NRC's larger, long-term program of food-related research. □