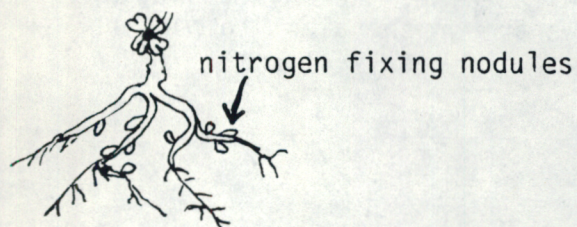


SECOND NITROGEN FIXATION SYSTEM DISCOVERED

Dr. Richard W. Millen, a biochemist with Agriculture Canada, and Drs. Robert L. Robson and Robert R. Eady, of the University of Sussex in England, have found a second biochemical process for the fixation of nitrogen. This process uses the metal vanadium to form the nitrogenase enzyme which allows



certain bacteria living in root nodules to change air or water borne nitrogen to a form capable of being absorbed by the host plants and other plants. As this process is critical to the use of clovers and other nitrogen fixing plants to improve soils by rotating crops, the finding is quite important.

In addition to the discovery of the process itself, the researchers have shown that this process is controlled by a separate set of genes from that used by the nitrogen fixing system of molybdenum-nitrogenase which has been known for some time. The researchers utilized the bacterium Azobacter in their original work and Dr. Miller now wishes to determine if this system is also found in the bacteria Rhizobium which are important in nitrogen fixation in many Canadian crops.

(Excerpted from an article by Lorraine Brown of Canadian Science News titled "Soil Bacteria Have a Second System for Fixing Nitrogen" from the Halifax Field Naturalists' Newsletter # 57.)

CROWS ON ICE

by Margaret E. Mallett

This spring, on April 5th, just before sunset I drove around Victoria Park to see how the ice break-up in Charlottetown Harbour was progressing. On the eastern side, there was open water out to the Hillsborough Bay. The break-up there was promoted by the passage of several tankers in to the port at the end of March and the first of April. However, the estuaries of the West and North Rivers and the area about the park were still icebound. (by April 11 the ice was all gone).

Continuing along to the town side of Fort Edward, my expedition became a crow and gull watching session.

When I stopped at Fort Edward, a woman was out of her car, scattering bits of bread on the ground. Not many birds came until she drove away. Then there were customers such as several adult Herring Gulls, a first year Herring Gull, a Ring-billed Gull, an Iceland Gull, some crows and one starling.

Across the ice, on a point of ice extending out from the Queen Charlotte Armories, there were at least 100 crows. A little later, on the ice between Fort Edward and Beaconsfield, the number of crows grew to another hundred.

Shortly after sunset several flocks of gulls flew over, heading eastward across the harbour. This did not trigger a mass exodus of crows as I half-expected, so near roosting time. It was nearly dark when they began to depart in small groups but not before about 30 of them had been up on the bank to pick up the last crumbs of bread. As I drove away at dusk, three crows flew away leaving three stragglers still on the ice. Somewhere, not far away, a number of trees would be required to lodge some 200 crows for the night.

Up to that time I did not understand the affinity between crows and ice, except that the ice was a nice level place to stand and enjoy the sunshine, to be relatively undisturbed by human beings, and to have a sip of water available when required.