Species of goldenrod, wild lettuce, and dogbane gave some promise of possible utilization, but much further study is still necessary.

Tests made on milkweed indicated that it had a higher rubber content than that found in other native plants. Analysis of the leaves revealed the presence of considerable amounts of rubber and resinous substances. Further studies made by the National Research Council indicated that milkweed gum might be a useful substance for blending with buna-s synthetic rubber. Extensive experimental work in planting, seed germination, harvesting and handling methods of milkweed is being undertaken. A pilot plant was erected in 1943 to process quantities of milkweed leaves in order to secure sufficient gum for large-scale commercial tests. The future use of milkweed for rubber depends on the results of these tests, being conducted at the present time by the National Research Council.

Seed of the Russian rubber-bearing dandelion, taraxaoum kok-saghyz, was received in Canada in May, 1942. Considerable field and laboratory work has been done by Canadian scientists on this plant, results being that, although kok-saghyz is a source of high quality rubber, numerous agricultural difficulties must be overcome before it can be planted on a large scale. Production of varieties with high rubber content, large roots and completely mechanized processes of planting, cultivating and harvesting would be necessary in order to bring the cost of production to a reasonable level.

Canadian species of the kok-saghyz growing in the Arctic and subarctic regions were investigated. None of these proved to be valuable as a source of rubber, but may be useful in the breeding program with kok-saghyz which is now under way.

Experimental work is being conducted on a native British Columbia plant, lactuca diennis, as a possible source of rubber, but its commercial possibilities are yet undetermined.

The plant, known for some time, is reported to have a potential annual yield of 600 pounds an acre, double that of standard rubber plantations. It contains some rubber and yields a quantity of gum, but its practical value as a source of rubber is not yet known.

The possibilities of native rubber production in Canada are being given careful study, although it is unlikely that domestic rubber will play an important part in relieving the present rubber situation.

SYNTHETIC RUBBER

The perfect, all-purpose synthetic rubber has yet to be found, in spite of constant technical research, but the three vulcanizable synthetics most closely resembling crude rubber are: buna-s, butyl and neoprene. With this in mind the North American synthetic rubber program has centred on production of these materials. Production at the Polymer plant, part of this all-over program, is confined to buna-s and butyl.

Demands of mounting war needs found Canada faced with a grave rubber shortage in December, 1941. In co-operation with the United States, a program for the development of synthetic rubber was inaugurated by the Canadian government. A crown company, Polymer Corporation Limited, was set up in March, 1942, to arrange for building and operation of a synthetic rubber plant near Sarnia, Ontario.