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DEPARTMENT OF RADE AND COMMERCE



A FACT A DAY ABOUT CANADA

FROM THE

DOMINION BUREAU OF STATISTICS

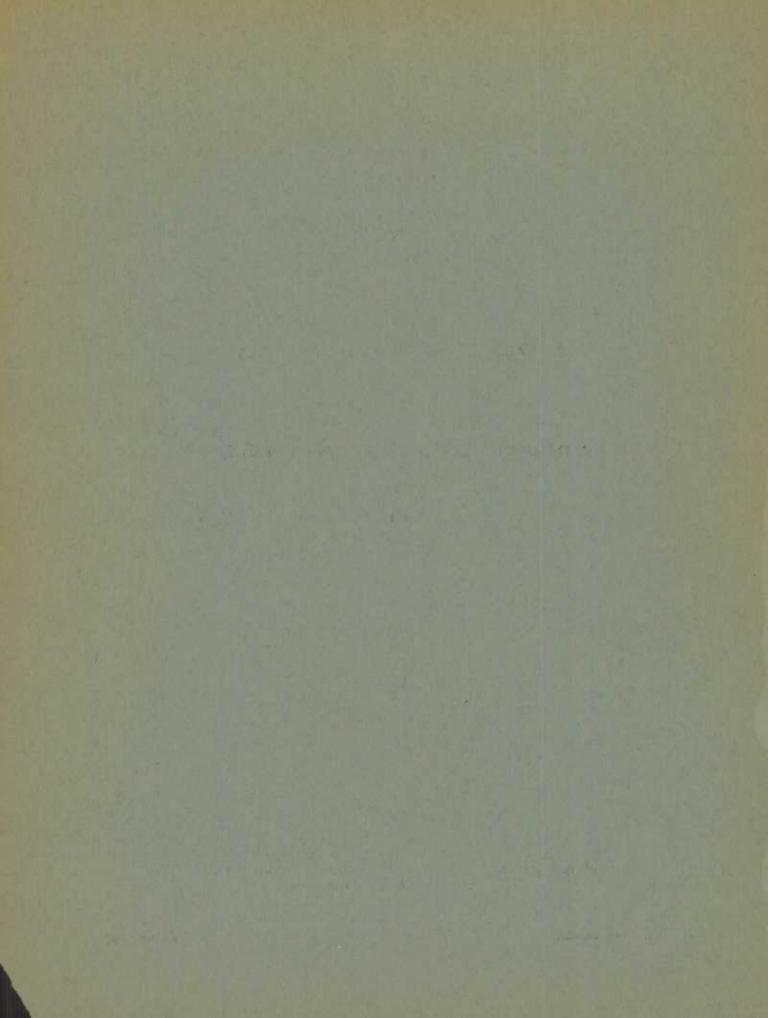
EIGHTH SERIES

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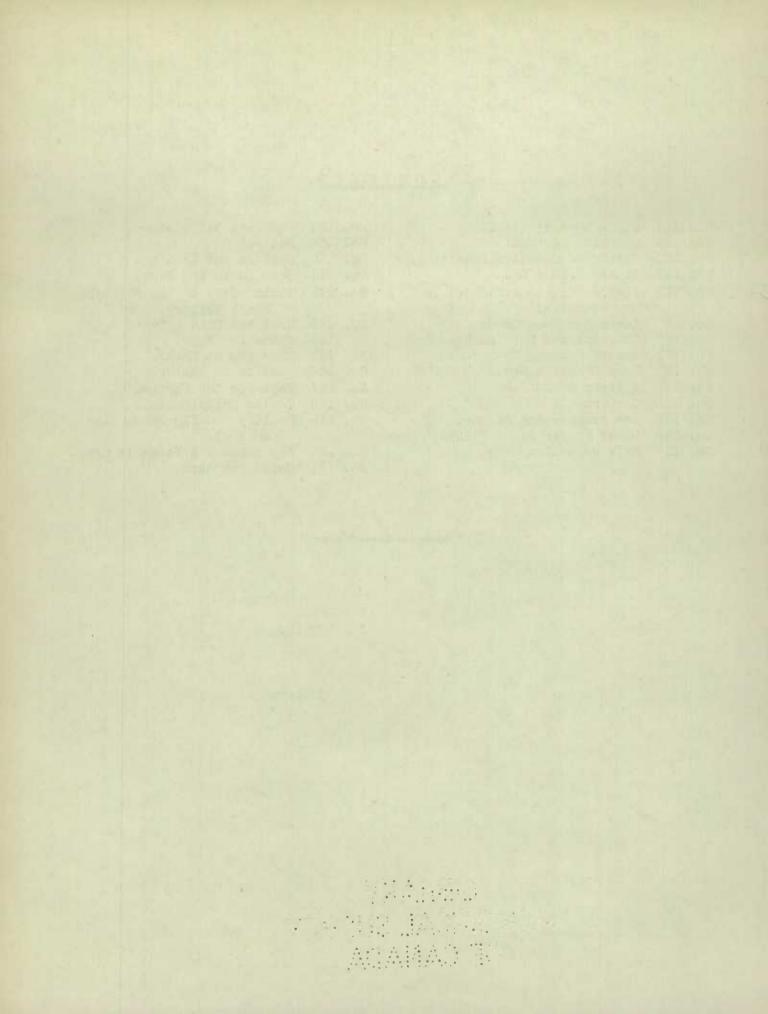
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James Muir,

Editor.





No.124 - Maple Harvest Time

War-time restrictions on the use of cane sugar may bring into production this spring many Canadian maple groves untapped for years. Maple syrup and sugar makers are urged to tap the maximum possible number of trees, and thus revive in many Canadian homes conditions similar to those pioneer days in the 19th century when maple sugar was the staple sweetener and cane sugar was a luxury.

Due to unfavourable weather conditions and the absence of frost in the ground, the maple sugar season in the spring of 1941 was disappointingly short. A continuous spell of warm, mild weather without night frosts cut short the output, although the product was of generally good quality. The total reported production expressed as syrup amounted to 2,276,000 gallons, a decrease of 27 per cent compared with 1940. However, the 1941 market price averaged 20 cents a gallon above the 1940 figure to give the 1941 crop a total value of \$3,561,200 as compared with \$4,209,300 in 1940.

Canada is now the greatest producer of maple sugar and maple syrup in the world, the only competitor being the United States. Records show that about thirty years ago the Dominion output was only one-third that of the United States, but today Canada's production of maple products is one-third greater than that of the United States. Approximately 37 per cent of the 1941 output was exported to the United States market for use chiefly in the tobacco industry.

Maple trees are tapped in Ontario, Quebec, and the Maritime Provinces, but the greatest producer is the Province of Quebec which accounted for 82 per cent of the 1941 Canadian output. Approximately 50,000 farm families in Eastern Canada take part in the harvesting of this auxiliary woodlot crop, which brings extra revenue at a time when there is little other activity on the farms.

The maple products industry in Canada appears to be organized on a sound basis, and the consumers now buy with confidence in the knowledge that control laws and official marketing grades permit the sale of only pure maple syrup and sugar. Research workers by developing new and more delectable maple—sap derivatives are creating a widening market for maple products.

Maple sugar time in Canada still retains its romantic side. Not even the return of the birds is more redolent of spring than the joyous message, "Sap's running!". As much as ever, old and young alike, delight to frequent the sugar camp on mild spring days to taste anew the varied joys of a "sugaring-off" party.

No. 125 - Mosquito Control

The approach of spring is the best time to commence the control of mosquitoes, because once these pests are on the wing little can be done to prevent their spread. All mosquitoes breed in shallow water, and the most effective time to attack them is before they emerge. In Canada most of the mosquitoes are produced in temporary shallows, such as snow—water pools, rain pools, and the flooded margins of ponds, lakes, and streams. Their eggs are laid during the warmer months but usually do not hatch until after passing through the winter under the snow blanket on the dead leaves and soil in low places. When the snow melts and the ground is flooded, the eggs hatch.

The larvae develop slowly when the water is cold. When they reach full growth they are transformed into pupae (wrigglers) and emerge shortly afterwards as winged insects. As a rule, the largest number of mosquitoes develops from late April to

June. Other mosquitoes breed during the summer in places such as rain barrels. However, permanent control entails a systematic campaign in the fall, attention being paid to the drainage of swampy land and ditches, and the filling in of hollows likely to hold water later on. Both the larvae and the pupae breathe through tube-like organs which they force above the surface of the water to the outer air. A little petroleum oil poured on the water sufficient to form a thin film on the surface penetrates the tubes and chokes the insects: Only the female mosquito bites and her need for blood to mature her eggs transforms her into a fierce and persistent hunter.

Although individuals on their own property can assist greatly by preventing mosquitoes from breeding, best results are obtained only when the work of control is organized by municipal or other authorities under competent direction. Many recipes are in vogue for protection against bites. Some of the most effective, together with the life history of the mosquito and methods of control, are to be found in the publication "Mosquito Control in Canada", a copy of which may be obtained free by writing to the Publicity and Extension Division, Dominion Department of Agriculture, Ottawa.

No. 126 -- Canadian Strategic Metals

The present war is a war of metals and their alloys and the British Empire, yes in fact, the United Nations, are fortunate in that the mining and metallurgical industries of Canada are now so well developed. Such was not the case during the last war when many of the products of the Canadian mine had to be shipped abroad to be treated. Canada can supply large quantities of the essential war metals and minerals but cannot completely satisfy the great maw of war destruction and the needs of private consumption as well. Control and salvage is therefore necessary to ensure available materials being placed in Canada or with friendly or allied countries where it will be the most effective.

The third year of the war has witnessed an increase in the tempo in output from Canadian mines, reaching the highest point ever attained in the history of Canadian mining. On Canada's metal mines rests almost completely the burden of supplying nickel for war purposes. During the past twenty years large sums have been spent on building up new peace—time uses. These have now been drastically curtailed where possible to supply the armament industry. Copper and zinc, the essential metals in the manufacture of brass, are being produced in ever—increasing quantities. Though lead does not hold the strategic position of the other common metals, consumption is overtaking production. This may also be said of most metals.

In addition to maximum outputs of copper, lead and zinc, plans to produce other metals of strategic importance were in evidence during the year. It has been announced that a plant to produce magnesium metal from dolomite will be built near Renfrew, Ontario; a plant has also been erected at Farm Point, Quebec, to extract brucite. Plans are underway for the recovery of tin and two mills have been erected for concentrating manganese ore. Tungsten occurs in many parts of Canada and during the past two years shipments of ores have been made; Canada is now producing more mercury than she needs, whereas before the war she produced almost none. Iron ore is produced in larger quantities than in the previous year, while chromium metal deposits are being developed at a rapid pace.

Owing to wartime censorship, no figures are permitted to be published on the production of base metals or certain industrial minerals which play such an important part in the allied war effort. It is sufficient to say that Canadian base metal mines, smelters, and refineries worked to capacity during 1941.

No. 12? -- Dinner from a Can

If there was ever an indispensable industry it's that one carried on by some 367 operating plants, in Canada, employing an average of 10,475 workers each year, and having a production value in 1940 of about \$55,180,000. Of what else could we be speaking but the Canned Food Industry — the industry that takes tropical fruits to the northlands, salt water fish to the Prairies and makes light of the four seasons.

The market for the products of this enterprise has been enormously extended in the last couple of years or so. In addition to satisfying the discriminating tastes of consumers in both city and country, the producers must meet the demands of a steadily enlarging personnel in the armed forces, and supply large quantities of food to Great Britain and other Empire Countries.

Canning of fruits and vegetables is carried on most extensively in Ontario, British Columbia and Quebec, where climatic conditions for growing the products are most favourable. From a recent report on the industry it would appear that canned soups and fruits lost favor somewhat during 1340 and that Canadians developed an increasing taste for vegetables, catsup and sauces, jam and jellies and marmalades. It is interesting to note, however, that baked beans didn't fare so well in the popularity contest, production dropping about a million cans from 1939. Carrots, the food with the Vitamin A reputed to be of great benefit to pilots because of its influence upon eyesight, showed a substantial increase in production of over 700,000 cans. Even spinach managed to make a few more friends and influence a few more people during 1940, selling value increasing by almost \$57,000 over the previous year. Apple juice is assuredly gaining favor, there having been almost million more cans of the beverage sold during 1940 than the year before.

Judging from the preliminary report for 1941, soups came back into their own last year, spinach retained most of its enthusiasts, and fruits, especially those native to the temperate zone, polled a larger majority than the previous year.

Stocks of fruits held by canners, wholesale dealers and chain store warehouses in the Dominion on the first of January this year totalled over 4,450,000 dozen cans as compared with some 10,000,000 dozen cans of vegetables. Both showed increases over the same month in 1941.

No. 128 - Fleece Weights and Sheep Selection

No one knows the ultimate limit to which sheep can go in producing wool. It is known that sheep of unimproved breeds in certain parts of the world produce fleeces weighing only a couple of pounds. On the other hand, fleeces weighing around thirty pounds have been produced by individuals of some of the best wool producing breeds. Thus there is a wide range in the wool producing ability of sheep. This can be seen even within single flocks where differences as high as ten pounds of grease wool may exist between individuals of the same breed, age, and sex, reports the Dominion Experimental Station at Lethbridge, Alta.

It is this variability that gives the sheep breeder the chance to improve the average fleece weight in his flock. If all sheep produced the same amount of wool, selection would be of no benefit but where differences do exist the removal of the poorer individuals will result in an increase in the average weight of fleeces produced by the remainder of the flock. Investigations at the Lethbridge Station and

at other institutions have shown that the production in one year is a fair indication of what it will be in succeeding years when compared with the average of the flock. This does not mean that the ranking of each individual will be exactly the same year after year but it does mean that the poorest in one year will continue to rank in the lowest group year after year and selection will have a permanent effect on the group in which it is practiced.

On the average, ewes with heavy fleeces will produce daughters that have fleeces heavier than those produced by daughters from light fleece dams. This means that selecting breeding animals for heavier fleeces will improve the average yield of the next generation.

The most opportune time to check on the wool producing ability of the sheep in your flock is at shearing time. A small spring scale is all the equipment required for getting the desired information. After a few fleeces have been weighed an estimate can be made of the minimum weight that should be retained in the flock and the sheep producing fleeces below this weight should be marked for culling. If this practice is followed for several years a marked improvement in fleece weight in the flock may be expected.

In connection with fleece weights it should be remembered that shearling sheep will usually average less in fleece weight than mature sheep and consequently culling should be done on the basis of weights within age classes. All classes above two-shear may be combined without serious error.

No. 129 - Increased Wool Needs

Canadian wool requirements have been substantially increased in the last few years due largely to the manufacture of military clothing, and with recent war developments threatening to restrict imports the quantity and quality of the home product assumes greater importance. It is quite likely that the annual production of Canadian wool will experience a sharp increase. When this does take place the present wool grading regulations provide the groundwork for an efficient marketing system.

With the introduction of wool grading regulations in Canada in 1941 the volume of wool graded reached 8,783,223 pounds compared with 4,058,754 pounds in 1940 when grading was still on an optional basis. The 1941 figure includes most of the shorn fleece wool handled through commercial channels. The grading regulations do not apply to pulled wool, washed wool or fleece wool used in home handicrafts.

Analysis of the 1941 figures shows that of the total graded, 27.4 per cent consisted of fine and fine medium grades which are suitable for the manufacture of fine civilian woollen goods. The medium and low medium grades which are largely suitable for military requirements amounted to 56.4 per cent. The low staple and coarse grades comprised 8.4 per cent and reject grades totalled 7.8 per cent.

During the past year grading was carried out in a total of twenty-six registered wool warehouses located at suitable points throughout the Dominion. From these warehouses manufacturers can buy Canadian grown wool which is free from rejects and graded according to length and fineness of staple as well as degree of shrinkage.

A feature of the present regulations is that the identity of all growers' clips must be maintained until they are officially graded. It has thus been possible to return a grade statement to the producers indicating to them the merits or shortcomings of their product. With the information gained from these grade

statements and because of the realization that all shorn wool must now be graded it is anticipated that the quality of Canadian wool will improve to a marked extent in the next few years.

No. 130 - Charcoal has War-Time Use

The use of charcoal in making light-weight alloys for aircraft construction has resulted in a substantial increase in the production of charcoal in Canada.

Refore the war charcoal was used in Canada principally for kindling fires and as a fuel for charcoal cookers. On this continent charcoal was at one time employed in the manufacture of steel but has been largely replaced in that industry by metal-lurgical coke. In several parts of Europe, in Australia, and in other countries where the price of gasoline is high, charcoal has been used extensively in recent years as a source of producer gas to replace gasoline in the operation of internal combustion engines for buses, tractors, trucks and motor cars. With further reduction of supplies of gasoline such use may assume importance in Canada.

Charcoal may be made from any species of wood but in Canada it is generally made from the heavy hardwoods—maple, beech, and yellow birch. Two methods of manufacture are employed: charcoal kilns and in steel retorts from which, in addition to charcoal, acetate of lime, methanol, and other by-products are recovered. One cord of air-dry hardwood will produce about 650 pounds of kiln charcoal or about 1,000 pounds of retort charcoal.

The earliest known method of making charcoal was to stack wood in bechiveshaped piles and to cover almost completely with earth. By kindling a fire and regulating the air supply part of the wood is burned, producing sufficient heat to convert the remainder to charcoal.

No 131 — Samuel Hearne, Explorer

The public services of Samuel Hearne, the earliest explorer of northern Canada, are commemorated by a tablet placed on the outer wall of Fort Prince of Wales at Charabill, Manitoba, by the Department of Mines and Resources.

Samuel Hearne was born in London, England, in 1745. At the age of eleven he became a midshipman in the Royal Navy, and later entered the services of the Hudson's Bay Compay, who sent him to Fort Prince of Wales in 1765.

At that time the lands to the south of Churchill had been travelled to some slight extent but the vast region to the west and north was completely unknown. Stories were told by the Indians of a great mine of copper which lay towards the Arctic. These stories were of much interest to the Hudson's Bay Company, and were the impelling motive for Hearne's journeys to the North in 1769, 1770 and 1771. On the last of these expeditions he discovered the Coppermine River and was the first white man to reach the Arctic overland from Hudson Bay.

From 1670 to 1774 all the posts of the Hudson's Bay Company were situated on the shores of Hudson Bay and James Bay, but in 1774, as a result of the advent of the Montreal traders, Hearne established Cumberland House on Cumberland Lake, Saskatchewan. This was the first inland post of the Hudson's Bay Company and its arection marked a new era in the fur trade and the beginning of the rivalry

between the Hudson's Bay Company and the other fur trading companies.

In 1775 Hearne was appointed Governor of Fort Prince of Wales, and was in charge of the fort in 1782 when it was captured by a French naval force under La Perouse. Hearne was taken as a captive to France, but in 1783 he was released and proceeded again to Churchill, where he remained until 1787, returning then to England, where he died in November, 1792.

No. 132 - Busy Canadian Bee

Within a few weeks millions of new workers will be busy aiding the Canadian war effort; many of them are already here and many more will shortly arrive from the Southern States to assist in the job of food production.

Normally the bees in Canada produce from 25 to 29 million pounds of honey each year, but they could double the output if necessary. Wax is another product of the bee now in great demand for many purposes. With certain sources of supply eliminated or curtailed, the honey bee must endeavour to meet the emergency with greater production.

The honey bee in doing an efficient production job of her own also assists in increasing the yield of many other products. Farmers and gardeners are not a little worried over the possible shortage of seed. Most seed and vegetable plants cannot produce seed or vegetable without cross-pollinization. The methodical honey bee in her search for nectar distributes the life giving pollen from flower to flower. The rosy apple, juicy plum or luscious cherry would be practically unknown were it not for the visiting bee during blossom time.

War production officials recognize the importance of the honey bee in war time economy and have granted certain priorities to the beekeeper who in turn should co-operate fully in providing for his bees the proper conditions that will enable them to work to their fullest capacity.

No. 133 -- A Story of Coffee

Abdullah the Arab kept goats. Day after day he would herd his goats far up into the hills beyond the encampment, up where the pasture was ample and luscious. Day after day he would laze in the sun and contentedly watch the animals wax bigger and bigger and fatter and fatter. One day after driving his prize herd further than usual he noticed them avidly nibbling on some strange small berries. That in itself was not surprising, for even in those early days of the fifteenth century goats had indiscriminating tastes. However, the unusually stimulating effect of the plant was something again. Never before had Abdullah's goats been so frisky, or so impudently active. This would take some looking into.

Now, Abdullah, observing the renewed vigor and vitality of even his oldest and most placid goats, decided to sample the berries for himself. And he did.

Well, here history skips the details and we're left to picture for ourselves a refreshed, and animated Abdullah. Whether it was drip or regular grind, we will never know, but we are certain it was coffee he tried.

Coffee made its leisurely way from Arabia through Egypt, Turkey, Java, the

Netherlands Indies and West Indies, finally coming to Latin America. The Turks introduced coffee to Europe around 1683 when some bags were inadvertently left behind during the scurry of a rather unexpected and hurried departure from camp when Vienna was under siege. So Europeans initiated the new beverage, and began cultivating it on their Java plantations, during the early part of the 19th century switching to their colonial plantations in the Caribbean.

By way of the botanical gardens in Amsterdam, from which coffee seedlings had been sent to the Colony of Netherlands Guiana on the northern coast of South America, coffee arrived in Brazil. Unlike rubber, it was not native to the country. However, the soil and climatic conditions prevailing were conducive to bountiful crops of the new plant and in the 19th century Brazil enjoyed a booming prosperity, thanks to the rapid growth of the coffee industry. Today Brazil exports more coffee than all other producers combined. She can produce more coffee in a year than is consumed by the entire world in 14 months. Her climb to this exalted position, however, has not been without setbacks, and serious ones. Many problems had to be dealt with, problems requiring above all else a sense of fairness for their ultimate and successful solution.

Although our neighbours to the South consume the greatest amount of coffee in the world, more than all of Europe combined as a matter of fact, we import a considerable amount as well. Most of our imports along this line come from British East Africa, Brazil, Colombia and Jamaica. In 1940 over 41 million pounds of green coffee beans were roasted in Canada, according to firms engaged in the industry reporting to the Bureau of Statistics. During the process of roasting there is a 15 or 16 per cent shrinkage in weight, however, making a final total of over 35 million pounds of roasted coffee available for domestic consumption in that year.

No. 134 -- Goobers

Although this may at first sound like an account of the conscripts in the American Civil War, what we're really going to talk about is something edible. We call them peanuts. Ever hear of them?

Goobers, pardon us, peanuts, come mainly from China and India. It's a toss up between the two countries as to which is the world's leading producer. The Chinese were first introduced to this highly proteinous food several centuries ago through the Philippines. But its possibilities were not fully realized. About 50 years ago an American missionary took a few quarts of the nuts back to China on his return from a furlough spent in his home land. So began the peanut industry in China. Today experts have it that there are no bigger or better peanuts on the market than those grown in China.

Canada is her biggest market, although the exports often go via the United States. In 1939-40 our total imports of peanuts were in the neighbourhood of 23,000 quintals, or over two million pounds, almost 80 p.c. of China's exports of unshelled peanuts. In 1940 we received around 14 million pounds of kernels from China.

In addition to the kernels themselves, peanut oil is a valuable item of commerce. We use good quality peanut oil as a substitute for olive oil, as a salad oil, as an ingredient of margarine, and in the process of soap making. In China the peanut cake, left after the oil has been expressed, is used for cattle feed, and when high-grade nuts are used, the cake is ground with flour and utilized in the making of bread. Then, of course, the quantity consumed in the form of

candy, confections and peanut butter is considerable.

Last year Canada adopted a licensing arrangement which somewhat restricted the import of peanut kernels from China, possibly with a view to increasing the imports from India.

No. 135 - New Prospecting Ground

Dominion Government geologists engaged during the past field season in an exploratory survey of a 30,000 square mile section of Quebec, lying east of James Bay, report the presence of a large band of volcanic and sedimentary rocks which they describe as being worthy of intensive prospecting for gold and other metals. The favourable rocks follow the Eastmain River for 140 miles and are 15 miles in width. The region is one of three within the Canadian Shield in which the Geological Survey made exploratory and reconnaissance surveys during 1941.

In one of the others, north of Chibougamau Lake and west of Lake Mistassini in Quebec, an area of good prospecting ground was disclosed in the form of a band of rocks eleven miles wide and extending east-west for 45 miles.

In the MacKay Lake portion of the Northwest Territories, the third area, approximately one quarter of the area examined was found to be underlain by rocks similar to those in which are located the producing gold mines of the Yellowknife district, 100 miles to the south. The rocks include two bands of greenstone each of which is larger than the band of rocks in which the Con and Negus gold deposits occur. Although they are less than thirty miles from Great Slave Lake, neither of the greenstone bands has been prospected and in fact their occurrence was unknown.

In British Columbia, the mapping of hitherto geologically unexplored or partly explored areas has revealed new prospecting ground. Work that was commenced this year in the McConnell Creek area has shown that the rocks compare favourably with those of most other portions of the province in respect to the occurrence of metallic ore deposits. Of some 900 square miles of new ground mapped in the Manson Creek area, about 350 square miles are considered to be favourable for prospecting. Likewise, the southwest corner of the Hope area in southern British Columbia is worthy of the attention of prospectors.

No. 136 - Birds Prefer Night Flight

Most of the birds that migrate to and from the Canadian northlands prefer to travel at night. The night migrants include all the numerous fly-catchers, vireos, warblers, thrushes, orioles, tanagers, and shorebirds and most of the sparrows. Some species of waterfowl under certain circumstances also migrate by night. Usually the birds launch into flight shortly after dark and stop before dawn. These night travellers may be observed by focusing a low-power telescope on a full moon during the height of the spring and autumn movement. The glowing surface of the moon forms a background against which the birds in passing are clearly outlined. Though a migrant may be flying rapidly, at a great height it will appear to float across the face of the moon.

Some species make their migratory flights in daylight. These include the swallows, nighthawks, chisney swift, various hawks, and the ducks and geese. The

insect-eating birds often combine business with pleasure by feeding erratically on the wing. The others lift at once to a habitual altitude of flight and drive forward unceasingly until the end of the day's journey.

The annual spring migration of the birds usually begins in Canada in the middle of February and continues until early June. The movement to the ancestral breeding grounds is accomplished in the face of many hazards, hardships and adverse weather conditions, and the great distances that some kinds of birds travel on these journeys are amazing. The bobolinks that nest in Canadian meadows winter in southern Brazil and neighbouring countries, while the tiny hummingbird returns each spring from Mexico and Central America.

No. 137 - Milk Molecules

One of the newest words in the English language is "chemurgy"; — the science of breaking down the molecules of every-day agricultural products and re-aligning them into new raw materials from which may be manufactured useful articles.

Milk is the most nearly perfect food. But it is also the most prolific contributor to the modern miracles of synthetic fabrics and plastics—one branch of chemurgy. From every form of "waste" after the manufacture of butter and cheese some further miracle is worked. After we make our cheese we can make butter from the whey; after we skim the whole milk for cream, we can separate the casein or milk curd from the skimmed milk and it is this casein that forms the basis of many of the new products. Here are some of them. The glossy paper coating of magazine paper; cold water paint for interior decoration; film; and shoe polish are all combinations of casein. The smart necklace, bracelet and glamour pin which decorate the Easter ensemble may be moulded from casein plastic. This material, which resembles ivory, is the result of treating casein with acid under pressure and heat. The plastic takes colour beautifully and is cut and moulded into everything from jewellery and toilet articles to composition floor coverings.

In the second World War milk has assumed an increasingly important role. In addition to its primary use as a food, the chemurgists of the world have been experimenting and finding further uses for the fluid dividends of "Elsie" and her sisters.

Casein glue is highly water resistant and is used to cement the thin sheets of plywood used in plane construction. Casein fibre has been successfully manufactured into fur felt from which hats for both men and women are made. Fur felt was formerly made from the hair of Belgium or Polish rabbits.

Milady may use cosmetics made from milk and the medicine men use it in various forms. Calcium lactate is used in the treatment of hay-fever, chilblains, lockjaw, tuberculosis and epilepsy. Sodium lactate is used for insomnia, hysteria and delirium. These are just a few of the uses of milk additional to its food value.

The production of milk in Canada in 1941 was 16,752,823,000 lbs. The consumption of whole milk was .86 lbs. per capita; the quantity used in the manufacture of butter, cheese, ice cream and concentrated milk products was ll_{4}^{1} million pounds or 37 per cent of the total. Casein, a by-product of skim milk, reached a total of 1,277,634 pounds in 1941.

No. 138 -- Canada's Oil History

The importance of oil in the present world conflict directs attention to the discovery of that fuel in Canada more than a century ago. The presence of oil in Enniskellen Township, Lambton County, Ontario, was observed in 1830 by early travellers and pioneer farmers who used the oil for medicinal purposes.

It was not, however, until 1858 that the first oil well in Canada was dug near Oil Springs, Ontario, by J. H. Williams, of Hamilton. The depth of this well was about 100 feet, and oil of a lubricating quality was obtained in the gravel-bed on top of the limestone. Williams' well attracted others to the locality who started digging in many places but only surface oil was obtained as the rock was not penetrated.

The first flowing well was brought into production in 1861 in Enniskellen Township by John Shaw, who drilled into the rock. Shaw, who is described as having been a photographer, is said to have invested everything he had in this well, and had actually been refused further credit by the store-keepers when he struck oil and was suddenly lifted from poverty to riches. The report of the flowing well spread like wild fire and the region rapidly became a centre of intense interest.

A report by Sir William Logan on the geology of Canada for 1863 shows that the production of petroleum previous to July 31, 1861, amounted to only 5,529 barrels. The Enniskillen Township development yielded large supplies of petroleum for a period of eighteen months, but about the beginning of 1863 the yield from the flowing wells became intermittent. Records show that during the years 1861 to 1864 the province exported 2,292,758 gallons of petroleum at a custom's valuation of \$352,855, or a trifle more than fifteen cents a gallon.

Oil is still produced in the Lambton County area of Ontario, but the principal petroleum field in Canada is now Turner Valley, in Alberta, where there are approximately 180 crude oil wells in operation. In 1941 Canada's output of crude petroleum reached a new high of more than 10,000,000 barrels, of which approximately 98 per cent came from the Turner Valley field. Crude petroleum is also produced in other areas of Alberta, in the Moncton district of New Brunswick, and from wells near Norman in the Northwest Territories.

The importance of oil in the life of Canada is recognized by a memorial erected at Oil Springs, Ontario, to mark the discovery of the first oil well in Canada. The memorial has been erected by the Department of Mines and Resources on the recommendation of the Historic Sites and Monuments Board of Canada.

No. 139 -- Not a Nut but a Button

Did you ever play that game called "phytelephus equaltorialis, phytelephus equaltorialis, who's got the phytelephus equaltorialis"? You don't think so? Well, perhaps you knew it as "Button, button, who's got the button". Doesn't that strike a responsive chord in your memory? Don't let the scientific name bewilder you. In plain truth it's the fruit from a tropical tree, the Tagua palm, found growing in the hot, damp jungles of Ecuador.

Growing from 15 to 35 feet high, the tree looks like a stunted palm fern. Blossoms appear at the base of the lower leaves and finally change into round pods in which the Tagua nuts are found. The clusters of pods, or drupes as they are

called, hold from 15 to 100 nuts, and there may be 15 to 25 drupes on each tree.

The kernel is of a particularly hard, white composition, very fine-grained and approaching real ivory in durability. Having been removed from the shell, sliced and dried, the kernels are subjected to extremes of temperature until every bit of moisture has evaporated, and the original bluish white tinge has changed to a pure ivorywhite or cream colour. After these operations each piece of this vegetable ivory becomes as hard and dry as a bone and will readily absorb almost any dye.

Tagua nuts so treated are used chiefly in the manufacture of buttons and have been so employed for some 85 years. However, umbrella handles, chess men, dice, poker chips, religious and ornamental articles and jewelry pieces have also been made from this substance in more recent years. It is an especially good substitute for synthetic plastic. Tests have proven its ability to withstand cracking under severe pressure and intense heat, and its capacity to remain colour-fast when subjected to innumerable washings, dry-cleanings, and blazing artificial sunlight. With defence needs increasing, more and more chemicals formerly devoured by the plastics industries will be used in munitions manufacturing. Thus vegetable ivory will take the place of plastic in countless instances in civilian life.

In the world markets, Canada does not rank high among importers of vegetable ivory. Our imports of this product are small and come mainly from the United States and British Sudan. In peace time Italy was Ecuador's best customer in this regard, leading United States, Germany, France, Spain, Japan and Great Britain, who were all large purchasers in their own right. The beginning of the present war however, saw the British blockade cut off these European markets, and Ecuadorians who depended upon the Tagua nut industry for their livelihood were left wondering. The United States Army made up somewhat for this adverse condition of affairs, by ordering large quantities of vegetable ivory buttons for use on military uniforms equipment. And another step was taken in the consolidation of the Western Hemisphere.

No. 140 -- Gardens and Canning

In so far as home gardens are concerned it is felt that encouragement should be given to all rural communities to be, in so far as possible, self-supporting in vegetables, the Agricultural Supplies Board states. Such a program would aid materially in limiting unnecessary transportation and aid in conserving family purchasing power. The encouragement of an increased number of city vegetable gardens and new community effort in the cities is at present not recommended. While there is enough vegetable seed for 1942 reserves will be slightly below normal for some crops and it seems desirable to maintain adequate reserves against possible seed crop failures. In addition, fertilizers and sprays are made from materials which are vital to the war effort and it is important to avoid waste in their use, the Board states. On the other hand, it is not desired to discourage those who have, in the past, successfully operated either a community or a home garden. In fact, they should be encouraged to maintain their production.

It is desirable that home canning of fruits and vegetables should be undertaken up to the limit that proper facilities and equipment will permit, states the Board. Available information indicates, however, that there are only sufficient new rubber rings and glass jars for normal demands. Furthermore, it is felt that it would be unwise to encourage amateurs to can in the home non-acid vegetables, unless pressure cooking equipment is available. As the supply of pressure cookers is limited, only those who already possess pressure cookers or those who in the past have successfully

used the hot water method will be in a position to can vegetables this year. In the case of fruits and tomatoes, which can be successfully canned by the water method, advice will be released by the Board, if necessary, in plenty of time to take care of any anticipated surplus in the event of either an unexpected reduction in the available timplate, or an unexpected increase in available supplies.

No. 141 - Save Sacks and Bags

From now on farmers would be well advised to take particular care of sacks and bags they may have on hand. The spread of the war in the Orient has seriously affected the possibility of getting supplies of jute, the raw material from which the best bags and sacks are made. In fact it is going to be very difficult to get supplies of jute in any quantities. Jute comes principally from India and is used in various classes of textiles from fine fabrics to coarse bagging, in cordage, binding twine and to meet a variety of needs on the farm.

If you have a number of bags or sacks on hand, the first important measure to preserve them is to keep them dry. Damp rots burlap quickly. Take the bags you have, and odd pieces of burlap, shake them out and spread out in a dry place where you are sure rats and mice cannot get at them. Any kind of cotton or duck bag or sack should also be preserved. You can mend any holes with the odd pieces of material you have, providing of course such pieces are in good condition. What supplies of burlap and canvas material are on hand are required for the fighting forces—so it is advisable to take care of any bags or sacks, as you may not be able to get any more—and it looks as if you won't for a long time.

The average farmer may not appreciate that used feed bags represent a cost to him in his feed purchases ranging from \$2.25 to \$2.75 per ton of feed. If he takes particular care of the bags, he can get a good price allowed for them when he returns them to the feed merchant or to any licensed buyer of such a commodity thereby cutting down on the cost of the feed purchases says the Feeds Administrator. The bags most used by the free trade are the 8 and 10 ounce jute bags in which bran, shorts, chop and commercial mixed feeds are sold

The feed bag situation is going to become more acute as the war continues. It may be regarded as a definitely patriotic policy to do everything possible to preserve the life of feed bags and keep them moving into the trade. There's a ceiling price on used or second hand bags, fixed by the Wartime Prices and Trade Board, but it should be understood that the farmer can hardly expect to get the ceiling price as the price is for bags fully cleaned, repaired, graded and in first class condition. However, bags are now worth more than they ever were and so as to keep up the distribution of feedstuffs must be made aveilable.

No. 142 - Taking Care of the Fighting Men s Toggery

Now that so many of our young people, men and women alike, are in the fighting forces, there is a duty that cannot be overlooked. It is to take care of their civilian clothes pending their return. So it is very timely that entomologists should send us along some notes about taking care of moths. Here is what they say:

Every year, especially during the spring and summer months, clothes moths and carpet beetles do enormous damage to woollen clothing, furs and fabrics of animal origin. With the present urgent need of conserving materials it is everyone's duty to take steps to prevent such losses and thus contribute towards winning the war.

Clothes moths have been troublesome pests for a long time. In the Book of Isaiah appears the following reference to their ravages: "The moth shall eat them up like a garment, and the worm shall eat them like wool." More than 2,000 years ago, the Greek scientist Aristotle wrote of the small animals which occur in wool and woollen goods and are present "in greatest numbers when the wool is dusty." The Roman, Pliny, thought that "a suit of clothes placed upon a coffin will be forever proof against the teeth of moths." In the Middle Ages it was believed that clothes "wrapped in the skin of a lion have nothing to fear." This was only superstition, and is ignored today, when people are fortunate in having scientific knowledge to guide them.

According to information issued by the Division of Entomology, clothing, blankets, and other articles subject to damage should be thoroughly brushed or sent to the dry cleaners before being stored away during the warm weather. Following this they may be placed in boxes or trunks made as moth-tight and gas-tight as possible by sealing all cracks with adhesive tape. To remove any danger of infestation, about one pound either of fresh naphthalene flakes or paradichlorobenzene crystals should be scattered in each large trunk full of clothes and the lid closed tightly. The concentrated fumes from these chemicals are deadly to the insects. Clothing in moth bags may be given additional protection by adding a few ounces of one of these substances to each bag. As the fumes are heavier than air the material should be suspended in cheesecloth in the upper part of the bags. To retain the fumes and to keep out moths the bags should be of some fairly impervious material such as heavy brown paper free from holes of any kind. Damage to piano felting may also be guarded against by suspending about one pound of naphthalene or paradichlorobenzene in cheesecloth bags inside the piano, and keeping it closed when not in use.

The larvae of clothes moths and carpet beetles may develop in many out of the way places where lint and dust collect, such as inverted lamp globes, furnace air shafts, floor cracks, behind sideboards, and even in the mending basket. Discarded clothes and furnishings left in the basement or attic are also a frequent source of infestation. A periodic house-cleaning, which takes into account all these and similar likely breeding places, is one of the most effective control measures. Rugs should be cleaned on both sides. Where available, a vacuum cleaner is a valuable aid in doing a thorough job.

If the house is to be closed for a long period, it is wise to scatter naphthalene or paradichlorobenzene literally over rugs and carpets, afterwards rolling them tightly and tying them up in stout brown paper. Upholstered furniture may be treated in a similar manner.

Much is heard nowadays of so-called moth-proofing substances. While some of these have definite value, none gives complete and permanent protection under all conditions. A simple and fairly effective preparation for home use may be made by dissolving two ounces of sodium fluosilicate in one gallon of hot water. If this is not available, a saturated solution of sodium fluoride has considerable merit. The solutions may be used for treating rugs and furniture coverings, providing there is no danger of water damaging the fabrics. They should be applied when cool by means of a sprayer or a sponge, using sufficient to saturate the material. When dry, the slight "bloom" that may appear on the surface should be brushed off. Sodium fluosilicate and sodium fluoride are poisons and should be handled with due caution.

No. 143 - Wool and Binder Twine

or sisal string to tie wool fleeces after shearing. Use paper string only. If paper string is not available the fleece should be left untied.

The Canadian Wool Board Ltd., has made a ruling that any wool tied with binder twine is subject to a penalty deduction of one cent per pound.

The reason that wool tied with binder twine is penalized is because twine fibres get caught in the fleece and the strands of jute or sisal cause defects in the finished wool fabric. Moreover, fleeces tied with binder twine slow up production and reduce the quality of wool products—and just now with difficulties in the way of getting normal supplies of wool from Australia and New Zealand, every fibre of Canadian wool is required.

While it is true that some particles of paper string or twine mix with the wool in the fleece they are easily removed and have no effect on the final woven product.

To use binder twine to tie the fleece is an expensive business—and what is equally as important it just isn't playing ball with the fighting forces, for whom most of the wool is required.

No. 144 -- Bonus for Eggs

For the purpose of encouraging Canadian egg producers to supply the maximum quantity of the best quality eggs for Britain during 1942, the Agricultural Supplies Board has been authorized under an Order in Council to pay a bonus of three cents per dozen on all Grade A eggs purchased for export under the present agreement with the British Ministry of Food. An additional bonus of one-half cent per dozen will be paid for oil dipping such eggs, a process which helps retain the quality.

Existing contracts with the British Ministry call for the delivery of at least 1,272,000 cases of eggs in 1942. At the present time egg dealers supplying eggs for Britain are receiving the contract price of 29 cents for Grade A Large and 28 cents for Grade A Medium at seaboard, plus the three-cent bonus paid by the Canadian Government. Exporters are, in effect, receiving 32 cents for Grade A Large eggs at seaboard and buying levels from producers throughout Canada are based on that price. The Dominion Department of Agriculture maintains a careful check on prices to ensure that the benefit of the bonus is passed on to the producer.

The question is often asked—"Why is the bonus not paid direct to the producer?" The answer is twofold. First, it is impossible in a product as widely produced as eggs, to determine which producer's eggs have gone into export packs. Secondly, if the bonus were paid to producers it would go only to those whose eggs went for export. The majority, whose eggs are sold at home, would, therefore, not benefit. Under the present method all producers, whether their eggs are sold at home or for export, receive the benefit of the bonus. This is so because the domestic market, in order to procure eggs, must pay the equivalent of the export price, which is augmented by the bonus.

The bonus will be limited to Grade A since the British Ministry is asking that no less than 87 per cent of the eggs under the spring contract be of that quality as contrasted with a division of 60 per cent A and 40 per cent B taken under the 1941 spring contract.

The effect of the bonus assures egg producers of a stabilized price throughout 1942 for top quality eggs. The bonus will not be paid on Grade B and Grade C eggs.

No. 145 - Diamonds at Work

One of the most amazing materials to swing its peace-time functions into line for large scale war-time production is the diamond. No, not the scintillating gem you associate with jewellery and ornaments, but its homely, hardworking brother, the industrial diamond. He's the one who has donned his overalls and buckled down to help "finish the job".

Basically, diamonds are pure carbon, the hardest substance known to man. For the most part industrial diamonds are stones imperfectly crystallized or of dark colour, and are a by product of mining for gem stones. There is one variety, however, known as the carbonado or black diamond that is mined for itself alone. Opaque, without a clear-cut, crystalline form, and usually yellow, dark grey or black in colour, the carbonado is the principal product of Brazilian mines, the source of most of our industrial diamonds.

Because of its extreme hardness, the diamond plays a part in the defence programme that could be performed as efficiently by absolutely no other substance. It is of such importance in industrial work that a shortage would slow up production of war materials to a tragic extent. It is used in lathe tools for rapid and accurate machine finishing of metals; in cutting to exact form the machinery grinding wheel that is used in making microscopically fitted gears for automobiles, ships, airplanes, gun carriages and submarines; in drilling holes in porcelain and glass; in pivots for chronometers, large capacity electric meters; finishing torpedo tubes to mirror like smoothness; in turning out lenses of bomb sights, range finders, telescopes, aerial cameras; as reproducing points in making master phonograph records, and hundreds of other vitally important uses. The principal diamond producers in the world today are South Africa, which is known as the Diamond Continent, Brazil and India. Mexico is also a producer and since 1937 Venezuela and British Guiana are producing. The four largest diamonds in the world of the ornamental category were discovered in South Africa. The Axis submarines lurking in the southern sections of the Atlantic are jeopardizing the route to the South African ports, so the mines in South and Central America will become strategically very important as sources of industrial supplies of diamonds. Data relating to Canadian imports and exports of diamonds are not available for publication, but a recent report on the diamond drilling industry for 1940 gives the value of stones and ready-set bits purchased by the firms engaged at over \$881,000. Ontario and Quebec are the chief centres of this industry in Canada.

It is interesting and gratifying to learn that in 1940 skilled personnel from the Canadian Diamond Drilling Industry participated in important engineering work conducted by the British army in Europe

No 146 - Factice in Rubber

Owing to the shortage of rubber, interest is being shown in the subject of substitutes and of compounding materials. Among these is "factice", a product of the action of sulphur or sulphur chloride on vegetable, fish or other oils. Material of this kind has been used to some extent in the rubber industry for a number of years and may now come into greater demand.

Brown factics is made by treatment with sulphur at 160-200°C, the soft kinds containing low sulphur from strongly blown oils; harder varieties from raw oils contain up to 20 per cent sulphur. White factice is derived from rape or colze colze oil by slow addition of sulphur chloride to the extent of 25 per cent. Factices are solid jellies, insoluble in rubber solvents; they disperse into very

dilute gels and can be saponified or converted into soap by treatment with alkalies. Brown factice is used in hot cured mixings, white in cold-cured. Erasing rubbers contain white factice; in some instances rubber is absent altogether. It is also used in rubber proofings, to which it imparts a characteristic smooth feel. Factice is sometimes used as an adulterant of reclaim and of gutta-percha. Another form of factice is made by treating warm oil with a small quantity of flowers of sulphur and then completing the treatment with the chloride. This product has fairly good mechanical properties and is used in cut sheet. There is a tendency to regard factice less as a substitute than as a definite compounding material introduced to improve the aging and produce good effect in the mechanical working of stocks; it does not oxidize or become resinous. It shows no inclination to ropiness in spreader stocks and it restrains blooming. Coloured tiles containing factice do not curl and do not so readily lose their tint.

This organic material possesses in some degree the characteristic elastic properties of rubber and can therefore be incorporated in vulcanized rubber in large amounts without destroying its "rubbery" character. The tensile properties and abrasion resistance of rubber containing factice are, however, poorer than when factice is not used. Rubber goods containing factice cannot be used in contact with steam or hot water.

No. 147 - Maps for the Forces

The number of maps distributed by the Legal Surveys and Map Service of the Department of Mines and Resources for the first three months of 1942 totalled over 206,000 and weighed approximately nine tons. This of course included distribution to Canada's fighting forces.

The demand for maps from the fighting services has been enormous since the commencement of the war; the Army for detailed topographic maps, the Navy for hydrographic charts, and the Air Force for air navigation charts. The Hydrographic Service attends to the hydrographic charts, the Legal Surveys and Map Service the air navigation charts.

Fortunately a series of air navigation charts in Canada had been commenced before the war started and a few sheets along the Trans-Canada Airway had been printed. Their number has now been increased to sixty sheets. In general the coverage is over the Atlantic and Pacific defence areas, along the designated civil airways and over the operating areas of the British Commonwealth Air Training Plan. It is the Air Training Plan that requires the maps in large quantities, two or three which cover the areas where training schools are the most numerous are used at the rate of about 15,000 sheets per year.

The requirements of the Air Force are not limited to air navigation charts; new schools opening for different purposes need a wide variety of maps and charts for classroom instruction. On the other hand, the shifting of the centres of conflict shifts the areas over which our planes may be required to operate and over which it is imperative that suitable maps be made available for aviation. There is close co-operation between Canada and the United States in their preparation.

No. 148 -- Indian Enlistments

ancestors. According to preliminary figures compiled by the Indian Affairs Branch at Ottawa, over 1,200 Indians have already enlisted in the armed forces in Canada. This figure is expected to be increased considerably when all the agencies throughout the country have reported. There are, no doubt, many Indian enlistments which have not been reported officially. Some Canadian Indians are known to have enlisted in the American Air Force and may now be striking down the enemy with winged Tomahawks instead of the tomahawk which their forebears used in days gone by.

According to the official records of the Department more than 4,000 Indians enlisted for active service in the Canadian Expeditionary Force during the last war. This number represented approximately 35 per cent of the Indian male population of military age in the nine provinces. The fine record of the Indians in the last war appears in a particularly favourable light, when it is remembered that their services were entirely voluntary as they were exempted from the provisions of the Military Service Act.

The Indian soldiers gave an excellent account of themselves at the front, and their officers have commended them most highly for their courage, intelligence, efficiency, stamina, and discipline. In daring and intrepidity they were second to none. Many of them were hunters in civil life and in consequence were expert marksmen. As a result of this experience they were able to render valuable service as snipers, and in this branch of fighting were unexcelled. They displayed characteristic patience and self-control when engaged in this work and were known to sit for hours at a vantage point waiting for a chance at the enemy sniper. In this way they did much to demoralize the sniping system of the enemy.

Today, the Indians of Canada are found in almost every branch of the armed forces and may be relied upon to follow the example of courage and devotion to duty set by their forefathers a quarter of a century ago.

No. 149 - Poultry and Egg Production in 1941

With increasing public interest being shown regarding shipment of foodstuffs to Britain, especially eggs, we feel that a few up-to-date statistics regarding Canada's poultry and egg production would be extremely timely information.

Increased poultry production has been recorded on Canadian farms during the past few years. This situation resulted from relatively abundant feed supplies and better markets for both poultry and eggs. The industry has also received an added impetus since the War through the shipment of large quantities of eggs to Great Britain. The total exports of eggs advanced to 16,276,256 dozen in 1941, an increase of 15,000,000 dozen over the 1939 shipments and 5,000,000 dozen over those of 1940.

The number of poultry on farms was estimated at 66,513,000 at June 1, 1941, an increase of 2,250,000, compared with the number recorded at that date in 1940, and approximately 4,000,000 above those shown two years ago. Advances of 3.9 p.c. for hens and chickens, and 1.9 p.c. for turkeys were shown; ducks and geese declined almost 1 p.c. The gross farm value of poultry advanced from \$47,000,000 in 1939 to \$51,000,000 in 1940 and \$59,000,000 in 1941. The average values per bird were 83 cents for hens and chickens, \$2.11 for turkeys, \$1.62 for geese and 99 cents for ducks.

The production of eggs was estimated at 244,154,000 dozen in 1941, an increase of 7,000,000 dozen over the farm output of the previous year. The average production

per hen was 112 as compared with 111 in 1940, and the total farm value of \$52,082,000 was the equivalent of 21.3 cents per dozen in 1941 as against 19.5 cents per dozen in 1940. The gross farm value of poultry and eggs amounted to \$111,403,000 and the sales income was \$50,202,000. Compared with the previous year these figures show increases of 15.2 p.c. and 13.5 p.c. respectively.

These facts and figures were compiled by the Cold Storage Division of the Agricultural Branch at the Dominion Bureau of Statistics.

No. 150 -- Soybeans - A Valuable Crop

War-time conditions have brought about an urgent need for vegetable oils in Canada. Oil-bearing seeds such as flax and soybeans must be depended upon to supply this need. In Canada the soybean acreage has never been large - ten to twenty thousand acres, but in addition to this production the equivalent of thirty-five to forty thousand acres has been imported in soybeans and soybean products. It is therefore necessary to increase substantially the production of soybeans in 1942 in order to meet Canadian requirements.

The soybean is a crop which may easily be expanded. The two main features of this crop are simple cultural requirements and a minimum of hand labour. The culture of soybeans may be briefly described as adapted to any good corn soil. A well-worked seed bed is desirable. Inoculated seed should be planted about May 15th in rows 22, 28 or 30 inches apart at the rate of about thirty pounds per acre. Weeds may be controlled early in the season by using a drag harrow across the rows of beans. Cultivation between the rows in the later stages of growth should keep weeds to a minimum. Harvesting of the seed is best done with a combine, but if this is not available a binder, reaper or mower with windrowing equipment may be used. The latter methods require a grain separator for threshing.

From a soil fertility standpoint, soybeans offer an added advantage in being a legume and therefore a soil improving crop. When these two advantages of the soybean are considered, together with the urgent need for soybeans, a large increase in acreage should be devoted to this crop in 1942. For further information on the culture and suitable varieties apply to the nearest Agricultural College or Dominion Experimental Station.

No. 151 - Horse Feathers

"It's not the 'opping over the 'edges that 'urts the 'orses' 'oofs, but the 'ammer, 'ammer, 'ammer on the 'ard 'ighway."

We thought we had heard the last clop, clop on the city streets when the gas buggy made its debut, 'way back in 1909. But we had reckoned without a certain little Caesar who has since elbowed and high-sticked his way into the seats of the mighty, leaving death and destruction in his wake. We had been told that history has a bad habit of repeating itself, but never expected that the exigency of world affairs would one day demand the return of ye olde grey mare to the scenes.

However, today, in this year of our Lord 1942, a supposedly advanced age, by the way, we find high-powered, shiny, streamlined descendants of those first "horseless carriages" collecting dust behind closed doors while their owners drag out the horse and wagon. That, my friends, is progress!

The revival of horses developed out of the wartime restrictions on gasoline and rubber tires. All classes of merchants plan to swing back to horse-drawn vehicles for deliveries, so Canadians are expecting a good market for leather goods this year. Manufacturers of harness and supplies will probably be kept busy meeting the increasing demand. In anticipation of a substantial rise in sales, dealers are prominently displaying harness and doing an improved business in the line of repairs. Demand for horses in eastern Canada is expected to be met by stock raisers in Alberta and other western provinces.

The production value of harness in Canada in 1939 and 1940 ran into the millions. It's an interesting fact that the number of saddles manufactured in 1940 was considerably less than in the year before, but in the same period almost five times as many whips were produced. The production value of the miscellaneous leather goods industry as a whole showed an increase from \$8,403,000 in 1939 to \$10,927,000 in 1940.

