DEPARTMENT OF FRADE AND COMMERCE



A FACT A DAY ASOUT CANADA

FROM THE

DOMINION BUREAU OF STATISTICS

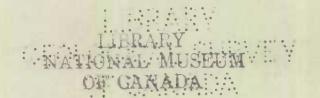
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James Muir,

Editor.

No. 62. -- Telegraphs

You've doubtless heard the well worn quip about the four most rapid means of communication being telephone, telegraph, telegram and tell a woman. Ignoring the last named, a discussion of which might lead us into untold difficulties, we are going to dwell particularly on telegraph and cable operations in Canada.

Service in Canada is kept up by the telegraph departments of the Canadian National, Canadian Pacific, Northern Alberta, Temiskaming and Northern Ontario railways, the North American Telegraph Company which operates north and west of Kingston, the Dominion Government Telegraph Department which operates lines in Nova Scotia, New Brunswick, Northern Quebec and the Western provinces up to the Yukon Territory and a small mileage in Ontario, and the Canadian Marconi wireless system and the Commercial Cable Company.

Some idea of the growth of Canadian telegraph and cable communication during the last decade or so may be obtained from a glance at the almost steady increase in gross revenues for the intervening years, which last year reached a high for the period of almost \$13 million. There are 4800 offices in the Dominion at which telegrams or cablegrams are received and forwarded. These days they are kept humning with messages to and from our boys and girls overseas or those stationed long distances from home here in Canada. Last year over 12½ million telegrams were sent from these offices, almost a million and a half more than in the previous year. Cablegrams sent, exclusive of wireless messages to vessels at sea, numbered over 2 million.

The transference of money by telegraph is a common time and labor saving practice and during 1941 almost \$4 million changed hands in the Dominion in this way. That sum does not by any means constitute a record total, the high mark for the last ten year-period having been set at over \$4½ million in 1932. While most of this was done between Canadian stations, there was also a sizeable amount transferred to and from the United States.

From the time the first electric telegraph communication in Canada was accomplished in 1346 when a message was relayed successfully between Toronto and Hamilton, this form of communication has progressed a long way. In proportion to the population and considering the climatic and geographic conditions of the country, Canada's telegraph system is one of the most extensive in the world. Its service to the railways, the press, the markets and the public in general is invaluable.

No. 63. -- Canadian Mineral Production -- 1

With an annual production from our mines of over a half-billion doltars, and representing as it does such a wide range of products, the men who are responsible for this magnificent production have every reason to feel proud of their accomplishments and contributions to the war effort during the third year of this titanic struggle. Without metals the Allied nations would have no munitions wherewith to beat the Axis nations into submission. How fortunate it is that Canada has an abundance of most of these as the following figures indicate.

The value of the mineral production of Canada reached an all-time high of \$564,000,000 in 1942, this being an increase of nearly \$4,000,000 over the 1941 total despite a drop in gold production of approximately 20 million dollars. Metals as a group totalled \$392,762,562, a decrease of less than one per cent; fuels, including coal, natural gas and crude petroleum rose six per cent to \$90,305,631; other non-metallic minerals were recorded at \$36,139,173 or nearly two millions more than in 1941. The structural materials group aggregated \$44,982,903, representing a slight decrease from the preceding year.

Production by provinces was as follows, with 1941 figures in brackets: Ontario, \$258,423,267 (\$267,425,727); Quebec, \$104,743,101 (\$39,651,044); British Columbia, \$76,035,262 (\$76,341,180); Alberta, \$46,410,000 (\$41,364,385); Mova Scotia, \$31,652,244 (\$32,569,867); Sankatchewan, \$10,612,854 (\$15,020,555); Manitoba, \$14,648,260 (\$16,689,367); Northwest Territories, \$5,225,079 (\$3,860,298); New Brunswick, \$3,503,825 (\$3,690,275); Yukon Territory, \$3,301,414 (\$3,117,992).

No. 64. - Canadian Mineral Production - 2

Not only from the standpoint of record production but also from the point of view of the number of new discoveries and the bringing to fruition developments that were under way in 1941, the year 1942 should be ranked as an outstanding period in the historical records of Canadian mining achievement.

However, it is a well understood fact that no country is blessed with an entire sufficiency in minerals and metals. At the beginning of the wer Canada was fortunate that she had a well developed industry for the production of the common base metals and could produce them in large quantities from the mine to the finished product. But there were other metals which she did not produce as the consumption of them in Canada was small and foreign competition severe.

The cutting off of foreign supplies and the world-wide demand for metals and minerals used in the production of war equipment resulted in an intensive search being made for them, and also considerable metallurgical research for their extraction. Private companies, government departments and individual prospectors joined forces in this work and Canada increased her yield of natural riches in time of need.

Tungsten, molybdenum and chromium had been produced from time to time in minor quantities. Tungsten was known to occur with many of our gold lodes, and careful prospecting was recently instituted by means of the violet ray lamp. In the beginning, tungsten ore was shipped to the mines mill at Ottawa, and since then new mills have been erected in various parts of the Dominion, generally in close proximity to tungsten-bearing gold deposits.

The old Moss molybdenum mine at Quyon, Quebec, was reconditioned and the mill treated local ore as well as ore from other deposits. It is expected that molytdenite production will be greatly increased next year when a mill projected by the Domes Mines has been completed at the scene of a new discovery of molybdenite made in Quebec.

Deposits of chromite which were operated during World War I in Quebec were brought into production again. A promising discovery was made in Manitola during the summer of 1942. A mine in British Columbia can supply the Canadian mercury consumption and have left considerable quantity for export. Indium was produced for the first time in Canada during 1942 and the production of tin as a ly-product from the ores of the Sullivan mine was commenced in a commercial way.

No. 65. -- Canadian Mineral Production -- 3

Perhaps the most outstanding achievement during the year was the production of the metal magnesium. The process which is being used was developed in the National Research Laboratories and consists of extracting the metal from dolomite rock. The plant is located near Renfrew, Ontario.

Canada must import a large part of her consumption of iron ore, but plans for the financing of the Steep Rock Iron Mines in northern Ontario approached the final stage during 1942 and it is not improbable that before another year has clapsed Steep Rock will be our next big mine in the making. Shipments of concentrates are once more being made from radium properties in the Great Bear Lake region.

Coal production exceeded 18,700,000 tons during the year, indicating an increase of nearly 500,000 tons over the 1941 output. Production from mines in Hova Scotia, New Brunswick and Saskatchewan was lower, but output in Alberta and British Columbia was heavier. Towards the close of the year the fuel situation became more acute, labour shortage was being reflected in a lower monthly output when compared with the previous year, and arrangements were being made for the return of some coal miners from the armed forces to the coal mines on a temporary basis only.

Natural gas production, estimated at 42,719,100 thousand cubic feet, was slightly less than in 1941, and crude petroleum production at 10,365,360 barrels was 230,000 barrels higher. In this connection it should be pointed out that Alberta produced 31,000,000 thousand cubic feet of natural gas and 10,150,000 barrels of crude petroleum.

No. 66. -- Canadian Mineral Production -- 4

Among the chief non-metallic or industrial minerals which Canada produces, asbestos is by far the most important, but for reasons of security no figures on production are released. Brucite, a magnesium oxide, occurring with limestone north of Ottawa, was recovered for the first time commercially in Canada by a process developed in the laboratories of the Department of Mines and Resources. It is used in the manufacture of various refractories and can also be used as a source of magnesium metal.

Barite production more than doubled during the year. This came largely from a barite property in Nova Scotia; this property began shipments for the first time in 1941. Cypsum production in Nova Scotia showed a marked decline. Large quantities of raw gypsum are shipped in the crushed form to the United States by boat

from Nova Scotia and shipping conditions on the eastern seaboard may have had something to do with the reduction in gypsum output.

Mica production rose sharply. This mineral is used in considerable quantity as an insulation in electrical equipment and is a war mineral of primary importance. Interest centered around a discovery of a high-grade muscovite in the Mattawa area of Ontario. This is the first large commercial output of muscovite mica in Canada.

Salt production rose 18 per cent to 658,458 tons. Part of this increase was due to the greater demand in the manufacture of heavy chemicals. One of the most interesting developments is the increase in the output of peat moss. Peat moss has wide uses, as an absorbent, an insulator, and in metallurgical processes. Production during the year rose to over one million dollars.

In the structural materials group, cement and lime production indicated an increase. It is not possible to make a very close estimate of the stone and sand gravel production as the sources are wide and the uses varied. Lime increased from 860,885 tons to 897,554 tons. New uses are being constantly discovered for lime and with the growth in the chemical and metallurgical industries in Canada the grade and quality of lime now being used is much improved.

No. 67. -- The New Beckeeper

Sugar rationing and increased prices of honey have made beekeeping attractive to many who have had little or no experience with the activities or needs of the bees.

Beckeeping is a business that should not be undertaken without thought or study. It means hard work for both head and hands and requires close attention to detail. Persons valo are afraid of bees should not keep them and those who are seriously affected by their sting should never go near an apiary.

Before securing bees the beginner should learn something of their activities and how to manipulate them. This can best be done by spending as much time as possible with a successful beckeeper during the summer months and to supplement this experience by reading. Bulletins dealing with the various phases of beekeeping may be secured, free of charge, from the Dominion Department of Agriculture, or from the nearest Dominion Experimental Farm or Station.

In addition to government bulletins, good text books may be purchased from any dealer in bee supplies and possibly through any good book store. The beginner would also be wise to subscribe to one established beekeepers publications. Courses in beekeeping are given by several of the Agricultural Colleges. The new beekeeper should make himself acquainted with the regulations concerning the keeping of bees within the province in which he resides. This information can be obtained from the Provincial Departments of Agriculture.

When deciding upon equipment, purchase only that which is modern and necessary. For producing comb honey at first and later transferring to extracted honey, or both, equipment should be bought that can be used for both purposes rather than special equipment for each. If second hand equipment is bought be

sure it has never before housed diseased bees. It should be sterilized thoroughly before it is used.

For a start the beginner is well advised to purchase one or two good overwintered colonies from a reliable beekeeper, first making sure that the apiary from which they come is free of disease. If such colonies are not available package bees from the Southern States are good substitutes, but if buying package bees be sure to have the necessary equipment on hand to house and care for them when they arrive. The best time to buy bees is the spring, April for packages, and early May for colonies.

Bees are primarily kept for the honey they will produce, but beeswax is also an important commodity. Save every particle of wax possible. It may only be a small amount, but by no means insignificant.

No. 68. -- Repair Farm Machinery Now

In haying time last year a farmer lost ten hours of time and made two special trips to town for repairs when a mower broke down. A small casting, which costs less than one dollar, was lost in the hay field and the mower could not be operated until it was replaced. This delay could have been avoided and valuable time saved for a cost of one cent, as the delay was caused by a cotter-pin which wore off and allowed the casting to fall off the mower. If this pin had been inspected and replaced before the haying season started, the hay crop would have been harvested earlier with less labour hours and at a lower cost.

Next summer many 'last minute' repairs will not be possible due to conditions caused by the war. Provision has been made for the production of a large volume of repair parts, but all dealers may not have all the parts which may be required at a moment's notice. Because of difficulties in transportation and in estimating the requirements of each district, it is necessary to order repair parts early so that the machinery dealers can place the required repair parts in stock.

Both labour and money can be saved by ordering repair parts now and by thoroughly overhauling machinery and equipment this winter.

To determine the repair parts which are required every machine should be inspected. After the first order of parts are obtained the machines should be overhauled and all additional repair parts ordered so that they can be used when the machines are being assembled.

Not only should field machinery be overhauled, but if pumps, grinders, feed hoppers and other such equipment are reconditioned now, labour can be saved next summer.

No. 69. -- Skiing in Canada

Skiing is one winter sport that has taken Canada by storm. The thrill of gliding over snow-clad countryside, sweeping down slopes with the breeze whipping in your face on a frosty winter's day is one which is enjoyed by both young and old alike. The Canadian winter, with its crisp frosty days lends itself

admirably to this winter pastime and it, combined with the ideal terrain that characterizes parts of Canada definitely assures skiing a growing popularity. Thousands upon thousands of persons are heeding the call each year and are joining the ranks with the result that ski clubs and associations are springing up all over the country.

The modern ski has some three thousand years of interesting development behind it, but the first historical mention dates from the sixth century. At that time the Vikings were using "suski", or snow glide shoes for winter travel. These were short, wide boards, covered with seal-skin to grip the snow and to make climbing easy, but for downhill travel they could have been little better than the snow-shoes of to-day. Later, this difficulty was overcome by using one skin-covered ski or "andor" and one runner of polished wood, the skier balancing himself on the runner with the aid of a long heavy pole for the descents. The next improvement was the use of two wooden runners; the early patterns of this type were turned up at both ends so that, if one point were broken, the ski could be reversed.

Nowadays skis are made in several patterns to meet special uses, such as jumping skis, metal edged skis for slaalom and downhill racing, and general purpose skis. The favourite materials used in making them are hickory, ash, maple and birch, all of which have the qualities of toughness, flexibility, and hardness in varying degrees and combinations. Hickory, for example, makes a strong hard-wearing but rather heavy ski, ash makes a relatively light ski, while maple skis are reputed to be very fast.

Experiments in making a laminated ski composed of layers of different kinds of wood glued together in order to produce a stronger, more efficient ski with less waste of material were carried on in Canada as far back as 1924. Although there have been many improvements in laminated skis since that time, especially in the use of waterproof glues, the basic principle has been proved sound and skis of this type are becoming increasingly popular.

No. 70. -- Barrels

In yesterday's Fact a Day a short history of the development of the sport of skiing was given. It might well be stated here that the amount of money spent each year by Canadians in equipping themselves for the ski trails runs into thousands of dollars annually. This is cuite definitely money wisely used. But what about Sonny, whose dad cannot afford to buy him a pair of real factory-made skis?

Ingenuity then has to enter upon the scene. The old apple barrel in the cellar lends itself admirably to the occasion. The staves are strong and tough, can be smoothed nicely and made very slippery; with a strap fastened to each stave the skis are ready and Sonny is prepared to join his more fortunate friends on the ski trails. Then too during the warm summer months the barrel stave finds further use, sometimes having its place in the body work of a cance or skiff; and it is a common thing to see a hammock made from the staves of a barrel.

The making of barrels is divided into two divisions — slack and tight cooperage. Slack cooperage, or barrels made with comparatively loose seams, for the shipping of dry products such as lime, potatoes, apples, dry fish, flour,

cereals, nails and other products which do not require a water-tight container, is probably the most important. Tight cooperage includes the manufacture of water-tight barrels only. These are mostly used for containing liquids, such as whiskey, beer, wine, syrup, cider, vinegar and oil. These are also used for pork and fish packed in salt or brine.

Elm, poplar, maple, spruce, beech, ash, basswood, birch and pine are a few of the types of wood used in the making of slack barrel staves and in 1941 the production of slack cooperage was valued at \$1,308,792, according to the Forestry Branch of the Dominion Bureau of Statistics.

No. 71. - Purification of Used Oil

Thousands of gallons of lubricating oil are wasted every year in Canada. It is a customary practice to drain the oil from an automobile or truck engine every 500 to 1,000 miles and replace with new oil. The old oil is then said to be worn out or dirty.

Oil never wears out, although it may temporarily be made unfit for use by contamination and lose its colour. If the contamination can be completely removed, it is still good.

Any oil in constant service will in time become contaminated with particles of carbon from the cylinder gases, and minute quantities of metal dust from bearings and cylinder walls.

One method of clarifying oil has recently been used on the Dominion Experimental Station at Swift Current with success. The equipment used consists of two small drums for saving the oil, one large drum made into a cleaner, and another in which to put the oil for further settling. When 18 gallons have been collected, it is put in the oil reclaimer drum and mixed with 18 gallons of hot water to which 7 ounces of caustic soda have been added. The oil barrel used as a cleaner has a removable inside mechanism. It consists of a large funnel soldered to a linch pipe, and five galianized baffle plates soldered to the pipe. Water is put into the drum and heated almost to the boiling point. Then the oil is poured into the funnel where it passes down the pipe to the lower end. It spreads around the lower baffle plate and rises through the three-sixteenth inch holes drilled in each plate. The holes are staggered in each plate so the oil is thoroughly mixed with water.

The mixture is kept hot for 24 hours and then allowed to cool and settle for 24 hours. After settling the oil will be on top of the water and can be drained off through the tap in the centre of the drum just above the level of the water.

No. 72. -- Billfish

Probably you never heard of it but there is a peculiar little fish known as the billfish, occasionally taken off the Nova Scotian coast in fishing operations. The billfish is a peculiar looking fellow resembling an elongated mackerel with a bill or beak longer than the head, thrusting out from the upper and lower jaws.

Known also as the saury, skipper, and bluefish, the species is found in temperate parts of the Atlantic on both American and European coasts.

It travels in schools and when pursued by tuna, mackerel or other similar fish, sometimes springs from the water to a height of several feet. Sometimes, too, it, when closely pressed by enemy fish, skips along the surface, with repeated starts, for more than 100 feet without once disappearing beneath the water. It is this peculiarity which gives the name "skipper".

The species reaches a length of 18 inches or so, and is described by some authorities as a "good, wholesome food fish", though in Canadian operations catches are only small and occasional and are used mainly as bait in other fishing.

Fishermen operating off the Halifax coast took some 68 hundredweights of these fish in recent operations. All of the catch was taken in mackerel traps and all utilized for bait. While the fish has been known to Nova Scotian fishermen for many years, it is not common, and is rarely taken commercially in large numbers.

No. 73. -- Soyabeans and the War

For more than a decade we have been hearing a great deal about the soyabean, or soybean as most people here now describe it. First of all the humble soyabean of tropical Asia was proclaimed as a godsend for plastic to make window frames and various accessories of the automobile and the home. It was a real thrill, just as people had been thrilled before that when we began to make vegetable ivory from nuts obtained in Brazil.

During the war, however, the soybean has come into its own in Canada in quite a remarkable way, and here is the explanation. The main purpose of increasing the acreage and production of this crop is to provide more vegetable oil, which is urgently needed. In order to fulfil this purpose, soybean growers should see that their beans are delivered to the mills for the oil to be extracted. There is much to be gained by doing this, for, in addition to the high cash value of the crop itself, it has been demonstrated that the soybean oil meal has a higher feed value for livestock than the beans themselves.

Some growers have for many years used soybeans in livestock rations and with reasonably good results. Much work has been done in recent years, however, to determine the value of the beans in comparison with soybean oil meal as a feed for the various classes of livestock, including dairy cattle, beef cattle, sheep, hogs and poultry. The results have almost invariably been in favour of the oil meal, and the principal reason for it is that in the oil extraction process the protein of the beans is heated and partially cooked and this makes it both more palatable, more digestible and therefore more efficient. For pigs and poultry whole soybeans are cuite unsatisfactory, but the meal can be fed to great advantage. One of the great disadvantages of the beans as feed is, of course, the oil content, which is too high for animals to use efficiently.

That is another reason why the proper extraction of the oil makes the meal a better and more satisfactory feed to use. In sending the beans to the mill, therefore, a double purpose is accomplished, the extracted oil becomes available for war purposes, and a better feed is made available in the form of the meal.

No. 74. -- Butter Rationing in Canada

In a special radio address on December 20 the Wartime Prices and Trade Board announced that butter would be rationed in Canada effective December 21. This step became necessary following the persistent development of regional butter shortages, particularly in the larger cities. Since creamery butter production during the first 11 months of 1942 was approximately equal to that of the similar period of last year, the abnormal disappearance was attributed to the greater purchasing power of consumers and to the development of 'panic buying'.

The purchase of butter by ration coupon was introduced and provides one half pound of butter per person per week. After the first two weeks, coupons became effective in pairs and become void at the expiration of two weeks. The ration should be ample for normal requirements. Spare coupons provided in ration books already in the hands of consumers are being used for the butter purchases.

At the same time as rationing was introduced it was announced that a reduction would be made in the wholesale price of butter which would result in lower retail prices to consumers. On December 28 a reduction in the wholesale price of l_2^1 cents per pound became effective. At the same time, the return for butterfat to producers was protected by an increase in the subsidy payments being paid of six cents per pound to 10 cents per pound. This will be maintained during the winter production season until the end of April 1943, when the subsidy will revert to the former six cent level. The Board estimates that retail butter prices should be reduced by an average of two cents per pound.

It is expected that butter production will continue at a reasonally high level during the winter months, and with the more orderly consumption provided for under the rationing system, it will be possible to build up depleted storage stocks. Should the supply position then become more favourable the ration could be increased, or restrictions otherwise relaxed.

75. - Fats and Bones - 1

This is going to be a little larger dissertation upon a subject than we usually have in the Fact a Day, but it is a subject of such great importance that it seems proper to deal with it at some length. Probably some of you heard Mrs. Phyllis J. Turner speak on the subject over the C.E.C. network recently and you must have been very much impressed. Mrs. Turner is a leading Canadian scientist and, when asked for a copy of her broadcast for readers of the Fact a Day, she kindly sent it along. To make easier reading we have broken it up into more than one story. Mrs. Turner said over the radio in her contribution to the Salvage Program for the collection of waste fats and bones:

Not one industry in Canada can carry on without the use of oils and fats.

Due to the loss of supplies from the Pacific and other areas under Axis control, Canada has made efforts to meet the deficiency in three ways: FIRST: by the increase in the production of oil-bearing crops such as flaxseed and soya beans, and Canadian farmers have responded magnificently to our appeal; SECONDLY: by the curtailment of non-essential uses of oils; and THIRDLY: by the Campaign for the salvaging of waste fats and bones, of which I should like to speak to you this evening.

There are three outlets open to the householder whereby she may dispose of waste fats and benes. She may dispose of them through the local salvage committees in areas where committees have taken on such work, or she may leave her containers of fats and bones for the garbage collector to pick up on garbage collection days in any municipality which has authorized such collectors to render salvage service. If neither of these outlets is available, she may bring her fats and bones to her local meat dealer who has agreed to handle these materials at no small inconvenience. I should like to say how deeply we appreciate the co-operation of the meat dealers throughout Canada in agreeing to take on this task at practically no profit, and I know that housewives will co-operate with meat dealers and show them their appreciation.

I have tried to think of all the questions which housewives might ask in connection with the Campaign and if you will bear with me I am going to recite a "Catechiam" relating to the Salvege Campaign for Fats and Fones.

No. 76. -- Pats and Bones - 2

- Q. What are waste fats used for?
- A. Waste cooking fats are used in the manufacture of glycerine. For instance, two pounds of fat will produce the glycerine required to fire ten anti-aircraft shells.
- Q. Is all the waste fat turned in used for munitions?
- A. The glycerine content is used for explosives and for other items, such as gun recoil mechanisms and floating compasses. After the glycerine is extracted from the fat, the residue is used in the manufacture of soap. Glycerine also has many important industrial and medical uses.
- Q. What are bo es used for?
- A. Bones yield fat for glycerine, animal glue for war industries, animal feed, and fertilizer.
- Q. Should housewives save chicken and fish bones?
- A. The answer is no.
- Q. What is the price that housewives will be paid for their waste fats?
- A. The price will vary according to the amount of freight involved in transporting fats and bones to rendering plants and according to the ceiling prices on tallow and grease in the various areas of Canada. For example, housewives bringing their rendered dripping to retail meat dealers at any point in Ontario and in the Montreal area will receive 4½ cents per pound; in other areas the price will be 4 cents per pound. Scrap fat will fetch 1 cent per pound. No value can be attached to bones due to the freight incurred in moving them to the processing plants. Since the principal motive for housewife participation in the Campaign is a desire to help the war effort, the price is not expected to make any difference in the volume of waste fats turned in.

- Q. Will retail meat dealers make any profit on the waste fats they buy from housewives and sell to renderers?
- A. Their profit will be negligible, since the 1 cent margin which they will receive will barely cover the cost of handling.
- Q. Should housewives go to the trouble of straining their fats through a fine cloth?
- A. Ordinary metal kitchen strainers will adequately remove meat scraps and other foreign matter from fats.
- Q. Are light fats more valuable than dark fats?
- A. Light and dark coloured fats are equally acceptable. Impurities which cause dark colours do not reduce the glycerine content of fat. The same price prevails for all colours and types, whether from ham, beef, lamb, poultry, steaks, chops, and bacon, or reclaimed lard and vegetable or blended shortening.

No. 77. - Fats and Bones -- 3

- Q. Are glass jars and paper containers suitable for waste fat collection?
- A. Paper and glass containers are not suitable. Most renderers melt the fat out of the containers by steam, Paper containers break up in the process. Class jars, if they haven't already cracked and chipped when the hot drippings are poured will certainly do so in the rendering process. Therefore, waste fats should be collected only in clean, wide-mouthed tin cans, preferably of the type used for shortening or coffee.
- O. How extensively should the fats be used before turning in as "waste"?
- A. Since the object of this Campaign is to make Canada's supply of fats go as far as possible, each housewife is expected to get the maximum cooking use and food value from her kitchen fats before turning them over to her meat dealer.
- Q. Why must waste fats and bones be kept in a cool place?
- A. To keep them from becoming rancid. Rancid fat yields less glycerine. Besides, your meat dealer does not want to handle rancid material.
- Q. Must waste fats be turned in to meat markets at any particular time?
- A. There is no set time for turning in waste fats but housewives can relieve week-end shopping congestion at meat counters by taking their collections to the butcher early in the week. Please do not ask your meat dealer to pick up your waste fat. This delivery system is already overtaxed. It is advisable to take your bones and waste fats to your meat dealer frequently in order to avoid decomposition.

No. 78. -- Fats and Eones -- 4

All types of grease and other waste fats are needed to make glycerine. We estimate that from 80 to 100 million pounds of these waste fats are thrown away each year; every pound can be used in Canada's munitions factories.

We must reach a collection rate of 35 million pounds of fats annually to offset possible shortages. Save pan drippings as well as cooked and uncooked fats after you have obtained all the cooking good from them; strain the grease into a clean metal container and when you have a pound or more, sell it to your butcher.

Already many appeals have been made to housewives to do their part on the home front in defeating Hitler. May we add another appeal to housewives to give their whole-hearted co-operation in making the Salvage Campaign for Fats and Bones a complete success. Let the women of Canada make a determined effort to keep the fat out of the fire and into the firing line.

No. 79. - Packaging of Apples

The modern trend in the packaging of apples to assure the highest possible quality and condition to the consumer has been responsible for the swing from barrels to smaller packages, and lately for similar reasons the apple crate has been replacing the hamper. Now the evolution of apple containers is towards even more protected packages. As a result of study and experiments in the use of small bags of moderate air-retaining properties, apples have not only reached the retailers in full flavour and moisture content, but the consumer has been enabled to retain the harvest freshness of the apples by keeping them in these bags until the apples were required for eating.

The bags, in turn, have been packed in a corrugated master container, and the handling in both storage and transportation have brought forth much favourable commendation. Wartime conditions have made further experiments with this package out of the question, and a comprimise has been made. Instead of using air resistant bags, a liner of similar properties has been used. This consists of a brown kraft paper of 30 pounds weight wet waxed to 40 pounds. The carton itself is 90-pound corrugated kraft holding half a bushel of layer packed apples.

The first results, however, showed a tendency towards cheek bruising of the apples, an occurrence common where apples exert pressure on each other. To overcome this, corrugated layer dividers were used, wet waxed to prevent moisture absorption from apples in contact with it. Although much of the bruising was eliminated, some bruising still existed where apples touched between the rows. The next step then was to use strips of similar corrugated paper as row dividers. This resulted in a complete elimination of the bruising under handling and shipping conditions.

No. 80. - Farm Machinery Situation

Because it was necessary to conserve the limited supply of new mechines so that they would be available to meet the most essential needs, farm thine rationing had been found necessary. Even with rationing it might not be possible to take care of every essential need but it would insure the best possible form of equitable distribution. Care had been taken to insure allocation of available supplies for Western and Eastern Canada so that all parts of the Dominion would secure a fair share of tonnage. The Canadian farmer, therefore, is assured of equal treatment with farmers in the United States. Rationing, co-operative use of implements, and maintaining machines in operation were the answers to the 1943 situation.

Features of the rationing system are (a) each manufacturer and importer is required to make an equitable allocation of available supply to each Province.

(b) A farm machinery rationing officer thoroughly conversant with farm conditions and agricultural implement business is attached to a designated office of the Wartime Prices and Trade Board within each Province. He deals with each application to purchase and determines the essentiality of the application in relation to supply. (c) In addition to the rationing officer, two consultants are appointed, an outstanding agricultural authority and an outstanding farmer, who, being fully conversant with the territory concerned, will deal chiefly in raviewing appeals, giving decisions relating to the transfer of quotas, and such like matters.

If a farmer is in according an estential piece of equipment and connot obtain it without purchase, he places his order with the implement dealer and fills in the essentiality form. The dealer, if he can supply the goods, completes the form, forwards it to his principal who, in turn, submits it to the farm machinery rationing officer. If this officer determines that the need is essential in relation to the short supply, he will issue a "permit to sell", enabling the supplier to make delivery. If the application is rejected, the applicant may appeal which will be considered by the rationing officer and the agricultural consultants.

Ho. 81. - The Mackintosh

anyone who knows anything about the British Isles and there are many of these in Canada -- knows also that a mackintosh and an umbrella are very necessary equipment there, for it rains there far more than in this Dominion. That is why the grass is greener in summer and the poet was able to sing so sweetly about the Green Isle, which in very truth Erin is.

It was realized at once that the fighting forces and other helpers who went across the Atlantic to make impossible the invasion of Canada by the hordes of Ritler, would need waterproofs, and cur factories turning out that essential clothing became very busy. In 1939 the output was valued at about 1,350,000, whereas in 1941 it larged to over \$4,000,000. Quite a jump!

Says the official report on the subject: "The greater part of the increased output was due to the ever increasing needs of the armed forces for oiled and waterproofed clothing and equipment".

These include coats, pants, hats, suits, caps, aprons, curtains, military equipment, windbreakers, leather jackets, work clothing, canvas covers and bags of all kinds.

Why the waterproofed coat came to be known as a mackintosh is worth remembering. A man named Mackintosh, who lived and worked in Glasgow, Scotland, where rains are frequent, invented the waterproof and secured a patent for making waterproof cloth in 1825, only about 120 years ago. So his coats were called mackintoshes. That started the ball rolling. The first waterproof cloth was air proof as well as waterproof and was therefore detrimental to health and new substances had to be found to impregnate the cloth. The modern types of waterproof and oiled clothing are visible results of the success of many years work.

No. 82 - Utilization of Wood in War Time

Since the outbreak of war Canadian forests and forest industries have supplied the major part of the requirements of the United Kingdom and have replaced supplies to other countries formerly secured from northern Europe. The external trade in forest products has provided a large part of the foreign exchange needed for the purchase of munitions in the United States. Domestic consumption of lumber has also increased enormously not only for war purposes but as a substitute for other materials required for war purposes. Owing to these increased demands forest production in Canada at present is limited only by the scarcity of efficient labour in woods and mills and the restriction of transportation facilities.

During the later pre-war years there was a noticeable tendency toward the substitution of metal for wood. In many cases this was justified by certain disadvantages of wood as compared to metal. Prominent among these were its tendency to split, the difficulty of making strong joints between its surfaces, its tendency to warp and swell when exposed to moisture, its susceptibility to fungus and insect at ack and its inflammability.

Many of these disadvantages were gradually being overcome before the War but the increased demand for metal for munitions has stimulated invention and accelerated new developments. This has resulted in a widespread extension of the field of wood utilization and, in many cases, a return to the use of wood where it had been displaced by metal.

No. 83 -- Manufacture of Plywood

The manufacture of plywood, which dates back over four thousand years, overcomes the tendency of wood to warp and split. The gluing together of the layers of vencer, each with its grain at right angles to its neighbour, counteracts these faults, but the failure of the adhesives used in the past brought discredit to this form of construction and made the word "vencer" a synonym for fraud and superficiality. The perfection of synthetic resin glues has given the wood-worker a light, strong, tough material that can be made in sheets of almost any required dimensions, either flat or assembled over moulds with complicated curved surfaces. The resulting structure maintains its shape and

withstands moisture, fungus and insect attack almost indefinitely. Plywood can now be used as a substitute for lumber in exposed situations for building construction and other purposes. In the building of ships and boats and in the manufacture of certain parts of aircraft, watertight tanks and drums, freight-car siding, truck bodies, cabinetwork, refrigerators, etc., its use releases large quantities of steel, aluminium and other materials, which had threatened to replace it.

Glue laminated construction, using layers of wood thicker than verser, has also been in use for many years in cabinetwork, where it reduces splitting, warping and swelling. It also permits, for the unseen cores and crossbanding, the use of cheaper wood than used for the face veneer. These built-up products, however, were limited in use to protected situations pending the perfection of waterproof glues. Clued laminated construction is now being used for aircraft propellors, truck and freight-car frames, etc., and, in still greater volume, in built-up beams of large dimensions, replacing structural steel and releasing the metal for war purposes. Such beams have a high resistance to moisture, decay and fire and can be quickly and easily constructed.

No. 84. - Wood Saver Metal

Next to synthetic resin glue, the most important development in recent years has been the timber connector. In the past ordinary bolted joints in atructural wood-work were weaker than the connected members. Without going into technical details it can be said that with split-ring connectors the strength of a joint can be increased up to 60 or even 100 per cent of the strength of the members connected thereby. This results in a saving of a large part of the metal formerly used to strengthen these joints, the use of timber of smaller dimensions and the possibility of prefabrication with a decided saving in cost, time and labour. This form of construction releases structural steel for more exacting uses.

Among other developments that tend to widen the field of wood utilization, are the speeding-up of seasoning and improvements in methods of wood preservation and fire-retarding treatment. Wood can now be used to advantage for pipe lines, culverts frains, air raid shelters and in other situations exposed to moisture.

The chemical use of wood, not only in the manufacture of pulp, paper and cellulose products has also increased with the pressure of necessity. The age-old art of charcoal burning, for one example, has been revived and improved to provide not only fuel but producer—gas for internal combustion engines in trucks and even passenger motor cars, a method of conserving gasoline that has been in widespread use in Europe for many years.

While many of these changes may be only temporary expedients to meet war conditions there is no doubt that even after the War, wood will continue to be used as a raw material much more extensively

No. 85 - Soil Survey and Crops

Some fields are better suited to one crop than to others due to differences in fertility, presence or absence of greater amounts of free lime, variations in acidity, differences in textures and physical conditions, and so on. From surveys

and from observations of the crops in the field, it is possible to indicate, with reasonable accuracy, the crops which are best suited for each soil, and which crops are unsuitable.

Some crops grow satisfactorily on a wide range of soils, while others can only be grown with success on soils having certain characteristics. Many soils, although not naturally adapted for certain crops, can, by proper treatment and management, be made to produce such crops satisfactorily.

It has been established that most black muck soils, which are naturally not very well suited for grain crops and pasture, are excellent market garden soils. Many of the poor, dry, sandy soils, considered useless for farming purposes, are well adapted for flue-cured tobacco, by reason of their good drainage, absorption of heat, and low nitrogen centent. Apple trees demand a well-drained soil and a friable, porous subsoil for good root development, and an absence of large amounts of free lime, which lowers the quality of the fruit. Successful potato growing is invariably associated with well-drained, fairly acid soils of reasonably light textures, such as loams and sandy loams.

Flax and sugar beets seem to do particularly well on fairly heavy soils, such as clay loams and clays, with a high natural fertility level. Grain and hay crops grow satisfactorily on a wide variety of soils, provided the soils have a reasonably good level of fertility, but alfalfa and, to a lesser extent, red clover do not tolerate acid conditions, and thrive best on soils containing some free lime. Many soils, which are not naturally adapted to farm crops, grow good stands of timber, pulp, or firewood. The most efficient use of such land is in forestry.

No. 86. - Sable Island Ponies

The war is teaching us many things very few of us knew anything about before. For example, the wild ponies of Sable Island.

Children love ponies. Before the automobile came into being there were far more ponies around than there are now. There were plenty of donkeys also. The old fashioned governess car, a two-wheeled box-like affair, high-sided to keep the children from falling out, was a common sight. The Shetland pony, or the donkey, went its leisurely way along the macadamized road with the happy gang inside.

There are still a lot of Shetland ponies in Canada, some people making a hobby of raising these nice little horses. The late Senator M. J. O'Brien, of Renfrew, Ontario had quite a well-known Shetland pony ranch.

But, to get back to the Sable Island ponies. They are descendants of a shipload of handy little farm workers that were on their way to Canada from France centuries ago, but their ship was wrecked on the treacherous sands of Sable Island, off the coast of Nova Scotia. Horses of all kinds are good swimmers, although they don't take to the water quite as well as moose, and a number of these immigrant ponies managed to make shore. There they multiplied and a great many have roamed Sable Island ever since.

Domesticated horses are usually larger than their wild cousins and so the ponies of Sable Island, weighing only about 700 pounds, are smaller than the French-Canadian horses of Quebec to-day, whose origin was largely the same.

But the free days of these tough, shaggy ponies are about ended. The Canadian Government has sold them and they will be brought to the mainland where they will be used to help out in delivery problems to save gasoline and tires. Bo when you see a little horse jogging along with a bit in its teeth and fire in its eye, it might bery well have come from wind-swept Sable Island.

No. 87. -- Dried Eggs for Britain

Before the war, Canada's largest export of eggs to the United Kingdom in any one year was 1,000,000 dozen. Eritain was not anxious for eggs after war was declared. Eggs naturally presented a transportation problem. The need for some eggs, however, and the desire of the poultry people in Canada to supply them resulted in the export of 10,000,000 dozen in 1940 and 15,000,000 dozen in 1941. In the 1942 plans, the British Ministry of Food decided to give eggs a more important place, and Canada was requested to state what she could supply. Encouraged by what they had done and being anxious to do more, Canadian poultrymen were advised that increase in poultry production should be made by improved efficiency within the capacity of existing facilities, and an agreement was made for 45,000,000 dozen eggs for Britain in 1942.

After shipments were started and eggs were rolling to scaboard in volume, the Canadian Government was informed that all eggs would have to be dried. Canada's egg drying facilities at that time consisted of three small plants that had been producing about 100 tons of dried egg products a year. As the centract called for about 7,000 tons and eggs were coming forward in large volume, an emergency problem presented itself. All plant facilities, including dairy equipment, were pressed into service, eggs were transferred to storage, but sufficient storage was not available so arrangements were made for breaking the eggs and storing them in frozen form. The drying process had to be standardized, the whole undertaking supervised, the produce packaged to stand shipment, all arrangements for transportation and even payment of eggs suddenly changed, and plans developed immediately for adequate drying facilities where they could be operated most economically and take care of the eggs available for export in the different parts of Canada.

All this was done, the hens kept on laying, many farmers hardly knew it was happening, and the contract, while not completed on time, could have been completed if so many eggs had not been available to domestic consumers who were clamourist for them to replace meat. It is estimated that 1,000,000,000 extrapullets were added to the poultry flocks last fall, and, while the demand for eggs has recently been ahead of supply, it is expected that all demands will be adequately met in the near future, and negotiations are now meaning completion to supply 9,000 tons of dried product to the British Ministry of Food during 1943. It is believed that quantity can be produced, perhaps more, after allowing for a substantial increase in market supplies to meet decestic requirements.

No. 88. -- Co-operatives -- 1

The story of co-operative buying and selling in Canada goes back about sixty or seventy years. Instances of co-operation can be cited earlier than this because of the community life of the early pioneers but there was no concerted effort towards an organized movement until about 1870. In a country where agriculture was and still is one of the most important occupations of the people it was to be expected that the first organizations would be found among the farmers. Farmers came together to discuss mutual problems of crops, cultivation and stock raising and thus naturally organized themselves into clubs or societies. Even before the 19th century there is evidence of the existence of such clubs in Maritime Canada. These associations were encouraged by the governments and became quite numerous in the middle of the century but no attempt was ever made at federation or central organization.

Mention may be made of the Dominion Grange, a Canadian farmers' organization which was formed under a Federal charter in 1877. It established quite a number of co-operative enterprises in Ontario and Manitoba, none of which was conspicuously successful. Some time later another farmers' organization, the Patrons of Industry, was organized in Canada. This group made attempts at co-operative organizations which also failed and by 1900 the Patrons had disappeared.

After Confederation in 1867, settlers who went west opened up the vast wheat-growing area in what is now the three prairie provinces. Several organizations of grain growers appeared and finally, in 1906, the Grain Growers Grain Company was organized to handle wheat and grain on a co-operative basis. This was followed by the organization of the Saskatchewan Co-operative Elevator Company in 1910 and the Alberta Farmers Co-operative Elevator Company in 1915.

In other parts of Canada, organization along provincial lines was evident in the formation of the United Farmers Co-operative Company Limited, in Ontario, in 1914 and the Co-operative Fédérie de Québec in 1922. In the fruit-growing areas of the Dominion, the United Fruit Companies of Nova Scotia appeared in 1912 and the Okanagan United Growers of British Columbia in 1913.

The United Grain Growers Limited provides an example of further expansion into the field of interprovincial organization. This company resulted from the amalgamation of the Grain Growers Grain Company and the Alberta Farmers Co-operative Elevator Company in 1917. In 1918, the Canadian Co-operative Wool Growers Limited was formed with branches in all provinces and has proved successful as an organization on a national basis.

There is evidence of co-operation in industrial areas of Nova Scotia in 1861 when a co-operative store was opened at Stellarton by coal miners. Ten other stores were opened in that province prior to 1900 but only one survived beyond that date. The first consumers' co-operative store on record in Ontario was opened at Guelph in 1904 but ceased operations in 1927. Other provinces provide examples of the organization of urban consumers into buying groups and western farmers used their marketing societies as a basis for group purchasing of farm supplies and general merchandise.

No. 89. -- Co-operatives -- 2

During the past two decades, co-operative activity in Canada has passed through a period of rapid success and great enthusiasm followed by reverses and declining interest. Some of the associations passed from the picture during the latter period but the great majority, profiting from adversity, strengthened their foundations and provided for further expansion. At present there is evidence of new progress which derives its vigour partly from the experiences, power and vision of the great western farmers' organizations and partly from the movement of education that has sprung up in the east.

This movement began about 1930 among the farmers, fishermen and miners of eastern Nova Scotia under the auspices of the Extension Department of St. Francis Xavier University at Antigonish, Nova Scotia. The first directed effort was towards the organization of small study groups which discussed the pressing economic problems of the community. From these discussions came the establishment of credit unions, co-operative buying clubs, consumers! co-operative stores and wholesales, poultry pools, and renewed interest in egg circles and live-stock shipping clubs everywhere in the Maritime Provinces.

The achievements of this movement in this section of Canada attracted world-wide attention and its leaders were invited to tell their story all over the North American continent. Other Canadian provinces, especially Manitoba, Quebec and British Columbia, have drawn on the Nova Scotia experience and much of the recent development in co-operative endeavour in these provinces can be traced to the "Antigonish Movement".

No. 90. - Co-operatives - 3

Co-operation among Canadian farmers in the marketing of farm products and in the purchasing of farm supplies has grown during the past ten years. Not only has expansion been noted in membership and volume of business but also in the number of products that are being marketed co-operatively. Elevators, stockyards, common and cold-storage warehouses and chick hatcheries are owned by farmers co-operatively. Butter and cheese are manufactured and chicken and fruit products are canned in co-operative plants. Hogs are processed into bacon and other pork products through these co-operative means. These are but a few instances illustrating the co-operative movement.

In the year ended March 1941, farm co-operatives handled approximately 31 per cent of the total value of the commercial production of Canadian farms. The grain growers are the most highly organized of producers in the various commodity groups. Nearly 44 per cent of all grain delivered at country elevators was handled through co-operatives. Organizations of live-stock producers handled 20 per cent of the total marketings of cattle, hogs and sheep and lambs. Co-operatives marketing honey accounted for 28 per cent of the commercial production. These co-operatives are of recent origin and have been singularly successful. Farmers have also used their organization as producers to pool their buying power.

Total co-operative membership in Canada in 1941 was 452,000 but the possibility of duplication must be kept in mind. Thus, in many communities a

farmer may be a member of more than one co-operative association. He may sell his cattle and hogs through a live-stock shipping association, his grain to a co-operative elevator and his poultry and poultry products to an association formed to market such commodities.

Another measure of co-operative activity in the marketing of Canadian farm products can be obtained by dividing the total sales value of these products by the number of occupied farms. Last year for instance, co-operative sales per farm in Canada averaged almost \$500. On the same basis Saskatchewan was the leading province with \$515 worth of farm products marketed co-operatively.

No. 91. -- Grapes

Some time early in the history of man it was discovered that the juice of the grape properly fermented made a very palatable drink, which in addition to quenching his thirst lifted his spirits above his surroundings and gave him a brighter outlook on life. It is not surprising then that, as he roamed over the face of the earth in quest of new lands to conquer, the grape was among the first fruits to be planted wherever he stopped to establish a new settlement. The oldworld grape, vitis vinifera, from which all the best wines are now made is thought to have originated in Asia. It has been carried to all parts of the world where it has been cultivated either in its original form or has been used in crosses with native species to produce new kinds which were hardier under local conditions.

Grapes were found in abundance throughout the North American continent by the earlier settlers. It was most natural that the settlers seeing how abundantly they grew should import grape plants of the type they were familiar with in Europe. The early attemps to grow the vinifera species, however, were doomed to failure and it was not until the Pacific Coast of the United States opened up that this species became established. The early failures were found to have been the result of the ravages of the grape root louse and mildew. These two pests are not native west of the Rockies so that the European varieties grew readily and have since run wild in some areas. Elsewhere in the North American continent the most popular present day varieties are the results of improvements of the native labrusca species or crosses between vinifera and labrusca.

Grape growing in Canada centers chiefly in south-western Ontario although the industry has made some strides in British Columbia as well. The most popular variety is, of course, the blue Concord which makes up the bulk of the crop in Ontario although such varieties as Niagara, Fredonia and Worden are also grown in some volume. Production in Canada last year reached an all-time high as a result of ideal growing weather during the summer and fall months. The crop is estimated at 74,869,000 pounds of which 72,000,000 pounds were produced in Ontario. The five-year average (1936-40) for Canada is 44,319,000 pounds.

No. 92. -- Oil Producing Plants

Due to this war which is spread over a greater area of the world many problems of supply have been created. One of these is the shortage of fats of all kinds. Before Japan entered the conflict many vegetable oils were imported from the Orient, but we must depend now on our own efforts and on whatever can be shipped from South America. The United States Department of Agriculture, according to latest survey, estimates that that country faces a shortage of close to a billion pounds of fats and oils for food and industrial purposes in 1943.

To help overcome this shortage the government of Canada is asking for increased production of oil producing plants such as flax, soybeans, sunflowers, etc. The objective for flax for seed is an acreage increase of 68 per cent.

trops such as soybeans and flax are not new. The Experimental Farms are testing and originating new varieties to try and improve the quality and quantity of ail as well as the adaptability of these plants to various climatic condition.

Now oil producing crops are also being tried out in an effort to improve the situation. One of these tested this year at the Central Farm and a number of Branch Farms was Argentine rape. It belongs to the mustard or turnip family and is an annual. The seed contains about 43 per cent oil and is used as a base for lubricating oils. The tests on the farms in Quebec produced yields of seed of 800 to 1200 pounds per acre this year.

The world to-day moves on oil and it may be, that through the necessities of war, the country will be zoned as to the areas suitable for the growing of each of the oil producing plants.

No. 95. -- Whale Fot

Whale Ho" or "Thar she spouts," or whatever modern equivalent Pacific whalers use on sighting their prey, was heard 164 times on the Canadian west coast shaling grounds in 1942. Probably it was heard a lot more often than that, for a total of 164 whales was brought in by British Columbia whaling vessels. The earth was considerably smaller than in 1941 when 233 of the big sea mammals were taken. However, in 1942 only one whaling station was in operation — usually there are two — and only three whaling vessels were at work. Then, too, according to the whalers, whales seemed less plentiful than usual, and bad weather hampered fishing more than a little.

The 1942 catch was made up of 162 males and 2 females. Classified according to species, there were 129 sperm whales, 27 finbacks, 7 humpbacks and one sulphur. Both the females taken were finbacks. They were used in making oil and meal, which is the whales accepted fate in these days.

In size the whales taken in the '42 season, which ran from May 10 to September 19, were, on the whole, somewhat smaller than those taken in previous years. The sulphur whale was 70 feet in length, and a finback made of the same size was also taken. The biggest female measured 66 feet. The largest whale taken in 1941 was a 73-foot sulphur, while in 1940 an 83-foot sulphur headed the list.

It is a far cry from the tall square-rigged whalers of the olden days to the modern steel whaling tug armed with harpoon gun and fitted for whaling in the modern manner, but some of the risk and romance still remains and on more than one occasion stories have some of an infuriated whale attacking the whaling tugs after being harpooned.

Though only four species of whales made up this year's catch, two additional species, the sei and bottlenose, occasionally are taken in Canadian whaling operations, which all take place off the British Columbia coast.

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