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DEPARTMENT OF  
TRADE AND COMMERCE



**A FACT A DAY ABOUT CANADA**  
FROM THE  
**DOMINION BUREAU OF STATISTICS**  
EIGHTH SERIES  
1941 - 1942

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Published by Authority of the Hon. James A. MacKINNON,  
Minister of Trade and Commerce.

25 cents per annum

May



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James Muir,

Editor.



No. 213 --- The Mosquito

You've met up with Mr. Mosquito again this year, of course. What you are probably hankering to know is some way to avoid meeting him again.

Well, it's a bigger job than one might be led to believe. First of all, there's a woman in the case. But all great men have owed their fame or notoriety more or less to the tireless efforts of some dauntless female and here we see history repeating itself. In this instance the woman behind the scenes is no less a person than Mrs. Mosquito herself. She's the one to keep your eye on. Frankly, she's no lady — she bites! One of those oh so tender but awfully tough characters you read of, but never expect to encounter.

While her meek little husband satisfies himself with sucking plant juices, "Mrs." goes out after the big game. She'll brazenly attack the Mayor, his gardener, or the man in the street — she's no respecter of persons. Some mosquitoes find man distasteful and confine their diets to the blood of domestic or wild animals and birds. True as this may be, it is a difficult job to convince the average person that any mosquito, large or small, male or female, finds him unpalatable.

Mrs. Mosquito, while she may be a perfect wife, and a doting mother, is none the less a disgraceful drunkard. On any one or all of her escapades she can be counted on to drink at least her own weight in the life blood of man or beast. What's more, investigations show that it only takes her about 30 seconds to become fully gorged, and under favourable conditions, may live for several weeks or even months on this liquid diet.

What's to do about it? Well, authorities say that although there are over 2,000 species of mosquitoes, only about 65 of them make Canada their home. All mosquitoes pass their early life stages in water. Because this is so, it is possible to control them by eliminating the breeding places by drainage or filling, or by applying an oil film to the surface of the infested water.

For personal protection from the pests, oil of citronella, spirits of camphor, oil of cedar and oil of lavender are recommended as being particularly offensive to mosquitoes, Mr. and Mrs. alike. Panama has made a great success in mosquito control. Detailed instructions for the control of the insects can be secured from the Dominion Department of Agriculture.

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No. 214 --- Prairie Wind

How many times during the past decade or so have you heard "The prairies! They're blowing away! Nothing left but wind, dust and gophers!"?

True, during recent years some sections of the Canadian prairies have experienced the most severe drought recorded in the history of that area. Once-productive and prosperous farms have been abandoned to the ravages of the elements. The fault, however, lies with Man and his inherent greed, rather than with Nature, to whom the blame is too often attributed. He has been over conscientious with his wheat growing and forgotten to put back into the soil what he so eagerly took from it. For centuries these soils were clothed with hardy native grasses which provided essential root fibre. Continuous wheat crops have destroyed this fibre and created the lamentable condition of soil drifting that exists today.

Experts are of the opinion that the only solution to the problem now besetting these prairie farmers is grass. Under the Prairie Farm Rehabilitation programme many farm lands have lately been sown to crested wheat. This hardy drought resistant perennial is proving fairly successful, and many farmers are making use of it in their crop rotation systems. While crested wheat adds immeasurably to the root fibre content of the soil, the seeds are small and must be sown close to the surface. If it could be sown to a depth of 3 inches or more, the seeds would get moist soil even under very dry conditions. Experiments have been carried on for several years now to produce a perennial hybrid with large seeds suitable for prairie conditions. Russian scientists some time ago succeeded in crossing wheat with a certain perennial grass.

In an effort to find an ideal combination for our western wheat lands, the Division of Forage Plants, Central Experimental Farm Ottawa, and the National Research Council have been experimenting with various hybrids but as yet no seed is available for general distribution.

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#### No. 215 -- Food Intelligence

There is naval intelligence, army intelligence and air intelligence which are departments of these various forces, but we do not hear of food intelligence as such, and yet it is one of the most potent departments in warfare, not for the forces only but also for the vast civilian force behind them, without whom the navy, army and air force could not exist.

Human bodies must be kept up and body building and energy can only be built up from food.

Food intelligence has many ramifications. A huge army of workers are behind it; farmers, transporters, storers, processors, wholesalers and retailers. Agricultural colleges search into the hidden mysteries of Nature for methods of improving production of crops and live stock. Each province in Canada has its Department of Agriculture to propagate this production information among farmers and to collect data from the farmers on such matters for its own and Dominion intelligence.

The Dominion Department of Agriculture has its research and propaganda machinery for the advancement of food production and it also collects data for its own use and for the Dominion Bureau of Statistics, whose Agricultural Branch collects, co-ordinates and publishes a great deal of statistical information on production and inventories of wheat, other grains, sugar, tobacco, live stock, dairy products, fruits and vegetables.

Information on fish is obtained by the Fisheries Department from its research laboratories and from its supervisors and inspectors on both the Atlantic and Pacific seaboard. Some provinces have their own departments for collecting data on fish within their own boundaries. Statistical data on production are issued by the Fisheries Branch of the Dominion Bureau of Statistics while inventories are obtained and published by the Agricultural Branch of the same Bureau.

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#### No. 216 -- The Tin Soldier's End

Wireless sets, toys and gramophones are the latest items to come under the notice of Canada's Controller of Supply. He has decreed that from now on on gramophones of

any kind are to be manufactured, that the production of wireless sets will cease when the present stocks have been disposed of by the radio manufacturers, and that no toys containing more than 10 per cent of metal are to be allowed. Pacific-minded parents will note that this eliminates the lead soldier.

In making these cuts the Controller does not merely make the decree and leave it at that: he adds helpful advice to those likely to be affected by the order. Thus he warns wireless set owners to take the best possible care of their equipment and suggests means by which they might be made to last longer. "Keep your radio at least an inch away from the wall", he said. "Check the plugs and connections. See that you have a good ground connection - a gaspipe should not be used. Clean the dust from your set as often as possible".

He goes on to say a word or two about the repair experts. "If you find it necessary to employ a repair-man, make certain he knows his job. A repair-man with a sense of public responsibility will not replace good parts. The set can usually be repaired in your own home, and this should be done to avoid unnecessary expense and wastage of materials. If the repair-man insists on carrying your set to his shop, ask him to let you know beforehand what he estimates needs to be done, and insist that he return the old parts. If he knows he must return these parts he will be less likely to make unnecessary replacements."

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#### No. 217 -- Carrying Oxygen

The other day a scientist said over the radio that water did not enter a fish through its gills but the fish simply extracted the oxygen from the water. That was how it breathed, he said.

The inevitable reaction of one's mind was to the Biblical story of Jonah in the whale's belly. Of course we know that whales come to the surface to breathe and spout water. "There she spouts!", the old whalers used to cry.

Critics of the Bible have had a lot to say about that story, but they really don't know anything about it. They and we don't know in what kind of whale Jonah spent his little holiday. It might have been a real fish, bringing in a supply of oxygen for the imprisoned Jonah; we simply don't know. Truth is sometimes the most unbelievable thing. Any experienced newspaper reporter will tell you that sometimes he comes across an item of news that he never publishes for none would believe him. Truth is stranger than fiction. Go out to Southern Alberta, look at the bones of prehistoric monsters and you will come back home feeling very ignorant and very humble.

One of the most extraordinary things of modern times is how our gallant aviators live while passing through the stratosphere. They carry their oxygen with them. Like the critics of the Jonah story, who amongst us save Jules Verne would have believed such a thing possible half a century ago? We didn't know and we can't even guess, as Verne did, what is yet to come.

Not very long since the manufacture of oxygen was confined to the laboratory and its practical utilization confined to replacing oil in the optical lantern. Today it has become an important raw material. It is the most widely distributed of the chemical elements. It is a colourless, odourless and tasteless gas. It forms 21 p.c. of the volume of the atmosphere, and eight-ninths, by weight, of water consists of oxygen. Oxides from a large part of the earth's crust. It is essential to life.

It was first liquefied in 1887 by two Frenchmen. Production of oxygen in Canada is now a vast industry.

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No. 218 — Dehydrated Butter

As the result of research work by the Dairy Research Institute dating from before the war New Zealand is now producing dehydrated butter or dried butterfat, and the British Government has contracted to take up to 20,000 tons during this season and next. This development, occurring at a time when New Zealand's shipments of whey butter to the United Kingdom have ceased through lack of refrigerator space, is of considerable help to the dairy farmers of the Dominion, as well as a valuable contribution towards Britain's demand for fat.

The possibilities of producing dried butterfat were investigated a few years ago when it was believed a market existed for it in certain parts of the world not served by refrigerator ships. After the outbreak of war the deterioration of the shipping position caused a progressive reduction in exports of creamery butter and after a period the complete elimination of exports of whey butter. In view of the resultant surpluses the matter assumed great importance and a satisfactory method of processing whey butter with the plant available was devised. A trial shipment of 400 tons was made some months ago to England and was very well received. The opportunity for large scale operations therefore presented itself.

Only pure unsalted whey butter is used in the manufacture of dry butterfat, though experiments are being carried on to provide an outlet for creamery butter as well. The butter is melted over a jet of steam and the melted fat and condensed steam are run into a cylinder which automatically separates the water that settles by gravity from the butterfat-water solution. After then going through two cream separators the material undergoes a final process of dehydration in a vacreator. It is then subjected to a special technique of **cooling**, filled into sterile canisters and sealed. It can be stored and shipped as general cargo. The product can be used in its dry state by pastry cooks and ice-cream manufacturers and the conversion of fat into butter is achieved simply by adding water and salt. It is regarded as a very suitable item in a parcel to soldiers and prisoners of war as it keeps better than tinned butter.

By the end of next year it is anticipated that from 10,000 to 20,000 tons of dry butter will have been processed, but production is governed by the shipping situation and the stocks of butter available. Facilities to produce on a large scale will likely be completed in Auckland by the beginning of next July. In the meantime a small plant is turning out 10 to 12 tons per day. The plant that will be available in July, it is announced, will enable all surplus whey butter and the very small quantity of second grade creamery butter made in New Zealand to be processed.

Although the United Kingdom demand for dry butterfat may end with the conclusion of hostilities, it is considered possible that a market of value to New Zealand may be developed in other countries to which refrigerator ships do not run.

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No. 219 — Record Salmon and Herring Pack

Canadian salmon and sea herring fishermen responded in a big way to Britain's food needs in 1941, and as a result the packs of canned salmon and canned sea herring for the calendar year set a new high for Dominion production.

The pack of canned salmon reached a total of 2,248,370 cases, exceeding the previous record pack of 1940 by 27,037 cases and the average for the preceding five years by 554,433 cases. Supplies of salmon were generally abundant, though the pink run was not up to expectation. Notwithstanding the large production of salmon, escapement to the spawning grounds was satisfactory.

Canned sea herring production, like-wise destined for British consumption, hit a high of 1,013,329 cases, leaving the best figures for any previous year far behind. The Canadian Government agreed to supply the British Ministry of Food with approximately 1,600,000 cases of canned sea herring to be canned during the winter season of 1941-42 and the 1941 pack represented the production of a substantial portion of the required herring.

Examination of the salmon pack figures reveal a number of interesting facts. For instance, the sockeye pack of 455,297 cases has only been exceeded in the last twenty-five years by the record pack of 1930, and then only by 22,381 cases. The 1941 sockeye production exceeded the average production of the preceding five years by 33,234 cases. Production of coho was a record one of 361,330 cases, which exceeded the average for the preceding three years by 103,209 cases. It was also the second year in succession to produce a large run of cohoes along the British Columbia shores.

Total chum salmon canned reached 920,470 cases, which exceeded the previous record pack of 1938 by 57,213 cases, and the average for the preceding four years by 297,393 cases.

The supply of pink salmon taken during the year was somewhat disappointing for the second year in succession. Total production was 427,766 cases, not a large pack as pink salmon go, though even at that an increase over the average pack of the preceding two years.

In the making possible of the large packs certain restrictions were imposed. For example, the export of fresh and frozen cohoes was prohibited to permit the use of greater numbers of these fish for canning purposes. Similarly there was no dry salting of chums in 1941, and export of fresh or frozen chums was likewise prohibited. In the case of herring owing to the necessity of placing as large a portion of the catch as possible in cans, for the purposes of the United Kingdom, no dry salt herring operations were conducted in British Columbia during the year.

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No. 220 -- Modern Martyrs

"If at first you don't succeed, try, try, try again" might well be the inscription on the spider family's coat of arms, if spiders have a family coat of arms. Personally, spiders have always headed the list of our pet aversions, so we never endured more than a brushing acquaintance. But we did learn from our school texts of the hope and inspiration Robert the Bruce received from watching a spider in its endeavor to scale the mouth of his lonely cave on Rathlin Island. After failing seven times, it finally made the grade and history records the achievement to this very day.

Spiders, say the entomologists, are cosmopolitan, found in Greenland and abounding in the tropics. In an effort to lessen our apparently childish fears of the be-legged creatures, they say that of the hundreds of species found here in Canada only one is poisonous. That solitary menace is known as the Black Widow and is easily distinguished by a red or orange "hour-glass" on the underside of its shiny,

coal black body. The climatic conditions prevailing in sunny southern Alberta seem particularly conducive to its propagation for it is rarely found in any other section of the Dominion. Occasionally tarantula or banana spiders are imported in shipments from tropical countries, but these never survive the rigours of our Canadian climate.

The popular prejudice against spiders is one of very long standing and due largely, we are told, to the erroneous idea that they are dangerous and ugly. To judge all spiders by those frequenting dark cellars and outbuildings is to do the species an injustice, for some spiders rival butterflies and beetles in brilliancy of color. Compared with the bite of a mosquito, the wound inflicted by a spider is practically painless and in only extreme cases causes illness and death.

Had it not been for these despised benefactors civilized man might never have successfully cultivated or even inhabited the earth. Spiders are living martyrs to man's inexplicable but ageless inconsistency. Engaged in a ceaseless warfare against some of our most insidious enemies, they reap only death as a reward. We slay them upon sight without the slightest compunction—the Scots excepted—yet ironically enough tolerate flies, filthy spreaders of tuberculosis, typhoid, infantile paralysis and countless other diseases.

In the event that spiders should become so numerous as to make themselves a nuisance, the Department of Agriculture advises the use of a good fly spray or sulphur dust to give control.

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#### No. 221 — Dried Fruits and Vegetables

As a result of World War No. 2 interest in the preservation of both fruits and particularly vegetables has been revived, and large quantities will be processed in both Canada and the United States for feeding to the armed forces. As a result of the tin and tin-plate shortage many products formerly packed in tin cans must necessarily disappear from the retail shelves. Drying as a means of preservation offers an alternative method of considerable promise.

Drying on the average reduces the weight of the product to approximately one-tenth of the weight and one-sixth of the space. There is, therefore, a very considerable saving in space for transportation purposes, and methods have been recently developed for vegetables by which stable products can be produced.

In recent years special drying equipment has been developed. In its simplest form drying is done in a "kiln". This consists of a slatted floor on which the fruit is placed to dry and underneath, a furnace is used as a heat source. Air is delivered to the furnace and heated, this air passes through the material, absorbs moisture and is allowed to pass to the outside by means of a duct through the roof. Although slow drying, until recently this has been the method used to dry millions of pounds of apples.

The most recent development in drying has been the use of dehydrators. In these machines, air is circulated over or through the fruit under controlled conditions of air volume, temperature and humidity. Under these conditions drying is rapid, and the product when rehydrated is very similar to the fresh product.

In the dehydration of vegetables with the single exception of onions, most products require partial cooking or blanching before they can be dried. In storage the finished product can be placed in boxes away from direct light. The vegetables

should be packed in hermetically sealed containers. For subsequent use they are re-hydrated in water and cooked as you would for fresh fruit.

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No. 222 -- Meat without Bones

For many years we have been so ignorant of the Chinese people, their culture and customs that we now rub our eyes and blink with amazement at their human endurance and fortitude. With all our modern ways we are only now learning things they have known for centuries. For instance, the Chinese people have used the soybean in one form or another for generations, one being a curd from soybean milk which they call "the meat without bones".

This curd resembles beef in its chemical composition and the milk from which it is made has been successfully used as a milk substitute with no loss in the protein value. Where the soybean has been used in China, pellagra and rickets, deficiency diseases so well known in the western world, are practically unknown. The German people have copied the Chinese and Japanese in the use of this bean and soya flour is now credited with being the mainstay of the German army and the civilian population, in the face of serious shortages of animal proteins, fats and other protective food. The United States army is said to have realized the benefits to be gained by its use.

The products of soybeans are numerous but as a food its uses are and will be of great importance in a war and post-war period. As a flour it is rich in proteins, minerals and vitamins and when used with wheat flour lowers the amount of starch found in bread, pastry, etc.; a boon to a balanced diet. As a by-product from making soybean oil, soybean oil meal has provided livestock with a very satisfactory vegetable protein. The oil itself can be used in the manufacture of shortening, salad oils and packing sardines. Other by-products are used in making chocolates, margarine and mayonnaise.

This amazingly useful plant can be grown cheaply and in large quantities in Canada and the United States.

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No. 223 -- Hoppers Like Heat

A warm weather menace to western grain fields is the notoriously familiar grasshopper. He still figures that the world owes him a living, and goes about his business of collecting in a conscientious manner.

In ancient times severe famines resulting in tragic loss of human life were caused directly by scourges of locusts or grasshoppers that swooped down upon fields and forests, stripping them bare and leaving nothing but desolation in their wake. Little could be done to prevent recurrences of these frightful visitations or to relieve the suffering peoples. Today, however, officers of the Dominion Entomological Laboratories at Brandon, Saskatoon and Lethbridge make annual surveys upon which are based forecasts as to the probable grasshopper situation each year. Conducted in August, September and October, these surveys have attained a high degree of accuracy.

In August the survey consists of a search for adult grasshoppers. Concentrations are noted and classified according to density of population. In September and October localities where an economic infestation was noted are visited and the soil sifted in a search for eggs. It is upon the average number of eggs per square foot that the forecast is based. The density of egg infestation is classified and the localities are

mapped indicating where light, moderate, severe, and very severe infestations occur.

These maps are published and exhibited in Post Office lobbies and municipal offices throughout the infested area. Commencing in 1931 the present outbreak reached a peak of 82,592,640 infested acres in 1935; fell to 43,224,960 in 1936, rose to a record peak of 97,272,320 in 1939, and again fell off to 53,169,920 infested acres in 1941. The infested acreage for 1942 is less in Manitoba but a little greater in Saskatchewan and Alberta. Severe areas occur about Davidson and Gravelbourg, Saskatchewan, and Vulcan, Alberta. Large sections of eastern Alberta, western Saskatchewan and northern Red River Valley area of Manitoba are moderately infested; there are no very severe areas.

The amount of damage resulting from a given egg deposit varies greatly with the weather. Long periods of cool, wet weather, keep the insects quiet and there is relatively little damage. However, when the days become warmer they will again become active, for the hotter the heat the happier the hoppers.

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#### No. 224 -- From Orange to Rose

A shortage of oranges in Britain has led to the acceptance of a new and rich source of Vitamin C, the anti-scurvy vitamin. It is now a question of would a rose by any other name taste as sweet? That's debatable. But the fact that they're effectively taking the place of semi-tropical citrus fruits in the diet of British children is beyond question.

Before the war it never occurred to anyone to use rose hips. Children, of course, have always chewed them. When vital shipping space had to be conserved for more essential cargoes, and the supply of oranges dwindled, a small army of Boy Scouts, Girl Guides, Teachers and Womens' Institute members turned into the country lanes of England and Scotland with their baskets. Two hundred tons of rose hips were turned into a syrup for the older children. However, housewives found it difficult to keep the hairs out of the syrup so the hips were finally sent to 9 factories which have now produced over 600,000 bottles of syrup. Two teaspoonfuls in 24 hours give all the Vitamin C which older boys and girls require. What is more, Mother has no problem in urging little Johnny and Susie to take their Vitamins, for the children sip it with relish!

Britain's Ministry of Health is well pleased with the result of the rosy diet and are hoping for a much bigger collection of rose hips when autumn rolls around this year.

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#### No. 225 -- Maps

The word map originally meant napkin, coming from the latin word "mappa". In the Middle Ages a world napkin was a map of the world, painted on a cloth. Indians and Eskimos and many of the Polynesian tribes, customary wanderers, are very acute in the understanding of maps. On the other hand, negroes are usually completely lacking in this respect.

Never has there been a greater demand for maps than at the present time. In Canada the vastness of the country makes for a map-makers' paradise. The number of maps distributed by the Department of Mines and Resources for the first three months

of this year numbered over 205,000 and weighed roughly around 9 tons. A considerable portion of these was accounted for by meeting the demands of the fighting forces in Canada. Detailed topographic maps were required by the Army, hydrographic charts by the Navy and aids to air navigation and a wide variety of maps and charts for class room instruction by the Air Force. The Air Training Plan requires maps in the largest quantities, two or three which cover the area where training schools are the most numerous being used at the rate of 15,000 sheets a year.

Maps issued by the Government are made by the Topographical and Geodetic Surveys in Ottawa, under the Department of Mines and Resources. Right now this Department is working hand in hand with the Department of National Defence to meet military demands. In addition to those issued by the Government many maps are put out by private companies located in various parts of the Dominion.

The topographer has indeed come into his own. A science which in peace-time seemed confined to the supply of charts to a few interested civilians, schools and so on now finds itself the basis of one of the most important aspects of the war.

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#### No. 226 — Bicycles

War has wrought many changes in our mode of living. In peacetime, for instance, the motorist could jump into his car and drive helter-skelter over the highways with great abandon, having little or no thought of the wear and tear on his car, the burning of gasoline or the wearing down of his tires. These could be readily replaced provided the purse could stand the strain.

But today conditions are vastly different. Gasoline is rigidly rationed, no longer is it possible to get tires for purely civilian driving and parts for breakages are becoming hard to replace. All of these factors have resulted in the removal of cars from the road and as time goes on this gradual disappearance will continue at least until the war has been brought to a successful conclusion.

What will be the result of this disappearance from the highway of more and more automobiles? The answer is obvious. Transportation problems that in some areas are even now difficult will become more aggravated. The horse will definitely come into its own, walking for pleasure will once again become popular, people will stay closer to their homes and bicycles will be more widely used.

To help relieve the problem, Canada has created something of a record by arranging for a 150 per cent increase in the production of bicycles during 1942. At the same time the making of children's bicycles is prohibited, and all unnecessary parts and trimmings in bicycles for grown-ups are eliminated.

After present stocks of bicycle parts are exhausted, manufacturers will be permitted to make only three sizes, two for men and one for women, while no model will weigh more than 33 pounds. Except for the handle-bar stem and the tube supporting the seat there will be no nickel plating. The front mudguard will be two inches shorter than at present, and such accessories as luggage carriers, baskets and so forth will be prohibited. By this simplification of design it is estimated that about 170 tons of materials, mostly metals, will be saved every year.

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No. 227 -- Down in New Zealand

Inevitably our thoughts turn every now and again to our cousins down under in New Zealand, to wonder how they have been getting along in food supplies. The New Zealanders are away off by themselves, yet they are nearer to the sources of supply of certain commodities—tea, for example,—than we are.

The Commercial Intelligence Journal, the official organ of the Trade and Commerce Department, has published an illuminating resumé of New Zealand trade which provides some very interesting information. Imports of tea have grown tremendously during the war years and last year it amounted to a value of about \$7,495,000. In 1938 the amount was only \$4,080,000.

Seven and a half million dollars worth of tea compares with a normal purchase by Canada of ten million dollars worth or about 40 million pounds, but Canada has between seven and eight times the population of New Zealand so that the New Zealanders are much heavier drinkers of tea than we are. They seem to use tea to the value of about \$5 per capita whereas Canadians spend a little less than one dollar per capita. These are by no means exact figures, but they serve to illustrate how much more tea is used there than here. Coffee is not mentioned in the list of imports.

New Zealand got twice the sugar last year that it did in 1938. Other imports have gone up during the war years, while some have decreased. Amongst those that have increased are raisins, barley, vegetables, butter and fats, cocoa, tobacco, wood-pulp, cotton and linen piece goods, wools, yarns, tin, copper, metal cordage, dyes, brushes.

Imports that have decreased include canned fruits, canned fish, bananas, wheat, spirits, seeds, footwear, drapery, floor coverings, railway plant, engines, sewing machines, agricultural and dairying machinery, earthenware, china and glassware and newsprint.

A feature of New Zealand's trade was the sharp decline in the imports of apparel. The value last year was around \$600,000, but in 1938 it was about \$7,500,000.

The United Kingdom is the largest purchaser of New Zealand produce, the chief items being butter, cheese, frozen meats, wool and sheepskins. The total value of the overseas trade in 1941 dropped to £116.6 million from £112.7 million in 1940, but was an improvement on the 1939 figure of £107.4 million.

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No. 228 -- Kipperd Snacks

Long a widely used though nearly always imported sea food in many parts of Canada, canned kippered snacks are due to enjoy an even wider demand now that the Dominion's 1942 pack of canned salmon and sea herring are reserved to meet Britain's food needs. The salty, smoked herring fillets make a tasty dish and can be used in a variety of fish entrees.

The preparation of canned kippered snacks is a relatively simple process. Processing methods followed by different manufacturers may vary in some of their details but in general the herring are scaled, washed, and filleted, and then brined in a half saturated brine from 35 to 55 minutes, depending on the size of the fillets and the temperature of the brine. The brined fillets are spread face down on wire mesh trays and dried and smoked simultaneously at 95 to 100 degrees Fahrenheit, in a tunnel

through which smoke and dry warm air is forced by a blower. Drying and smoking lasts for about three and one-half hours.

The fillets are then placed in oblong cans and the cans exhausted from three to five minutes in the usual manner and sealed immediately. No sauce or oil is added to the fillets. Retorting is carried out at 240 degrees Fahrenheit for 30 minutes.

The resulting product is among the most tasty of fish, and one which should enjoy a wide favour on Canadian tables. In the production of kippered snacks 100 pounds of round herring will produce about 45 pounds of fillets, which in turn produce some 35 pounds of "Snacks".

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#### No. 229 -- Cooperative Contribution

A direct contribution to the happy conclusion of the present maniacal demonstration of brotherly love gone askew is being made by hundreds of farmers in Canada, from the East coast to the rocky shores of the threatened Pacific. The whole idea is one of cooperation and the pooling of power and labour.

The restricted amount of new farm machinery now available makes it vitally important that every piece now in use be made to last as long as possible and do the greatest possible amount of work. The pooling of farm power and machinery results in a substantial reduction of the cost of operation to the individual farmer, cuts down on the amount of labour required, and gets the maximum amount of work from a minimum amount of equipment at the lowest possible cost to all concerned.

Cooperation in the use of farm machinery may be worked out in many different ways. The four most common forms of cooperative machinery use now in operation are: (1) joint ownership of one or more machines by two farmers; (2) "custom work" where one farmer with large equipment performs work for other farmers in addition to his own; (3) "contract farming" where one man owns all the equipment and makes it his exclusive business to perform all field operations for his customers; and (4) the pooling of all equipment by a group of farmers in a company where all operations are performed by common operators on a prearranged plan and where individual payments are made to the company for work performed. All these systems are being practised and farmers are finding them particularly adaptable to the present conditions and shortages resulting from the increasing tempo of munitions production.

The results of many years of keeping accurate cost records have enabled the Dominion Experimental Farms Service to offer concrete aid to individuals who are considering plans for this cooperative use of equipment. Information and helpful suggestions will be supplied upon request.

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#### No. 230 -- Birch and the Borer

There are 9 species of birch in Canada scattered from East to West, and as far north as the timber line. Four of these varieties inhabit the Pacific Coast region. Relatives of the alders, birch trees are easily recognized by the bark which is characteristically marked with long horizontal slits or lenticels. In young trees of most species it can be separated into papery layers.

Birch is one of our valuable hardwoods and the war has increased the demand for

this type of tree. It is from the white birch, which has an extremely wide range in Canada that the Indians have for generations made their birch-bark canoes, famed in song and story. The wood is valuable for the manufacture of spools, bobbins and clothespins. The yellow birch, found from Newfoundland and the Maritimes westward to Lake Superior and along the international border to the Lake of the Woods, is the largest of our native birches. The lumber is of good weight, easily worked and hard and strong enough to withstand wear and mechanical stresses, hence its importance as a war material. In connection with aeroplanes it is employed in the construction of laminated wooden propellers. Its use for flooring, furniture, interior finish, vehicle stock, agricultural implements, veneer handles, and similar uses is increasing. The plainer lumber is often stained to resemble walnut or mahogany, but the natural appearance of slightly figured wood is so attractive that natural finish or light stain that preserves the original sheen and figure of the wood are coming into extensive use. It is the most important hardwood in Canada sawn into lumber.

Then there's the sweet birch, known variously as the cherry, black or red birch. This is a very aromatic variety and is frequently distilled for the winter-green flavouring that is produced from an essential oil it contains. The wood itself is highly prized for furniture and cabinet work because of its deep colour and satiny lustre. As a rule, however, sweet birch and yellow birch are not separated as a lumber and are sold together.

War has brought increased demands for bigger and better birch logs. There are large forest areas, particularly in Quebec and the Maritimes in which birch predominates. Accessibility is a vital consideration in forest operations, especially at the present time. An added difficulty in securing adequate supplies of birch in good stands has made its appearance in the form of the bronze birch borer.

This pest generally prefers to work on old and weakened trees. The immediate problem, therefore, is to cut as much as possible of the injured trees or stands first. It will often be found that trees which appear dead in the distance are still fit for salvage. The log is fit for veneer or other uses until the stem begins to die and the "shothole borers" start to make holes directly into the wood. When this happens the tree is fit only for fuel, and soon loses its value for any purpose whatsoever.

Efforts are being made by the Dominion and Provincial Governments and by private operators, to direct operations into the areas where salvage will be most effective in reducing the loss. All owners of birch, including woodlot owners, should watch for evidence of attack by the bronze birch borer, for it is a dangerous saboteur that can quickly undermine vital war industries.

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### No. 231 -- Lobsters

A food that frequently makes its appearance on our tables as a luxury is the crustaceous lobster. Canada, with an annual catch of some 90 million is the largest lobster fishing country in the world, with the United States, Ireland and Norway following.

A century ago the lobsters were so plentiful that fishermen regarded them as a nuisance. Today, however, laws have been made to protect the fish from indiscriminant killing so that our resources might not be seriously depleted. Any lobster less than 10½ inches in length and weighing under a pound and a half must be carefully replaced. Fishing in lagoons, shallow bays, narrow inlets or in any water less than

two fathoms in depth is strictly prohibited. And it has been suggested that the number of traps should be specified for each boat, the maximum per company being set at 300 traps and 10 boats. Fishing for lobsters is restricted to those weeks between April 20 and July 10, and the month of September.

Lobsters are not migratory over long distances. Swimming by means of the vigorous flipping of the tail is exhausting and ordinarily walking is slow and laborious. They do not grow quickly and it takes from 4 to 5 years for a lobster to reach maturity. Each stage of growth is a period of helplessness and danger, and is taken suddenly. For instance, a 6-inch lobster at one step becomes a 7½ inch fish.

A fully matured female lobster of about 8 or 10 inches long lays about 5,000 eggs which she carries about with her for some time. This habit is in contrast to that of cod, herring, haddock and oysters, etc. some of which lay and deposit between 8 and 9 million eggs. So, if a female lobster is wantonly destroyed, it means the loss of thousands of young fry. Although the average size attained by lobsters is about 8½ inches at an age of one year and about 22½ inches at 30 years, we recently heard of one that was caught measuring 3 ft. 5½ in. with a weight of 42 pounds.

Canning of lobsters in the Dominion is an industry confined largely to the Maritimes. In the process, the lobsters, which are green when caught, are put into huge vats of clean salt water, or salted fresh water. They are boiled from 8 to 15 minutes. About 200 pounds of fish are boiled at once, and they emerge from their bath as red as,—well, as red as boiled lobsters. The boiling operation loosens the meat from the shell, and claws, arms and tails are easily removed. After a thorough washing the meat is packed in parchment lined tins and sent to market.

One of a list of 60 different kinds of Canadian food fishes, around 283,000 cwt. of lobsters were caught in 1940. Their value when marketed totalled over \$3,137,000. Our export trade in fish and fishery products has always been large, and since the commencement of the war shipments have increased tremendously. The chief markets have always been the United Kingdom and the United States. Owing to war restrictions on figures for publication, recent statistics are not available, but in 1933 the value of our fishery exports to the United Kingdom represented 29 p.c. and to the United States 46 p.c. of the total exports. The total value of fish and fish products exported in 1940 amounted to over \$32,662,000.

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#### No. 232 -- Bread

There are few foods which have the sustained preference of consumers as that of bread, and yet relatively little attention is given to its storage. While bread is not generally considered a perishable food, its eating properties may easily be spoiled by improper storage conditions. Bread is at the peak of its flavour and palatability during the first 36 hours after it leaves the oven and, where possible, purchases or baking should be restricted to the requirements of such a period. As bread is frequently stored for a much longer time, it should be stored under proper conditions if it is to retain the most of its good eating properties.

Mould, the colour of which may vary from a light grey to an intense black, is probably the most common cause of spoilage in bread. The moulds usually grow in patches, which increase in size until the whole loaf may be attacked. In the early stages, the mouldy patch may be cut off and the bread used up. When a large area is moulded, the bread should be destroyed, and the bread storage then thoroughly disinfected.

The condition known as "rope" on the other hand, develops on the inside of the loaf, and the damage cannot be noticed until the loaf is cut. The centre of a "ropey" loaf becomes slightly discoloured, somewhat sticky and stringy. As the condition develops a heavy characteristic odour is noted, while the dark colour and doughiness become intensified. When these conditions are found to exist the infected bread should be destroyed and a thorough clean-up made.

Where bread spoilage occurs in commercial bread notify your baker at once, so that he may be able to take action. If the bread is baked in the home, the addition of 2 teaspoons of vinegar for every four cups of flour usually prevents the trouble. Bread should be baked a little longer than usual and thoroughly cooled before being stored away.

Bread should be stored in a clean, cool, dry place, away from other substances which have decided flavours or odours. Where it is stored in large amounts, bread should be placed on racks, preferably screened in, one loaf high and so spaced to allow adequate ventilation. The racks should be scrubbed frequently and thoroughly dried before bread is placed on them. Bread should never be stored for any length of time in pasteboard shipping containers.

In the home a well ventilated bread box should be used. The bread box should be scrubbed and aired in the sun from time to time. If wrapped bread is used, the wrapped should be removed before the bread is placed in the bread box, and left-over bread should never be allowed to accumulate. As most of the bread spoilage takes place during the humid summer weather, extra care should be taken during this period.

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#### No. 233 -- Pruning of Trees

Trees like children require careful training and feeding in their youth to build a strong frame in order to stand the blows of time. Pruning has two main objects; first to improve the structural strength of the tree by preventing the formation of bad crotches between main limbs and second, to improve the appearance by promoting good balance.

In all young shade trees the ideal structure consists of a single straight leader or trunk running up the full height of the tree with lateral branches commencing a few feet from the ground and evenly spaced around and up the trunk at regular intervals of one to two feet.

If the tree has been well grown in the nursery, only minor pruning will be necessary. Small branches springing from the trunk between the main laterals should be removed, and any large lateral which is growing out of bounds should be headed back to a side branch growing in the right direction. Also occasional small branches need removal to create balance and openness. When the young tree has been properly formed only an occasional light pruning will be necessary to help it retain its good shape.

Here are a few rules on pruning that should be observed: 1. When a branch is removed, the cut surface which is left should be smooth, flush and in line with the parent branch. If any bump or stub is left it prevents the formation of a healing callus and allows decay to enter. 2. Never permit the formation of bad crotches between main limbs. These will split and allow decay to enter. Any ascending branch may be cut back to a secondary lateral which is growing in a horizontal position. 3. Never leave wounds in the bark with horizontal or ragged edges. All wounds should be pointed top and bottom, in the form of a boat pointing lengthwise of the branch,

so as to permit the flow of sap along the entire margin. This encourages the formation of a healing callus. 4. Never use ordinary paint to cover wounds. Paint the edge of the inner bark with orange shellac to prevent drying and cover the wound in the wood with some waterproof asphalt tree dressing to prevent decay.

The point to guard against is that no unprotected wound shall be left in the surface through which disease can enter to weaken the tree's structure.

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#### No. 234 -- Woodlot Management

The most important part in successful woodlot management is the proper selection of trees to be cut. Haphazard cutting throughout the whole lot is as much a mistake as is clear cutting. A good practice is to confine each year's operations to about one-tenth of the woodlot so that the whole area is cut over once every ten years.

Before cutting starts the owner should go over that portion of the lot that he intends to cut over and examine the trunk and the crown of each tree and mark with his axe the trees he is satisfied should be cut. By thus "selecting" the trees, mistakes by the chopper are avoided.

This marking should be done when the leaves are on the trees because the leaves often indicate whether the tree is healthy or not. Trees that should be marked are: Dead or dying trees; trees attacked by insects or fungus; badly deformed trees; poor trees of closely formed groups.

The allowable annual cut from a 20-acre woodlot will probably be from 10 to 20 cords depending on the condition of the stand.

The aim should be to keep enough sound young trees so spaced that there is no overlapping of the crowns, and yet have the ground almost completely shaded.

After the whole stand has been cut over once in this systematic manner there will be very few dead, dying, or defective trees to be cut in future operations, and consequently the wood will nearly all be of the highest quality. Good growth of good trees is obtained by systematic cutting.

A woodlot can be kept as a going concern, yielding more and better products as management becomes more effective. Clear cutting in which all the young, as well as the mature trees, are harvested, is wasteful and extravagant. There is little usable volume in the young trees, but it is in these that the most rapid growth rate occurs, and without any expenditure whatever.

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#### No. 235 -- Summer Transplanting of Conifers

The most serviceable shelterbelt trees for prairie planting are spruce. Though the most natural time to transplant these evergreens is during April and the first half of May, when they are awakening for a new season of activity, they can, however be transplanted successfully in late summer. In Southern Manitoba mid-August has been favourable.

In moving trees it is important that the soil be moist. At this time the parts of the tree above ground have completed their growth. The terminal bud is developed

and the new growth has become firm and woody. However, underneath, a second period of very active growth of new roots has commenced. This extension of new roots continues until the earth becomes cool in autumn. A tree moved in the last half of August, or early September, and well and firmly planted, should re-establish in its new setting before growth processes are halted by cool temperatures in the soil. October transplanting is approved by some growers but little, if any, new roots will sprout before the next May, and the operation is therefore more hazardous.

After a rain in September is a fair time to move larches. Junipers transplant well in late August. The Rocky Mountain juniper from Alberta, North Dakota and Montana seems to be one of the evergreens best adapted to withstand bare ground and cold wintry winds, particularly on light types of soil.

In digging for transplanting, the ball of earth is bound about its equator with a band of burlap. Such may be made tight and fast by weaving nails through the several overlapping thicknesses of the binder. Then the whole ball is rolled gently into a sack hammock. This is tied snugly and the tree moved to its permanent bed. The ball is placed in a roomy hole at a level of an inch lower than previously. The depth can be judged from the original soil mark to be seen on the tree trunk. Nails and twine are removed. The burlap is untied but left in the hole. It soon rots. Pulling it out is likely to wreck the ball of earth and severely shock the plant.

An important aid to success is to dump a pailful of peat moss into the large hole before placing the plant. This acid material encourages prompt root growth and retains moisture like a sponge. Peat moss is a big help when mixed with the earth around the sides of the hole where heavy clay is the soil type.

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#### No. 236 -- The Canadian Army

At home and abroad the Canadian Army is undergoing a programme of expansion and reorganization to meet the requirements of total war in what is believed the most critical period of the world conflict.

Canada is building an army overseas, which is described as 'a well-balanced, highly effective fighting force, co-ordinated from the front line to the rear echelons--a weapon forged and sharpened to play a great part when the time comes to strike.'

In the current year, the army programme will call for an expenditure of \$1,000 million. When it is completed, there will be a Canadian active army overseas of two army corps. Necessary ancillary troops will be provided, and a division now in Canada is being equipped as an armoured division and will be trained and sent overseas. Another army tank brigade is being created for use with the armoured divisions.

At home, defences are being strengthened by the mobilization of the 7th and 8th Divisions. These will be held as mobile reserves for existing and projected defences, particularly on the coasts. Many of the men for these new divisions will be made available by national selective service. The Reserve Army is being placed on the most highly efficient basis.

The first Canadian troops landed in the United Kingdom in December, 1939. They are now standing at the alert in key defence positions. Troops from the

Dominion are also stationed in the West Indies, Newfoundland, Gibraltar, and defence areas in Canada.

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No. 237 -- The R.C.A.F.

Members of the Royal Canadian Air Force are now fighting in Ceylon, the Middle East and Britain. Young Canadians who received their air training in Canadian schools, are serving in Royal Air Force units in many war theatres. There is, in fact, scarcely an R.A.F. squadron which does not have a Canadian in its ranks.

The operational strength of the R.C.A.F. in Canada is being rapidly increased to meet its broadly expanded responsibilities. Expenditures for home war establishment in 1942-43 will be about \$315 million. This compares with over \$23 million in 1939-40, over \$50 million in 1940-41 and about \$115 million in 1941-42. In addition to the estimates for the current fiscal year, long range commitments of \$120 million have been made for home defences.

The most important task of the R.C.A.F. is administration of the British Commonwealth Air Training Plan, which is now in full operation. This plan is training empire aircrews and other categories, who are now reaching the battlefronts in a steady stream. The final school of the Air Training Plan was opened last December 15. Two days later--on December 17--the Air Training Plan marked its second anniversary. Although the enterprise is a joint one, in which the United Kingdom, Australia, New Zealand and Canada co-operate, the Plan is essentially Canadian. Canada has supplied more than 80 per cent of the manpower, and is paying \$300 million of the \$900 million which the plan is costing.

There are 93 schools training all categories of airmen; 140 establishments of all kinds and more than 2,000 buildings.

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No. 238 --- Canadian Munitions of War

The creation of war industries in Canada since the outbreak has been little short of an industrial revolution. From a normal peacetime organization Canadian industry, under the supervision of the Department of Munitions and Supply, has built war industries in every part of the country, employing directly and indirectly more than 600,000 workers. By the end of the year another 100,000 workers will have been employed. Thus, about 700,000 Canadians out of a population of eleven and a half millions will be employed in producing munitions of war.

From July 14, 1939, to March 31, 1942, orders have been placed to the value of more than \$5,447 millions for war equipment and supplies for Canada, the United Kingdom and other countries. Of this amount, \$2,047 millions was placed on Canadian account.

A wide range of munitions, many of which Canada was not equipped to make before the war, are now being manufactured. The aircraft industry is turning out aircraft at the rate of more than 360 planes a month. About 250,000 army vehicles have been delivered. There are now nine types of guns and eleven types of carriages or mountings produced in the Dominion. A new type of 4-inch naval gun, a 12-pounder naval gun, naval mountings, a 6-pounder anti-tank gun, 3.7 inch anti-aircraft gun and mounting, 2-inch bomb throwers, Boys anti-tank rifles and Sten sub-machine guns have recently come into production.

Hundreds of Canadian-made tanks have been shipped to Russia. The Dominion ship-building programme calls for an outlay of \$550 million. The keels for two large Tribal type destroyers have been laid in Canadian yards. Larger and faster corvettes are being constructed. New plants are under construction to produce magnesium and synthetic rubber.

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No. 239 -- On the Home Front

War is imposing heavy sacrifices upon Canadians. The burden in dollars, in labour, and in the loss of personal conveniences is becoming steadily heavier.

The Dominion Government needs \$10 millions every day this year, nearly \$9 millions of which will go to war. This year, war will cost more than \$3,200 millions, nearly twice the entire cost of the First Great War. Taxes have been tripled. Five times as many Canadians pay five times as much in income taxes. Despite these striking tax increases it has been necessary to raise huge loans to bridge the gap between revenues and expenditures. Since the outbreak of war Canadians have lent more than \$2,000 millions in bonds, war savings certificates and stamps. The Second Victory Loan of February raised a record \$1,000 millions. Subscribers totalled more than 1.6 millions, the largest number to buy an issue of Dominion bonds.

To use manpower resources most effectively for war a comprehensive programme of national selective service is being carried out. An increasing number of women will be brought into industry to turn out weapons and supplies of war. By the end of this year, 700,000 workers will be employed in war work. The age for compulsory military training for men, unmarried or widowers without children at July 15, 1940, has been raised. Men will be selected by drawing lots over the entire field. Liability for military service is being extended to all residents in Canada whether citizens or not.

To stabilize agriculture, farmers, farmers' sons and farm labourers will not normally be liable to compulsory training and service. To increase the number of men available for the armed services, war industries and other essential industries, a long list of restricted occupations has been designated into which fit men of military age cannot enter. An extended programme is being provided to recondition men for military service.

As part of the carefully integrated system of economic controls, wages and salaries have been stabilized and a general price ceiling has been placed on goods and services.

Many of the goods, materials and services of peacetime are no longer available because of the necessity for maintaining and increasing war production. No motor cars or radios are being made for civilian use. Gasoline and sugar are rationed. Manufacture of all descriptions of 'non-essential' goods is being curtailed. 'Frills' are being eliminated and variety is being lessened. By means of a country-wide organization, rubber, metals of all sorts, paper, rags, fats and other materials are being salvaged. Construction is severely restricted.

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No. 240 -- Control of Plant Lice

Aphids, or plant lice, are soft-bodied insects which are found feeding in clus-

ters on a wide variety of plants. They vary greatly in colour--white, blue, green, red, and black--and when they make their appearance, they should be checked at once before further damage is done.

The aphids can be controlled much more easily at the beginning of an outbreak than later in the season, when their numbers have increased and the leaves upon which they have been feeding become curled up in such a way as to protect them from sprays and dusts.

The easiest and best method of control is by spraying the plants with 40 per cent nicotine sulphate and water, to which has been added a small amount of laundry soap, in the ratio of 3/5ths of a pint of nicotine to 40 gallons of water, and two pounds of soap. For small amounts, use two teaspoonfuls in a gallon of soapy water. Apply the spray on a calm hot day, and drench both the upper and the lower surfaces of the leaves, so as to actually hit the insects.

In protecting field crops, at least 100 gallons of the spray should be used per acre at each application. Two or three applications at weekly intervals will be necessary for complete control. In buying nicotine sulphate in quantity, insist on getting it in large containers rather than in a number of small bottles or cans, because the cost is much reduced when purchased in bulk lots.

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#### No. 241 -- Not for Trash

This is a story about ashcans--not the ordinary run-of-the-mill variety that adorns the front stoop on garbage day, but a special type of ashcan with more than a utilitarian purpose in life. As a matter of fact, it's bent on a career of devastation that may ultimately mean the difference between life and death for you and you and even you. This ashcan, alias the depth charge, is locked in mortal combat with the U-boat, a deadly foe that even now menaces the vital life-line of the Atlantic.

The U-boat is the "most precisely built instrument of destruction ever devised. It's job is to snipe day and night at Britain's ocean communications in a constant endeavor to bleed her of her striking power and starve her into submission." Armed with "ashcans", it is the work of the Navy to ferret out the U-boat and blast it out of the sea.

The listening devices on destroyers and corvettes which pick up the tell-tale throb of the U-boat engine are always panned. When the approximate location of the sniper is determined, the ashcans are brought into play. The most efficient method of disposing of a submarine is to "bracket" it. This is done by surrounding the underseas craft with four depth charges, timed to go off simultaneously. The exact effect of these little parcels of TNT is not known, but even if a direct hit is not made, the craft may be disabled and forced to the surface, or sink to depths where tremendous water pressure will crush it.

This, in brief, is the action of the depth charge. The cans are fitted with explosive charge made up of a mixture of TNT and other chemical compounds, which is capped and sealed by a layer of pure TNT. It is extremely important that no air bubbles are left in the explosive when the can is filled. The pistol that detonates the explosive is a precision instrument. As the depth charge sinks water flows into the pistol chamber, eventually creating sufficient pressure to actuate the firing pin. The rate at which the water pressure is built up determines the length of time that elapses before detonation takes place. The rate of inflow can be regulated to

suit the action required.

As the explosive charge detonates under water, a tremendous bubble of gas is formed instantaneously, displacing the water for a considerable area in all directions. As water is a comparatively incompressible medium, the wall of water pushed back with tremendous force acts with the effect of a steel piston, delivering a giant hammer blow against any object in its path.

Made and filled by Canadian workers in defence plants located in Ontario and Quebec, these ashcans, in the hands of an ever vigilant Navy may ultimately mean the end of submarine warfare, and the failure of the main purpose of the U-boat, namely, the strangulation of Britain.

We are indebted to an official publication of Canadian Industries Limited for this information regarding the depth charge, whose ungainly shape won it the nickname "ashcan". So it's yours for bigger and better ashcans!

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#### No. 242 -- Fish Culture

What in the world the object may have been can only be conjectured by several somebodies recently raided stocks of young trout placed in an eastern lake by the Dominion Department of Fisheries and scooped them out in large numbers. The fish were still too small to be of any honest use and the only effect of the marauding will be to nullify, in part at least, the department's efforts to improve the fisheries resources of the area in question by stocking operations.

The raiders were on illegal business, and stupid business. Stupid business because, if it's true that "you can't have your cake and eat it," by the same token there can't be continued good fishing in any water if the little fish are taken from it before they have a chance to develop.

Each year the Department of Fisheries raises millions of trout and salmon in hatcheries and then liberates them in selected streams and lakes. Last year, for instance, there were distributions of 29,000,000 little fish in waters of the Maritime Provinces where fisheries administration is a federal job. These annual distributions or "plantings" have the purpose, of course, of improving fishing in the waters which are stocked, the creation of better fishing conditions for the benefit both of anglers and commercial fishermen. Plantings are made carefully, in such numbers as may be judged necessary to bring about improvement.

Needless to say, there are always some losses among the little fish through natural causes and if to these there are added wanton destruction by unlawful or unthinking persons the purpose of the plantings will be largely defeated. It's not much use to say anything to the lawless folk--John Law will have to deal with them when he can catch up with them--but decent people may be reminded that if they thoughtlessly retain the small fish which they chance to capture the future fishery will suffer. Everybody is cautioned to return small fish to the water unharmed, and residents and frequenters of lands adjacent to stocked waters are urged to co-operate in protecting the young fish and thus to assist the department in its efforts to conserve and improve the fisheries.

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No. 243 — Bark for the Doctor!

You're not barking up the wrong tree when you choose a cascara to plant in your back yard, says the forest service in British Columbia. Farmers there are being encouraged to cultivate cascara extensively, for the bark is an extremely valuable source of medicinal supplies. Medical men know no substitute for it, and because of army needs cascara is in greater demand now than ever before.

Found in the southern coastal region of British Columbia, usually on rich bottomlands in association with red alder, Western red cedar and Douglas fir, the cascara tree is small, rarely over 20 feet in height. Flowers which appear in June are greenish in color and form in clusters near the end of the branches. Round black berries that ripen in August or September are sweet and very attractive to birds. The bark is usually not more than  $\frac{1}{4}$  inch thick, dark brown to light brown or grey, tinged with red, and broken on the surface into short thin scales. When freshly cut it is bright yellow but turns dark brown on exposure to light and has a very bitter taste.

In recent years Japanese and Indians have been peeling much of the bark and selling it to wholesale drug manufacturing firms. The evacuation of people of Japanese origin from certain areas in British Columbia has left the Indians and white men to carry on. British Columbia druggists expect a supply of upwards of 300 tons of bark annually, but they claim that this output cannot be maintained indefinitely unless more scientific methods are adopted for stripping the trees.

British Columbia is the only part of the British Empire where the tree flourishes. The government is experimenting with cascara at its extensive forest nursery near New Westminster, and it is hoped that farmers will adopt the programme of cultivation to the same extent they have recently endeavoured to enter the Christmas tree trade on their cut-over woodlots.

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