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C O N T E N T S

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James Muir,

Editor.

No. 245. -- Bristling Business.

Ol' Sol and firecrackers aren't the only things to come out of the East. Before the apple cart upset about four years ago, China carried on a rather bristling business in bristles of one sort and another. In fact prior to Japanese occupation and the closing of all normal exit routes, China was the chief source of bristles for the whole world. The bristles, in turn, emanated from the noble backs of hogs that were given an extra lease on life so their bristles would be long and strong. That was before the Japs swarmed in and the Chinese killed and ate many of their prize hogs rather than leave food on the hoof for the enemy.

Besides raising the hogs, dressing the bristles is a specialized business requiring nimble fingers and continued practice over a period of years. During the last few years bristle dressers have migrated to this continent from Europe, but as long as a good quality of bristle was available from China we depended largely upon that source of supply of ready dressed bristle. Since the war, however, the situation has altered and our attention has been forced to other markets. In this country hogs are raised principally for meat purposes and are slaughtered while still young. That is probably the main reason why bristles are not produced commercially in Canada.

Although we don't raise bristles we do manufacture brushes. In 1941 over 1,868,000 dozen brushes were made in Canada, not including those made of corn or fibre. Peacetime uses for bristles run to paint and varnish brushes, tooth and other toilet brushes such as shaving, clothes, hair, nail and shoe brushes, and dabbing brushes for the woollen industry. All are manufactured with a view to serving a definite purpose and different types and lengths of bristles are mixed in order to give the proper working qualities. Wartime uses of brushes include the woollen mills which produce cloth for the armed services and the navy and army require large quantities for construction and maintenance of equipment.

Horse hair and certain vegetable fibers are often mixed with hog bristles in the manufacture of brushes, especially since the war has made the latter hard to get. Horsehair is not generally used alone in the manufacture of better paint and varnish brushes but can be used satisfactorily in floor sweeps, counter and mill dusters and many miscellaneous brushes. Fibre, especially istle, a Mexican fibre, has unlimited possibilities in the manufacture of brushes other than for paint and varnish purposes. There are grades for coarse and abrasive brushes and for shaving brushes, with all qualities in between.

Nylon filament was just coming to the fore in replacing hog bristles in the manufacture of brushes when the war forced it into more vital channels. However it had been in domestic use long enough to prove its worth and in some cases it was found superior to the materials formerly used.

In Bureau records brushes are listed under the heading "Broom, Brush and Mop Industry". In the 1941 report 93 such establishments are listed as being in operation, with most of them located in Ontario and Quebec. Paint brushes, with a selling value of over $1,858,000 came first in importance, with corn brooms, brushes for household use and mops of all kinds next in order.

No. 246. -- Canadian Firefighters in England.

In the early days of the war when the German air force was blitzing London and other English towns, dropping their loads of death without regard for the

military value of their targets, homes with all their contents were blasted, people were killed, churches, hospitals and schools were demolished. Incendiary bombs were dropped by the hundreds and the property loss through fire reached alarming figures. Through it all, with courage and fortitude, the people carried on with their daily tasks, little shaken by the onslaught. But today with the Allied fighters and bombers controlling the skies over Britain as well as over Continental Europe, the Nazi bombers have lost much of their sting.

To combat the fire menace fire fighting bodies were organized throughout Britain to which Canada has made an invaluable contribution in the form of the Corps of Canadian Firefighters. It is a unique organization in that it is the first unit of its kind ever mobilized in one country to fight fires in another. Organized in March 1942, members of the unit began to arrive in Britain by the following June. Today more than 400 Canadians have been recruited in this service to serve in Britain.

Recruits are equipped and trained in Ottawa. The Corps, at the present time, represents 105 Canadian municipalities. Two-thirds of the strength is composed of trained firemen, including fire chiefs, assistant fire chiefs and all degrees of lesser rank. Unskilled personnel is selected carefully from applicants whose qualifications indicate they are likely to become first-class firefighters.

During April, Canadian Firefighters fought blazes started by Nazi bombs in a municipality on the English south coast. The Commander of the British National Fire Service Unit with which the Canadians worked declared that "the keenness and enthusiasm displayed and the efficient manner in which they carried out their various duties is worthy of the highest praise."

No. 247. -- The Greasy Pole on the First Dominion Day.

Mr. Gilbert Rowan, of Miniota, Man., a much valued Bureau of Statistics reporter, has given us permission to make public the following letter from him:

"I am 87 years old last September 28th. And I remember getting up after being three days in bed with the measles. I walked three miles to Georgetown, Ontario, to be present at the great day of commemoration, the first of July. It was called Dominion Day and there never had been a Dominion Day before. I hope I don't weary you, but I remember one incident of that great day that I have never forgotten.

"The man that was doing the loud talking said there was $2.00 for anybody that climbed the greasy pole and put his hand on the top. Well, I watched 'til there was nobody looking and I went and inspected the pole, and started to climb. Soon there was a crowd around. It was quite interesting climbing, but I got half way when I came to the soft soap. I tried to go on up but found it was out of the question. But they would laugh at me if I quit.

"Then I had a brain wave. I went down and filled the new pockets of my coat with red sand and rubbed it on the pant legs where the soft soap was. Then I went at it again. I could hear them talking. Some boys said I wouldn't get to the top, but Dr. Wm. Freeman said 'I know that Gil Rowan. He'll go to the top alright!' Well, I got about two feet from the top and my sand gave out. Again I went down and got a fill-up of sand. Finally I succeeded in placing my

hand on the top of the pole. But there wasn't any $2.00 bill there.

"The crowd cheered loud and long. I got it into my head that they were laughing at me so I just loosened my arms and legs, dropped to the ground on my feet and took to my heels. I ran the three miles home and told my Mother all about it. She said sure they laughed at me. 'Just look at that good new suit of homespun flannel all in such a mess.' I wasn't fit to be seen. Well, I was never going to Georgetown again to be laughed at.

"A few days later a neighbor woman who had been to Georgetown came over with $2.00 which she said Joseph Barber had given her to give to Gilbert Rowan for climbing the greasy pole on Dominion Day.

"I can remember that scrape I got into, but I can't remember when I started to send crop reports to the Dominion Bureau of Statistics. I am sure it was not before July 1st, 1867 because there was no New Dominion before that date. I have been on the Pacific but I have never seen the Atlantic. I was born in Hamilton and Toronto is the farthest East I have been. I would like to see Ottawa."

No. 248. -- We Learned About Paper from Wasps.

If it hadn't been for a wasp, this story might never have been put down on paper.

We learned about paper from wasps. Did you ever watch one of these insects build a nest? First of all he tears off a small piece of dry wood, like a sliver from a fence post, then he chews it up into a pulp, works it into a paste and finally spreads the whole mess out to dry. By patience and persistence the familiar cone-shaped nest is at last completed--a house of real wood-pulp paper. Scientists had often watched this operation but it wasn't until as late as the middle of the last century that they finally tried it themselves. That was the beginning of the industry as we know it today, an industry in which Canada now leads the world.

Until wood superseded rags and straw in the manufacture of paper, the industry was relatively unimportant. Our extensive pulpwood resources and widely distributed water powers have been largely responsible for the great development. Quebec and Ontario are the centre for operations in Canada. Spruce supplemented by balsam fir in the east and by hemlock in the west has been found to be most suitable for the production of all but the best classes of paper. A few years ago the United States was the world's chief newsprint producer. In 1941 Canada's production was over three times that of the United States. Last year our output was well in excess of three million tons. In fact we are now sending 210,000 tons of newsprint across the border every month.

Not only newsprint is made in Canada. Practically all kinds of paper used here at the present time can be produced within our own boundaries. There are three classes of mills in the industry. In 1941 these comprised 28 making pulp only, 51 combined pulp and paper mills, and 27 making paper only. Newsprint makes up almost 80 per cent of our paper production, with paper boards, wrapping paper, book and writing paper, tissue and miscellaneous paper in order.

Indeed, it's a paper era in which we live. Paper is utilized in building our houses, our automobiles, even some of our clothes. With its help civilization

moves on. Sanitary paper food wrappers, individual paper cups and towels, surgical dressings and handkerchiefs have all become part of our daily life. Add to these few mentioned, the art and literature placed at our disposal and you have perhaps a faint idea of just how much we do owe to the development of the paper industry.

Increased business activity since the war has resulted in large increases in the demand for many kinds of paper, and vast quantities of many different grades are needed by the fighting services for purposes of record. Such products as paper board are extensively used in new offices, military hutments and other buildings, and both wrappings and board are in great demand for packaging goods ranging all the way from food to ammunition. Certain pulps are used in the manufacture of explosives and for other purposes.

Newsprint paper continues to provide the principal medium through which the public can be informed of the progress of the struggle and the problems it entails. One of the most important war functions of the pulp and paper industry of Canada is that of supplying foreign exchange in large volume for the purchase of war supplies of classes and kinds not available in this country. In this connection the pulp and paper industry has played a part far greater than that of any other industry.

No. 249. -- Hemp Now Grown in Canada.

The connection between the invasion of the Philippine Islands by the Japanese and a field of hemp growing in Canada may not be apparent but in reality they are very closely related. When the Japs took over these islands in the Pacific they cut off one of Canada's sources of supply of imported fibre. But as with the case of many other commodities, the sources of which have been reduced or entirely cut off by enemy action, Canada has gone in for the production of hemp, although under the watchful eye of the police.

Hemp production in Canada has been illegal since 1935, because of what was known as the Marihuana situation when cigarettes were made of the plant. As the act making the growing of hemp unlawful has not been set aside it can only be grown under police supervision by special dispensation. Hemp as grown in Canada, the United States, Russia and other European countries is a soft fibre, such as flax and jute, and should not be confused with the Manila hemp, sisal, henequen and other hard fibres.

The Dominion Department of Agriculture, anticipating that there might be a definite need for Canadian-grown hemp, has followed the situation closely. A permit was granted for the production of one field of this crop at the Central Experimental Farm in 1942. The production was carefully worked up over flax machinery, both hand and turbine, and evaluated by the hard fibre spinners as to possibility for use. At the same time the plans of the United States Department of Agriculture were followed, and sufficient seed was requisitioned to set up two hemp mills in Canada, one in the East, the other in the West, capable of handling 2,000 acres each.

Very considerable research is still going on toward the utilization of hemp fibre, possibly spun over jute machinery, with different treatments, in the hope of producing binder twine which will operate successfully in the present type of binders. As is well known, the present binder twines are made from a mixture of sisal and henequen, the chief sources of which are British East Africa and Mexico.

No. 250. — Handicaps of Wartime Farming in Britain

The Canadian farmer is having a difficult time these days but in comparison with the British farmer his lot is easy. In Britain normal afternightfall chores have to be done in pitch blackness, without light visible in the barnyard or from the house or any other of the farm buildings. Night raiders flying over Britain see no light in all the expanse of towns, villages, and countryside. Yet throughout Britain farmers are milking, feeding their stock, bedding down cattle, working in barnyards and in the farm buildings, and until recently many had to do their tractor ploughing in the blackness of the night made darker by the drizzling rains and mists common to the climate.

But there are other handicaps to farming in Britain than working in darkness. The farmer there has got accustomed to his turnip field being turned at a moment's notice into a base for anti-aircraft batteries; he must work is pock-marked fields to the edge of bomb craters—big holes four to 10 feet deep and up to 20 feet across—which must be fenced in if they cannot be filled in or farmed around. One farm had more than 50 of these holes, but what hurts the farmer most is that the bombs scatter the infertile subsoil over the top soil that has taken many years to build up.

Precautions have to be taken against incendiary bombs when the grain is ripening or the straw stacked in the fields. Buckets of water, sand bags, and fire beaters must be kept close at hand. If the army wants its farmhouse, the farmer and his family must take up quarters in some outbuilding. Increased products—grown under handicap of labour and equipment—must be sold at fixed prices, and carry on "Coupon Farming" that is, feed his live stock and poultry on a coupon basis, and in many instances he finds that the feeds allotted under the system do not begin to meet the minimum requirements of his stock.

The British farmer also has to pay a heavy income tax, but, in addition, if his profits for the year are above a certain fixed level, he must give up for the duration of the war exactly 100 per cent of that surplus profit under the Excess Profit tax. Yet he carries on and has increased not only the acreage but the average production per acre. As an example of increased yield wheat in 1942 returned an average for the country of 34 bushels to the acre and oats 80 bushels.

No. 251. — The Forests vs The People

Order! Order in the court!

Oyez! Oyez! Oyez! Hear ye! Hear ye! Hear ye! All manner of persons interested in the findings of this court.....

The people of Canada stand charged with the woeful desecration of the forests of this Dominion. Acts committed against the defendant include:

1. Carelessness and indifference in handling fires in and near the woods, resulting in destruction which in 1941 totalled 1,446,000,000 cu. ft. of merchantable timber.

2. Indiscriminate and unregulated cutting of timber stands.

3. Gross neglect in taking protective steps against fungus and insect attacks, allowing them to reach epidemic proportions. Ravages of this kind destroy about 700,000,000 cu. ft. of wood every year.

4. Blindness exhibited to the importance of forests in soil and water conservation programs and the preservation of fish, game and all wild life.

5. Failure to recognize the importance of scientific reforestation in the perpetuation of Canadian woodlands.

Your Honour, Canada possesses over 313,000 million cu. ft. of standing merchantable timber. Annual drain on forest resources in 1941 were about 5,100,000,000 cu. ft. Even if total depletion is replaced by total growth, the ancient giants of the forest will require several hundred years to replace. The idea that forests must make way for agriculture was rampant in earlier years. Soil drifting and erosion have resulted. Shelterbelts and farm woodlots are beginning to gain widespread recognition and plans are being formulated with a weather eye peeled for the future.

The forestry industry represents a capital exceeding a billion dollars. Wood exports net the Dominion an annual $300,000,000. Elaborate and ingenious advances have been made towards building up industries to consume our timber supplies, but in the protection and rational development of the very resource upon which these industries depend we have lagged sadly behing.

After due and careful consideration, gentlemen of the jury find the accused guilty as charged beyond all reasonable doubt. The maximum penalty under the prevailing laws of cause and effect and natural compensation for acts committed, whether out of ignorance or indifference, shall be the ultimate and inevitable reduction of this lush and fertile country of ours to a barren waste, utterly bereft of life in any form.

Case dismissed.

No. 252. -- Boil, Boil, Cauldron, Bubble!

"
Ten tanned toilers tasting tea
Trying to trot to Truxbury Fair,
One ox opening an oyster.

No, it doesn't make sense, we admit, but mention of tea always brings the old nursery rhyme twister to mind.

Before the war Canada was listed in fifth place among the chief tea drinking nations of the world. In those comparatively peaceful days we quaffed about four pounds of the "China drink" per person per year. The honors for first place in this marathon are generally conceded to Great Britain where it is estimated that each person drinks nine pounds of tea every year. Strange enough China, whence came much of our tea, drinks about half the tea grown in the entire world, yet her average per capita consumption amounts to only about two pounds a year.

Since the war a certain Paraguayan tea has appeared on the North American market. It is known as "Mate" and greatly relished by natives of various South American countries. Although most widely grown in Brazil. Most of our tea came from India, Ceylon, China and Japan. Imports then ran to over 40 million pounds annually.

Canadians seem to prefer black tea to the green variety. These days, of rationing and coupons a cup of tea is a cup of tea no matter what the colour. In 1941 more than 36 million pounds of loose tea were listed among materials used in the

miscellaneous foods industry of Canada. The selling value of the tea at the factory totalled some $18,840,000.

Three hundred years ago if you had the $40 it took to purchase a pound of tea you could wrap it up carefully and take it home, with the excuse that the Apothecary reported it good for colds. We have now advanced to that stage of civilization where the $40 doesn't mean a thing if you can't produce a ration coupon. And so the wheels of progress turn.

No. 253. -- Good Lawns in Shady Places

The establishment and maintenance of grass under trees and in other shady locations is one of the most difficult of all turf problems. There are, of course, some situations where the shade is so dense that it is impossible to grow grass. In other instances it is possible to maintain a green cover only by sowing grass seed two or more times each year. In a majority of cases, however, it is possible, by very careful preparation and maintenance, to secure and maintain a satisfactory permanent turf.

The ideal soil for lawns in the shade is a deep, rich, well drained sandy loam and if not already present every effort should be made to secure such a soil by improving that which is on the site or replacing it with soil of a suitable nature. Heavy fertilization before seeding is recommended and the fertilizer should be worked deeply into the soil. Where large trees are present it is desirable to provide extra food for them by removing the topsoil from the area in which the feeding roots are situated and working a liberal application of fertilizer into the subsoil without disturbing the roots. The topsoil is then replaced and fertilized in the same manner as the remainder of the lawn. If the subsoil is heavy it is well to install a system of tile drains in order to secure adequate under-drainage. Surface drainage may be taken care of by proper grading.

The best time to seed in shady places, particularly under deciduous trees, is around August 15. This allows free time in the fall and early spring for the establishment of a deeply rooted turf.

The seeds mixture should contain a high proportion of species particularly adapted to shady locations. Creeping red fescue and chewing's fescue do well under dry shady conditions and rough stalked blue grass usually does well in moist shady locations.

The grass should not be cut too short. A height of one and one-half to two inches is recommended. Established grass in shady places should be fertilized twice each year, once in the early spring, before active growth begins and again during late August. The health of both trees and grass can be greatly improved by feeding the trees through holes punched into the soil in the feeding root zone.

Water only when necessary to keep the grass in a slowly growing healthy condition. Trim out as many limbs of the trees as possible without affecting the beauty or health of the trees.

No. 254. -- Winter Wheat

During the first three years of the war Canada disposed of an average of 350 million bushels of wheat between domestic and outside demand. The acreage objective set for 1943 is 18.7 million acres, a decrease of about 14 per cent from the 21.6 million acres seeded last year.

For the past two decades the acreage sown to winter wheat on the Prairies has been very small, in fact production of it has been practically confined to south western Alberta. In that area, after wheat growing first commenced, the winter variety was the most common. However, losses due to root rot, winter killing and a low market price combined to replace winter wheat with that seeded in the spring. Since the war prices have again risen and as winter wheat cannot be imported from the United States there has been a greater demand for it. It has been found too that by delaying seeding until after the beginning of September losses from root rot can be avoided.

This year winter wheat will likely receive more consideration by farmers both east and west due to the very wet conditions at the time of seeding spring crops. Success with this crop depends on proper tillage of the soil, adequate fertility, selection of fields with good surface drainage, seeding at the proper time, and use of good seed of approved varieties and seed treatment. In Ontario the average yield in pounds per acre for the past ten years has been higher for winter wheat than for barley or oats, which has made it a popular crop for feeding purposes. It has also enjoyed a steady market among milling companies and the early ripening advances the harvesting season which helps in no small measure to counteract the present labour problem. The area for harvest in 1943 of fall wheat is expected to be about 600,-000 acres.

Canada's commitments for the shipment of bacon, eggs and cheese to the United Kingdom and the need for increasing this year production of other live-stock and dairy products, required the assurance of substantial supplies of feed and forage crops Therefore in 1943 feed and forage crops will take up 2.9 million acres of the 1942 wheat area. With most of the wheat acreage located in the Prairies it necessarily follows that the shift from wheat to other crops chiefly affects Western Canada.

No. 255. -- It's the Berries!

As the berry season looms large and lucious on the horizon, our mouths water and we dream incessantly of gobs and gobs of strawberry shortcake. Though the whipped cream is a war casualty, our dreams appear well on the way to sweet fulfillment for the 1943 strawberry crop looks promising. Production during the last couple of years has been somewhat below the previous five-year average, but supplies have been adequate for domestic demands. The crop estimate for this year runs around 15 million pounds as compared with a production of over 17 million last year. Next to apples, strawberries are Canada's most important commercial fruit and are produced widely throughout the Dominion, with the exception of the Prairies.

After strawberries comes the raspberry, with an estimated production this year of 8 million pounds. The backward weather in most sections of the country delayed the appearance of this fruit on the market a few weeks this year. Loganberries comprise other cultivated berry crop of which about 1,750,000 pounds are expected to be produced this season. Substantial revenue is also derived from the native blueberry and cranberry, the former being abundant over large areas of Eastern Canada, while the cranberry is found chiefly in the Maritimes.

The importance of fruits in the diet demands that wherever possible production should be increased to protect both domestic and export requirements. Housewives are urged to preserve as much as their sugar rations will allow. A recent Agricultural Bulletin reminds us that because sugar is limited, it does not follow that the greatest amount cannot be canned, because after the sugar has been stretched to its utmost fruit can be canned without sugar. Chemical compounds and "canning powders" are not recommended.

Speaking of sugar, Canadians are expected to consume about 850 million pounds this year compared with over a billion in 1939. Of this amount it is estimated around 18.6 per cent is to be produced right here in the Dominion, while the balance will be imported. In order to keep commercial jam production up to the 1942-43 level subsidies have been granted manufacturers of strawberry, raspberry and loganberry jam.

No. 256. -- Bacteria -- Friend and Foe

Shipments of Canadian foodstuffs destined for Britain are under attack long before they leave our shores. Before the big convoys move out, the unseen fifth column of bacteria and moulds must be overcome. From the time the food leaves the farms until it passes through the processing plants and is made ready for shipment, the scientists of the Dominion Department of Agriculture have done their part to see that the precious cargo space is not wasted in carrying spoiled food.

Tests have been developed for measuring the quality of milk coming to cheese factories. Simple and practical methods have been discovered for washing milking machines and cans. Assistance has been given to cheese-makers to prevent the development of rancid flavour in cheddar cheese, which is one of the important concentrated foods demanded by Britain. The prevention of surface discoloration of storage and print butter, and testing of butter specially packed for invasion forces are functions of the Department.

The great increase in the use of dehydrated vegetables and fruits and powdered eggs for export has meant further testing to prevent loss caused by bacteria. An outstanding contribution has been made in the research work on the production of penicillin and citrinin, two anti-bacterial substances now in demand for treatment of wounds.

Fortunately all bacteria are not fifth columnist; some of them are friendly helpers who assist in producing the choice flavour demanded in cheddar cheese, and the Dairy Research Unit supplies cultures of the proper type of bacteria to be used as starters in the manufacture of cheese. Bacteria also assist in breaking down the various elements in the soil which are used as plant food, and some of them even wage war in the soil against the bacteria and moulds which cause plant diseases. Another group assists in the fermentation of butylene glycol concerned with rubber production.

The scientists of the Department are constantly marshalling their forces to repel the tiny unseen enemies which attack Canada's food supply, and to support those friendly bacteria that provide food for plants, flavour in your Welsh rarebit, and may some day assist in producing tires for your car.

No. 257. -- Tourist Traffic

June has always been an exciting month. Bees start buzzing, farmers start ploughing, housewives start canning, lovers start mooning, and Junior starts his holidays. Oh joyful June! -- that time of year when life takes on fresh flavor, especially for the mosquitoes and the Travel Bureaux.

Travel! From the standpoint of pleasure seekers, that word has been rendered almost obsolete by the war and the far reaching tentacles of its demands upon individual liberty. The only strictly legitimate travellers abroad in Canada today are those in the uniforms of the United Nations. As for automobile traffic, well, everything's been said before. Nothing could be included here that would alter your

AA ration card or get you a new set of tires.

Summer usually brings with it a decided expansion in the volume of traffic. Of late years this expansion has been very slight and expenditures of vacationists have been less concentrated, while a larger proportion of business and official travel has been recorded.

Last year travellers from other countries spent an estimated $81,900,000 in Canada. That sounds like a nice round sum until you stop to compare it with the $111,-000,000 spent the year before. Most of our tourist traffic comes from across the border. Last year our visitors spent $79,000,000 here. Of this total 41 per cent is represented by rail traveller. Travellers from overseas countries did about $2,900,-000 worth of business in Canada, a little over half what they spent the previous year.

This month Canadians begin to think of vacations, of "getting away from it all", but they won't be going far afield this time. Many are even taking their holidays in "capsule" form, right under their own fig trees, and discovering that shade is shade for 'o' that even if the bird bath does have to double for a lake or a far flung ocean shore.

No. 258. — United Nations Food Conference - 1

"The first cause of hunger and malnutrition is poverty."

This was the premise upon which was based the entire discussion at the recent food conference held in Hot Springs Virginia. There were delegates of 44 nations present representing about three quarters of the world's people. The purpose of the conference was to consider the goal of freedom from want in relation to food and agriculture and to make recommendations to governements represented. It was recognized that it is useless to produce more food unless men and nations provide the markets to absorb it, and to provide the purchasing power sufficient to maintain an adequate diet for all, there must be an expansion of the whole world economy. With full employment in all countries, enlarged industrial production, the absence of exploitation, an increasing flow of trade within and between countries, an orderly management of domestic and international equilibrium, the food which is produced can be made available to all people.

As a working basis, there were four technical sections set up with committees to deal with consumption levels and requirements; expansion of production and adaptation to consumption needs; facilitation and improvement of distribution; and recommendations for continuing and carrying forward the work of the conference. And just what were the findings and subsequent recommendations of the Conference? Well, here they are, in brief:

It was first of all recommended that the governments and authorities represented immediately undertake the task of increasing the food resources and improving the diet of their people. This should be done in accordance with the principles and objectives outlined in the findings of the Conference.

The problem of adequate nutrition took up a large part of the program. The report presents these facts in considerable detail and calls for more investigation of the subject. It was urged that not only should international measures be taken, but that each government should accept the responsibility of improving the diet of its own citizens.

No. 259. -- United Nations Food Conference - 2

Conservation farming was another recommendation brought out at the conference. It was agreed that for the long-time pull after post-war needs are met, nations should produce more fruits and vegetables, milk and meat for their own people. Certain other crops -- for example, wheat should, in the long run, be concentrated in those areas of the world best suited to growing them.

The Conference emphasized the belief that everything possible should be done to see that farmers have a reasonable return for production.

Improved farming methods should be put into effect as rapidly and as widely as conditions in different countries permit. Research and educational work for agricultural producers and consumers should be actively pushed and supported.

Markets should be improved and extended. The possibility of narrowing market margins should be closely studied. Standards and grades should be extended to protect farmers both in selling their products and in buying materials they need for production.

Other recommendations dealt with agricultural credit, cooperative movements, land tenure and farm labour, development and settlemment of land for food production, occupational adjustments in rural population, international commodity arrangements, special international measures for orderly food distributions.

Recommendations are all very well, you say, but can we count on them being carried out? Definitely. Included in the resolutions is one providing for the organization of a permanent body as soon thereafter as possible. The purpose of this Commission will be to give effect to the recommendations of the Conference. The Interim Commission and the permanent organization when established, will include various sections or division to deal with production, marketing, distribution, nutrition, consumption, research and education.

This United Nations Conference on Food and Agriculture has shown that the governments and authorities represented are agreed upon the necessity of their taking action individually and in concert to achieve freedom from want of food. The reports and recommendations of the Conference indicate further consideration of the methods to be followed. Accordingly it is recommended that the governments and authorities represented should recognize their obligation to their own people and to one another to raise the levels of nutrition and the standards of living, to improve the efficiency of agricultural production, and to cooperate one with another for the achievement of these ends.

No. 260. -- About the Census

Now that a great many 1941 census reports have been issued it may be well to remind readers of a few things about the census.

The utility of any government of knowing the extent of its resources in men and materials is so obvious that some means of ascertaining this knowledge was probably employed very early in the history of the world. There is no record of such census taking in the Egyptian or Assyrian inscriptions and the Chinese accounts are said to be rather dubious. The first reliable record is that of numbering the Jews by King David. Such early enumerations aroused the hatred and suspicion of the people, and evasions were no doubt common. This antagonistic attitude was due to the use of the enumerations for purposes of tax assessment and conscription, rather than for statistical

analyses. With the rise of constitutional government, the individual is now protected by garantee of secrecy respecting the facts gathered by the census enumeration.

The credit for taking the first census of modern times belongs to Canada, for in 1666 some 3,215 persons were enumerated in New France. The first complete census of modern times was taken in the year 1751 in Sweden. The first census of the United States was taken in 1790 and of England and Wales in 1801. Sporadic censuses were taken in the early Canadian colonies as early as 1824 and continued more or less irregularly up to the time of Confederation. The first census of the Dominion of Canada was taken in 1871.

Under the Census and Statistics Act of 1905 and the Statistics Act of 1918, a census of population and agriculture of the three Prairie Provinces was taken in 1906 and every tenth year thereafter, in addition to the enumerations at the decennial census of the whole Dominion. A census of the Prairie Provinces, is, therefore, taken as of June 1st, in the sixth year of each decade, giving the Provinces of Manitoba, Saskatchewan, and Alberta, quinquennial enumerations of their population and productive resources.

No. 261. — Estimates of Population

While the populations in different countries are actually counted at decennial or quinquennial censuses, annual estimates of population are required by modern states for many purposes, such as the calculation of birth, death and marriage rates, and per capita figures of economic and social significance.

In different countries, various methods of obtaining annual figures of post-census populations are adopted. For example, it is possible with good vital population at any particular date with approximate accuracy by the simple method of adding births and arrivals and substracting deaths and departures during the period elapsed since the census.

This method, however, is impracticable for Canada, with 4,000 miles of common boundary line with the United States, crossed in both directions every day by many thousands of people. The method of arithmetical progression is widely used in estimati the populations in the older countries of the world — this method involves the annual addition to the population of the country and of particular areas within it of one-fifth or one-tenth of the numerical increase in the last quinquennial or decennial inte censal period.

In Canada, prior to the Census of 1931, annual figures of population were purely estimates on the basis of past increases. The intercensal estimates are worked on the basis of certain known factors, such as natural increase and migration, plus a consideration of the collateral data back to 1867, and the resulting figures are believe to state the populations at intercensal periods with greater degrees of accuracy.

Immediately following every census, the previous postcensal estimates of population are adjusted to the newly enumerated population figures.

No. 262. — Growth of Communities

The population in a community may be increased in one of two ways: by the natural increase, the excess of births over deaths or by the mobile increase, the excess

of immigration over emigration. The growth of the total world population is of course dependent solely upon the balance of births and deaths.

Since the era of discovery, immigration has been an important factor in the growth of the Americas, the South African countries and the Antipodes. On the other hand, some European countries have suffered a continuous diminution of population by reason of extensive emigration. During recent years, however, immigration to the United States and Canada from other countries has been checked to some extent by changes in the immigration laws and the establishment of quotas.

On the other hand, the enormous increase in transportation facilities has brought about a greater mobility of population within the North American countries. Migrations alter the distribution of the people within a country but do not affect the net population growth in point of added numbers. Interprovincial migrations are extremely difficult to assess and actually cannot be determined except by population enumeration.

In keeping with a similar decline in the birth rate, the rate of natural increase of the population of Canada has declined during recent years. On the other hand the natural increase decline has been offset to some extent by a corresponding decline in the death rate. In 1926 the rate of natural increase was 13.3 per thousand of population, declining by 1940 to 11.7.

The total natural increase in the population of Canada from 1926 to 1940 was 1,857,998, representing an annual average increase of 123,867 persons. During this period there were 1,780,641 male births and 1,687,561 female births, or a total of 3,468,202 births, as against a total of 1,610,204 deaths reported during the same period.

No. 263. — Death Rates

The general death rates of communities and nations have, from time to time, been violently disturbed by periodic outbreaks of epidemic diseases. Many communicable diseases have their favorite haunts, wherein they become epidemic, while in other localities these particular diseases may never appear. An infectious disease is said to have become pandemic when it becomes world wide in extent.

Plague is an infectious disease which, during the history of the world, has caused a high mortality. Originally the term "plague" was used to define any disease of epidemic nature which caused a high mortality. Today, however, the term "plague" is applied to a disease caused by a specific parasite or bacteria.

Primarily a disease of the rats and other rodents, the modern plague is transmitted to the human through the medium of rat fleas. History records many plague epidemics of varying severity during the ages, among the most devastating during the past six or seven centuries being that great cycle of plague deaths in the 14th century, commonly known as the Black Death, which is said to have wiped out one-quarter of the population of Europe, roughly 25,000,000 persons. The "Great Plague of London" in 1664-65, which according to the "Bills of Mortality" claimed a total of 68,596 victims in a population estimated at 460,000, an astounding mortality rate of 149.1 per thousand of population.

In modern times, cholera, dysentery, typhus and bubonic plague, are most prevalen in hot countries. These infections are said to be Asiatic in origin. Isolated epidemics of diphtheria, typhoid fever and similar infections are of fairly common occurrence even

today, but none of these diseases has, during recent years, reached pandemic proportions.

No. 264. — Smallpox

The date and origin of smallpox is unknown, but history records a severe epidemic in Iceland during the 13th century, while its first recorded appearance in Europe was during the 15th century. Smallpox epidemics became progressively more common in the 16th and 17th centuries, attaining the maximum of frequency and extent during the 18th century.

The "Bills of Mortality" revealed that over a period of 10 years, from 1681 to 1691, smallpox deaths in the city of London exceeded an average of a thousand deaths a year. The United States and Canada, in the latter part of the 19th and early years of the 20th centuries, experienced severe outbreaks of smallpox, yet today vaccination has reduced this great scourge in most European and North American countries to be almost negligible.

An infectious disease which during the last 40 years has reached pandemic proportions is influenza in its various types. The 1890 epidemic travelled around the world within three to four years, and from 1917 to 1919 it again circled the globe. Influenza first became apparent in epidemic proportions in Canada early in October of 1918 and reached its peak in December and January, subsiding gradually towards the end of March and the beginning of April 1919.

Ontario, the most populous of the provinces, in 1918 recorded a death rate per thousand population of 15.3 as against 12.0 in 1917; 11.9 in 1919; and 13.9 in 1920; while Quebec, the second geographical unit of Canada in size of population recorded crude death rates of 15.8 in 1917; 20.6 in 1918; 14.5 in 1919; and 16.4 in 1920.

No. 265. — Wheat for Greece

"Every month since August 1942" says the Hon. James A. MacKinnon, "Canada has been sending half a million bushels of wheat to Greece."

This announcement, made in the House of Commons recently by the Minister of Trade and Commerce must have had tremendous appeal for Canadians generally. Almost unbelievable stories of pitifully gallant struggle being put up by the people of Greece have been seeping out of Europe. Our hearts have bled for them in their hour of supreme sacrifice, but commiseration is one thing and sustenance quite another. Sympathy does not fill empty stomachs. Now at last we can be sure that our moral support has something tangible behind it.

As a matter of actual fact, our shipments of wheat to Greece have passed the 5,000,000 bushel mark. This has been a straight gift from Canada to the Greeks and has been carried in neutral Swedish vessels. During the five months ending May, over 2,335,000 bushels were safely delivered, distribution overseas being supervised by the International Red Cross.

For our own larder it is expected that we will have about a billion bushels of wheat after this year's harvest. At the present time there are about 650,000,000 bushels in storage. Western grain growers have been encouraged by the Agricultural Department to reduce wheat acreage and increase coarse grain production. The total

acreage reduction now is about 11,000,000 acres from the former total area of around 66,000,000 acres. More than 185,000 farmers have taken advantage of the wheat acreage reduction bonus system which has now been in force for three years. Last year acreage reduction bonus amounted to $21,000,000 and this year it is anticipated it will reach $26,000,000.

According recent statements of the Department of Agriculture about a billion dollars have been paid to date out of the Federal Treasury in various forms of aid to grain growers. Unless a big market for wheat develops before the end of the war, there seems little chance of stopping the present policy of bonusing western growers for turning wheat acreage into the production of coarse grains and other purposes.

No. 266. -- Tuberculosis

Tuberculosis in all its forms ranked eighth among the ten leading causes of death in Canada in 1940. This disease takes its heaviest toll during the industrial years in the span of life between the ages of 16 and 65. The world toll in this age bracket is in the neighborhood of 30 per cent of all deaths. Twenty-five years ago, one-eighth of the total world mortality was due to the ravages of "man's most universal scourge" -- tuberculous infection.

It is more prevalent among the poorer classes than among those in the upper economic levels. Many people infected with tuberculosis recover spontaneously and civilized man is said to have developed a distinct resistance to the disease. Even before the nature of the infection was known, tuberculosis began to decline. It has already become a class disease and prevention is today a medical-social problem. Early diagnosis is an important factor both to the infected person and to the community.

On the North American continent during the past fifty years, reductions in the death rates from tuberculosis have been truly remarkable. In the United States the tuberculosis death rate dropped from 249 per 100,000 of population in 1390 to 46 in 1940, a reduction of 82 per cent. The public health campaigns for the prevention of tuberculosis have been particularly successful in the fight against this original "Captain of the men of Death".

Yet, during the past fifteen years, 1926 to 1940, over 106,192 Canadians died from the effects of tuberculous infection. The majority of these deaths could have been prevented by avoiding infection, and improving resistance. An improvement in nutrition, better housing, the elimination of over-crowding, over-work and worry, greatly improves the resistance to the disease.

Science has gone a long way in demonstrating the pattern for eradicating tuberculous infection, but it remains for society generally to apply the full program of the preventive measures.

No. 267. -- Movement of Population in Canada

At the 1941 Census 8,305,011 persons or 72 per cent of the total population of Canada had always resided in the province in which resident on June 2, 1941. Between 85 and 90 per cent of the population of the Maritime Provinces had never resided outside these provinces. About 88 per cent of the population of Quebec had always lived in the province, while 72 per cent of the population of Ontario had never established residence outside the province. About 60 per cent of the population of Manitoba and of Saskatchewan

reported continuous residence in the province, while for Alberta just over 50 per cent had never lived outside the province. British Columbia, with only 38 per cent of its population born and brought up within the province, had a much smaller continuously resident population than any other province of Canada. It might be mentioned that in the Census a person was deemed to have had continuous residence in the province in whic living at the date of the Census if he had never resided for a year or more outside that province.

There were 3,201,644 persons in Canada at the 1941 Census who had not always resided in the province in which resident at the 1941 Census. However, over half of these had resided over 20 years in the province of residence,at the date of the Census, and about 80 per cent ten years or more. The remaining population with less than ten years residence in the province at the Census date constituted about 20 per cent of the population of Canada not always resident in the province, and about 5 per cent of the total population of Canada on that date.

With the exception of British Columbia, in each province the proportion of the total population with less than 10 years residence in the province at the date of the 1941 Census was approximately 5 per cent. In British Columbia 138,008 persons or 17 per cent of the population of the province had been resident in the province less than 10 years prior to the Census date, June 2, 1941. Most of these persons appear to have come from the Prairie Provinces.

No. 268. -- Sealing Pact Sealed

About thirty years ago four countries made a treaty known as the Pelagic Sealing Treaty. The word Pelagic means oceanic, that is of or pertaining to the sea. The countries involved were the United States Russia, Japan and Canada, and the agreemen established control of sealing operations in treaty waters. It has the effect then of saving a North American industry which at that time was near to the vanishing point. By 1911, the year of the treaty, the Pribilof herd of fur seals had dropped to 125,000 from a herd once estimated at 4,000,000. Uncontrolled exploitation was the main destruc tive factor, but steps taken under the treaty had brought the numbers back to 2,250,- 000 by 1941.

A provisional agreement between Canada and the United States, deemed to have come into effect as of June 1, 1942, has been made to control the fur seal capture in the Bering Sea and other waters off the continent's west coast. Under its terms twenty instead of fifteen per cent of each year's take will now be delivered to Canada by the U.S. government and in dealings in sealskins a five per cent difference counts for some- thing. This agreement will continue operative until twelve months after the end of the present world emergency or for a year after either government has notified the other of its intention to terminate the understanding. Broadly stated, the agreement's major provisions are that no nationals or citizens of either country, except, under certain conditions, Indians or other aborigines, may kill, capture or pursue fur seals at sea within the area which the agreement covers.

The right of the United States to suspend, restrict and regulate the taking of skins at the rookeries is not affected by the agreement but there is a proviso that "the two governments will consult from time to time regarding the level of population at which the seal herd is to be maintained or other important phases of management or policy."

So far as the old treaty is concerned, it came officially to an end in the autumn of 1941, following notice from Japan in 1940 of intention to abrogate the convent

For some years before 1940, however, Russia had not participated actively in treaty affairs. Following abrogation by Japan, the Canadian and United States governments entered into discussions as to the course best to be followed to conserve the herds and obtain continued return from the fur seal resources, and out of these discussions came the provisional agreement, which was accepted by each country a short time ago.

No. 269. -- Canning Subsidies

Subsidies to growers of tomatoes, corn, peas, green and wax beans for canning will be paid to growers by canners who will recover their payments from the Agricultural Food Board. The subsidies, higher than those of 1942, are in addition to the canners' purchase price which must be at least equal to that of 1941.

The board explains that where farmers have contracted to deliver these vegetables to canners for a price which did not include the subsidy, they will receive the subsidy in addition to the contract price. If the contract included only part of the subsidy, the canner will be required to pay the difference to the grower.

Amount of the subsidy for tomatoes is $3 a ton; corn, $4; peas, $10, shelled weight, or $2, straw weight; and beans, $7.50.

Subsidies on canning crops were introduced last year when they were paid to the canner who included them in his purchase price to the farmer. At that time, the subsidy on tomatoes was $1 a ton; corn, $2; peas, $7.50, shelled weight, or $1.50, straw weight; and wax and green beans, $5.

The 1943 subsidies are higher than those received by the farmer in 1942 by $2 a ton for tomatoes and corn, $2.50 for beans and shelled peas, and 50 cents for the straw weight of peas. The reason for the increase over 1942 subsidies was to encourage this year's production of the required quantities of canning crops. Otherwise, farmers might have substituted less essential crops requiring less labour and risk to produce.

The 1943 subsidies are payable and recoverable by canners holding a Manufacturer's Sales Tax License. License-holding growers who can their own product are also eligible for the subsidy. But when these grower-canners buy vegetables for canning, they must pay the subsidies in addition to the purchase price and apply to the Agricultural Food Board for refund.

No. 270. -- Rid the Home of Ants

Ants frequently enter dwellings in search of food. They can become, if not controlled, a great pest. They feed on many kinds of foodstuffs but are particularly fond of sweet or fatty substances. Ants may be discouraged from entering houses by keeping shelves, tables and floors in kitchens and pantries as free as possible from crumbs and other food fragments and by storing foodstuffs in ant-proof containers. In addition, openings in floors and walls should be carefully plugged.

The most satisfactory material so far discovered for destroying ants is sodium fluoride, sold by druggists in the form of a white powder. The powder should be scattered or dusted lightly in places frequented by the ants and left undisturbed until the ants have disappeared. As sodium fluoride is somewhat poisonous, care should be taken to prevent children or animal pets from gaining access to it.

As an alternative, baits may be used. They may consist either of meat bones or sponges dipped in sweetened water. When large numbers of ants have collected on the baits they may be destroyed by immersion in very hot water. A bait trap which has been used with success may be made by taking a small tin with a tight lid, punching several holes in the sides and top, and placing a small piece of sponge inside moistened with a syrup prepared by mixing 10 grains of sodium arsenate, 6 ounces of sugar, and one pint of hot water. In using this bait, great care must be taken because of the poisonous nature of sodium arsenate.

No. 271. -- Science and the Farmer

To the casual passer-by the soil of any farm may appear uniform but under the careful investigation of the soil scientist startling differences may soon become apparent. There may be mineral deficiencies, some soils may be more efficient for growing certain crops than others, and again some soils may be of little use to the farmer unless they are treated with the proper amount of the necessary fertilizers. One of the aims of the agricultural scientist is to make the most efficient use of the soil by determining the treatments necessary to get the most production.

Most Canadian soils require large amounts of phosphoric acid, and where this is added in the form of super-phosphate much of it becomes tied up in such a way that plants cannot use it. This is called phosphate fixation, The study of how to improve the utilization of the phosphoric acid of superphosphates has been one phase of the work of paramount importance to Canadian agriculture carried out by the Dominion Department of Agriculture. Under present war conditions, the study is of special importance, because the supply of superphosphates is limited, chiefly on account of the restricted amount of sulphuric acid necessary in its manufacture.

An investigation on the sources of phosphoric acid as a fertilizer is also another of the main objects of the Division. Basic slag (a by-product in the manufacture of steel) has received particular attention. Chemical tests have indicated that, as a result of a change in processing much more of the phosphoric acid of the slag becomes available, and the Division is now undertaking studies to determine the fertilizing value of this modified product. In view of the fact that the annual production of slag at Sydney, N.S., is expected to be about 125,000 tons, and also that there is a need for larger quantities of phosphate fertilizers in Canada the employment of the open hearth slag would be an important aid to increased production, if it can be shown that it is a useful source of phosphorus for plants.

In addition to studies in connection with soils and fertilizers, the work of the Division of Chemistry includes investigations on animal nutrition, plant chemistry and foods. Chemical analyses are also made for projects conducted by other Divisions of Science Service and the Experimental Farm Service and analyses are made in connection with the administration of the Meat and Canned Foods Act and the Maple Sugar Industry Act. The main laboratories of the Division are situated at the Central Experimental Farm, Ottawa, and regional laboratories are maintained at the Dominion Experimental Stations at Kentville, N.S., and Summerland, B.C.

No. 272. -- Let's Draw Straws

The dog-eared quip "When in Rome do as the Romans do" may seem a bit distasteful just now, but it would seem we are indebted to the Romans of earlier days for at least one thing. That is the custom of wearing straw hats.

Although Romans generally went bareheaded, they donned straw hats with stiff brims and high crowns when they attended the open air theatres. Fishermen, sailors and travellers of one sort or another usually wore them too. Patterned after Macedonian models, the Roman straw hats were too difficult to sculpture so that accounts for the hatless statues of early Roman heroes that haunt our museums.

Today the world's finest straw hats come from Ecuador, so strictly speaking the familiar "panama" is not a product of Panama at all. In fact, it is not really made from straw either. It is handwoven by Indians from split and bleached leaves of the palmlike "toquilla". In Ecuador and Colombia hat making is a home industry, frequently a side line to farming. One hat may be six months in the making.

Straw hat making has also become a large domestic industry in the United States, and it is from there we have imported most of our straw hats in the past. In 1939 about 26,350 hats of straw, grass or chip came into Canada from across the border. Many of these may have been re-exports from Ecuador or Colombia or even Mexico. Other pre-war sources of this commodity were the United Kingdom, France and Italy. The total value of our imports of straw hats in 1939, the last year for which figures are available, was $59,415.

No. 273. -- Teachers' Salaries in Eight Provinces

Reflecting enlistment in the armed forces, together with the fact that other branches of employment provided more attractive remuneration, the number of male teachers in eight provinces of Canada, i.e. excluding Quebec, declined from 14,700 in 1939 to 12,600 in 1942, a net loss of 2,100. Fully 80 per cent of this loss was from the one-room rural schools, where the teachers are younger and lower-paid. There were 50,100 teachers reported in the eight provinces. There were approximately 17,000 one-room schools in the eight provinces. In other words, one-third of all teachers work in such schools.

Under wartime conditions teachers in the small schools are staying less than two years in their jobs, on the average, before moving on to another school or another kind of work. In the Maritime Provinces they are averaging $500 or less per year in pay, in Manitoba somewhat over $600, in Saskatchewan $700, in Alberta, British Columbia and Ontario between $800 and $850. Accordingly in the provinces where the salaries are best, half of these teachers receive less than $70 monthly, and in some provinces half receive no more than $40 monthly.

During the first three years of war their salaries in the eight provinces increased on the average about $10 per month, but this was not enough to offset the comparative attractiveness of other employment, and in the year just ended a very considerable number of these small schools have either had to remain closed or to be put in charge of teachers without certificates.

In larger schools, during the first three years of war, salaries nowhere increased as much as $10 per month, except in Saskatchewan where they had not recovered from the low levels reached in the drought years. There were small increases, however, in all provinces but Prince Edward Island.

No. 274. -- Care of Hedges

To paraphrase an old adage, to spare the shears is to spoil the hedge. After it is planted properly, the most important point in the development of a good hedge is to cut it back the first year as severely as it will stand.

A deciduous hedge, or a hedge which is not an evergreen, should be cut to within a few inches of the ground as soon as it is planted in the spring; with evergreen pinch out about half of the current season's growth about the middle of June for spruce, pine and yew, and about the first of September for cedar. If the hedge is allowed to grow tall before trimming commences, the bottom will never fill in thickly.

After the initial trimming, one trimming a year about the time that active growth starts will keep the hedge tidy. In districts where the snowfall is heavy the top of the hedge should be rounded or pointed to prevent the weight of snow from breaking it down. The sides should slope in towards the top so as to allow more light to reach the lower foliage and keep it healthy.

Like other living things hedges require food and water. A good top dressing of well-rotted barnyard manure may be spread over the soil on each side of the hedge in autumn, and lightly forked into the surface in spring--deep digging will destroy the roots. If manure cannot be obtained a row of holes about a foot apart 9"--12" deep and about 18" out, should be drilled with a crowbar in the soil on either side of the hedge and commercial fertilizer placed in these holes at the rate of two pounds to every 25 feet of hedge. Blood meal or tankage is good for conifers and a 10-6-4 fertilizer for deciduous hedges.

During the first year the hedge should receive a liberal supply of water, but once established watering is not so necessary except where the hedge is planted at the top of a retaining wall or between paved driveways where it cannot receive much water naturally.