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DEPARTMENT OF  
TRADE AND COMMERCE**A FACT A DAY ABOUT CANADA**

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James Muir,

Editor.

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No. 1 -- Fri. Oct. 1, 1943 -- The Span of Life.

The life-span of the average Canadian is longer today than it was in years gone by — longer even than a very few short years ago. This lengthening of the span of life has no doubt been brought about in large measure by the great strides made in medical science, together with improvements in sanitation and health conditions in general.

A discussion of this nature automatically raises the query: What diseases claim the greatest number of lives in Canada? In view of the interest shown in this matter the Dominion Bureau of Statistics presents in the following paragraphs some enlightening facts on the ten leading causes of death as indicated by statistical information collected over the fifteen-year period from 1926 to 1940.

The leading cause of death for the fifteen years has been diseases of the heart. In 1926, diseases peculiar to the first year of life ranked second; in 1930 this group dropped to third place and to fourth place in 1934. Since then the group has ranked sixth and seventh on three occasions. All forms of pneumonia ranked third in 1926; from 1927 to 1939 it varied from fourth to sixth place, dropping to seventh in 1940.

Tuberculosis varied in rank between fourth and fifth place from 1926 to 1939, while in 1934 and 1935 it dropped to seventh, rising to sixth for the next two years and dropping again to eighth place from 1938 to 1940. Cancer was fifth in rank in 1926, rising to third place for the next three years and from 1930 to 1940 retained second place. Violent or accidental deaths ranked sixth from 1926 to 1929, rising to fifth place for the years 1930 and 1931. For the next two years the group stood at seventh place and from 1935 to 1940 varied in rank between fourth and fifth place.

Nephritis ranked seventh in 1926, and except for one year, in 1929 held eighth place from 1927 to 1937; for the next three years this disease rose to seventh, sixth and fifth places, respectively. Diseases of the arteries ranked between eighth and seventh from 1926 to 1931, rose to sixth in 1932, to fourth in 1933, and was in third place from 1934 to 1940. Influenza, except in 1929, when it ranked seventh, has, generally speaking retained ninth position although for four out of the fifteen years it ranked tenth. Intracranial lesions of vascular origin, or cerebral hemorrhage ranked tenth for eleven years out of the fifteen and for the remaining four years stood in ninth place.

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No. 2 -- Sat. Oct. 2, 1943 -- Salt for Fish Curing.

There is a salt field in Nova Scotia called Malagash, and in that province much salt is required for the fish harvested from the sea. So Federal action is being taken to establish a plant for purifying the mined salt and it is expected that soon there will be a large supply of bacteria-free salt available for the fishing industry.

Scientific investigation has shown that pure rock salt is preferable to solar salt for fish curing, a branch of fish processing which is centred mainly in the Atlantic Provinces, but since adequate supplies of rock salt have not hitherto been available, it has been necessary to use large quantities of solar salt from the Caribbean and Mediterranean areas. The Malagash field of rock salt is extensive.



Many in the armed forces overseas will have noticed that numerous places in the United Kingdom indicate by their names that a local salt industry had at one time existed there, or might still exist. The sea water was kept in large pans until the heat of the sun evaporated the water and left the salt. An example is Prestonpans in Scotland.

Prestonpans has a little bit of military history also that will interest our overseas folk. It was there in 1745 that the Highlanders of Prince Charles Edward Stuart's army defeated the Hanoverians under Sir John Cope. One morning the clansmen swooped down on their enemies before the bugles had wakened them up for breakfast and those who escaped in that dark hour before the dawn hightailed it for their southern homes in barefoot disarray.

We used to import before the war 32,000 tons of that solar salt for the fishing industry alone, about half of which came from the British West Indies and about half of the remainder from Spain. All kinds of salt imported ran to around 110,000 tons.

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No. 3.-- Sun. Oct. 3, 1943 -- Maternal Mortality.

Maternal mortality has been greatly reduced in Canada during the last fifteen or sixteen years. This is a glowing tribute to the tireless efforts of the medical profession generally, as well as to the work of public health authorities who have done much to spread the knowledge of proper nutrition, pre-natal care and health education in general. Through their combined efforts the number of these tragic losses is being reduced year by year.

The average number of maternal deaths during the five-year period from 1926 to 1930 was 1,339. This declined to 806 in 1942, the decrease each year being continuous. Expressed in another way the death rate per thousand live births in the 1926 to 1930 period was 5.7 and in 1942 it was only 3.0 -- almost halved. This is regarded as very encouraging progress, although much yet remains to be done.

All provinces have made progress in the fight to reduce maternal deaths but the best showing has been made in British Columbia and Alberta. The maternal death rate per thousand live births in Alberta during the 1926-1930 period was 6.6 and in British Columbia 6.1. Both dropped to 2.4 in 1942. The earlier rates in other provinces, along with the 1942 rates in brackets were: Prince Edward Island, 4.6 (4.2); Nova Scotia, 5.5 (2.7); New Brunswick, 6.2 (4.5); Quebec, 5.2 (3.3); Ontario, 5.8 (2.6); Manitoba, 5.6 (2.6); Saskatchewan, 5.9 (3.4).

The latest maternal mortality rates for other countries on hand at the Dominion Bureau of Statistics are those for 1937 in which year Canada stood 21st on the list of 28 leading countries of the world. The rate for the Netherlands in 1937 was 2.6 per thousand live births, England and Wales, 3.3, New Zealand 3.6, Union of South Africa 4.4, Australia 4.6, Scotland 4.8. Canada's rate was 4.9, being the same as that for the United States. Incomplete figures for the same group of countries in 1942 show that Canada has greatly improved her position in this respect.

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No. 4 -- Mon. Oct. 4, 1943 -- Baths in Canadian Homes.

One half of Canadian dwellings were equipped with a bath or shower in 1941, according to the last Dominion housing census. Of this number four per cent were

dwellings where two or more families shared these facilities. The proportion of homes with bath or shower was comparatively high in the larger urban communities. Seven per cent of farm homes had a bath or shower, while in cities of 30,000 population and over, the corresponding percentage was 89.

Provincial percentages of dwellings with bathing facilities were highest where urban development was greatest. Percentages of dwellings having a bath or shower were as follows: Saskatchewan 16, Prince Edward Island 21, Alberta 28, New Brunswick 31, Nova Scotia 35, Manitoba 38, Quebec 53, Ontario 61, British Columbia 69.

In the cities of 30,000 population and over, the proportions of dwellings with a bath or shower varied widely from 100 p.c. down to 46 p.c. There are 27 of these cities in Canada, and in nine of them at least 20 p.c. of dwellings had no bath or shower. The shared use of bathing facilities by two or more families in one dwelling was unusually high in the cities of the Prairie Provinces, and more than 13 p.c. of dwellings contained a bath or shower used on this basis. The shared use of bathing facilities also appeared to be related to the prevailing size and type of dwellings. It was high, for example, in Toronto, where there is an unusually large proportion of large houses originally built for single family occupancy; it was especially low in Montreal, which is predominantly a city of moderate sized single family flats and apartments.

In some rural areas and smaller urban centres, a small proportion of dwellings had bathtubs but no running water. Saskatchewan farms showed the greatest disparity in this regard, with 4 p.c. reporting bathtubs and only 1 p.c. with running water. Apart from the Prairie Provinces farm areas however, the proportion of farm households reporting running water was always considerably larger than the proportion reporting bathtubs. It may be safely assumed that bathtubs and showers in other areas were practically all in dwellings with running water.

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No. 5 -- Tues. Oct. 5, 1943 -- Cost of Footwear.

When a man makes up his mind to wed, he has to consider - his prospective wife has to think it over too - how far and in what direction his slender purse will go. Food, housing and clothing are the first items to find their way into the budget. As a rule the two young people have been brought up in an atmosphere of old adages and wise saws. Some of these saws are not so wise. For example it used to be said that it doesn't take any more to keep two than to keep one and so on up the scale.

People who have no children to support, or very few, have derived a good deal of comfort from that reflection, because they can thereby calm any qualms they might have when they observe neighbours with large families compelled to do without many things to which they themselves have grown so accustomed that these gadgets of life seem to have become necessities. However, when we scale down the necessities of decent up-to-date community life into a cost of living index as is done at the Bureau of Statistics, it is discovered that some of these wise old saws go by the board.

But let's get away from philosophy to hard-pan, and examine what induced the thought. A Bureau report on the Leather Footwear Industry for 1942, just issued, tells us that a new high record for quantity production has been established with more than 33 million pairs of boots and shoes. People generally have more money to spend than in pre-war years. But that isn't the point we are after.



There are two curious things about this report. Despite the fact that our armed forces use up considerable of this footwear, women get 16 per cent more shoes than men. In 1942 the output for women was 47 per cent of the total and for men only 31 per cent. There is an item in the budget for the prospective husband to consider.

The second curious thing about the report is that the output for boys and youths is only four per cent of the total. That provokes some heart searching, doesn't it? What is the answer? Admitted that every healthy young boy loves to go barefoot in summer as long as he can until the cold weather nips his toes, there is a long distance between four per cent for lads and 31 per cent for grown men. Consider also that a boy will wear out a pair of shoes infinitely faster than a man; why, the new look is gone with a week's wear.

There you have it. There are not so many young boy Canadians as there used to be, speaking pro rata to our population today and aforesaid. Except in certain sections of the people, the large families are almost a thing of the past. The Anglo-Saxons, or more properly the Anglo-Celts, are certainly those who are not carrying on the race as did their immediate ancestors. The boot and shoe production brings it home to us in a very practical way.

Early in life girls become accustomed to using up more shoes than their brothers. In fact they get three pairs to a boy's one. There is little wonder, therefore, that when the girls have grown into women, they keep on wearing out more than their men folk do. Well, what does it all amount to? Is it not simply this, that women like to be dainty, and what kind of man is he who doesn't love to see his women folk looking dainty? Surely our way of life will grant us that much.

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No. 6 — Wed. Oct. 6, 1943 — Amazing Increase in Herring Canning.

Listen to this. In 1938 Canada canned 80,000 cases of herring. In 1942, Canada canned 1,642,400 cases. This was an increase of almost 2,000 per cent.

Put it in another way. The 1938 pack represented not much more than five and a half million pounds of herring landed by the fishermen for use as the raw material of the canneries, whereas nearly 115 million pounds of fresh herring were required to produce the 1942 pack. This is going some.

This is one part of the story of the contribution the fishing industry is making to the cause of the United Nations. The great bulk of this herring pack has gone across the Atlantic to keep up the food stocks of the British people and to provide a tasty morsel for our fighting men and women overseas.

When the boys and girls come back those of them who have been quartered in England will be talking of "blosters" and those who have been stationed north of the Tweed will be calling a Loch Fyne herring a "Glasgow Magistrate".

We have become quite used to Kipperred Herring and Finnan Haddie since a famous Canadian Prime Minister had a breakfast of the latter when he was attending an Imperial Conference. There and then he decided Canada had to have that delicious dish too. So he went to work immediately with the result that experts were brought from the Old Land and soon we had Kippers and Finnan Haddie fixed up in our own Maritime Provinces and spread all over the corner groceries of our inlands.

Now we are repaying some of the debt we owe for that choice food because a lot of our cured haddock and kippered herring is today going back to the Island Kingdom of Britannia in the days of stress.

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No. 7 -- Thurs. Oct. 7, 1943 -- Butter and Cheese.

Dairying is one of the oldest and one of the most important Canadian industries. The permanent establishment of cattle dates from about the year 1608, when Champlain brought a few head to the colony of Quebec. Cattle were placed in Acadia in 1632 and by 1671, according to a census of that year, the number had increased to 866. Butter and cheese making were introduced by the early French colonists who had brought from their native land a knowledge of the art, and who soon were able to produce sufficient for home requirements. With the arrival of the United Empire Loyalists in the years 1783-4-5 the art of butter and cheese making was extended to Upper Canada and dairying commenced to occupy a fixed place in the commercial life of the country.

Early records show that in 1801 there was a surplus of butter at Kingston, Ontario, and that some was exported to the United States. It was not until 1864, however, when the factory system was introduced that dairying entered upon the era of development which has placed it in the forefront of the industrial life of the country. A little later came the introduction of the centrifugal cream separator, which revolutionized work in the factories and, together with the facilities afforded by improved methods of cold storage, assisted in bringing the dairy industry into its modern position.

The first Canadian cheese factory was established in Ontario in 1864, and the first Canadian creamery for butter-making in Quebec in 1873. The first centrifugal cream separator was imported from Denmark in 1882, and the Government organization of cold storage services dates from 1895. In 1868 the quantity of cheese exported from the Dominion was 6,141,570 pounds and of butter 10,649,733 pounds. There was a rapid advance in the export trade of cheese after that date and a moderate advance in the export of butter. Cheese reached its maximum export in 1904 with 234,000,000 pounds, and butter in 1903 with 34,000,000 pounds.

The decline shown in the exports of these two commodities in succeeding years was due to the greater requirements for home consumption caused by the increase of urban population since the beginning of the present century. Since 1940, due to the demand created by the war, there has been an upturn in the export of dairy products, cheese and concentrated milk products accounting for most of the increase.

Records maintained by the Dominion Bureau of Statistics reveal that there were 2,427 dairy factories in operation in Canada in 1941 with a production valued at \$180,000,000. Butter output was valued at \$93,000,000, cheese \$25,000,000, ice cream \$10,000,000 and other products, including concentrated milk \$52,000,000.

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No. 8 -- Fri. Oct. 8, 1943 -- The Hot Dog Business.

"Red hots! Red hots! Come and get your red hots!" These are familiar words to every boy and girl who has visited the home-town Fall Fair. With this colorful sales cry or some similar variation, along with the usual odour of fried onions, "hot dog" stands were scattered throughout the fair grounds to allay the pangs of hunger of the tired sightseer. Smearred with mustard or chili sauce or whatever individual taste demanded, hot dogs made a delightful snack.

During the ten or fifteen years preceding the outbreak of the war a thriving trade in hot dog, hamburger and potato chip dispensing was built up along our motor roads. However, with the advent of gasoline rationing, together with the



rubber shortage and the rationing of meats, these roadside businesses have to some extent become war casualties. But it seems reasonable to suppose that after the war is over the business will once more come into its own.

It appeared for a time recently that the hot dog business was to receive a further body blow. The Wartime Prices and Trade Board had issued an order halting the manufacture of hot dog rolls — a serious blow, especially to the younger members of the family. But this order has since been withdrawn. So, instead of Junior being placed in the embarrassing position of having to eat his hot dog wrapped snugly between two slices of bread, he may expect to continue to munch his 'dog' in the manner to which he had become accustomed.

When Junior and the rest of the family are enjoying their favourite brand of hot dog they little realize the amount of time and money that manufacturers have spent in making them appetizing. Although it is not known what progress has been made since the war broke out, it is known that just before the guns began to roar a certain manufacturer brought out a frankfurter that thrilled the hot dog eating fraternity -- in fact this manufacturer went so far as to say that the average small boy, if unrestrained, would eat about twice as many of the new 'dogs' at a sitting.

At one stage of the new process the frankfurters are dipped in a bath of pineapple juice. The result — a tender sausage casing. Then there is the skinless variety which was first seen some 14 years ago when a cellulose-base casing was put on the market. So, after this war is over and the now necessary restrictions have become a thing of the past, great developments will no doubt be seen in the hot dog business.

The records of the Dominion Bureau of Statistics show that in the Sausage and Sausage Casings Industry alone the 1942 production of frankfurters amounted to 1,207,000 pounds and of weiners 1,044,000 pounds. These figures do not represent the total Canadian production because it is definitely known that firms included in other industrial groups produce these items. It is believed also that some dispensers of 'hot dogs' feature pork sausage instead of frankfurters or weiners, so that it would be a somewhat difficult matter to estimate the number of hot dogs consumed in a year by Canadians.

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No. 9 -- Sat. Oct. 9, 1943 -- Bentonite.

Bentonite is a remarkable clay-like mineral so fine grained that even under high-power microscopic examination it appears to consist of extremely small, more or less rounded grains of fairly uniform size. Being very plastic and highly absorbent it has found favour in foundry work, oil-well drilling operations and oil refining.

Due to its special qualities, bentonite has found wide application in industry, being used in the manufacture of soap, of cosmetic and pharmaceutical preparations, horticultural sprays, insecticides, ceramics, and plasters. It is said to improve the flow and workability of concrete and is used as a clarifying agent of wines and vinegars. Increasing amounts are being used for water sealing to stop seepage through and around dam abutments, reservoir walls, the sides of irrigation ditches and structural foundations.

When wetted, bentonite will absorb more than three times its weight or seven



times its volume of water. Some varieties when wetted with water expand to more than six times their original volume. The wetted material is exceedingly smooth and soft and feels like soft soap. Some varieties when ground and thoroughly agitated with water will stay in suspension for an indefinite period, forming a gelatinous mass.

Bentonite is widely distributed over large areas of the Prairie Provinces. The most important known deposits are exposed mainly in areas dissected by drainage channels where they show as beds in the slopes bordering valleys and in the sides or on top of small buttes in typical "bad-land" topography. Thus many of the chief exposures are found in the Red Deer Valley section of Alberta, over a wide area in southern Saskatchewan, and in southern Manitoba.

One lower-lying bed of bentonite occurs in the Drumheller district in Alberta, as well as near Cluny, farther east. Other exposures exist in the Edmonton region, Alberta, and farther west on McLeod River near Edson. In British Columbia a deposit of unusual thickness occurs in tertiary beds near Merritt and at Princeton.

Several of the above occurrences have been mined on a limited scale, but the total production to date is comparatively small, amounting in 1942 to 1,616 tons. Most of the output has come from the Drumheller area, the Red Deer Valley, Alberta, and from the Morden area, Manitoba.

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No. 10 -- Sun. Oct. 10, 1943 -- The Common Cold and Pneumonia.

The common cold is one of man's most bothersome ailments and one which may lead to serious complications if not properly treated. Now that fall is here and winter is at hand throat tickling, coughs and sniffles are on their way. But if medical science makes good its promise, the common cold will soon be relegated to the side lines as an illness of little consequence.

Over the radio the other evening it was stated that after the war is won there will be made available for public use the means by which even the most severe cold may be brought under control in a matter of twenty-four hours.

This will be a boon to mankind. For the time being, however, keep warm to keep fit. Avoid chills at all costs and get lots of rest; at the same time avoid contact with those who may already be infected with cold germs.

One disease closely related to the common cold is pneumonia. It is one of the most prevalent and fatal diseases. It ranked seventh among the leading causes of death in Canada a year or two ago.

Pneumonia is peculiar to no climate but shows a distinct tendency to seasonal prevalence. It is most frequent in Canada and the United States during the winter and early spring months. Neither is pneumonia a respecter of ages, as it attacks young and old, rich and poor with equal severity, but the incidence is more marked at the extremes of life.

Pneumonia is seldom epidemic of its own volition, but as a secondary condition the disease may become epidemic when influenza, measles, whooping cough, etc., are prevalent in widespread proportions. Overcrowding as in barracks and industrial plants, etc., is said to develop a susceptibility to an excessive prevalence of pneumonia, especially when a specific type of infection is present.

The Canadian death rate from pneumonia has been reduced sharply during the past fifteen years. In 1926, 89.3 persons out of every 100,000 of the population died from this cause, but by 1940 the rate had been lowered to 53.9. During the same fifteen years, an annual average of 7,325 Canadians died of this disease.

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No. 11 -- Mon. Oct. 11, 1943 -- Canadian Hospitals.

Effective planning for mobilization of the Dominion's resources against sickness, disease and epidemics and of planning health services in the post-war period requires careful analysis of existing hospital facilities and in this respect the Annual Report on Hospitals for 1941 affords valuable data in tabular form that should prove useful to organizations and individuals concerned with immediate and long-range planning of hospital and auxiliary services throughout Canada.

The Annual Report on Hospitals for 1941 deals exclusively with general public hospitals, private hospitals and Dominion hospitals under the jurisdiction of the Department of Pensions and National Health and the Department of Mines and Resources. Due to the rapid changes occurring in hospitals under the control of the Department of National Defence, data on these are not included. Neither are mental hospitals nor tuberculosis sanatoria statistics included as these are printed in separate annual reports.

The following classes of hospitals are included: General Public, 496; Women's, 10; Children's, 11; Contagious Diseases, 14; Convalescent, 10; Red Cross, 42; Incurable, 20; Private hospitals, 322 and Dominion hospitals referred to above, 27; a total of 952.

As by far the most considerable portion of hospitalization for general and acute diseases of all classes of the population is provided in general public hospitals, it is to this large group that the following data refer.

The total bed capacity of all public hospitals was 56,318 beds, an increase of 1.5 per cent over 1940; salaried doctors numbered 577, a decrease of 6.5 per cent from the previous year; graduate nurses totalled 7,835, an increase of 4.7 per cent over 1940; all other nurses 10,715, an increase of 3.5 per cent, while total personnel was 40,868, an increase of 5 per cent over the number in 1940.

The percentage of bed occupancy rose from 68.2 in 1940 to 69.4 in 1941. Admissions during the year totalled 1,019,869, an increase of 68,499 over admissions in 1940, while the total days' care amounted to 11,505,365, an increase of 520,663 days over 1940.

The number discharged from public hospitals during the year was 984,197, or 93.5 per cent of the total under care. Births in public hospitals during the year totalled 126,365, of which number 122,379 were live births. Total births in public hospitals in 1940 were 112,493, of which number 108,952 were live births.

Nine out of every one hundred of the general population of Canada entered public hospitals in 1941.

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No. 12 -- Tues. Oct. 12, 1943 -- Public Libraries.

The circulation of public libraries in Canada in 1941 totalled 20,283,618 volumes as compared with 20,728,151 in 1939, a reduction of 444,533 volumes, according to a survey conducted by the Dominion Bureau of Statistics. The decrease was confined to the borrowing of adult reading matter, particularly of fiction, the circulation of books for children having been increased. Despite the drop in circulation the number of registered borrowers increased to 1,057,336 in 1941 from 1,045,521 in 1939.

Illustrating the trend in the wartime reading habits of the Canadian people, the public library circulation of adult fiction volumes decreased to 9,944,591 volumes in 1941 from 10,225,813 in 1939, adult non-fiction to 3,922,343 volumes from 3,997,336; juvenile increased to 5,979,200 volumes from 5,707,948, while unclassified volumes decreased to 447,525 volumes from 786,054.

One plausible explanation for the decline in the circulation of adult fiction volumes lies in the fact that many readers who by joining the armed services have gone out of reach of the libraries. There has been no general plan by means of which librarians could provide a compensating service to enlisted readers. However, some library boards out of local resources have made special attempts to meet the library problem of training centres in or near their cities, but in the main the provision of reading material for service personnel has been left to voluntary agencies.

Children have made increased use of public library facilities. The newer school programs of study, placing less reliance on a few text books and recommending access to a wide selection of books, doubtless have much to do with this development. In addition to the traffic in books a few libraries make provision for story hours or classes to be conducted on the library premises, while others have members of the library staff visit the schools.

The survey shows that well over half of the Canadian population is still without public library service as compared with one-fourth in the United States and less than one per cent in Britain. Expenditures on libraries in this country continue to be less than 20 cents per capita.

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No. 13 -- Wed. Oct. 13, 1943 -- Some Problems of the Farmer.

Before dealing with the consideration of the post war problems in the production of food, there are a few hard facts in connection with the farmers of Canada that should not be overlooked, says a high authority in the Government service.

Agriculture previous to 1939 was not in a prosperous condition. It was the first to take the disastrous slump in prices during the depression, and most agricultural crops, unlike many industrial products, had not recovered pre-depression prices at the outbreak of the present war. The farmers were thus at a distinct disadvantage in their buying power over a long period of years. True, this reacted very unfavourably on industry in Canada because the 750,000 Canadian farmers still constitute the best market for industrial products but what was even more disastrous, however, was that the farmer was left in an exceedingly unfavourable position.

For a considerable period of years, and more intensely so during the depression, Canadian farms have been slipping, debts have increased, and even with debt adjustments which were desirable to farmers and others alike, the farmer has no licence



to be placed in the unenviable position of being unable to carry on his business without being in the red. An evidence that the farm business was slipping financially was seen in the fact that his buildings lack paint, lack improvements, and need modernizing. The farmer and his wife do not choose to be in the position where only 8 per cent of the farm dwellings have sanitary facilities, 7 per cent with bathing facilities, less than 20 per cent with electric lights, and only 12 per cent have furnaces of any description for heating purposes.

What has been even more disastrous is the fact that the farmers' greatest bank account — the soil — was being steadily drawn upon to the detriment of production. The gradual depletion of Canadian soils due to inability of the farmer to pay for proper fertilization, insecure live-stock markets and population to maintain soil fertility, coupled with erosion have taken a heavy toll of the great fertile soil wealth of Canada. The farmers' war effort, namely an all-out production program with even more limited fertilizers than in times of peace, has to the farmers' own knowledge, still further drawn on Canada's soil resources. These are a few of the facts which must be faced in Canada's future food production program.

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No. 14 -- Thurs. Oct. 14, 1943 -- The Canadian Family.

There were 271,981 children born in Canada in 1942, exclusive of stillbirths. That was 16,564 more than in 1941. It was a rate of 23.4 per thousand of the population. This was slightly less than the birthrate during the five years preceding the Great Depression when it was 24.1 and fell in the next five years to 21.4 and still later to 20.4. It had become increasingly difficult for young men in these hard years to marry and establish family life.

However, a betterment began in 1940. War marriages became a feature of our social life, with the inevitable result that births became more frequent. There were 121,842 marriages in 1941 and 127,368 in 1942. Clergymen were busiest in the last two years in British Columbia, for in 1941 the marriage rate was 11.9 per thousand of the population and this swelled to 13.1 in 1942. If experience is any guide there will be a sharp increase in the birth rate of 1943.

The trend of family building is very evident. Take the two largest provinces as an example. Of the 16,564 increase in births last year, there were 5,832 in Quebec and 5,818 in Ontario, yet Ontario had a population of 3,825,000 and Quebec 3,390,000. The fact is that the rate of natural increase in the population in Quebec is 18 per thousand of the population and in Ontario only 10.2. The nearest approach to this large increase in Quebec is New Brunswick with 16.1. Others are: Nova Scotia 15.2, Alberta 15.1, Saskatchewan 13.2, Manitoba 12.5, Prince Edward Island 12.2 and British Columbia 9.7.

One of the reasons vouchsafed for the decrease in the birth rates is the longer time spent upon education compared with a number of years ago. Sir Guy Carleton had a family of nine sons and two daughters.

Young men and women attending school and college until well into their twenties would formerly long before that have been raising families and learning the lessons of life in gainful occupations and chores around the home; today a vast number of young Canadians have little hope of entering wedlock until they are about thirty years of age and the prospect of a large family has to be given up. With our increasingly regimented way of life it costs much more to make a start.

This is the whole marital situation today of a very large proportion of the British races in particular. It was formerly obviated to some extent by the apprenticeship system, now almost wholly abandoned, under which a lad learned his trade, and got his technical and scholastic training by attending evening classes at a college devoted to the special purpose. At the end of his apprenticeship he was immediately employable at an income which warranted plans for marriage.

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No. 15 -- Fri. Oct. 15, 1943 -- Criminal Convictions Higher in Canada.

There was a sharp increase in convictions for infractions of the law in Canada during the first three war years as compared with the three years preceding the outbreak. By actual count there were 632,431 convictions during 1942, 484,328 in 1939, and 420,975 in 1936. During the three pre-war years the increase in convictions was 15 p.c., while during the three war years the increase was 30.6 p.c. In other words convictions increased twice as fast during the war years as during the peace-time period.

Convictions of both adult and juvenile offenders increased at an alarming rate during these war years. The percentage increase in convictions of juveniles was far in excess of that of adult offenders. Further, fewer adults were convicted of the more serious breaches of the law during the war period whereas amongst the juveniles the reverse was the case.

The number of adults convicted of indictable offenses decreased 18.3 p.c. during the war period, while for non-indictable offenses the increase was 35.6 p.c., or an increase in total adult convictions of 30.2 p.c. Among the juveniles, major convictions increased 37.9 p.c. and minor convictions 86.4 p.c., or an increase during the war years of 54.4 p.c. The pre-war increase in juvenile convictions was 5.6 p.c. and that of adults 15.2 p.c.

Juvenile convictions which had increased from 7,210 in 1936 to 7,613 in 1939 or by 5.6 p.c. continued to increase at a rapid rate during the next three years. The 1942 convictions were 11,758, an increase over 1939 of 54.4 p.c. At no time since statistics of juvenile crime were compiled separately in the early 1920's has any period shown such a marked acceleration in the juvenile crime rate as the three war years have revealed.

Convictions of juveniles for major offences which increased from 4,970 in 1936 to 5,018 in 1939 or by one per cent advanced to 6,920 in 1942, an increase of 37.9 p.c. over the 1939 total. Minor offences, which increased from 2,240 in 1936 to 2,595 in 1939 or 15.8 p.c., rose to 4,858 in 1942, or 86.4 p.c. higher.

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No. 16 -- Sat. Oct. 16, 1943 -- Theft, Burglary and Assault by Juveniles.

The increase in convictions of juveniles for major offences during the war years was brought about by the greatly accelerated increase in theft, burglary and common assault. Convictions for theft which had decreased 9.1 p.c. from 1936 to 1939, increased 30.6 p.c. during the war years. Thefts of bicycles and automobiles showed a much faster rate of increase during the war years than was recorded in the earlier period.

Burglary by juveniles, which had increased 17 per cent in the earlier period, increased faster after the start of the war, and convictions were up 25.9 p.c. in



1942. Convictions for common assault which had declined from 35.3 p.c. for the 1936 to 1939 period showed an increase of 62.1 p.c. since the start of the war.

Adult convictions, which increased from 413,765 in 1936 to 476,715 in 1939, or by 15.2 p.c., showed a continued and more rapid increase during the three year war period. Convictions during 1942 increased to 620,673 or by 30.2 p.c. during the war years. Convictions for indictable offences had increased from 36,059 in 1936 to 48,107 in 1939, an increase of 33.4 p.c. However, a decrease of 18.3 p.c. was recorded in convictions for indictable offences during the war years.

In contrast with the 33.4 p.c. increase in indictable convictions of adults during the 1936 to 1939 period there was a decrease of 18.3 p.c. from 1939 to 1942. Only 39,309 convictions were recorded in 1942 as compared with 48,107 during 1939. Non-indictable convictions, which increased from 377,706 in 1936 to 428,607 in 1939, continued to rise at an accelerated rate since the start of the war. There were 581,364 convictions in 1942, an increase of 35.6 p.c. for this class of crime over the 428,608 convictions recorded in 1939.

Amongst the adult indictable crimes, offences against the person, which had shown an increase of 70 p.c. during the three pre-war years, decreased 0.2 p.c. after the war started. Offences against property with violence, which increased 27 p.c. during the three pre-war years declined 36.2 p.c. Malicious offences against property went up 53.5 p.c. in the pre-war years. This rate slowed somewhat, recording an increase of only 9.9 p.c. Forgery and other offences against currency had increased 94.3 p.c. during the three pre-war years, but decreased 42.4 p.c. since the beginning of the war.

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No. 17 -- Sun. Oct. 17, 1943 -- Certain Crimes Declined in War Years.

Decreases in theft, embezzlement, false pretences, fraud, receiving stolen goods, horse and cattle stealing, burglary, robbery, forgery and uttering, and gambling, which are among the crimes providing the greatest percentage of all indictable convictions, were leaders in the decline of indictable convictions during the war years. For example, convictions for theft, which increased 18.3 p.c. in the three pre-war years, decreased 29.3 p.c. Theft comprises nearly one-third of all indictable offences.

The acceleration of convictions for adult non-indictable offences from the 13.5 p.c. increase in the three pre-war years to 35.6 p.c. during the 1939-1942 period was due mainly to more rapid increases in breaches of municipal by-laws, breaches of traffic laws and in operating a radio without a license. Breaches of municipal by-laws, which increased by 31.7 p.c. from 1936 to 1939, rose 85 p.c. during the war years. Breaches of traffic laws, which had shown a pre-war increase of 27.7 p.c. increased 35.5 p.c. Convictions for failure to purchase a radio license increased from a negligible number to 38.6 p.c. during the war.

Gambling which had declined sharply in peace-time, increased by 90.2 p.c. The rate of increase for drunkenness in wartime was almost identical with the increase during the three-war years, being 24.4 p.c. and 26.6 p.c., respectively.

All provinces of the Dominion contributed to the increase in juvenile delinquency during the war years, whereas during the pre-war period Nova Scotia, Ontario and Saskatchewan had recorded declines. Major convictions during the war period were common to all provinces with the single exception of Nova Scotia, while in the minor category, New Brunswick alone recorded a decline.



During the three pre-war years, convictions of adult offenders increased in every province with the exception of Quebec. Although the total number of adult convictions increased from 15.2 to 30.2 p.c. during the next three years, Manitoba, Saskatchewan, Alberta and Yukon and Northwest Territories revealed lower rates.

The pre-war situation amongst adults for indictable offences was a serious one with all provinces recording increased rates. However, during the war years all provinces recorded declines with the exception of Nova Scotia where there was a minor increase of 0.7 p.c. The results was that convictions of adults for indictable offences dropped 18.3 p.c. for the Dominion. The upward swing of convictions of adults for non-indictable offences during the war years was common to all provinces except the Yukon and Northwest Territories.

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No. 18 -- Mon. Oct. 18, 1943 -- The Wheat Situation.

Argentine and Australian farmers are busy adding their quota to the world wheat supply of bread grain for 1944. The new harvest is well advanced in Australia and is extending southward in Argentina to the heavy producing areas in the province of Buenos Aires. Production in Australia is estimated at 97,000,000 bushels compared with 156,000,000 bushels a year ago, while the Argentine crop, recently revised downward to 291,000,000 bushels, compares with 235,000,000 bushels produced last year. Thus, the combined wheat crop of these two southern hemisphere countries is 388,000,000 bushels or approximately the same as they produced a year ago.

Making allowance for normal domestic disappearance in both countries during the next twelve months, the surplus available for export from the new crop is about 225,000,000 bushels. Australia has a carry-over of 153,000,000 bushels of old wheat and Argentina 122,000,000 bushels after deducting quantities set aside for fuel and animal feed. This makes a total surplus of 500,000,000 bushels available for export and carry-over in Argentina and Australia during 1944.

When joined to the Canadian wheat surplus, which stood at 670,000,000 bushels on October 1, 1943, this reservoir of wheat would seem to hold assurance that a Europe liberated in 1944 and provided with adequate ocean tonnage would not go short of bread. Moreover, both Canada and the United States will harvest another wheat crop in the middle of 1944 and the United States is endeavouring to increase the acreage under wheat for the 1944 harvest by 14,000,000 acres.

Tremendous quantities of wheat have been disappearing into non-food channels during the past year under stress of the burden of supplies in some countries and because of the lack of adequate feed supplies for live stock in others. There are indications that this diversion of bread grain supplies will taper off in 1944, particularly if the end of the European struggle comes in sight. In this event, at least 1,000,000,000 bushels of wheat, half of it in Canada, would be available for shipment to the hungry people of Europe.

It was with this statistical picture in the background that the Dominion-Provincial Agricultural Conference later decided to recommend that no increase in wheat acreage in Canada be encouraged in 1944. The production of coarse grain and oil-bearing seed crops, as well as peas, beans and corn was regarded as more urgent and it was suggested that a high proportion of the land in western Canada be summer fallowed again in 1944. This summerfallow, it was contended, would be an asset if circumstances justified an increase in wheat acreage in 1945.

Both the United States and Argentina removed wheat acreage restrictions in 1943 but Canada and Australia held to a policy of acreage reduction. The two Dominions were successful in their efforts, but the other two countries accomplished very little in the way of increased plantings, partly because the restrictions were removed too late to permit of farmers altering their seeding plans.

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No. 19 -- Tues. Oct. 19, 1943 -- Wheat Prospects in Europe.

Wheat prospects in Europe for 1944 are of much importance to Canada but authentic information on the acreage in Europe has been unobtainable. Unofficial estimates have indicated that wheat acreage in the United Kingdom has been doubled since the war began. The acreage in Eire is known to be higher but only piecemeal information of an unofficial character has been available for continental Europe. It is generally assumed that labour difficulties, the lack of fertilizer supplies and the scars of battle have reduced the crop area, and that wartime production has been consistently below the pre-war average. It is reported, however, that bread grain production in 1943 was the highest of the war years.

Latest advices suggest that efforts to increase acreage for the 1944 harvest have been successful in many European countries. Fall conditions were favourable for ploughing and seeding except in the Balkan areas where drought conditions hampered field work. This drought has since been broken and information credited to Roumanian sources indicates that the outlook is now very favourable. Cabled reports from Turkey point to good conditions there, while advices from the United Kingdom not only confirm a record harvest in 1943 but report satisfactory progress in the seeding of crops for next year's harvest.

Much valuable wheat land in the Ukraine is back in Russian hands. It can be assumed that as much as possible of this recaptured territory was seeded to grain this fall and that the Russians will benefit from the harvest in 1944. Production of grain is reported to be in full swing again in Tunisia and Algeria and it is very probable that the rehabilitation of agriculture in Sicily and southern Italy is under way. The North African territories are surplus-producing areas and in pre-war days they supplied France with substantial amounts of wheat and wheat products.

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No. 20 -- Wed. Oct. 20, 1943 -- Canada's 1944 Acreage Objective.

Wheat acreage for the 1944 harvest in Canada will be the same as the acreage planted in 1943. The Dominion-Provincial Conference decided after lengthy examination of the wheat situation, to recommend that no increase in wheat acreage take place next year. Speaking in support of this recommendation, the Federal Minister of Agriculture expressed the view that an average crop next year on the 1943 acreage would give Canada sufficient wheat to meet the highest possible demand during the next two years.

Wheat acreage in Canada in 1943 totalled approximately 17,500,000 acres, and this is the objective for 1944. The long-time average yield of 16 bushels per acre on this acreage would produce 280,000,000 bushels of wheat and this amount, added to the prospective carry-over on July 31, 1944, would provide a total supply for the crop year 1944-45 of between 600,000,000 and 700,000,000 bushels of wheat. The current estimate of export and domestic disappearance of Canadian wheat during the



crop year 1943-44 is in the neighbourhood of 475,000,000 bushels and the balance available for export on October 1, 1943, after two months of the crop year had expired, was approximately 670,000,000 bushels.

Emphasis is again placed on the production of coarse grains in 1944 to meet the feed demands of live stock and poultry producers. It has been proposed also that a larger acreage be devoted to the production of oil-bearing seeds crops and to peas, beans and corn for husking. If these objectives are met, any upward change in wheat acreage would result in the lowering of summerfallow acreage and this was argued to be undesirable, at least in 1944.

The summerfallow area in western Canada has increased considerably in recent years under the Dominion Government's acreage policy. The Dominion Census taken in 1941 revealed an increase of about 6,000,000 acres between 1940 and 1941. A large part of this increase was absorbed in 1942 when acreage seeded to oats and barley was expanded but the acreage under summerfallow in 1943 was still 20,637,000 acres compared with 17,325,700 acres in 1940. Very little change was noted between 1942 and 1943 despite a further increase in acreage planted to coarse grains and flaxseed, this being accomplished at the expense of wheat.

Spokesmen for the Dominion Department of Agriculture favoured retention of a high summerfallow acreage in 1944 contending that since there was no case for increased wheat acreage next year, a large summerfallow acreage would be an asset of high value if circumstances warranted heavier production of wheat in 1945. The seeding of a large proportion of the crops on summerfallowed land in recent years was believed by agricultural authorities to have been a factor of importance in the high yields per acre obtained generally in 1942 and in some areas in 1943.

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No. 21 -- Thurs. Oct. 21, 1943 -- Infant Mortality in Canada.

Canada has made great progress in recent years in reducing infant mortality. Deaths of children under one year of age in 1942 were at the rate of 54 per thousand, the lowest ever achieved. Compared with the 1926 rate of 102 per thousand, when vital statistics were first collected on a nation-wide basis, it has been practically halved. The rate was 78 in 1937, 85 in 1931 and 90 in 1928.

Striking progress has been made in all provinces in this important work, reflecting improvements achieved in hospitalization, nutrition, health education, and other provincial and municipal public health services, together with improved home facilities for care of the new-born.

Provincial infant mortality rates for 1942 were as follows, with those for 1926 in brackets: Prince Edward Island, 50(70); Nova Scotia, 58 (80); New Brunswick, 77 (106); Quebec, 70 (142); Ontario, 40 (78); Manitoba, 51 (77); Saskatchewan, 43 (81); Alberta, 38 (85); British Columbia, 38 (58).

The latest records the Dominion Bureau of Statistics has obtained from other countries show that New Zealand's infant mortality was the lowest in the world in 1937 with 31 deaths per thousand. In that year the United States rate was 54, while the British Isles rate was 62 and Australia 38.

Canada's rate in 1937 was 76, when the Dominion stood 17th out of 43 leading countries in relation to infant mortality rates. Indications are, however, with the limited data available from other countries for 1942, that Canada's position in relation to these same 43 countries, has been much improved in this connection.

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No. 22 — Fri. Oct. 22, 1943 -- Some Conveniences in Canadian Homes.

It was found during the taking of the Census in 1941 that 78 per cent of Canadian occupied dwellings had radios, 40 per cent had telephones, 24 per cent had vacuum cleaners and 37 per cent had automobiles. None of these conveniences was possessed by the households in 17 per cent of occupied dwellings while 11 per cent had all four.

Proportions of dwellings with radios and vacuum cleaners increased with the concentration of population, being smallest on farms and largest in the cities of 30,000 population and over. However, higher proportions of farms reported telephones and automobiles than did the smaller urban communities, and automobiles were owned by a higher proportion of farm households than by households in the cities of 30,000 and over.

Seventy-eight per cent of all occupied dwellings had radios in 1941. The percentage of urban dwellings so equipped was 89, farm dwellings 61, and rural non-farm 71 per cent. Telephones were reported by 40 per cent of all dwellings, 50 per cent by urban dwellings, 29 per cent of farm dwellings and 28 per cent of rural non-farm.

Automobiles were owned by 37 per cent of occupied dwellings. Forty-four per cent of farm dwellings had automobiles, 37 per cent of rural non-farm, and 33 per cent of urban dwellings. Electric vacuum cleaners were owned by 24 per cent of dwellings, mostly urban.

In Prince Edward Island 60 per cent of dwellings were equipped with radio receiving sets, Nova Scotia 73 per cent, New Brunswick 65, Quebec 71, Ontario 84, Manitoba 79, Saskatchewan 76, Alberta 79 and British Columbia 84. Telephones were found in 22 per cent of dwellings in Prince Edward Island, 33 per cent in Nova Scotia, 27 in New Brunswick, 33 in Quebec, 52 in Ontario, 33 in Manitoba, 32 in Saskatchewan, 28 in Alberta and 48 per cent in British Columbia.

Automobiles were owned by 29 per cent of Prince Edward Island dwellings, in Nova Scotia 28 per cent, New Brunswick 26, Quebec 19, Ontario 50, Manitoba 38, Saskatchewan 42, Alberta 43, and British Columbia 35. In Prince Edward Island six per cent of dwellings had electric vacuum cleaners, Nova Scotia 16 per cent, New Brunswick 12, Quebec 13, Ontario 35, Manitoba 20, Saskatchewan 10, Alberta 18, and British Columbia 33 per cent.

No. 23 — Sat. Oct. 23, 1943 -- The Agricultural Scientist.

In the relationship between the Canadian farmer and the Canadian scientist, there has been a remarkable change during the present century. The scientist has taken his methods to the fields; the farmer has brought his problems to the laboratory. To apply the laws of science to the everyday practices of agriculture is one of the functions of the research workers of the Dominion Department of Agriculture, mainly through its Science Service, and the Experimental Farms, in addition to the agricultural scientists at the several universities and agricultural colleges, and to some extent by industry. The results are obtained, classified and analyzed by the Dominion Bureau of Statistics.

In the field of agricultural research, Canada occupies a high place in the fine work done by her trained specialists. Canada's plant breeders have opened up many millions of acres through the development of earlier maturing and more suitable

types of crops in cereals, forages, and horticulture, and to these accomplishments have been added the protection of these acres through the creation of disease and insect resisting varieties and types of crops.

Because of the development of new types and varieties of tobacco and cultural methods adaptable to Canadian conditions, large new areas have been opened up, and other crops, such as fibre flax, have been introduced, improved, and adapted to various parts of Canada. One of the most recent accomplishments, and one probably of the greatest value in wartime, is the study of Vitamin B1 values of wheats.

Research workers dealing with animal and poultry nutrition have also shown the way toward greater usefulness of Canadian foodstuffs. Research in marketing has also contributed greatly to Canada's agriculture and applied industry, and has benefited the consumers of Canadian foodstuffs both at home and abroad.

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No. 24 -- Sun. Oct. 24, 1943 -- Bibles Printed in Canada.

While this is being written an historic event is taking place in Toronto, an event of unusual interest to the printing and religious worlds. For the first time in history an edition of the Authorized Version of the Bible, also commonly known as the King James Version, is being printed by the Ryerson Press, the publishing house of the United Church of Canada.

The printing of the Bible has never before been undertaken in Canada. For one thing it is a mammoth task which no Canadian firm has sought. Another reason is that the copyright for the Holy Bible is vested in His Majesty the King. When the King accepts the Bible at the coronation ceremony the act is symbolic of the investiture of the copyright in his person.

The King's Printer is the firm of Eyre and Spottiswoode and hitherto the crown rights in the United Kingdom have been granted to only three printing houses, the Oxford and Cambridge Presses in England and the Collins firm in Scotland. Now the rights are given to a Canadian firm. The reason is the paper and labour shortage in the United Kingdom.

The task in Canada has been made much easier by the transportation of the plates on which the type has been impressed. Thus the huge work of composition has been avoided as well as the important job of proofreading. Only the press work and binding are therefore being done in Toronto.

The necessity for obtaining a greater supply of Bibles than was possible under war conditions was the cause of this new venture. Every member of the Canadian Armed Forces has been given a Bible and in Canada alone there has been a free distribution of no fewer than 583,000 copies.

Mention of the proofreading recalls that there are two printer's blunders in the present King James Version — the better known is in the phrase "that which groweth of its own accord", Leviticus, Chap. 25, Verse 5. It should read "it own accord" or "his own accord". The neuter possessive as "its" crept into the language subsequent to the translation of the Bible at the behest of James I of England and VI of Scotland.

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Note: The second printer's blunder has been forgotten by the Editor. Can any reader remember it?



No. 25 -- Mon. Oct. 25, 1943 -- Controlling Weeds.

Weeds are becoming more and more a problem in grain crops. This is more true in the last few years, owing to the shortage of farm labour and machinery which has interfered with proper tillage.

In the past, various tillage procedures and rotations have been the sole means used for weed control. However, within the last couple of decades, the value of commercial fertilizers applied to the crop as a means of controlling weeds, has been tested. The results of ten years of experimentation with different rates and methods of application of commercial fertilizers for the control of weeds have definitely shown that a marked reduction in weeds is effected by their use.

The rate of application and the type of fertilizer used depends to a large extent upon soil-climatic conditions. In general, the drier the climate, the lighter the application required for effective control. In the Prairie Provinces, triple superphosphate and ammonium phosphate fertilizers, drilled in with the seed, have been effective. The rate of application of these for effective weed control varies from 20 to 50 lb. per acre.

Barnyard manure has not been found effective in the control of weeds. On the contrary, weeds tend to increase if manure alone is applied. However, when used in combination with commercial fertilizer, quite effective control may be obtained.

The fertilizer provides the growing plant with a readily available source of food, thus enabling it to form a vigorous root system quickly, and thus young weed seedlings are more or less starved out and prevented from establishing themselves.

Experimentation has shown that fertilizer is effective in keeping down weeds only during the year of application. There is no noticeable residual effect the second year after application, consequently fertilizer used for weed control must be applied each year.

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No. 26 -- Tues. Oct. 26, 1943 -- Gasoline Substitute.

The present shortage of gasoline and the probability of a continued shortage after the war have caused many people to investigate and to experiment with various substitutes which are more readily obtainable. One of the most attractive of these is producer gas, which is made in a small furnace, similar to those used for heating houses and in which the gas is produced, as required, by the suction of the engine while the car or truck is running. The fuel used in the producer or "gasogene", as it is sometimes called, is charcoal, wood, anthracite (hard coal) or coke, and of these the two first are readily obtainable in normal times in all parts of Canada. They are also replaceable, by growing fresh timber, and thus their use does not spend our non-replaceable fuel "capital".

These gas producers have been used for stationary gas engines for over fifty years and the small ones, which are suitable for cars, trucks and motor boats, were employed to some extent in the British army during World War I. After that, they were used quite extensively in Europe, where there are now about half a million of them, and to a less extent in other parts of the world.

The impending shortage of petroleum fuels was foreseen by the Dominion Government in 1941 and a Committee of the National Research Council has been investi-

gating the possibilities of other fuels for vehicles since that time. A great deal of experimental work has been performed on various types of gas producers and sufficient evidence has been obtained to justify recommendations which are being placed before the Government, so that appropriate action may be taken if the emergency becomes acute.

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No. 27 -- Wed. Oct. 27, 1943 -- About Gas Producers.

Many inventors are claiming a considerable amount of success with gas producers made by themselves. It is quite a simple matter to make a gas producer that will work satisfactorily for a time, but for general use many precautions must be taken. The gas contains about 30 per cent of carbon monoxide and therefore is very poisonous. It must not be used carelessly or by unskilled persons. It must be properly cleaned before it goes to the engine, otherwise the cylinders will wear rapidly or the valves become stuck with tar. The scrubbers and filters that clean the gas must be cleaned regularly and the plant must be kept free from leakage.

If water is used for cleaning or cooling parts of the plant or if it accumulates by condensation from the fuel, freezing is liable to occur in cold weather. When the fire is dumped or ashes are cleaned out there is a considerable risk of setting fire to the vehicle or garage and in some instances minor explosions may occur because of the mixture of gas and air.

These facts make the design and use of gas producers by amateurs a hazardous matter, and many authorities state that this is not a job for the amateur to attempt unless he has money, experience and testing facilities available. Many gas producers have failed, after receiving unusually good press notices, for some of the reasons outlined above. It is desirable, therefore, that these gas plants should first of all be tried out under practical conditions by firms and public bodies who have fleets of trucks and can afford to employ a proper maintenance staff. It is improbable that they will be generally applied to cars for some time, as the service difficulties are great. Also, unless the engine is modified, the power developed in producer gas is only about 60 per cent of that in gasoline.

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No. 28 -- Thurs. Oct. 28, 1943 -- Underground Storage Depots.

The London Mining Journal prints the following remarkable statement of how certain abandoned quarries in the United Kingdom have been converted into suitable underground depots for the storage of munitions. For security reasons, of course, the locations of these quarries cannot be divulged.

About seven years ago the War Office turned its attention to certain disused quarries which it seemed might be turned very usefully into storage areas. These quarries were deep underground, building stone having been extracted from them by various tunnels and shafts communicating with the surface and they covered a large area; after the extraction of suitable stone the rock debris had been put back into the cavities which had been made, leaving just small alleyways for access. The scheme was to adapt these cavities as complete self-contained depots, including underground power houses, offices and barracks for use in case of emergency, and this scheme has now been carried out.



A planned scheme was, of course, necessary for the underground layout, and this had to be based on an accurate survey, which did not exist, of the underground cavities. A detachment of the Royal Engineers, of the Survey Battalion, was allotted for this duty, and has been at work ever since. At the beginning work had to be carried out under great difficulties, since surveyers had to work their way through the cavities, often crawling through a narrow space between the top of the heaps of debris and the ceiling, or alternatively coming into deep places with loose rocks all round. Their work has throughout been so accurate that the error in joining up is normally not greater than one-half inch.

The lighting and the operation of various forms of transport and other plants require a secure electricity supply and so in addition to having alternative connections to the grid, each depot also had its own underground generating plant for use in case the grid supplies break down. This plant is installed in power houses underground. The transport is a particularly important problem, since the rapid in-take and out-put of stores is of prime importance. In one depot there is direct railway communication to the main line, special diesel standard gauge locos being operated by the Royal Engineers, with their own underground repair shop. In another case there is a mile-long tunnel connecting the depot with the railway, through which runs conveyor belts electrically operated, with a "creeper" at the end, electrically operated to convey trucks from the tunnel to the siding. There are also surface loading platforms for lorry transport, which give access underground to conveyor belts in slope shafts and in one case by electric lifts.

A system of remote control enables the elaborate conveyor belt systems to be operated each from a central point in a depot. Since the air underground is cold and humid, it was necessary for storage of some types of stores, and also for the underground offices and barracks, to instal a system of air conditioning. In one case it was possible to use a large network of disused quarry passages as a "cold sink", from which air is drawn at a low temperature, and having deposited much of its moisture so that by warming it up a suitable degree of both temperature and dryness is obtained. In another case this system is not possible, and a refrigerating plant has had to be installed to cool the air and thus get a moisture deposit, the process being somewhat similar to the alternate wetting and squeezing of a sponge.

The air conditioning arrangements involve an intricate system of shafts, air-ways, electrical fans, steam boilers and steam lines, as well as the refrigerating plant already mentioned. The extension of air conditioning to all the districts is now in progress, since it was found that the ordinary conditions underground are not desirable for the indefinite storage of ordinary types of stores.

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#### No. 29 — Fri. Oct. 29, 1943 — Danger in Pruning Apple Trees.

Due to the present shortage of help there is a tendency to begin pruning apple trees in December and early January, when the fall work is completed. Pruning just before the very cold weather sets in is likely to take a heavy toll in dead and injured trees.

A survey of the commercial apple orchards in some counties of Ontario last summer disclosed that wherever McIntosh, Fameuse, Spy and Ben Davis trees were pruned in December prior to the cold spell of December 20, 1942, the trees were either completely killed or badly injured. In one block of an orchard near Trenton, Ontario, thirty-one Spy trees twelve years of age were pruned early in

December, the remainder were not touched until late winter. The thirty-one trees killed out in the summer to a tree whereas the unpruned trees showed no injury at all.

In another block of Spys, fourteen years planted, the owner pruned twenty-five to thirty trees near the buildings in early December and did not get around to pruning the rest until the spring. The December pruned trees were all severely injured by trunk splitting and crotch injury and several were dead by mid-summer.

In another orchard near Trenton severe trunk splitting occurred on McIntosh eight to ten years out that were pruned in the first and second weeks in December. Adjoining trees in the same block of orchard which were left unpruned until spring showed no trace of injury. It is of interest to note that the McIntosh trees which were pruned the latest, about mid-December just before the cold spell, showed more injury than those pruned the first week in December. Older McIntosh trees in another block of the same orchard pruned in October did not suffer from winter injury.

Location and cultural treatments were not contributing factors and there appeared to be just as much injury on trees pruned under one treatment as another. In an orchard near Whitby practically all the Fameuse trees thirty years of age, that were pruned the first three weeks in December, were injured severely. The bark loosened all around the trunks of these trees and, in some, well up the limbs. Trees pruned in November and after the first three weeks in December in the same orchard showed little or no injury.

These experiences indicate that severe winter injury resulting often in complete killing of the trees may occur if apple trees are pruned just prior to unusually low temperatures. It is clear that apple growers cannot afford to take the risk of fall and early winter pruning as the penalties are often very heavy and may even be disastrous when whole blocks of orchard are killed out. To be on the safe side no pruning should be done in the fall and early winter. In Eastern Ontario and Quebec no pruning cuts should be made until early March.

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No. 30 — Sat. Oct. 30, 1943 — Women Workers in Canada.

There are almost one and one-half million women employed in Canadian industry at present. The actual number is 1,440,000. This is an increase of 70,000 in the last twelve months. It is a great contribution to Canada's war effort. A report issued by the Dominion Bureau of Statistics says:

It is worthy of note that despite the virtual stabilization of the number of male wage-earners reported in the year, and the widely-distributed gains in the number of females, there have been increases in the average weekly earnings in the various industries and areas between October 1 of 1942 and 1943. Since no general increase in the cost of living allowance was authorized during this period, the widespread rises in the average weekly earnings result in specific cases from increases in the rates of wages or bonus, but more generally, from the upgrading of workers as they acquire experience.

Of the total of 510,715 women in recorded employment in the nine leading industrial divisions, 337,251 or 66 per cent were engaged in manufacturing, including electric light and power; the October 1, 1942, proportion had been 66.4 per cent. The next largest groups of female employees were those of 80,238 in trade,



32,958 in finance and 25,819 in services. Communications, transportation, construction, mining and logging together reported approximately 34,450 women workers, or only 6.7 per cent of the total. Small though this proportion was, it fractionally exceeded that of just over six per cent at the time of the October 1, 1942 survey.

The number of females engaged in plants turning out heavy manufactured goods constituted 25.6 per cent of the total at October 1 this year as compared with 20.9 per cent in 1942. On the other hand, the proportion of the total reported by the light goods manufacturers declined from 45 per cent at the time of the first survey, to little more than 40 per cent at the date under review; employment in this class was then generally quieter than a year earlier, the falling-off taking place among the male workers. Certain manufacturers of consumers' goods reported growing difficulty in obtaining the services of women and girls; in a few cases, it was stated that shortages of such workers were being made up by the employment of increasingly large numbers of boys of pre-enlistment ages.

Among the provinces, Ontario and Quebec ranked first and second, respectively, in the number of females in recorded employment; 46.7 per cent of the Dominion total belonged in Ontario, while Quebec firms reported 31.6 per cent of the aggregate. The greatest gains over the year in the number of women in each 1,000 persons on the reported payrolls were in Manitoba and British Columbia, where the proportions rose by some 27 per cent and 25 per cent, respectively. The largest increases in the number of females at work were shown in British Columbia with a rise of 34.5 per cent, and in Alberta where the number exceeded by 30.2 per cent that indicated in 1942.

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No. 31 — Sun. Oct. 31, 1943 — Playing the Horses.

During 1943 a total of \$33,145,013 was wagered at 32 horse race meetings in Canada over 283 days of racing. The 1943 amount bet by race track fans was \$7,674,100 more than in 1942 when there were 32 race meetings and 275 days of racing. The prize money paid in 1943 amounted to \$1,178,550, an increase of \$117,260 over 1942.

The money bet on horses by those who attended Canadian tracks in 1943 was the highest since 1931 when \$33,377,786 was clicked through the parimutuel machines. The all time high amount bet on the race tracks of the Dominion was in 1921 when the figure was \$75,110,551.

By provinces, Ontario led in the money wagered with over \$21 million, followed by British Columbia with over \$5½ million; Manitoba with over \$3 million; Quebec with over \$2 million, Alberta with over \$800,000 and Saskatchewan with over \$440,000.

The cities betting more than one million dollars were: Toronto, \$14,801,490; Vancouver, \$4,680,936; Winnipeg, \$3,194,781; Hamilton, \$2,657,025; Fort Erie, \$1,948,263; Niagara Falls, \$1,624,615 and Montreal, \$1,561,839.

Victoria, B.C., wagered more than \$900,000; Calgary more than \$800,000; Ottawa, over \$500,000, and Regina and Saskatoon over \$200,000 each. The largest amount wagered at one track was the fall meeting of the Ontario Jockey Club at Woodbine Park, Toronto, with \$2,080,297.

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