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C O N T E N T S

- | | |
|---|---|
| No. 275. Canadian Wood for Airplanes | No. 291. Cash Income from Farm Products |
| No. 276. Canadian Steel | No. 292. Ways to Prevent Soil Washing |
| No. 277. So Long, Slug! | No. 293. Sound Detection of Herring |
| No. 278. Juvenile Delinquency Causes
Heart Searching | No. 294. Influenza |
| No. 279. Insect Enemies | No. 295. Rhubarb in the Cellar |
| No. 280. Heart Disease | No. 296. Important Anniversary |
| No. 281. Tanning a Hide | No. 297. What the Cost of Living is and
is not |
| No. 282. Fur Farms of Canada | No. 298. Alfalfa Seed Production |
| No. 283. Cancer | No. 299. United Nations Organize to Feed
the World |
| No. 284. Buildings, Dwellings,
Households and Families | No. 300. What the Food Conference Did |
| No. 285. Refrigeration has Gone to War | No. 301. Other Freedoms |
| No. 286. Diseases of the Arteries | No. 302. Other Important Results |
| No. 287. Gainfully Employed by
Industry and Occupation | No. 303. To Give Organization Flesh and
Bones |
| No. 288. Nephritis | No. 304. Food Prices in Relation to the
Cost of Living Index |
| No. 289. Newsprint | No. 305. Iron Under Water |
| No. 290. War Saves Seals | |

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James Muir,

Editor.

No. 275. -- Canadian Wood for Airplanes

Half a decade ago almost any Canadian would have bet his bottom dollar that wood was a "has been" as far as transportation was concerned. "Steel" he'd have said with a knowing wink, "that's the stuff today. It's replacing the old saw log in practically every line of mobile construction you can mention. Yes sir, mark my words, in another ten years we'll wonder how we ever trusted our precious necks to vehicles made of wood."

Wood was giving way to the lighter alloys and high strength steel components. It took a war and a serious shortage of metals to reopen our eyes to the intrinsic value of wood. Man's genius went to work and today one of our foremost fighting planes has a wooden fuselage. It's the new Anson V bomber, constructed right here in Canada from Canadian pine and birch veneers.

Strong as steel and aluminum, the wooden fuselages are a combination of plywood and synthetic resin glue. The craft is lighter, more rigid and more fire resistant than metal makes. No rivets are required in its construction and less reinforcement is necessary. Experts claim that as a result of these combined advantages the plywood plane is smoother in the air, being more streamlined and causing less resistance to air currents.

Canada now has achieved production of other combat planes such as the Lancaster, Mosquito and Curtiss Helldiver. Altogether nine types of aircraft are being produced in Canada, with the expectation that later this year a trans-oceanic cargo plane will go into production. Up to the end of May the planes produced totalled 8,014.

Our fighting strength is being still further strengthened by the addition to our now substantial navy of 550 ships, a number of frigates, corvettes and steel minesweepers. But orders have also been placed for 180 wooden patrol ships and wooden minesweepers, of which 100 were in the water by the end of June.

Canadian wood has come through the test. It has proven to even the most skeptical that our original trust in its durability, strength and versatility was more than well founded.

No. 276. -- Canadian Steel

Since the war began Canada has doubled her steel production and now occupies fourth place among United Nations producers, exceeded only by United States, Russia and Great Britain. The two largest blast furnaces in the British Empire are located here in Canada. This explains in part how we have managed to produce pig iron at the remarkable rate of more than two and a half million tons a year, almost four times as much as immediately prior to the war.

Four years ago Canada had not manufactured a single pound of armour plate. Today the factory making this plate is turning out enough for all Canadian requirements for tanks, armoured vehicles, gun shields and certain naval purposes. The most spectacular expansion has been made in the field of alloy steels for guns, armour plate and machine tools the production of which is now five times as great as in 1939. It is expected that by the end of this year we shall have produced more than three million tons of steel ingots. New rolling and finishing mills of the most modern type have been equipped and are in operation. Two new plate mills

helped to increase production of plate to nearly 300,000 tons more in 1942 than in 1939. Most of this has gone into building cargo vessels and fighting ships. Shell steel production now is at about 250,000 tons a year. Production of tanks and other army vehicles requires about 500,000 tons of steel a year.

Besides producing steel we are busily engaged in salvaging it. An interesting undertaking along this line is being conducted in the Great Lakes where sunken vessels are being raised from their watery beds. In the last 75 years it is thought that over 2000 ships have been lost in these treacherous waters. In addition to hoarding steel now vitally needed for armaments, the "victims" are reputed to have taken with them to their graves valuable cargoes of everything from whiskey and wines to gold and rich furs. The salvage, therefore, may be even more valuable than at first thought.

Here is an interesting story about Canadian steel, and some of the little publicized uses to which it is put. A certain Canadian shipbuilding plant located on a comparatively narrow river builds 10,000 ton ships which are winched into place on the launching platform of a marine railway. The railway is slowly lowered into the water and the ship's hull is set afloat. The chain used as the restraining medium in lowering the platform and ship is a very important factor. The chain required is one and one-quarter miles long, two and one-quarter inch thickness and each link weighs 38 pounds. Out of 8400 links tested for the job only nine were rejected or less than one tenth of one percent of the total production. That's Canadian steel for you!

No. 277. -- So long, Slug!

The finest kind of bath powder for unwelcome garden guests like slugs is hydrated lime. To be really effective it should be applied after sundown just as the invaders have settled down for their evening meal of beans, lettuce, cabbage and cauliflower. A few light dustings every three or four days are more effective than one heavy dose, and absolutely no water should be used.

A shower of Bordeaux mixture is also reputed to be effective in persuading the visitors to leave. They are supposed to find this particularly annoying forthwith curling up their tails and disappearing hot foot, to take up residence in nearby weeds. Should they be inordinately stubborn slugs a mixture of metaldehyde and bran will usually do the trick. As this is a rather expensive treatment under field conditions, its use is mostly confined to small gardens. The material may be purchased ready mixed at most seed stores, under a definite trade name.

Aphids, commonly known as plant lice, frequently arrive en masse uninvited and make themselves quite at home on your best aspidistra or calceolaria or maybe even the antirrhinum. In that case the best manner of approach is to spray the plants with 40 per cent Nicotine Sulphate and water to which has been added a small amount of laundry soap. The nicotine should be used at the rate of half a pint to about 40 gallons of water, with two pounds of soap. Two or three applications at weekly intervals should convince the aphids that you mean business and most of them will obligingly fall to the ground and die.

In conclusion, here is a home-made Aesop Fable. An old friend broke down the other day and told a story of the days when he was young and tender and the Colorado Beetle had not yet become common here. During the course of an expedition to the carrot patch, he had occasion to pass through the potato field. He noticed a lot of little round hard things on the leaves and stalks and assumed

that they were berries. Ah, a find indeed! So he continued down the rows, one after the other, picking potato bugs and popping them into his mouth. Curtain!

No. 278. -- Juvenile Delinquency Causes Heart Searching

The war has altered our way of living to such an extent that if we were to turn the hands of time backwards to early 1939 we would have some difficulty in recognizing our peace-time ways. Today, we have the rationing of certain foods, of gasoline, of rubber, control of credit buying, and we pay heavier income taxes. It has caused some adjustment in our methods but the task has not been difficult. It is a small price to pay for victory.

But while we have been concentrating our efforts upon the winning of the war, what has been happening to our young people? Have they been allowed to get out of hand, through lack of sufficient supervision or guidance? Statistics of juvenile delinquency compiled by the Dominion Bureau of Statistics paint a rather drab picture of the situation.

In 1938, the year before the outbreak of war, 9,829 of our juveniles were brought before the courts to answer for their alleged misdemeanours, 6,100 for major offences and 2,829 for minor offences. These totals increased at such a rapid rate that by 1942, 13,802 youths had been summoned to appear, 7,938 for major breaches of the law and 5,864 for minor offences. Of the juveniles summoned for major offences, 6,920 convictions were obtained in 1942.

Some comfort may be taken from the fact that of the offences committed against the state, minor cases are accounting for an increasingly larger proportion of the total. In other words, the crimes of our juveniles seem to be becoming less severe in character. Further solace may be taken from the fact that the number of repeaters has shown an almost steady decline. In 1938, there were 1,518 of these habitual criminals, whereas by 1942 this total had fallen to 1,343.

Amongst the provinces, Nova Scotia showed a decrease of 20.7 per cent in juvenile delinquency during the pre-war three-year period and a further decrease of 13.8 per cent during the three war years. It is the only province in which juvenile delinquency has decreased during the war. Prince Edward Island and New Brunswick show that juvenile crime in those provinces has increased more slowly during the three war years than during the similar pre-war period.

Quebec increases have not been accelerated by the war, being almost identical with pre-war increases. From Ontario westward the war years show juvenile crime increasing at a sharp rate. Ontario shows a 13.9 per cent increase for the war years as compared with an 0.5 per cent increase for the preceding three years.

In the three pre-war years juvenile crime in Manitoba increased 0.8 per cent while in the three war years the increase was 69.6 per cent; in Saskatchewan, in the pre-war period a decrease of 3.7 per cent was recorded while in the war period an increase of 102.6 per cent was shown; Alberta's pre-war increase was 9.3 per cent compared with a war period increase of 86 per cent; in British Columbia the pre-war increase was 1.3 per cent while in the war period the increase was 4.9 per cent.

No. 279. -- Insect Enemies

Loss of food cargoes by "enemy action" includes more than depredations by U-boats. There is the active insect enemy working at home all the time without let-up. During the last war, very serious losses were sustained through the destruction of food products by insects. Such commodities as flour, cereals, grain of all kinds, and seed were included in a lengthy list of materials damaged. On the outbreak of the present war, prompt measures were taken to avoid losses by insect depredations in grains and other foodstuffs being shipped overseas, as well as the reserve supply in Canada. A co-operative program was developed.

This includes the inspection of premises, such as warehouses, elevators, mills, and seed houses in which grain, cereals, flour, seed, and similar commodities are stored; the inspection of boats loading grain for winter storage at the head of the Great Lakes; the inspection, in co-operation with the British Ministry of Food, of boats at seaboard ports loading grains, cereals, or other stored product cargoes; an intensive study, in co-operation with the Division of Entomology, of insect outbreaks in dead storage at the head of the Lakes, and the inspection of fruit and vegetable processing plants.

As a result of this work, outbreaks of insects and mites were found in a number of boats, mills, elevators, and elevator annexes, dehydration and other plants. The species of insects included all the principal stored product insects found in Canada, but, by taking appropriate action in all cases and by bringing about effective sanitary conditions of storage premises and carriers the threat to food cargoes has been held in check.

No. 280. -- Heart Disease

Heart disease ranked first among the ten leading causes of death in Canada in 1940. In fact in nearly every country heart disease is far in the lead among the causes of death. In a broad sense it includes a number of highly diverse diseases with varying conditions. Most heart conditions are due to underlying causes and may be the results of heredity, obesity, occupation, worry, fatigue, and other diseases such as diabetes. This disease is primarily an ailment of men over forty-five years of age and is said to be twice as common among men as women.

Emerson estimated that between 2,330,397 and 3,665,062 persons, or from 1.9 to 2.9 per cent of the population, were suffering from some form of heart ailment in the United States in 1931. While special surveys of selected groups of the population -- such as industrial workers and applicants for insurance policies -- have revealed that heart disease has a morbidity rate of around two per cent of the total population examined. School surveys have shown roughly one per cent of the children examined through medical services are afflicted with heart disease. Some individuals appear to be under the false impression that all lesions of the heart are fatal. With good medical guidance and physical care many heart sufferers live far beyond the allotted "three score years and ten".

The Canadian crude death rate per 100,000 population for diseases of the heart, has shown an increase of 47.5 per cent from 1926 to 1940, or from 120.9 in 1926 to 178.3 in 1940. The rate increased steadily until 1934 when it was 151.3, dropping to 147.1 in 1935, but has since resumed its steady rise. During the 15 year period, deaths from diseases of the heart totalled 228,537 or a yearly average of 15,236.

The trend of "heart deaths" among men over 45 years of age has steadily increased during the fifteen year period, from 45.1 in 1926 to 55.7 per cent in 1940, a proportional increase of 23.5 per cent. This would seem to indicate that the Canadian male is no exception to the rule that diseases of the heart are primarily to be found in males over 45 years of age.

No. 281. -- Tanning a Hide

There are those who would claim that the only raw materials needed in tanning a hide are a well chosen switch and a strong right arm. Colloquially speaking they may be right, but technically they're all wrong.

Early days of leather making in Canada saw the hardy self-sufficient pioneers fashioning their own shoes and deerskin moccasins. At the time of the first Canadian census, back in 1666, there was about a score of cobblers serving a population of some 300 inhabitants. Harness, articles of clothing, and luggage were also important leather products of the day. These early artisans used oak bark and leaves, sumac leaves, and the bark of hemlock, chestnut and spruce in their simple tanning processes. The same materials are used to some extent even today. However, through the years leather has acquired such a multiplicity of uses that manufacturers have searched the world over for materials which will produce the highest qualities of finished articles. Chrome and other mineral tanning chemicals are used but the processing of by far the largest proportion of leathers depends upon tannins from plants.

Vegetable tannins have long been the basis of scientific research and the war only served to intensify this study. One of the most important is quebraco, a product of South America. Quebraco tannin is regarded as especially valuable for shoes when blended with other tannins such as chestnut, because it imparts great qualities of strength and durability. When used alone, however, it makes the leather brittle and tends to burn the feet. Quebraco is also extensively used by tanners of sheepskin leathers, for properly blended it yields a light leather well adapted to take on all varieties of dyes. In the solid form this tanning agent is reported to be the most highly astringent tanning material known.

Quebraco is not the only vegetable tannin. Mangrove and divi-divi also from Latin America are promising sources. Of much less commercial importance than quebraco, divi-divi first gained widespread recognition about 20 years ago. Now with the war having cut off usual sources of tannins such as gambier, valonia and myrobalans, divi-divi importations into North America have again increased.

Here in Canada over 4600 persons are engaged in the leather industry which is for the most part centred in Ontario. The output value of 216 plants in operation in 1941 reached almost \$34 million. About six million hides, weighing over 117 million pounds were used during the year. Not all the hides used in the leather industry are of domestic production. In that year about two million were imported. In the first seven months of this year leather footwear production in Canada totalled more than 20,250,000 pairs. Women's shoes comprise the bulk of production, with 1,307,000 pairs in July alone, compared with 893,000 for men, 343,240 for misses and children, 179,000 for babies and infants and 126,000 pairs for boys and youths.

No. 282. -- Fur Farms of Canada

The fur farming industry, which had its origin in Prince Edward Island some fifty years ago, is now established in every province of the Dominion and the

annual increase recorded in the number of fur farms since its introduction, has been nearly constant. The first enumeration of the industry was made in Prince Edward Island in 1913, and the records show a total of 277 fox farms in the province -- at that time the raising of foxes was the only branch of fur farming that had been successfully pursued.

The high record year for number of fur farms in Canada was 1938 when 10,454 were in operation. In 1939 the number dropped to 9,899, in 1940 to 9,164 and in 1941 to 8,440. In the majority of cases the farms closed were small and their loss did not affect the total value of property, which advanced from \$14,345,386 in 1940 to \$15,171,845 in 1941, an increase of \$826,459 or six per cent.

The number of animals retained on the farms at the end of 1941 was 256,928 comprising 91,543 silver foxes, 153,447 mink, 6,511 new type foxes (platinum, white-face, silver blue, etc.), and various other kinds with a total of 5,427 animals. The number of silver foxes decreased from the preceding year by two per cent, but the number of mink and new type foxes advanced by 16 per cent and 181 per cent, respectively.

The revenue of the farms in 1941 amounted to \$5,582,339, a decrease from 1940 of \$570,735, or nine per cent. The pelt sales had a total value of \$4,799,489, and the sales of live fur-bearing animals a value of \$782,850, compared with \$5,608,380 and \$544,694, respectively, in 1940. To the total revenue, live animals and pelts included, silver fox contributed 55 per cent and mink 39 per cent, or a total for the two kinds combined of 94 per cent.

Average prices for most of the principal kinds of farm pelts were higher than in 1940; silver fox advanced to \$23 from \$18, and mink to \$11 from \$10. Among the principal kinds of live fur-bearing animals sold, silver fox increased to an average of \$47 from \$39 in 1940, and mink to \$24 from \$19, while the average of the new type fox dropped to \$179 from \$218.

No. 283. --- Cancer

Cancer, primarily a disease of adult life, ranked second as a cause of death in Canada in 1940. Cancer is a general term used to designate all malignant growths and includes carcinoma and sarcoma. It is said to be more of a disease of civilization than of racial stocks, although the evidence is somewhat conflicting, as the reported death rates tend to indicate that the disease is less prevalent among aboriginal races.

Extensive studies indicate that cancer is on the increase and statistical reports from various countries would appear to support the theory. But whether or not the increase is real or due to a number of particular factors is a debatable question. Statistics reveal that cancer is being more frequently reported as a cause of death.

This may be due to the fact that it is no longer considered a disgrace to die from cancer, while the rapid improvements in x-ray facilities and the general advance in medical practices and cancer research have made diagnosis of the disease more accurate. The widespread publicity that has been given to the disease and the extension of clinical facilities have no doubt led people to seek medical advice and care earlier and physicians are said to have become more "cancer conscious."

Cancer control is known to have its limitations, and the problem of reducing the ever-increasing death rate is one of the most baffling to medical

science. It is doubtful whether much can be accomplished in the way of prevention, for the actual cause of the disease is unknown. Extensive research in every country of the civilized world has failed to reveal the causative agent, but, on the other hand, early diagnosis, use of X-ray and radium for treatment and removal of the growths in their early stages of development have established some very remarkable and permanent cures.

A steady increase has been shown in the number of deaths from cancer in Canada since 1926. In 1926 the death rate per 100,000 of the population was 80.7 and by 1940 it reached 117.2, an increase of 45.2 per cent. The total death toll from cancer during the fifteen years, from 1926 to 1940, was 155,520, an annual average of 10,368 deaths.

No. 284 -- Buildings, Dwellings, Households and Families

At the 1941 census 2,155,550 residential buildings were recorded in the nine provinces. These buildings contained 2,635,753 dwellings, of which 1,457,885 were occupied by owners, 1,114,705 by tenants, and the balance, 63,163, were vacant. In rural areas 874,845 dwellings were occupied by owners and only 282,926 dwellings by tenants while in urban areas 583,040 dwellings were occupied by owners as compared with 831,779 by tenants.

The ratio of owner-occupied dwellings to tenant-occupied dwellings was much smaller in the larger urban centres than in the towns and incorporated villages in 1941. For example, in cities of 30,000 population and over the number of owner-occupied dwellings was only 266,620 as compared with 533,345 dwellings occupied by tenants, whereas in urban centres under 30,000 population, dwellings occupied by owners numbered 316,420 while tenant-occupied dwellings were slightly less at 298,434.

According to census figures, there were 2,706,154 households in Canada on June 2, 1941. Over half, or 1,521,478 households, were found in urban centres while 1,184,676 were located in rural areas. The average size of household in urban areas was 4.18 persons and in rural areas 4.42 persons. In the census a household is defined as a person or group of persons living in one housekeeping community. The persons constituting this group may or may not be related by ties of kinship, but if they live together with common housekeeping arrangements, they constitute a household.

The total number of families at the 1941 census in the nine provinces was 2,516,726. The number living in farm areas was 658,868 and in non-farm rural areas 424,724. There were 1,433,134 families living in urban areas on June 2, 1941. The total number of children under 24 years of age living families at the census date was 4,642,299. By family in the census is meant a group of persons consisting of husband and wife, with or without children, or a parent and unmarried child or children, living together in the same housekeeping community.

No. 285. -- Refrigeration Has Gone to War

Modern refrigeration has gone to war with our fighting men on all the far flung battle fronts throughout the world in more ways than one. Not only does it fulfil the primary objective of keeping our fighting men supplied with a flow of healthful perishable foods, but it is also employed extensively in certain phases of the manufacture of delicate instruments of destruction. Cold storage service is listed as an essential activity and is again recognized as essential

to the war program in activity and occupation.

Transported over long distances, by refrigerated railway cars across the country, by ships on the high seas, and by transport to the field of battle, food is reaching our men in a fresh and healthful condition. Not only are our sailors, soldiers and airmen benefiting from the extensive use of refrigeration, but the flow of food to the peoples across the seas is also reaching its destination in a wholesome and fresh state.

Refrigeration is being used in certain phases of the production of munitions and machines of war. For instance, when precision parts for airplane motors must be machined to tolerances as close as one-ten thousandth part of an inch the temperature where the work is carried on must be controlled continuously within very narrow limits. Special tools and other fine equipment required for these delicate operations are stored in air-conditioned rooms to prevent expansion, contraction or corrosion due to differences between night and day temperatures.

Conversely, flying instruments, bomber, range and gun sights, range finders and radio parts must leave the factory in such condition as will enable them to withstand extremes of tropical humidity or stratosphere coldness. Design and production to come up to these requirements are made possible through scientific refrigeration.

Canadian manufacturers of electric refrigeration equipment are making their contribution to the war effort. The factory value of their output in 1942 amounted to \$9,902,138, an increase of more than 31 per cent over the 1939 valuation of \$7,538,448. Thus, refrigeration is marching shoulder to shoulder with our fighting men in this crusade for world freedom.

No. 286. -- Diseases of the Arteries

Diseases of the arteries ranked third among the ten leading causes of death in Canada in 1940. For the most part this is a disease of the upper age brackets, although a few deaths are recorded each year in the age group 20 to 45. Osler has said: "A Man is as old as his arteries." Thus, a man of 30 may have a condition of the arteries similar to that of a man of 60 years of age.

Just how long the arteries will last depends in the first place on the quality of arterial tissues a person inherits. Whole families may show a tendency to arteriosclerosis. In the second place, a man having received good equipment from his forebears, may subject his body to bad treatment -- over-indulgence in intoxicating liquors, over-eating, continual high-pressure under nervous strain, and over-work of the muscles, all of which tend to increase the blood pressure. These in turn cause a breakdown of the tubes containing the blood.

Diet and rest will lengthen the span of life, but just as a rubber band will not regain its lost elasticity, so too hardened arteries cannot be rejuvenated and must be accorded the same care given all worn out machines. Sex appears to have very little bearing upon diseases of the arteries, as males and females are affected in almost equal proportions.

During the fifteen year period from 1926 to 1940 an annual average of 7,737 deaths due to diseases of the arteries was recorded, or a fifteen year total of 116,048. In 1926 the crude death rate for this cause per 100,000 of the

population was 54.2. There was a sharp rise to 1930 when the rate was 67.6; in 1931 it dropped to 57.5 and rose again very sharply to 103.3 in 1940, showing an increase of 79.7 per cent in nine years.

No. 287 -- Gainfully Employed by Industry and Occupation

Preliminary figures, based on a 100% tabulation, indicate that the number of persons in Canada gainfully occupied at the 1941 Census was 4,448,302, of whom 3,613,547 were males and 834,755 were females. The gainfully occupied population was distributed by provinces as follows: Prince Edward Island 29,560 males, 5,138 females; Nova Scotia 172,795 males, 37,378 females; New Brunswick 132,353 males, 27,562 females; Quebec 966,559 males, 260,542 females; Ontario 1,234,430 males, 315,742 females; Manitoba 235,661 males, 49,935 females; Saskatchewan 291,931 males, 42,800 females; Alberta 267,733 males, 40,435 females; British Columbia 282,525 males, 55,223 females. Figures quoted throughout include persons on Active Service with a gainful occupation previous to enlistment.

Since the 1931 Census the gainfully occupied male population in Canada has increased by 352,176 or 10.8 p.c., and the gainfully occupied female population by 168,896 or 25.4 p.c.. The increase in the gainfully occupied males since 1931 is just slightly higher than the growth in the total male population over this decade.

The number and percentage of the total gainfully occupied males engaged in agriculture at the 1941 Census was 1,103,363 or 30.5 p.c., in forestry, fishing, and trapping 152,220 or 4.2 p.c., in mining 99,926 or 2.8 p.c., in manufacturing, 869,260 or 24.1 p.c., in construction, 234,686 or 6.5 p.c., in transportation and communication 264,438 or 7.3 p.c., in trade, 383,034 or 10.6 p.c., in finance 68,458 or 1.9 p.c., and in service 360,898 or 10.0 p.c. For females 21,219 or 2.5 p.c. were engaged in the primary industries; 184,448 or 22.1 p.c. in manufacturing, 19,832 or 2.4 p.c. in transportation and communication; 113,271 or 13.6 p.c. in trade, 23,416 or 3.4 in finance and 460,844 or 55.2 p.c. in service of whom 261,031 or 31.3 p.c. were employed in personal service and 165,655 or 19.8 p.c. in professional service, chiefly in education and health services.

Preliminary figures for Canada based on the 10 p.c. sample tabulation show that 246,300 males and 960 females on Active Service reported a gainful occupation prior to enlistment at the 1941 Census. Of this total only 41,340 or 16.8 p.c. reported as having been employed in agriculture. Since agriculture represents 30.5 p.c. of all industries it is worthy to note that the armed forces withdrew a relatively small number from this industry.

The relative growth in the gainfully occupied by industry groups since the Census of 1931 may be compared, after some adjustment for differences in industrial classification, for Canada. While the total gainfully occupied males increased by 10.8 p.c. over this period, the number engaged in agriculture showed a decrease of 0.5 p.c. Males employed in forestry, fishing and trapping recorded a notable increase of 57.0 p.c. between 1931 and 1941, while the increase in the numbers employed in mining industries was 39.5 p.c. The growth in the number of males employed in manufacturing since the 1931 Census was considerably greater than the increase shown for all gainfully occupied males, being just over 38 p.c., transportation and communication increased by 3.7 p.c. while construction showed a loss of 5.1 p.c. over this decade. The increase in the number of males in trade and finance was 21.9 p.c., while the numbers engaged in the services represented an increase of 11.8 p.c. In the latter group employment in the professional and public services expanded by 14.9 p.c. and 22.9 p.c. respectively over the decennial

period, while the number in the personal services showed a decline of 1.5 p.c.

Females in gainful employment increased by 25.4 p.c. over the ten year period between 1931 and 1941. Among the more important industry groups employing women the largest increases occurred in the public service group and in manufacturing, the former showing an increase of over 30 p.c. and the latter an increase of 47 p.c. The number employed in trade and finance increased by 28.8 p.c. over this period, slightly greater than the rate of increase shown for gainfully occupied females as a whole. The increase of 23.6 p.c. in the number of women employed in the personal services was less than the rate of increase for all females in gainful occupations, although the numbers employed in such personal services as restaurants and hair dressing establishments probably increased at a faster rate than shown for all gainfully occupied women. The number employed in professional service also represented an increase of 13.8 p.c. between 1931 and 1941. It would appear that the number of women employed in the teaching profession has not shown a normal rate of increase over the ten year period since the 1931 Census.

For the first time in the Canadian Census occupation statistics are shown by counties or census divisions. Likewise occupation and industry figures are given for smaller urban centres than ever before, taking in all urban centres of 5,000 population.

Occupation and industry statistics are also published for the first time for the "greater" cities of Montreal, Toronto, Vancouver and Winnipeg. "Greater" Montreal showed a gainful population of 473,054 as compared with 378,841 for Montreal proper, "greater" Toronto 401,888 as compared with 307,579 for Toronto proper, "greater" Vancouver 148,461 as compared with 119,952 for Vancouver proper and "greater" Winnipeg 124,338 as compared with 98,449 for Winnipeg proper.

No 288. — Nephritis

Nephritis in all its forms ranked fifth among the ten leading causes of death in Canada in 1940. Acute nephritis is due to the action of a foreign agent upon the kidneys, such as bacillary infection, and removal of the causative agent usually clears up the nephritic condition. However, should the acute condition continue over a period of time, as frequently occurs in such cases as scarlet fever, it may degenerate into a chronic condition.

Chronic nephritis is an incurable affection and the pathological conditions upon which it depends are quite beyond the reach of medicine. In many cases the onset is insidious and the patient will have no symptoms whatsoever to warn him that a very serious condition exists. Chronic interstitial nephritis is almost invariably associated with arteriosclerosis and hypertrophy of the heart. Though nephritis is said to be incurable a victim of the disease may live a normal life from ten to fifteen years, if a proper dietary course is followed and life regulated so as to throw the least possible strain upon the heart, arteries and kidneys.

Records maintained by the Dominion Bureau of Statistics show that nephritis is a disease of the upper age brackets and is most prevalent among men and women over 45 years of age. Since 1933 an upward trend in the number of deaths assigned to this disease is apparent; this may be caused to some extent by the advancing age of the population.

The crude death rate per 100,000 of the population in 1926 was 54.4, while 1937 was the peak year when the rate was 58.8; the lowest rate during the fifteen year period, 1926 to 1940, was in 1931 when it was 49.9; in 1940 the rate increased to 60.1. During the 15 year period, 1926 to 1940, deaths from nephritis totalled 88,230, an annual average of 5,825 deaths.

No. 289 -- Newsprint

In terms of gross value of production the manufacture of pulp and paper has been one of Canada's leading industries for the last quarter of a century. Last year a new record was established when the total reached \$337,390,000. This represented the sum of values of pulp made for sale in Canada, pulp for export and paper manufactured.

There were 105 mills at work to achieve this record, one less than the year before. The 77 making paper produced about 4,242,000 tons of this amount more than three quarters was in the form of newsprint. According to the Newsprint Service Bureau Canadian production of standard newsprint was over three times that of the United States last year, comprising 74 per cent of the total North American production of some 4,407,000 tons. The United States and Newfoundland made up the remainder. For the first six months of this year our output was estimated at 1,447,000 tons, about 13 per cent less than in the same period of 1942.

Over 1800 publications, including 107 daily newspapers, 953 weeklies and a number of other magazines and periodicals combine to keep the Canadian public well informed. Daily newspapers average probably between 20 and 30 pages while Sunday editions and weeklies are much larger. But, as you might well imagine, the amount of newsprint consumed runs into thousands of tons. The newsprint comes in large rolls about 6 feet in length and is placed on the machines at the newspaper office where it is printed on both sides and cut in a twinkling by great machines. Most daily papers have enough newsprint on hand to supply them for several days, although storage is a problem.

Despite the fact that both United States and Canadian production facilities have been expanded to the utmost, paper stocks are low and supplies are limited. At the end of July this year there were 57,336 short tons on hand in the Dominion. Canadian deliveries are limited to about 210,000 tons per month, but United States publishers ordered about 12 to 13 per cent more paper than Canada agreed to supply, and the Canadian authorities were forced to reduce deliveries by these percentages. The North American newsprint mills are endeavouring to produce 3,900,000 tons of paper in 1943. The key to the newsprint supply situation is the wood supply, and back of this is the manpower situation. Publishers feel that if sufficient manpower is available in Canada, there can be a reasonably adequate supply of newsprint. To attain the objective set will require every cord of wood that can be obtained, no reduction in power, and no further depletion of operating labour.

No. 290 -- War Saves Seals

Not a single fur seal was taken in British Columbia waters in 1942 and none in 1941 although, before that, hundreds were killed every year - 576 of them in 1940, for instance - as they made their migratory way along the coast toward the Pribilof Island rookeries. The seals went safe in '42 and '41 because the Indians of British Columbia are the only Canadians permitted by international agreement to hunt these animals in the waters of the North Pacific and the Indian

hunters have either enlisted or become so busy as a result of wartime's increased employment opportunities that they have no time for sealing.

Although numbers of seals were taken off British Columbia every year in pre-war days, the great bulk of the annual "kill" was made at the Pribilof Islands by hunters employed by the United States Government. Under an international treaty, which became operative in 1911, pelagic sealing, or, in other words, hunting fur seals at sea, was forbidden in the treaty waters, except to Indians, Aleuts or other aborigines dwelling on the coasts of the adjacent areas. At the Pribilof rookeries, where the herds go ashore, the killing was done by the United States Government and a specified percentage of each year's take of pelts was handed over to Canada by the Washington authorities. That old treaty has now disappeared but in its place there is a provisional agreement between Canada and the United States which is much the same as the treaty in its effect but entitles the Dominion to increased share of skins.

No. 291. --- Cash Income From Farm Products

A further increase of 25 per cent in the cash income from the sale of farm products is shown in the estimates for the first six months of 1943 when the total was \$538.3 million as compared with \$428.7 million in the corresponding period of 1942. The increase this year was common to all provinces except Ontario, and was most marked in the Prairie Provinces where substantial sales of wheat and other grains were made from the large 1942 crop. The greatest increase this year was in Saskatchewan which was the only province recording a decline in the first six months of 1942 as compared with 1941.

Income from the sale of wheat during the first half of 1943 increased substantially to \$68.5 million from the relatively low figure of \$28.4 million in the first half of 1942. The greatest percentage increase occurred in the receipts from marketings of oats and barley. For Canada as a whole, receipts from the sale of oats amounted to \$27 million in the first half of 1943 as compared with only \$6.3 million of a year previously and over the same period income from the sale of barley increased from \$4.3 million to \$19.6 million. Other substantial increases were recorded in income from the sale of hogs and dairy products. Income from the sale of hogs in the first six months of 1943 totalled \$106.2 million and from dairy products \$110.3 million.

The greatest percentage of farm cash income is normally received during the last six months of the year when marketings of grain and live stock are at a high level. In 1942 cash income for the entire year was \$1,083.1 million of which almost 40 per cent had been received up to the end of June. The reduced grain crops in the Prairie Provinces this year, combined with difficulties in securing storage space, may reduce the fall marketings of grain, but on the other hand, substantial increases are expected in the marketings of live stock.

Income received by farmers in the form of subsidies and bonus payments are not included in these calculations except in those cases where the payments have been made in the form of higher prices to the producers.

No. 292. --- Ways to Prevent Soil Washing

Soil washing or sheet erosion is the most common form of soil wastage from the sandy loam soils in Eastern Canada. Heavy rainfalls on cultivated soil cause a movement of fine particles of soil down every slope. The steeper the slope

the more rapid the movement of surface water from either rain or melted snow.

By ploughing and cultivating across the slope of the land or by following contours the movement of water is delayed so that it soaks into the ground or moves more slowly to lower levels. The ridging up of land along the contours in the autumn prevents washing. On moderate slopes the sowing of fall rye immediately after digging potatoes will retain much soil that otherwise would have been carried away. This rye can be pastured in the spring, plowed down as green manure for another crop, or harvested for grain.

Steep slopes should be kept permanently in grass or planted to trees to retain the fertile soil. Such land when valuable enough to be retained in crop production can be terraced to retard the movement of water down hill. The spillways from terraces should remain in tough fibrous rooted grasses and be so made and kept that the soil is protected against free running water. These spillways should be graded so that the water will flow down them and avoid any steep decent, removing the surplus water by uniform slope to a stream or outlet.

Briefly: Stop soil washing by slowing up the movement of surface water. Locate contours and work along them. Use grass, grain and trees to retain the surface soil, the nation's most valuable possession. Stop all gullies in the making by diverting small streams with snow, earth or other materials or direct the water by terracing and spillways. Prevention of washing away is the cheapest method of preserving soil fertility.

No. 293. -- Sound Detection of Herring

Herring swimming about in British Columbia waters were heard not long ago by a fishing vessel a hundred feet above them. As a matter of fact, indeed, herring were heard when they were 250 feet or so under water. It was a mechanical ear which did the hearing, not human.

The listening "ear" was an echo sounder, an instrument intended primarily as a depth-sounding aid to navigation but tested in this instance as a device which might tell whether there were herring down below and at what depth levels in the water.

The sounder proved its effectiveness as a herring spotter, and possibly it could be used also in detecting other schooling fish, but it is not an inexpensive piece of apparatus and it remains for future operations to show whether it would be economically feasible to put it into extensive use.

The British Columbia tests were made last winter by members of the Pacific staff of the federal Fisheries Research Board from a fishing vessel which one of the large fish-producing companies had equipped with a sounder for the purpose. Earlier experiments of the same kind in Norway and elsewhere had been reported successful but the British Columbia people were "from Missouri" and wanted to be shown.

Tests were made at a number of different places along the coast, and the sounder found herring. Its truthfulness was verified, in several instances at least, when experienced fishermen, using a weighted "feeling wire" such as they often use in their own operations, reported that where the sounder said there were herring they found herring, too, and at depths corresponding to those recorded through the mechanical ear. Incidentally, the tests showed that the echo sounder has a number of advantages over the "feeling wire" as a means of determining where

herring are - one of them the fact, as cited by a Research Board man who had part in the tests, that "the exact depth and 'thickness' of the school and some idea of its density can be obtained at a glance" - but, of course, it also costs much more than a simple piece of wire.

In principle the sounder is comparatively simple, though perhaps laymen might be inclined to regard it as something of a wonder-worker, especially when the fact is added that it can write as well as hear! By means of a transmitter the sounder sends a high frequency sound impulse downward into the water and then, through a receiver installed near the vessel's keel, picks up the echo when the impulse is reflected upward from the sea bottom or intervening obstruction. When the echo is heard, the instrument writes down the depth it had come from, though that description of what happens may not be exactly as the expert would put it.

When transmitted sound impulses encountered bodies of herring, in the British Columbia experiment, back came echoes to the receiver apparatus. The mechanism went to work on them, so to speak, transformed them into electrical energy, amplified the energy, and applied it to a pen which automatically wrote on a slowly-moving strip of sensitized paper markings which corresponded to the depths from which the reflected sounds had come. And that is another way of saying that the pen marked down on the paper just how far the herring were below the water surface.

No. 294 Influenza

Influenza ranked ninth among the ten leading causes of death in Canada in 1940. Influenza is not a new disease -- an epidemic, probably influenza, was recorded as early as the year 1173. The first authentic outbreak was described in 1510 by those famous physicians Willis and Sydenham. Since 1173 there have been eighty major epidemics, the records of which are more or less authentic and of these, fourteen reached pandemic proportions. When influenza sweeps the world in pandemic form it becomes the most serious and furious of epidemics because of the large number of persons under attack in a short period of time.

The world-wide pandemic of 1918 to 1919, is reported to have arrived on the North American continent in September of 1918 and by November of that year it was difficult to find a community anywhere which was not affected by the ravages of the disease. The duration of an epidemic in a locality is from six to eight weeks, disabling community life as so many are placed on the incapacitated list at the same time. Like pneumonia it affects all classes and is no respecter of race, sex or age.

Epidemiology and medical research have proven that sooner or later there will be further epidemics and pandemics. Such may appear within a few years or even a few months, or they may postpone their ravages for many years. If advances are made in the study of influenza as rapidly in the future as in the past, there would be developed, and available in adequate quantities, a vaccine with which to immunize communities when an epidemic seems imminent, since it travels from "place to place in a pair of shoes."

The knowledge that an outbreak has occurred at one point should be a "red light of warning" which would enable the epidemiologist and the laboratory technician to institute suitable preparations for combatting the spread of the disease to other localities. It is for this reason that health authorities on this continent keep a constant watch for the reports of communicable diseases from the various state and provincial health departments.

While the general trend of the death rate for this disease has been downward from 1926 to 1940, a number of annual variations have appeared during the fifteen years, which were probably due to mild epidemics. In 1926 the death rate per 100,000 population was 52.8; in 1940 it dropped to 24.5, while the definite peak years were 1929 when the rate was 69.7 and 1937 when the rate was 47.4. The death toll from influenza during the fifteen year period averaged 3,774.

No. 295. -- Rhubarb in the Cellar

Fresh, pink, juicy, home-forced rhubarb can be had during the winter months until almost the time when the outdoor crop is available in May.

Healthy two or three year old crowns or roots sown from good stock crowns by divisions are the best, but in some cases older material is quite good.

The crowns or roots should be dug or ploughed out in the late autumn and left on the surface of the ground to freeze. The freezing, coupled with a short rest period, is essential to satisfactory forcing. Roots freshly dug and not frozen do not force well, due to the natural characteristics of the plant. While on the surface of the ground, a light covering of straw litter should be spread over them to prevent drying out.

Any frost-proof, dark cellar or shed where the temperature can be maintained at 60 degrees will give good results. Heat can be supplied by stoves or any other convenient system. At a temperature of 50 degrees the growth will be very slow but the colour of the product very deep red, while at a temperature above 65 degrees the colour will be pale with weak slender growth.

As it requires about one month from the time the roots are brought in until the first pulling is made, it is necessary to bring in a fresh lot at intervals of two weeks to maintain a continuous supply of forced rhubarb. The usual practice is to make only four pullings from each lot, after which they are put out of doors to freeze under a light covering of straw litter. These plants can be planted out again in good soil to recuperate.

Because the fleshy roots have all the necessary plant food stored up in them, it is only necessary to place them close together on the forcing cellar floor and spread a light covering of sand, soil or cinders over them as a moisture retaining media. From time to time water should be sprinkled as required to maintain an even moisture supply. The varieties useful for forcing include Ruby, Sutton and Victoria.

No. 296. -- Important Anniversary

Today, July 22, is an important day in the life story of Canada. One hundred and fifty years ago on this day Alexander Mackenzie, the great Scottish explorer of the North West Company, reached his destination on the Pacific Coast from "Canada". He painted on a rock on Bentinck Arm the following: "Alexander Mackenzie from Canada by land, the twenty-second of July, one thousand seven hundred and ninety-three. Lat. 52 deg. 20' 48" N".

The rock has been preserved as an historical monument. Writing in his diary Mackenzie tells of sighting the sea on July 20; his trouble with his Indians who feared the tribes of the Coast; of how one of his men left but later returned loaded down with porcupine; of how he found the ruins of a village

with a temple in the centre. On July 22 Mackenzie wrote: "Two canoes arrived from the same quarter as the rest, with several men and our young Indian along with them. They brought a few very small sea otter skins, out of season, with some pieces of raw seal's flesh. The former were of no value, but hunger compelled some of my people to take the latter at an extravagant price. Mr. MacKay (one of his assistants) lighted a bit of touchwood with a burning glass in the cover of his tobacco box, which so surprised the natives that they exchanged the best otter skins for it.

The young man was now very anxious to persuade our people to depart, as the natives were as numerous as mosquitoes and of very malignant character; but as I was determined not to leave this place, except I was absolutely compelled to it, till I had ascertained its situation, the solicitations were not repeated. While I was taking a meridian, two canoes of a larger size and well manned appeared from the main southwest channel. They seemed to be the forerunners of others who were coming to co-operate with the people of the village, and our young Indian renewed his entreaties for our departure. In relating our danger his agitation was so great that he foamed at the mouth.

Though I was not altogether free from misapprehensions on the occasion, it was necessary for me to disguise them, as my people were panic-struck and some of them asked me if it was my determination to remain there to be sacrificed. My reply was that I would not stir until I had accomplished my object, but at the same time to humor their fears I consented that they should put everything into the canoe ready to depart."

Mackenzie returned to Montreal calling at Niagara en route and paying his respects to Governor Simcoe, and began the writing of his adventures. He afterwards represented Huntingdon in the assembly of Lower Canada, was knighted in 1802, returned to Scotland in 1808 and lived there until 1820.

No. 297. -- What the Cost of Living Index is -- and is not

The cost of living index of the Dominion Bureau of Statistics is a percentage figure which shows the rise and fall from month to month of the cost of a wage-earner family budget. The cost of living bonus is determined by the index. For the purpose of measuring the wartime increase in the cost of living, the index for August 1939 was placed at 100. By July 1943 the index had increased to 117.9, which is a percentage wartime gain of 17.9.

Why publish a percentage figure instead of a dollar and cents total? Because people tend to consider dollar figures to represent either (1) a necessary minimum living allowance, or (2) an amount necessary to cover a budget based on estimates of scientific nutrition requirements and other living needs.

The index budget is neither; it represents purchases actually reported by representative wage-earner families. The Bureau of Statistics does not say - "Here is the amount you must have to live", it says in effect, "Here is the percentage change in the cost of a representative average of actual wage-earner family budgets."

And right there arises a point which causes considerable misunderstanding. The Bureau's cost-of-living budget shows changes in the cost of the same standard or level of living from month to month and year to year. Many families now have more to spend than formerly because everybody is working. It is now possible for them to buy better things and in some cases more than before.

People who are able to do this naturally will find their living costs rising by greater percentages than the cost-of-living index shows. The index measures changes in the cost of a pre-war level of living which is surely a fair basis of reckoning a wartime cost-of-living bonus.

It is true that items and budget quantities in the index have been changed due to war conditions, but it still measures the rise in cost of a pre-war level of living. This may sound strange, but here are examples that will explain what it means. Before the war motor cars were used very largely for pleasure. That's not possible now, so the index budget for motor car operation has been reduced, while the amount for other pleasures has been increased accordingly. To compensate for items such as baked beans, and bananas which are no longer generally available, further amounts of other foods have been added to the food budget.

But what about this percentage increase in living costs that the index shows? So far the index has risen only 17.9 per cent since the war started, and that looks pretty small alongside of the rise for many staple necessities. Here is a way to test how much this means to your family. First think back and make a rough estimate of your family's earnings in 1939. Now take paper and pencil and figure what 17.9, or let us say 18 per cent of that amount would be. It's rather surprising when you look at it that way, isn't it?

And now a final word about the seemingly mysterious 100.0 that the newspapers so often mention when reporting what the index has been doing. We have said that the index is a percentage figure, and all percentages are related to 100.0. For the index, 100.0 equals approximately \$1,450 which was the pre-war cost of the wage-earner budget mentioned at the start. Nothing very complicated about that, is there?

Note: Next week we shall go on to discuss the most important group in the index budget, foods. Meanwhile, remember that foods, although the most important group, form only about one-third of the budget's total cost.

No. 298. -- Alfalfa Seed Production

Successful alfalfa seed production depends upon a number of factors some of which are within the grower's control and others upon a favourable season. The stand should be free from noxious weeds especially those that are difficult to remove in seed-cleaning. Thin stands of alfalfa yield more seed than thick stands. While this latter factor is not entirely under the growers control especially where production of hay is the primary consideration and seed production incidental, nevertheless where conditions, such as winter-killing, or a dry spring have brought about a thin stand, the chances of a good seed crop are increased.

A profitable seed crop also depends on a season with low soil moisture that prevents too rank and rapid growth and encourages plenty of bloom. After the onset of blooming alternating spells of cloudy and sunshiny weather with moderate wind and occasional showers are considered most favourable for pod-setting.

In order that flowers shall set pods they must be "tripped". This is brought about by the visits of such insects as bumble-bees (honey bees are relatively ineffective) or by bright weather. Tripping due to weather conditions results in a high proportion of self-fertilized seed which is undesirable from the standpoint of vigour in the next generation.

Considering the importance of wild bees in seed production possible nesting sites along fences and woods should be left undisturbed. A good seed crop of alfalfa depends upon a thin stand of weed-free alfalfa. The season must be favourable throughout and at flowering time there must be a sufficient population of effective tripping insects such as wild bees.

Due to the acute need for forage seed, farmers should carefully consider the possibility of cutting second crop alfalfa for seed for home use. Those who wish to grow registered seed should get information from Production Service, Dominion Department of Agriculture, Ottawa.

No 299 United Nations Organize to Feed the World

Mr. L. B. Pearson, Minister-Counsellor of the Canadian Legation at Washington, and Chairman of the United Nations Board on Food and Agriculture, has the following to say regarding the deliberations and conclusions of the Allied Nations Food Conference at Hot Springs, Va., this summer. In common with others the Dominion Bureau of Statistics will have an active interest in the work that the decisions of that most important gathering entail. Therefore, it seems timely that Mr. Pearson's clear-cut presentation of the facts should be in the hands of as many people as possible. He said: The first United Nations Conference - that on Food and Agriculture - met against the somber and compelling background of a world at war. It began long before the opening plenary session at Hot Springs, Virginia, on May 8th, 1943. It began when two great statesmen said in an "Atlantic Charter" that we were fighting in this war for a peace "that will afford an assurance that all men in all lands may live out their lives in freedom from fear and want". The Conference came closer when free men, in January 1942, formed themselves into a group of United Nations to wage war together against those evil forces which would destroy forever, freedom from want and every other freedom.

This United Nations idea, however, had to become more than an idea. It needed form and substance. It had to express itself in action, before men could draw from it full assurance of victory in war and of a peace which would be something more than an uneasy and temporary respite from arms. In short, the United Nations had to organize; to start dealing with international problems in an international way.

It was a happy inspiration of the President of the U.S.A. to begin this process by inviting the first United Nations Conference to concern itself with freedom from want of food.

Two-thirds of the world's people spend their whole lives producing food and the other third join them in eating it. But there has never at any time been enough to eat. Of the 2,100,000,000 people on this globe, more than half of them, even in normal peace times, do not have enough of the right kind of food for health and decent living. Indeed, if the world's food production in a normal year were equally divided among all its people, practically every Canadian would suffer. There just isn't enough food to go around. This, at a period in the world's history when man for the first time has acquired through science the physical means for conquering want.

So President Roosevelt's invitation was well-conceived and well-timed. All the 44 governments invited, accepted, and all were represented when the Conference opened. The United Nations - in the midst of a grim but victorious fight - were lining up to win the war after the war. The delegates came from the four corners of the world - from China to Egypt, from Chile to Canada. They came

from the tropics and the sub-Arctic. Three-quarters of the population of the world were represented. Nations great and nations small were there. The representatives of re-born Ethiopia sat alongside and equal with the delegates of the United States. Tiny Iceland was given the same right of deliberation and decision as mighty Russia. This first United Nations Conference demonstrated that in practice and in principle, there are among us no superstates or master races.

No. 300. --- What the Food Conference did

Before discussing what the Conference did, I should explain what it was not meant to do, continued Mr. Pearson. In the first place, it was not a war food conference in the sense of organizing the production and distribution of food for war purposes. That was already being done, and efficiently, by United Nations war agencies. It was, however, a war conference because its moral significance, and its material results were meant to bring hope and encouragement to our ranks and confusion and fear to those of our enemy.

The Conference was not a food relief conference. Relief was for discussion at a later conference. At the same time, no one at Hot Springs - especially the representatives of the occupied countries - even forgot that millions of men were at this time suffering from want of food under Axis slavery. A Conference which only discussed a food Utopia 100 years from now would be a grim joke to a starving victim of Axis Aggression in 1943. A French delegate said: "For us, one thing counts above all; how to save France from hunger as soon as it is liberated." Discussions of nutritional values, economic theories, and trade policies were never allowed to blind the delegates to these grim realities of today.

But the problem was primarily a long-term one - that of permanent freedom from want. For the first time in history this problem was deliberately faced, not nationally, but as a world problem requiring international action. How men can work together to produce more food and to get that food wherever it is required; how national health can be improved by right feeding; how to banish the savage stupidity of one country destroying the food that other countries need; how to remove barriers which hinder the easy exchange of food; how, in short, to replace international anarchy by international order in the field of agricultural production, distribution, and consumption.

The Conference ranged wide and dug deep. As it was a fact-finding and advisory body only, all it could do was to bring home to the governments it represented the issues at stake, and recommend the policies necessary to meet them. But that, I think, it did.

What were the results? Well, in the first place, the Conference unanimously adopted (and unanimity is something when 44 governments are involved) a great many resolutions covering a very wide field; all designed to bring closer through co-operative action the day when the world will win freedom from want of food.

I know that resolutions themselves are mere words and that the streets of Geneva are paved with them. At the same time, the resolutions of this Conference go very far and embody fundamentally important principles. Their acceptance by Governments will at least make it more difficult for those governments to depart from them in practice.

No. 301. -- Other Freedoms

The Conference also recognized that freedom from want of food depends on other freedoms. Freedom from want and freedom from fear, like hunger and war, are indivisible. You can't have one without the other. Affirming this truth, the Conference passed what is perhaps its most important resolution:

"WHEREAS;

1. Freedom from want cannot be achieved without freedom from fear; and
2. Policies of aggression and the fear of aggression have induced the uneconomic employment of human and material resources, the development of uneconomic industries, the imposition of barriers to international trade, the introduction of discriminatory trade practices, and the expenditure of huge sums on armaments;

THE UNITED NATIONS CONFERENCE ON FOOD AND AGRICULTURE RECOMMENDS;

1. That the governments and authorities here represented, by virtue of their determination to achieve freedom from want for all people in all lands, affirm the principle of mutual responsibility and coordinated action to establish such conditions of international security as will make possible an expanding and balanced world economy."

The Conference also affirmed in another resolution that freedom from want can only be achieved in an expanding world economy. It repudiated that shabby doctrine of profit through scarcity. "Let's remove together", said the delegates, "the barriers of every kind to international trade and then double our world production of food." That is bold and challenging counsel, and if it is to be met, there will have to be far more political wisdom and international understanding in the future than ever there was in that fantastic and depressing interim between the two world wars.

No. 302. -- Other Important Results

The Conference had other important results. The very fact that it met at all was important. That it was the first United Nations Conference made it of special importance. Further, it spoke with one voice in clear-cut and unequivocal terms on practical matters. That is an encouraging sign for the future. Equally encouraging is the fact that the Conference recognized from the very start that no nation - not even the greatest and most powerful - could alone win freedom from want. We have learned in the bitter and bloody trial of war that isolation cannot give us freedom from aggression. We had better learn also that isolation cannot give us freedom from depressions.

Finally, the Conference was a workmanlike approach to practical problems. In other days - and not so far back either - the emphasis on international meetings was nearly always placed on the "rights" of man and nations. It is, I think, of some significance, that at the first United Nations Conference the emphasis was placed on their "welfare". We may get further in this "welfare" approach to international organization than ever we did along the road of glittering political abstractions. This approach has been sneeringly referred to by some as the doctrine of the "pint of milk a day for every Hottentot". Well, a pint of milk a day for everyone may in the long run prove a greater help to international co-operation than thunderous declarations of the rights of man. Co-operation, like peace, sits uneasily on an empty stomach.

I recognize, however, that it is an easy thing for a Conference of well-fed, contented delegates in a luxury hotel solemnly to declare that they must all work together for the common welfare. I have attended a good many international assemblies. I know by heart the fine ringing declarations of international solidarity and understanding that came from them. I have witnessed their enthusiastic acceptance at many a conference, but I have seen few of them translated into international action.

So let's get behind the words and see if anything permanent and concrete may result from all these lofty resolutions and inspiring principles that came out of Hot Springs. The Conference recognized this danger of throwing out words and then going home and throwing off responsibility. It realized also that it could do no more in the short time allotted than to sketch in barest outline an international organization which might be the mechanism through which governments could put into practice the principles they had accepted.

No. 303. -- To Give Organization Flesh and Bones

To give this organization flesh and bones, the Conference recommended that there should be convened in Washington an Interim Commission, representing all the countries who were at Hot Springs. That Commission is now working. It is undertaking a variety of duties, but its main task is to prepare for governments a specific and detailed plan for a permanent international organization in the field of food and agriculture, with functions covering the promotion of scientific technological, social, and economic research, the collection and dissemination of information, agricultural production, distribution and conservation, agricultural credit, nutrition, and many other things.

This is a sizeable and important task. Furthermore, the permanent body, which we hope will be set up to deal with these matters, will be the first of its kind established by the United Nations. It is therefore of particular importance that its constitution and its power be established on a sound practical international basis. If this can be done, the permanent Agricultural Board may become a model for United Nations Boards in other fields; Boards which we hope ultimately can be pulled together and brought under the supreme direction of some controlling United Nations authority. That, however, is another problem. Meanwhile, if we do our job well in Washington in the field of food and agriculture, we will all have moved a little closer to our ultimate objective, which President Roosevelt has, in simple but noble words, stated as follows:

"It is to build for ourselves and for all men, a world in which each individual human being shall have the opportunity to live out his life in peace, to work productively, earning at least enough for his actual needs and those of his family; to associate with the friends of his choice; to think and worship freely, and to die secure in the knowledge that his children, and their children, shall have the same opportunities."

No. 304. -- Food Prices in Relation to the Cost of Living Index

When family living costs are mentioned the mistress of the household thinks immediately of food prices. This is natural, because foods are the largest single item in the wage-earner family budget. During the past year or two the lady of the household has found a growing strain on her purse strings caused by higher prices of foods; this strain is by no means a figment of her imagination. Food prices have very definitely advanced.

Official figures compiled by the Dominion Bureau of Statistics show that the wartime increase in the price of foods has been nearly 33 per cent to July, 1943. The mistress of the household is puzzled when she compares this increase of 33 per cent with a rise in the cost of living index of only 17.9 per cent. How is that brought about? How is it that the cost of living has increased only 17.9 per cent when foods alone are 33 per cent higher?

The answer is really simple, although these two percentages look contradictory. They are part of the same picture. When the Bureau of Statistics calculates its cost of living index, it considers not only foods, but fuel and lighting, rent, clothing, home furnishings, and a miscellaneous group of items, including health costs, items of personal care, recreation, transportation and life insurance. Every day of the year, money is being spent on these things and the cost of living picture would be incomplete if they were omitted from it.

When the Bureau made a survey of actual family living expenditures, it found that all of the groups listed above formed important parts of the total living costs. So prices are collected each month for representative items in all these budget groups.

As has been mentioned, food prices to July 1943 have shown a wartime rise of about 33 per cent. This is the greatest rise which any of the main budget groups has shown. Due to the freezing of rents, the general advance in rentals has been just over seven per cent; the miscellaneous group is also up about seven per cent. Other groups have gone higher, fuel and lighting over 14 per cent, home furnishings nearly 17 per cent, and clothing over 20 per cent. When you take account of the amount spent on each of these groups, the combined rise in all living costs amounts to just under 18 per cent.

If rents and miscellaneous items had risen as much as foods, the total increase would be 28 per cent instead of under 18. That shows how important an influence these two groups have been in holding back the general increase in living costs. And, remember, the importance given to them is not the Bureau's own personal idea of how important they are. It is based upon actual expenditure records collected by the Bureau from wage-earner families in 12 cities ranging across the Dominion from Halifax to Vancouver.

There were 1,439 of these families, and of every dollar they spent, 31 cents went for foods, 19 cents for shelter, six cents for fuel and light, 12 cents for clothing, nine cents for home furnishings and services, and 23 cents on miscellaneous items.

In showing the relationship of food costs to all living costs, the discussion has strayed away from our original subject. We shall get back to some further angles on food prices next week.

NOTE: The foregoing is the second in a series of weekly chats about the Cost of Living Index. The third will appear next Friday.

No. 305. — Iron Under Water

An interesting project is underway at the present time in Ontario to rob a lake of iron ore it has been hiding for years.

About 40 miles north of the international border, near a small railway divisional point named Atikokan is a lake — Steep Rock Lake. In places this lake

is 400 feet deep but there's iron down there and plans have been made to drain the lake to permit large-scale production. A spur is to be constructed on the Canadian National Railway from Atikokan to Steep Rock Lake, a distance of a little over three miles, and an ore dock is to be built at Port Arthur. The Hydro-Electric Power Commission has consented to run a power line from the Port to Steep Rock and furnish current at a stipulated rate. Commitments of this nature by the Dominion and Ontario Governments have in all aggregated initial expenditures of some \$5,000,000 which has already been appropriated.

Ore bodies were discovered at Steep Rock back in 1938. A company was formed to develop the property and some diamond drilling was done which resulted in the outlining of one deposit and the finding of another. Early the next year all assets were purchased by Steep Rock Iron Mines Ltd. and as the drilling programme continued a third deposit was discovered. The ore is especially desired at this time because it is suitable for use in open hearth steel furnaces and will reduce the amount of scrap steel now added to each charge and that is growing month by month.

The water diversion scheme is expected to be completed by November. Pumping out of Steep Rock Lake itself will then begin with about 125 billion gallons of water to be taken out. On order are fourteen pumps and seven scows, 16 pumps will be capable of pumping 300,000 gallons per minute. This move to drain the lake has the backing of both the Canadian and United States Governments. Part of the ore body should be exposed inside of six months time.

Findings at Steep Rock are considered particularly fortunate because of the threatened depletion of the high grade ores of the Lake Superior ranges. Furthermore the new found ore is believed to be of exceptionally high uniformity which reduces the task of grading during mining operations. It is exceptionally low in silica content, averaging only a little over 3 per cent, a very desirable attribute for blast furnace use. Steep hematite is unusually low in phosphorous. Present indications are that 25 per cent of the ore will be lump and this added to its other favourable physical and chemical characteristics, makes it suitable for both blast furnace and open hearth.

The original plan was to provide a plant and equipment capable of producing a million tons of ore a year, but in view of the urgent need for the ore it is now planned to increase the capacity to two million tons. The present work schedule calls for production to commence in August, 1944. To meet this about 1200 men and a million and a quarter dollars worth of equipment are employed on the property.

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