# Nutrition Policy in Canada, 1870-1939

*Aleck Samuel Ostry*

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*This book is dedicated to my parents.*

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# Nutrition Policy in Canada, 1870-1939

# Introduction

As nations industrialized and began to grapple with feeding urbanized populations, the increasing separation of people from the land and their concentration in big cities led to the establishment of vast systems of food production, distribution, storage, and sale – systems that were largely governed by private markets. In most nations government stepped in during the late nineteenth century to regulate these markets, at first solely to ensure economic order but later also to protect human health.

Today most states have complex legal and regulatory systems that monitor food production at all levels. Scientists establish standards that regulate the content of food and design programs of health promotion and education in order to disseminate nutritional information. As well, a complex industry grows, processes, distributes, sells, and trades food, sometimes openly but often in a highly protected manner.

Today public interest in food and nutrition (ranging from broad worries about the sustainability and safety of systems of agricultural production to the desire for information on the links between vitamin intake and specific diseases) is very high. The public's interest in the relationship between food, diet, and health has not always been this intense. It has waxed and waned. For example, during the economic hardships of the Depression worries about the links between malnutrition and ill health, particularly among the children of the unemployed, was high. With a full-employment economy following the Second World War, and for two decades thereafter, until links between high fat diets and coronary heart disease became widely known, the public's interest in food and health waned in Canada.

Now, however, consumers are hungry for health news, particularly about fitness and nutrition. Newspapers, television, and the Internet have steadily increased their coverage of health issues (Pellechia 1997). In a recent study more than 70 percent of the science coverage in three

major American newspapers was health-related (American Readership Institute Survey 2001). While most of this health news dealt with the etiology and treatments of diseases, including food-borne illness, the second most common area of health coverage was lifestyle, which, in turn, was dominated by issues of weight loss.

While in most developed nations the print and broadcast media have, historically, been the major sources of health and nutrition information for the public (Begley and Cardwell 1996; Goldberg 1997, 2000), two major changes are under way in the Canadian media. Most television stations now have specialized reporters and increasingly large segments of news casts devoted to "health news." The use of the Internet has increased, as has the proliferation of health- and nutrition-focused Web sites (Goldberg 2000). Compared to other developed nations Canada has among the highest Internet access and use rates in the world, and in 2000 and 2001 health sites accounted for 13 percent of the total online media sites used by all Canadians (Media Metrix 2000, 2001). In Canada the subject of nutritional health is the fastest-growing area of interest on the Internet (Kouris-Blazos et al. 2001).

While people thirst for information about nutrition and health, it is not clear that reading newspapers, watching television, and surfing the Internet will meet their needs. For example, according to the few studies that have been conducted, nutrition information available on the Internet is of low reliability and accuracy both in the United States (Miles et al. 2000) and in Canada (Davison and Guan 1996). Often, media articles and news on nutrition and health describe single studies, with limited context provided in "sound-bite" style, so that people have a difficult time developing a clear understanding of the relationship between nutrition and health.

Thus, the public is left with disconnected tidbits of information (often biased by the interests of industry and various disease- or nutrition-based foundations and institutes) that do not add up to a coherent whole and do not allow for the development of a nuanced, "big-picture" view of the relationship between nutrition and health, on the one hand, and the structure and process of nutrition policy making and health on the other. Without information on the latter, people don't know how to become involved in, or otherwise influence, the policy process in ways that might improve either food security or their own nutritional status.

The combination of a growth in public interest in the links between nutrition and health within a context of increased concern about the health effects of diet (particularly from overeating); the media proliferation of unreliable information on nutrition and health (and the increasing power

of consumers to find this information on the Internet); and the growing commercial stake in marketing food based on health claims (and an increasingly lenient regulatory environment) is a recipe for public confusion. In Canada this problem is exacerbated by a lack of basic historical research on nutrition policy, the links between nutrition and health, and how these have changed over time. This research is essential to current policy-making efforts.

One could divide the history of nutrition policy in Canada into five main eras. The first era, lasting roughly from the mid-1870s to the end of the First World War, was dominated by the establishment of a system of food safety, inspection, and surveillance. This system was developed within the framework of federal criminal law, and its purpose was to counter widespread food adulteration in order to protect consumers from economic fraud and to preserve the integrity of the trade in food.

The second era of nutrition policy occurred during the interwar years, and it saw a more activist federal government begin to use its spending power in areas of social and health (including nutrition) policy, which were formally under provincial jurisdiction (Ostry 2006). The establishment of the federal Department of Health in 1919 marked the beginning of this period, and the formation of the Canadian Council on Nutrition in 1938 marked its end.

For several reasons nutritional policy issues in the 1920s were different from those in the past. A spate of new vitamin research throughout the 1920s linked a deficiency in certain vitamins with diseases such as rickets. The discovery of vitamins caught the public imagination, drawing increased attention to the relationship between nutrition and health. These developments occurred as the new retail chain stores expanded through mass advertising.

As well, in the 1920s, when the supply of cow's milk was uneven and the milk itself of uncertain quality in most regions of Canada, nutrition policy makers directed their attention towards breastfeeding. Accordingly, the first national nutrition policies specifically related to improving the health of Canadians (and largely ignored by Canadian mothers until the late 1960s) were developed by the federal Department of Health in order to promote breastfeeding.

As the Depression worsened in the early 1930s widespread unemployment put the issue of hunger squarely on the public policy agenda. The debate was highly politicized as malnutrition and dietary standards became central to an increasingly intense political struggle regarding appropriate relief payments for the unemployed. By the end of the decade the focus of nutrition policy making had shifted to the development of

a national dietary standard. This was part of an international effort in which the League of Nations aggressively promoted the new nutrition science and its application to problems of global unemployment and stagnating agricultural trade.

The 1930s were also important because this was when the medical profession consolidated its role as a major stakeholder in nutrition education, particularly in relation to infant feeding. The profession, particularly pediatrics, had helped to develop and market the first commercial artificial baby foods. Its involvement in dispensing infant feeding advice to new mothers accelerated as, beginning in the early 1930s, birthing increasingly shifted from home to hospital.

The third era of nutrition policy making spanned the lifetime of the Canadian Council on Nutrition (CCN), from 1938 to 1972. This institution, along with the Nutrition Services Division of the federal Department of Health and the Department of Agriculture, shaped wartime dietary standards and ensured that key workers (e.g., munitions workers and other producers of essential war equipment and goods) were well fed.

From the 1950s through the 1970s the CCN developed national policies on food fortification in conjunction with the Department of Health as various elements and vitamins were added to the Canadian food supply. Ironically, during this time of growing agricultural production, increased access to and consumption of food, and even early warnings of an emerging obesity problem, nutrition policy making (especially fortification policies) continued to be driven largely by Depression-era concerns over malnutrition, particularly in relation to vitamin and mineral deficiencies.

As the life of the CCN came to an end, one of its last acts was the coordination of the world's first representative national dietary survey. In 1972 the results of this huge survey were published. It demonstrated some nutrient deficiencies, particularly among young women, that were blamed partly on restrained eating and dieting. Most important, the survey noted that, in Canada, being overweight was an "epidemic problem," that this was an extremely difficult nutritional problem to correct, and that it had been a problem in Canada likely since the 1950s (Beaton 1981).

The fourth era in nutrition policy making lasted from the demise of the CCN in 1973 to the publication of modern dietary guidelines in 1992. The beginning of this era witnessed the end of the post-Second World War economic expansion and, in the mid- and late 1970s, serious

food price inflation. After almost a quarter century of relative public unconcern about nutrition and its links with health, the 1970s witnessed new citizen activism and government policy making as worries grew that the poor unemployed might lack food.

This was also when Ancel Keys's (1970) groundbreaking research linking dietary fat intake and coronary heart disease began to be taken seriously by the public and by some nutrition and health policy makers. As well, in the 1970s and 1980s nutrition policy making in the federal Department of Health was dominated by the health promotion paradigm, first outlined in the Lalonde Report (Lalonde 1974). Framed within this model, nutrition policy making shifted almost completely to a reliance on the twin pillars of nutrition education (which was also increasingly well coordinated with provincial ministries of health) and food fortification.

The fifth (and current) era of nutrition policy making, under way since the early 1990s, has been marked by the consolidation and internationalization of the agrifood sector. Since the signing of the North American Free Trade Agreement and the birth of the World Trade Organization, the new North American and global trade environment has accelerated the integration of national agribusiness sectors on a hemispheric and global level, increasing pressure to internationalize food standards and dietary guidelines and to dismantle supply management and other so-called hidden tariffs in Canada. And this has occurred as biotechnology has evolved to allow genetic manipulation of the food supply.

While I have framed the history of nutrition policy in Canada from the late nineteenth century to the present within five eras, the focus of this book is on the first two, from the 1870s to 1939. These two periods saw a shift in agricultural production from grains to meats, the birth of modern nutrition science, the increasing involvement of the medical profession in advising people about nutrition and health, and the establishment of a national nutrition policy-making institution.

These two eras of nutrition policy making in Canada have remained underinvestigated. As well, the federal policy-making institutions that drove nutrition policy in the 1950s and 1960s – primarily the Nutrition Services Division of the Department of Health and the Canadian Council on Nutrition – were profoundly shaped by developments in politics, science, health, and agriculture, all of which occurred before these institutions were established on the eve of the Second World War. The political and scientific debates and priorities concerning food and health during this time comprised the foundation around which most of the

early nutrition policies and nutrition policy-making institutions were formed. Understanding foundational developments during this period is important because they continued to influence nutrition policy making for decades after the Second World War, in particular as the Depression-era thinking about undernutrition continued to dominate nutrition policy making even as overnutrition and obesity were becoming national problems.[1]

In most areas of health and social policy the federal government used its spending power to shape provincial and national policy (Ostry 2006). However, in the case of nutrition policy prior to the Second World War the federal government took a more direct lead. The earliest federal foray into nutrition policy was through the Adulteration Act, which was framed within federal criminal law. This act and the food safety system upon which it is based was not (at least at first) about health and, therefore, was not a provincial constitutional responsibility.

As well, after 1919 and the passage of the federal Department of Health Act, the federal government was mandated to coordinate "efforts for preserving and improving public health, conservation of child life and promotion of child welfare" (Canada 1919). Thus, public health efforts to improve the nutritional health of infants and children became a direct federal responsibility, which is partly why the first national nutritional guidelines were developed in relation to breastfeeding.

The federal government was also aggressively and indirectly involved in nutrition education through the activities of the Department of Agriculture, which became heavily involved in promoting milk consumption among children from the 1920s onwards. And, in the 1930s, establishment of a national dietary standard became an important element of a government strategy to reform national labour policy and the delivery of unemployment insurance (Grauer 1939; Struthers 1983).

[1] There is evidence that, as early as 1945, nutritionists were beginning to worry about overweight and obesity in the Canadian population (Beaton 1981; Pett 1972). For example, in summarizing the overall results of the limited number of (albeit unrepresentative) dietary surveys conducted between the early 1930s and 1950 (with approximately 10,000 individuals), Pett (1972) observed that, in some surveys, overweight was found in up to 33 percent of respondents. And Beaton (1981), commenting on the results of the 1972 nutrition survey, claimed the obesity was a problem of epidemic proportion. As well, as early as 1945 there is evidence of concern that inflated dietary standards encouraged overeating. At present, nutritionists and public health experts appear to be unaware that overweight and obesity (albeit not as severe at present and not as severe among children) has been a problem since the 1950s.

This book focuses on three basic themes in nutrition policy between the 1870s and the beginning of the Second World War: (1) food adulteration and the evolution of a system of food safety, inspection, and surveillance; (2) policies on breastfeeding; and (3) the scientific and policy developments leading to a national dietary standard. The context of these three themes is key to achieving a nuanced historical understanding of nutrition policy. Accordingly, I examine this context in light of four subthemes.

The first subtheme involves early nutrition policies that were focused mainly on milk. In the late nineteenth century milk was the most widely adulterated food in Canada. Indeed, it was known as a dangerous food that killed babies. Beginning in the 1920s, and bolstered by the discovery of vitamins, milk underwent a fundamental makeover and was increasingly touted as the quintessential "protective food" for children. In the 1930s the price of milk and milk marketing were major economic and health issues. Thus, the changing scientific and public image and the marketing of milk was central to the nutritional health of infants in Canada during this time.

The second subtheme involves the changing nutritional and health status of the Canadian population from the 1870s to the beginning of the Second World War. Especially after 1919 nutritional policy was driven by concerns about the links between poverty, malnutrition, and ill health (particularly among infants).

The third subtheme involves the medical profession's role in dispensing nutritional advice, which emerged slowly and steadily throughout the nineteenth century. By the beginning of the Second World War physicians were trusted experts who were increasingly consulted by governments with regard to developing nutrition policy. As well, the interaction between the medical profession, the government, and ordinary (particularly female) citizens is key to gaining a better understanding of how breastfeeding policy and dietary standards were shaped.

Finally, while the federal Department of Agriculture had always been a powerful player in Canadian history (MacRae 1999), its indirect and usually underacknowledged role in shaping nutrition education (particularly through its marketing branch) became more important as the industry faced crippling economic pressure in the 1930s. Beginning in the 1920s the agricultural industry and the Department of Agriculture helped to shape nutritional health policy, both directly and indirectly, through their alliances with the federal Department of Health and through their explicit use of health-based claims to promote sales of Canadian agricultural products. Today, this interaction between health

and agricultural interests remains key to understanding nutrition policy development.

This book has nine chapters. The first three cover the period from the 1870s to 1920; the next two cover the 1920s; and the remaining four focus on the 1930s. Chapter 1 identifies the origins of Canada's food safety legislation and the subsequent evolution of the national food surveillance system. I describe food safety laws during colonial times as well as the origins of Canadian legislation in British criminal law. Chapter 2 evaluates the evidence relating to the nutritional status of the population prior to the First World War. It also outlines the problem of persistently high infant mortality rates as this issue shaped the breastfeeding guidelines that were developed after the war. Chapter 3 moves from the consideration of the food safety system outlined in Chapter 1 to a discussion of the safety of artificial infant foods as these emerged in the late nineteenth century, championed by the new medical specialty of pediatrics.

Chapter 4 describes the changing image of cow's milk as, with new vitamin discoveries, it was transformed from unhealthy liquid into the perfect food for children. This transformation is key to the infant feeding guidelines developed in the 1920s, which are outlined in detail in Chapter 5.

Chapters 6 to 8 focus on the 1930s. Chapter 6 shifts back to food safety, picking up where Chapter 1 left off in 1920 and continuing to 1939. The combination of new techniques of food production and marketing in the 1920s, the growing popularity of vitamins, and the potential for false health claims fraud (compounded by the worsening economic crisis of the 1930s) created new food surveillance and monitoring problems for the federal Department of Health. The Depression also altered the agricultural sector's approach to marketing food as the industry struggled with closed export markets and persistently low prices. The final section in this chapter revisits the role of the medical profession in dispensing nutrition advice during the 1930s.

Chapter 7 utilizes the available evidence to assess the nutritional and dietary status of Canadians during the 1930s. This issue framed the debates linking nutrition, unemployment, and the creation of the 1938 dietary standard. Chapter 8 outlines the changes in mortality due to nutritional deficiency diseases as a crude indicator of the extent of hunger and its impact on health during this decade of economic hardship. Chapter 9 describes the origins of the 1938 dietary standard, the establishment of the Canadian Council on Nutrition, and the role the League

of Nations played in its formation. The final chapter summarizes findings and presents conclusions.

I used seven types of sources in conducting the research for this book. First, I consulted general historical works. Second, I reviewed books and articles on agricultural policy and agricultural economics in late nineteenth- and early twentieth-century Canada. Third, I studied the few books exploring nutrition policy in Canadian history. Investigations in this area are limited (e.g., there are only two main works [Curran 1954; Davidson 1949] on the development of the food safety system in Canada from the 1870s to the 1930s). In order to supplement these sources, I obtained federal Department of Health and Department of Agriculture reports to determine "official" views on nutrition issues. Fifth, from Statistics Canada I obtained data on national food disappearance, food consumption, and food prices as well as data on infant mortality and nutritional deficiency diseases mortality. Sixth, through the Ottawa Historical Archives, I obtained minutes of meetings of the Canadian Council on Nutrition. Although the council was formed in 1938, the minutes cover events that occurred from the early-1930s onward. Finally, I systematically scanned late nineteenth- and early twentieth-century nutrition and medical journals such as the *Canadian Public Health Journal* in order to obtain information on the development of pediatrics, advice about infant feeding, and the results of early dietary surveys.

The provinces have played an obvious and important role in developing nutrition policy. A more detailed historical review of the provincial role is beyond the scope of this book but should undoubtedly be undertaken as the differences in the development of nutrition policy across regions may prove a fruitful arena for historical and current studies of food security and nutrition policy.

# 1
# Establishing a Food Surveillance System in Canada

Prior to 1919 and the establishment of the federal Department of Health, nutrition policy was shaped mainly by the Adulteration Act, 1874. As Canada's first consumer protection law, it was designed to shield food purchasers from fraud due to the deliberate adulteration of food, which usually occurred when food wholesalers and retailers added contaminants and fillers in order to increase profits. This was a common (almost accepted) business practice in the late nineteenth century.

Under the authority of the Adulteration Act, inspection facilities, laboratories, and an inspectorate were organized and began to operate nationwide by 1919. The Adulteration Act was framed within criminal law, and its purpose was to police food manufacturers, distributors, and retailers in order to prevent economic fraud. Thus, by the late nineteenth century the federal government was playing a role in nutritional health.

This chapter describes the early development of a system of food safety and shows why and how the federal government became involved in nutrition policy making. It explains the origins and subsequent evolution of the Adulteration Act and is divided into four sections. The first section describes food laws enacted by the French and British colonial regimes; the second section reviews the origins of the British food adulteration legislation, upon which the original Canadian legislation was based; the third section describes the conditions in Canada that led to the passage of this legislation; and the last section describes how, by the end of the First World War, the federal government had established a national food surveillance regimen.

### Food Laws during the Colonial Period

During the French regime food laws were enacted to cope with periodic scarcity as, at various times during the sixteenth and seventeenth

centuries, the fledgling colony was threatened with crop failure and, during the first half of the eighteenth century, with British blockades. As well, in the quarter century prior to the British conquest, the French colonial administration was particularly corrupt. Royal officials often manipulated prices, particularly of imported food, in order to extract personal gain, thus creating hardships for the colonists (McLynn 2005).

In New France there were several instances when rationing and price controls were implemented because of poor harvests and military blockades. For example, following a crop failure in 1713 a regulation was passed prohibiting grain exports and forcing farmers to sell most of their grain (after keeping enough for their families) to bakers, who could use it only for baking bread (Davidson 1949).

As the colony became more agriculturally self-sufficient emergency laws designed to avoid food scarcity were enacted less frequently; instead, regulations were passed to control grading, storage conditions, and weights and volumes of staple food items such as fish, pork, sugar, flour, and butter. Similar laws were enacted by the British following the conquest of New France, and under British rule a small inspectorate was soon established to control food adulteration (Davidson 1949).

The Adulteration Act, 1874, was modelled directly on England's Adulteration of Food and Drugs Act, 1872. It is therefore to England that we must briefly turn in order to better understand the origins of Canada's modern food legislation.

### Influence of British Legislation

The earliest British food legislation was the 1266 Assize of Bread and Ale statute, which imposed standard weights for a loaf of bread and volume standards for ale (Fallows 1988). Between the thirteenth and eighteenth centuries food laws, mainly controlling weights and measures, were enacted on an ad hoc basis and mainly in towns where the guilds were powerful enough to police them. In the early eighteenth century local standards for the weight and price of bread were legislated and enforced by magistrates. Additional legislation was passed in 1757 to prevent adulteration and to specify permitted ingredients for bread. The purpose of these early bread laws was to create a level marketplace for bakers rather than to ensure consumer protection (Fallows 1988).

In the early nineteenth century the industrial revolution uprooted millions of farmers and agricultural labourers, turning them into landless city dwellers. During this time new food manufacturing industries and distribution facilities were created to serve the rapidly growing urban population. There is some evidence that adulteration of food, by

both manufacturers and retailers, was widespread and largely tolerated by the authorities (Jukes 1987).

However, during the nineteenth century several new developments began to alter the laissez-faire public and official attitudes towards food adulteration. By the 1820s advances in chemistry made it possible to detect common adulterants in food and led to the publication of the first "Treatise on the Adulteration of Food and Culinary Poisons," in which evidence of food adulteration was demonstrated using the latest analytic techniques (Hassall 1855). By the 1860s these new skills had greatly enhanced the prestige of chemists and provided the state with the technical capacity to detect many common food adulterants.

As well, by mid-century public health professionals and citizens had forged a coalition that pressured the British Parliament to enact the world's first public health laws. This legislation laid the foundation for the sanitary revolution that, by 1875, had stimulated the building of sewers and the provision of clean drinking water in most English cities. It also created an international sanitary hygiene movement that promulgated these new sanitary hygiene ideas, laws, and methods, particularly within the British Empire (Rosen 1958).

In the late nineteenth century, in an atmosphere of heightened health awareness and concern, many medical health officers and other sanitary movement activists became interested in the health implications of a contaminated food supply. The *Lancet* brought the issue to public and professional attention, publishing a series of reports on food adulteration and provoking a parliamentary investigation. These developments occurred just prior to the Bradford incident of 1858, in which 200 people were severely poisoned after eating lozenges. This incident, set against the background of the sanitary revolution and the *Lancet* reports, caused widespread public and professional disquiet and increased the pressure on Parliament to develop food adulteration laws.

Until the 1860s the British food industry had opposed regulation as it had benefited from the state's laissez-faire attitude towards adulteration. With minimal food regulation, manufacturers and retailers could add filler to their products in order to increase weight and volume, and they could also add any quantity of preservative in order to extend shelf life. All of these methods of adulteration could increase profits at both the wholesale level and the retail level.

However, as free trade expanded after 1850, British food manufacturers came under pressure from imported foods. In this new economic climate they realized that laws against adulteration could be used to

keep foreign foods out of their market and to ensure that honest domestic manufacturers and retailers would not be undermined by local food adulterers (Paulus 1974). For these reasons, by the late 1850s British food manufacturers became increasingly willing to support comprehensive legislation to control food adulteration.

These pressures resulted in the Adulteration of Food and Drink Act, 1860, promulgated within the Department of Inland Revenue, which made it an offence to knowingly sell adulterated food and which empowered local municipalities to hire food analysts to enforce regulation of the local food supply (French and Phillips 2000). The value of this legislation was limited because penalties were applied only to illegal retail transactions; the law did not apply to manufacturers and wholesalers.

While this legislation was largely unenforced, it broke new ground because it was the first consumer protection legislation and the first comprehensive food law to be enacted in the British Empire. It gave official recognition and support to the role of municipal food analysts and established a fledgling food inspectorate in Britain. Although health activists helped to force this legislation through Parliament, and although the legislation was motivated in part by public concerns about food safety, the act was crafted largely with economic issues in mind (Fallows 1988).

This 1860 British act was strengthened in 1872 when local governments were mandated to appoint properly trained chemists, when food market inspectors were given powers to seize suspected food samples, and when manufacturers and wholesalers were made liable for adulterating their products (French and Phillips 2000). The amended British Adulteration of Food and Drugs Act was passed in 1872 and served as the template for Canada's Adulteration Act, 1874.

### Origins of the Canadian Food Adulteration Legislation

In Canada in the 1860s public concern about adulteration of food and drink escalated, although the issues were different from those that motivated the British public and legislators. In Canada there were widespread public fears about increases in crime and insanity, which temperance advocates and many politicians linked to excess drinking in general and to the drinking of adulterated spirits in particular. Overcrowding in jails and mental institutions was blamed on both intemperance and the consumption of adulterated liquor (Davidson 1949).

In the early 1870s several House and Senate committees were struck to investigate how intemperance and drinking adulterated liquor affected

criminality. These committees were supported by an active temperance movement led by the Women's Christian Temperance Union, which favoured state-legislated prohibition of alcohol (Valverde 1991). In 1873 temperance advocates presented Parliament with a petition containing 36,000 signatures supporting prohibition (Davidson 1949). Prohibition was opposed by the Roman Catholic Church in Quebec, which viewed it as a potential infringement on the practice of Holy Communion and, therefore, a veiled attack on both the Church and on French Canadians (Curran 1954).

The debates preceding the Food and Drug Act, 1874, were focused on liquor adulteration. The final act, which was placed under the supervision of the Department of Agriculture, was a compromise that appeased the Church by avoiding prohibition and that was at least partially acceptable to temperance advocates because it placed limits on the availability of alcohol. Liquor producers and retailers were required to obtain licences, and an inspection process was established to dissuade manufacturers and retailers from adulterating liquor.

### Establishing a System of Food Safety in Canada

Like the public health legislation passed in Ontario (and later adopted by other provinces) around this time (Ostry 1995b, 2006), the 1874 Canadian adulteration legislation was based almost entirely on its British antecedent (Davidson 1949). Although the Adulteration Act was passed due to concerns about alcohol, almost all the early prosecutions that occurred under it dealt with milk and butter. In 1876, 60 percent of the milk sampled under the authority of the act was adulterated, mainly by the addition of chalk and/or water. In 1877 approximately 50 percent of the butter tested was adulterated, although by 1885 this fell to about 19 percent (Davidson 1949).

Over the next quarter of a century legislators amended the Adulteration Act several times and moved its administration from the Department of Agriculture to the Department of Inland Revenue. The amendments resulted in the hiring of a chief analyst, the building of regional laboratories, the expansion of the central laboratory in Ottawa, and improved technical training for all analysts.

Unlike in Britain, in Canada analysts were hired by central rather than municipal governments and were attached either to the central laboratory in Ottawa or to regional laboratories in Ontario, Quebec, the Maritimes, and British Columbia. These analysts were, by and large, poorly trained, badly paid, and empowered to supplement their meagre salaries by charging clients extra fees for their services (Davidson 1949).

This provision was placed in the legislation in order to keep government costs associated with operating the new food inspection service to a minimum. However, the integrity of the system was undermined not only because low wages attracted underqualified analysts but also because the sanctioning of private payments between client and analyst provided fertile ground for corruption and the falsification of results.

Two things were necessary in order to strengthen the system: (1) the establishment of better laboratory techniques and analyst training and (2) the enshrining, in law, of standards for those foods most commonly adulterated. With regard to the latter, the chief analyst in Ottawa was asked to develop positive standards for foods that were commonly adulterated (such as milk). These standards were to define foods in terms of their main chemical constituents. For example, at this time milk was commonly adulterated by the addition of water. Therefore, a definition of milk had to establish a standard for its fat content. Once such a standard was set, it would be possible to declare any deviations from it as adulterated, and it would therefore be possible to launch successful prosecutions whenever this standard was breached.

However, in order to prosecute cases successfully these unofficial food standards had to be established in law. Accordingly, in 1890 the Adulteration Act was amended to enable the government to prescribe standards for food and drugs. The amendment delegated legislative authority to orders-in-council, thereby allowing the government to develop new standards for particular foods without, in each instance, resorting to amending the legislation (Curran 1954).

The 1890 amendment supporting the establishment of positive food standards made Canadian legislation the most advanced in the world. Other countries quickly recognized this Canadian innovation, and within a few years Australia, New Zealand, and South Africa were emulating it (Jukes 1987). The United States was also influenced by the Canadian legislation, incorporating it into the first modern American food adulteration law, the Pure Food Law, 1906 (Curran 1954).

While Canada had established its excellent legislative framework by 1890, it did not, except in the case of milk and a few imported products such as tea, authorize enough money for the analysts to establish positive food standards. This resulted in the system remaining underdeveloped and ineffective.

Canada finally established a number of positive food standards after the passage of the American Pure Food Law, 1906. Passage of this act was motivated almost solely by the scandal resulting from Upton Sinclair's *The Jungle* (Sinclair 1906), which described the Chicago meat-packing

industry and stockyards in grim detail, exposing the exploitation of both workers and animals and the incredibly unhygienic standards in the meat processing industry. It also described incidents where workers, who happened to be in the wrong place at the wrong time, ended up as sausage meat. *The Jungle* had a major international impact and, as a shocked public rejected American beef, led to the temporary elimination of imports to Britain and the rest of Europe.

The Pure Food Law, 1906, was the American government's response to this crisis of food safety in the beef industry. The new rules were stringent, and the funding for a new food inspectorate was generous. Very quickly the American system became the international standard.

Immediately upon passage of the Pure Food Law, 1906, the US government established positive food standards. Once published these were adopted, often with little modification, by the Canadian chief analyst and passed into Canadian legislation (Davidson 1949). For example, in 1909 the Canadian chief analyst, with the guidance of an advisory board, used the American legislation as a base to develop standards for a range of dairy products, meats, grains, maple products, and beverages. These were passed in 1911 by an order-in-council but only after being submitted for approval to the Canadian Manufacturers Association (Curran 1954). This indicates that, early in the development of food safety regulation, the Canadian food manufacturing industry was a full partner with the Canadian government in establishing food standards.

In 1907 the federal government passed the Meat and Canned Foods Act. This statute established a regulatory system for all animals intended for slaughter as well as for the inspection of packaged meat products. It also gave the federal government authority to inspect any products prepared for and packed in cans, stipulated labelling requirements for packaged foods, and required that the name of the company, as well as the contents and weight, be marked on the packages. All fish, fruit, and vegetables prepared for export were subject to federal inspection (Canada 1907).

The Meat and Canned Foods Act, 1907, came about for two main reasons: (1) the canning, processing, and mass marketing of foods had become a reality, and (2) this reality was being aided by the rapid concentration of the North American processing industry and the expansion of retail chain stores (Levinstein 1993). The need for an inspection service arose once it became clear that the public was increasingly consuming canned products. The new act increased the workload of the food surveillance system because it expanded the volume, type, and

diversity of products for inspection and, for the first time, made inspectors responsible for food labels.

Responsibilities and workload were increased a few years later when the Dairy Industry Act, 1914, was passed to enable the government to more closely monitor the quality of milk, butter, and cheese and to prohibit their being adulterated with water, cream, foreign fat, colour, or preservatives. The act also prohibited the sale and supply of adulterated milk or dairy products to manufacturing plants, bottling plants, or shipping stations, and it allowed the minister of agriculture to specify regulations regarding the classification and branding of dairy products (Canada 1914).

With the Adulteration Act's "teeth" having been sharpened by the 1911 legislative framework for establishing positive food standards, and with the help of the Meat and Canned Foods Act and the Dairy Industry Act, the legal framework for successful adulteration prosecutions was finally in place. However, the civil service was still badly equipped, badly trained, and badly organized, and this seriously hindered successful prosecutions for food contamination. Given its increased responsibilities for the inspection of meat, vegetables, fruit, dairy products, and canned goods, the civil service was strained.

This situation was remedied somewhat in 1913 through an order-in-council establishing new regional laboratories in Halifax, Winnipeg, and Vancouver. In order to speed the pace and quality of analytical work, the laboratories hired properly trained food chemists. By 1919 twenty-five food inspection districts had been established in Canada, and they were staffed with a professionally trained full-time inspectorate (Department of Health Report, 1925).

Thus, by the beginning of the First World War, three main pieces of legislation supervised by the Department of Inland Revenue and the Department of Agriculture formed the backbone of a national food safety, inspection, and surveillance system. The development of properly equipped regional laboratories staffed by well trained food analysts, along with the establishment of a professional inspectorate, had finally produced a fully functioning national system of food inspection.

In 1919 administration of the Adulteration Act was transferred from the Department of Inland Revenue to the Food and Drug Division within the newly formed Department of Health. These institutional and infrastructural developments were enshrined in legislation with the repeal of the Adulteration Act and the passage of the Food and Drug Act, 1920. Transfer of the act to the Department of Health was more than

symbolic as it signalled the shift from customs and excise policing of food, and a historical focus on the prevention of economic fraud, towards health surveillance.

The new Department of Health was responsible for coordinating efforts to preserve and improve public health and to conserve child life and promote child welfare – a mandate that gave it jurisdiction over nutritional health issues related to children. This, and the fact that it supervised the Food and Drug Act, gave the health department a strong national role in nutrition policy making both through federal criminal law and through its authority to engage in public health and nutritional health promotion activities.

Under the Food and Drug Act, 1920, food was deemed adulterated if any substance was added to reduce its quality or strength; if any valuable constituent was abstracted from it; if it consisted, in whole or in part, of a diseased animal; if it contained a poisonous ingredient; or if its strength or purity was below standard (Canada 1920).

The new Food and Drug Act also distinguished between adulteration and misbranding (i.e., fraudulent labelling or advertising) of products and provided full salaries for inspectors who had previously been allowed to support themselves by claiming a portion of the penalties they assessed. Twenty-six inspectors were appointed at ports across the country (Vancouver, Halifax, Montreal). While the Food and Drug Act applied to all imports and goods from interprovincial trade, the inspectors focused mainly on imported products (Canada 1920).

Because the nature of fraudulent practices in the food industry began to shift as more foods were sold in packages, as advertising became central to marketing, and as the retail food chain stores proliferated, the new act contained provisions regulating the misbranding of products. The health department was increasingly forced to shift its resources from the inspection, analysis, detection, and prosecution of companies that adulterated their food to fraudulent labelling and/or advertising (see Chapter 6).

**Summary**

Laws to protect the integrity of the trade in agricultural products and processed food were passed by both French and early British colonial administrations. Modern Canadian food adulteration legislation was passed in 1874. For the first forty-five years this legislation, framed within federal criminal law, focused on the prevention of economic fraud on the part of food wholesalers and retailers. This legislation was adopted,

almost verbatim, from British food adulteration legislation that had been passed in 1860.

By 1890 Canada, through a series of amendments, had developed one of the most advanced food adulteration laws in the world; however, due to the undertraining and underfunding of the civil service, it was barely workable. Over the first two decades of the twentieth century – with the adoption of American food standards, increased investment in the food inspectorate, expansion of the central and regional laboratories, and increased salaries for analysts, inspectors, and administrators – the food safety, inspection, and surveillance system began operating effectively nationwide.

The work of the food system began to shift to the inspection and analysis of canned and other processed goods (in order to detect bacterial contamination) as well as to the screening and inspection of labels (in order to detect fraudulent health claims). Public excitement around the discovery of vitamins and manufacturers' growing use of health claims based on the vitamin content of food products increased the burden of the inspectorate and the laboratories.

Moving responsibility for the food safety system from the Department of Inland Revenue to the Department of Health signalled that economic concerns, although still central to the inspectorate, were increasingly being supplanted by new health and health-related nutritional concerns.

The Canadian economy, in the two decades after Confederation, was based mainly on agriculture and resource extraction. After 1880 the pace of industrialization increased, and by 1920 Canada was emerging as an industrial nation. This was not without its problems for the health and nutritional status of the population, and it is to these that I now turn.