Popularizing a Military Diet in Wartime and Postwar Japan

Katarzyna J. CWIERTKA

Abstract

In this paper, I document the role played by the Imperial Japanese Army and Navy in the dietary transformation of modern Japan. I first describe the development of a new, multicultural diet in the Japanese armed forces during the first decades of the twentieth century. Then I identify the trajectory through which this new diet was popularized among the civilian population during the 1930s and the 1940s. Finally, I argue that the postwar transformation of Japanese foodways rested upon the foundation constructed by the diffusion of military dishes and the military's advice on nutrition during the wartime period.

"War is probably the single most powerful instrument of dietary change in human experience" (Mintz 1996: 25).

Food and War

Social scientists generally agree that the ways in which people produce, cook, and consume their food, and the ways in which they perceive their foodways, change over time. As with other cultural transformations, the

---

Katarzyna J. Cwiertka was trained in Japanese language and history at Warsaw University (Poland), Tsukuba University (Japan), and Leiden University (The Netherlands), where she received her Ph.D. in 1999, and where she is currently Associate in Research at the Centre for Japanese and Korean Studies. For more than a decade she has been involved in researching Japanese food habits. Cwiertka is the editor of the recently published *Asian Food: The Global and the Local* (Curzon Press 2002). Her e-mail address is K.J.Cwiertka@let.leidenuniv.nl

causes of dietary change are very diverse, from ecological disasters and business decisions, to religious and political considerations. An interplay of these and other forces creates specific circumstances that may stimulate or discourage change in diet.

Certain occurrences on a larger scale, and of a wider geographical scope, can affect more substantial numbers of people. The European maritime expansion, for example, activated a global dispersion of foodstuffs with extraordinary speed. Potatoes, tomatoes, maize, peanuts, chili pepper, and cocoa beans — all native to the New World — have within a few centuries turned into vital components of the culinary cultures of Europe, Africa and Asia. By introducing, among other things, rice, cattle, coffee and sugar-cane to the Americas, Europeans, in turn, not only altered the local foodways, but also made the economies of American societies part of global markets (Mintz 1985; Roseberry, Gudmundson, and Kutschbach 1995; Tannahill 1973: 202–223).

The Industrial Revolution had a similarly powerful impact on global food habits. The influence of science and technology on the production and processing of foodstuffs, and the rationalization of dietary choices due to the diffusion of nutritional science, have spread across the planet in less than two centuries. A global dispersal throughout the twentieth century of the classics of Western food processing, such as sweetened condensed milk, Spam, biscuits and chocolate, reflects the powerful legacy of the Western colonial realm (Achaya 1994, Cwiertka with Walraven 2002). A recent worldwide spread of fast-food chains and multinational food brands, in turn, indicates the continuation of Western global domination in the twenty-first century (Tomlinson 1991, Watson 1997).

At the same time, the culinary culture of each region has developed under local conditions shaped by ecological, economic, political and ideological factors that shift over time. Japanese foodways are no exception to the rule of culinary dynamism. Throughout the ages, new foodstuffs were introduced and new varieties of existing ones were developed. The manner in which meals were prepared and consumed was repeatedly transformed. As with other hierarchical societies (Goody 1982), the Japanese upper classes tended to be more cosmopolitan than the rest of the population in terms of diet.

Yet, the last century witnessed a nationwide dietary transformation of a degree and pace that was unparalleled in Japanese history. A broad range of new foodstuffs and cuisines found their way into Japanese kitchens and tables, technological innovations were applied to the production and

preparation of food, a scientific approach towards nutrition replaced existing food-related beliefs, and an unprecedented democratization and commercialization of food consumption took place.[1] This transformation was inspired by the political, social and economic changes that swept the country throughout the twentieth century. Industrialization and urbanization, along with imperialist expansion and, in recent decades, the extended global flow of people, commodities and information, exerted a profound impact on the diet of the Japanese population.

There is a general tendency to view the transformation of Japanese foodways into what we see today as a direct consequence of the 1960s economic boom and the post-war American domination.[2] The majority of works on modern Japanese food history imply that the year 1945 marked the beginning of the entirely new era, with a very loose connection to what took place during the preceding decades, in particular during the wartime period (1931–1945).[3] Yet, as will become clear in the course of this paper, there is more continuity in Japanese foodways before and after 1945 than has generally been assumed. The militarization of society and the mobilization of resources for the war effort throughout the 1930s and the first half of the 1940s speeded up the modernization of Japanese foodways, by generating greater implementation of science and technology in food preparation and food processing, contributing to the homogenization and democratization of food choices, and sustaining the popularization of foreign food.

Cultural transformations, of which dietary change is but one example, never occur overnight, but usually take years or decades to come about. However, under conditions of war, old habits may be surrendered more easily and new ones established with less resistance than would be the case in peaceful circumstances. The French Revolution, for example, speeded up the development of restaurant culture in Europe (Pitte 2000), and World War I provided a potent impulse for the rise of interest in the issue of public nutrition (Kamminga and Cunningham 1995). The experience of World War II significantly reshaped the food preferences of American citizens, both those who were drafted into the armed forces and civilians at home (Mintz 1996: 25–28; Levenstein 1993: 80–100).

Economic recession and food shortages, which may accompany war, are often responsible for the loosening of dietary rules, the rise of a more liberal approach towards food of low prestige, and a relatively swift spread of new foods and customs. However, the main effect of modern war on human food tastes may be that individuals drafted into the armed forces are

deprived of the choice of what to eat. Millions of service people eat what they are given, and what they are given is decided by power-holders who function outside their direct experience (Mintz 1996: 25). Depending on the degree of militarization of a society, the impact of war on civilian food habits may vary. As Andreski has noted, militarism often implies the extensive control of the military over social life, and the extolling of the soldier and of military virtues by society (1968: 185–186). In such cases, not only the food habits of the military personnel, but also those of the civilian population may be radically altered by the war experience.

In this paper, I aim to identify the role played by the Imperial Japanese Army and Navy in the dietary transformation of modern Japan. I will first trace the development of a new, multicultural diet in the Japanese armed forces during the first decades of the twentieth century. Next, I will pin-point the trajectory through which this new diet was popularized among the civilian population during the 1930s and the 1940s. Finally, I will argue that the postwar transformation of Japanese foodways rested upon the foundation constructed by the diffusion of military dishes and the military's advice on nutrition during the wartime period. By identifying the impact World War II played in revolutionizing Japanese diet, I hope to incite a discussion of the role of Japanese militarism in the cultural transformations of Asia. The main political, economic and bureaucratic aspects of Japanese imperialism and colonialism have been expertly charted.[4] However, comparatively little work has been done on the practical ways in which these events were experienced by both the Japanese and peoples under Japanese domination, and on what role the wartime legacy played in cultural development in Asia. More than half a century after Japan's defeat, research on the cultural impact of Japanese colonialism still remains a contentious issue, haunted by controversies and loaded with ideological sentiments.[5] This paper is intended to shed some light on these veiled aspects of Asian history.

Canteens in Contemporary Japan

I will begin by identifying the space where the legacy of military food remains, even today, most pronounced — the canteen.[6] Canteens in contemporary Japan are very diverse, depending on their budget, the region they operate in, and the kind of customers they serve (male/female, young/old, blue-collar/white-collar etc.), to mention only the most important

factors involved. Student canteens are different from the ones operating in factories or the ones situated in office buildings. Even within the same category there are considerable differences. The food available at the canteen of Japan Women's University (*Nihon Joshi Daigaku*), for example, is certainly a world apart from what is served at one in the overwhelmingly male Tokyo University of Technology (*Tōkyō Kōgyō Daigaku*).[7] Nevertheless, with varying degree of proximity, all Japanese canteens share a common heritage, which can be traced to the 1930s military food.

A standard menu in a Japanese canteen consists of a bowl of rice, a bowl of *miso*[8] soup, and pickles (*tsukemono*) supplemented by two or three side dishes, one of them being a kind of "main side dish" usually featuring fish or meat. Other canteens' mainstays include Japanese-style and Chinese-style noodles, spaghetti, sandwiches, and the Japanese-Western rice-based hybrids served on a plate (not in a bowl), such as curry on rice (*karē raisu*), pilaf, and rice pan-fried with chicken and tomato ketchup given the name 'chicken rice' (*chikin raisu*). As will become obvious in the course of this paper, the majority of these dishes appeared in wartime military menus.

Table I features the choice of three "main side dishes" as identified earlier, to accompany the standard rice-soup-pickles set. This choice was offered at the canteen of the Tokyo headquarters of a Japanese company throughout February 1995, where the author was conducting fieldwork. Many of these dishes can be classified as luxurious versions of the menus served in the Imperial Japanese Army and Navy half a century earlier, and disseminated as the model for civilian mass-catering to follow. The canteens in small towns and villages, as well as those catering for male dormitories, serve food which resembles military menus even more than this relatively fancy canteen in the very center of the capital. Some of these dishes could easily be found in Japanese homes, served to elderly men, and at the tables of farming or working-class families in the far corners of the country where recent culinary trends have failed to diffuse. Many of these dishes project an image of pre-bubble Japan, before the age of microwaves, convenience stores, fast food chains, and tiramisu.

The Making of Military Diet

Once Japan officially paved the way towards modernization by abolishing the feudal regime and establishing a central government in 1868, its

Table 1: The choice of main side dishes at one Tokyo canteen

Date	choice A	choice B	choice C
01/02/1995	ham cutlet, cheese omelette	grilled Spanish mackerel	chicken fried with *miso*
02/02/1995	pan-fried vegetables	deep-fried sardines	sausage and vegetables in cream sauce
03/02/1995	beef cutlet with cheese stuffing	*nimono*[9] with soybean curd and *shimeji* mushrooms (*Lyophyllum*)	seafood in chili sauce
06/02/1995	flatfish *nimono*	beef and mushrooms sauté	deep-fried oysters
07/02/1995	beef *nimono*	pork cutlet with mushroom sauce	pan-fried vegetables
08/02/1995	yellowtail *teriyaki*[10]	meat-balls Chinese style	beef Japanese style
09/02/1995	chicken cutlet grilled with cheese	assortment of Chinese dishes	*nimono* with oysters and soybean curd
10/02/1995	freeze-dried soybean curd stuffed with meat	pork in sweet-sour sauce	salmon with mayonnaise sauce
13/02/1995	curry croquette, deep-fried fish	beef pan-fried with vegetables	fish in tomato sauce
14/02/1995	grilled Spanish mackerel	rolled cabbage Chinese style	beef-and-cheese hamburger
15/02/1995	cutlet on skewers	fish *teriyaki*	*nikujaga*[11] Western style
16/02/1995	abalone steak, deep-fried shrimp	chicken fried Chinese style	assortment of *sashimi*[12]
17/02/1995	grilled fish	spring rolls	beef stew
20/02/1995	*nimono*	hamburger Japanese style	pork and eggplant pan-fried with miso
21/02/1995	*sukiyaki*-style *nimono*	grilled chicken	pan-fried vegetables
22/02/1995	soybean curd croquette, deep-fried horse mackerel	grilled Spanish mackerel	hamburger with winter vegetables
23/02/1995	chicken and taro *nimono*	shrimp with rice *au gratin*	pan-fried vegetables Chinese style
24/02/1995	chicken with bacon and potatoes	soybean curd Chinese style	grilled fish
27/02/1995	minced chicken with bread stuffing	beef steak	*nimono*
28/02/1995	grilled shrimp	beef pan-fried Chinese style	*nimono* with dried-freeze soybean curd and vegetables

Source: author's fieldwork

general policy was symbolically represented by the slogan "Rich country, strong army" (*fukoku kyōhei*). From the very beginning of its existence the new regime undertook serious measures in order to modernize its armed forces — the Military Affairs Ministry was set up in 1869; a decree ordering all domains to adopt the French model for their land forces and the English model for their naval forces was issued in 1870; separate army and navy ministries were established in 1872; and the Conscription Law was promulgated in 1873. By 1878 the central government had constructed a single, highly centralized organizational model for both the army and navy (Westney 1987: 176). From the very beginning, the military's position within the new government was quite strong, and military institutions were the first areas of major structural change and the first to adopt Western organizational patterns. As Eleanor Westney phrased it, "the military led the way in changing Japanese society" (1987: 188), and diet was no exception.

The leaders of the Imperial Army and Navy quickly realized that food was an important component of the modern military, and the improvement of the appalling physical condition of the conscripts through nutrition was regarded as an essential part of the government's modernization program. In this respect, the Japanese leaders did not differ from their counterparts in the West, who, at the same time, sought nourishing and cheap food for their armies (Finlay 1995: 53). Military experts believed that standardized rations would improve military planning, and enhance the strength of the troops. As meat was generally considered essential to military diets, this issue received particular attention in Japan, considering the fact that the Japanese were basically not meat-eaters (Harada 1993).

The beginning of the modernization of army feeding goes back to 1868, when the Bureau of Naval Affairs, in an official notification to each province, ordered the daily food ration to be 1.08 litre (6 *gō*) of rice and an allowance of 1 *shu*[13] for the dishes to accompany rice. This was the first measure taken in order to create a uniform modern army diet based on the Western model. In 1871, along with the formation of the Imperial Guard, a system of military catering was established (Westney 1987: 176). The new system replaced the existing tradition of contracting professional caterers to deliver soldiers' meals to the units, and marked the beginning of the era of army catering (Yamashita 1996). This change created the necessity of developing an entire network for distributing and preparing food for the troops within the military structure. With the creation of the draft army in 1873, it was announced that the ration would be 1.08 litres of rice and an

allowance of 6 *sen* and 6 *rin* per soldier daily (Yamashita 1995: 126–127). Under the 1871 New Currency Regulation (*Shinka jōrei*), a centralized monetary system was introduced in Japan, establishing yen as the basic unit of currency. A hundred *sen* constituted one yen, and 1 *rin* was one tenth of a *sen*. The use of *shu*, *zeni* and other units that had been used during the premodern period was soon discontinued.

The new regulations concerning army catering meant that the budget for side dishes was determined by the central authorities, but the content of the menus was left entirely up to the accountant of each unit. Until around the 1920s, the army leadership issued virtually no suggestions with regard to the preparation of combat meals. The lack of guidance and experience in mass catering, a negative attitude of commanders toward the importance of food quality for their units, and the low esteem of cooking as an activity to be carried out by a soldier were responsible for the very poor quality of the army diet well into World War I (Ishiguro 1926).

A serious transformation of army catering began in the first years of the 1920s, and was initiated by a group of officers from the Army Provisions Depot led by the First Army Accountant, Marumoto Shōzō (1886–1961). The Depot began to carry out extensive research, which aimed to develop modern catering techniques and convenient cooking equipment. At the same time, a large-scale educational program for army cooks was initiated (Yamashita 1996). In the first place, new combat menus were invented. From the first decade of the twentieth century, new high-incalorie and economical recipes began to be included in military periodicals, and the first military cookbooks were published. From the inspiration of dishes served in cheap Western-style restaurants known as *yōshokuya*, hybrid Japanese-Western dishes were incorporated into army catering (see List I). After 1918, Chinese-Japanese dishes were also included in military menus. These were inspired by food served at cheap eateries run by Chinese immigrants, which became popular in Japanese cities from the second decade of the twentieth century onwards (Ishige 2000).

In cooperation with the Army Ministry, the Army Provisions Depot devoted much attention to compiling cooking manuals for military catering personnel. Under the Depot's supervision, instructors were sent to advise divisions throughout the country on dietary matters, and experienced cooks were dispatched to the units stationed in Korea, China, Manchuria, Siberia and Sakhalin (Egawa 1929). In the mid-1920s, the Army Provisions Depot also started cooking courses for army caterers. Such courses, organized by

List I: Hybrid Japanese-Western dishes served at the Japanese Imperial Army in the 1920s

Nikumeshi (Meat Rice): Boiled rice mixed with beef, burdock root and leek simmered in soy sauce with sugar.

Hikiniku aburayaki (Hamburger Steak): Minced beef mixed with chopped onions and salt, shaped in flat dumplings, fried in lard.

Furai (Fries): Fish (if big, a piece of fish) seasoned with pepper and salt, soaked in flour and egg-yolk, covered with bread-crumbs, and deep-fried in lard.

Katsuretsu (Cutlet): Flat piece of beef, pork or chicken seasoned with pepper and salt, soaked in flour and egg yolk, covered with bread crumbs and deep-fried in lard.

Korokke (Croquette): Mixture of minced canned salmon, mashed boiled potatoes, fried chopped onions, flour, salt and pepper, formed in balls, dipped in egg yolk and bread crumbs and deep-fried in lard. Variations with different kind of fish, or with minced meat possible.

Buta karēni (Curried Pork Stew): Pork and bamboo shoots cut in small pieces, and simmered in garden peas in a small amount of water and thickened with starch. Seasoned with salt, sugar and curry powder. Variations with potatoes, carrots, onions or dried peas possible.

Kanpan kayujiru (Ship's biscuit gruel): Ship's biscuits crushed into pieces and boiled in water with sugar and salt.

Uo sarada (Fish Salad): Pieces of steamed fish and boiled bulb vegetables dressed in a sauce made of flour, lard, vinegar and sugar.

Dōnatsu (Doughnuts): Ring-shaped dough made of flour, sugar, eggs, salt and baking powder, deep-fried in lard. (Rikugun ryōmatsu honshō 1924)

the Depot, included a great deal of nutritional information. For example, during the second Military Catering Course, which took place in Tokyo between 23 January and 7 March 1928 (45 days), next to cooking lessons the following theoretical lectures were delivered:

Introduction to Nutrition (*Eiyō gairon*) — 5 times[14]
Food Knowledge (*Shokumotsu chishiki*) — 15 times
Introduction to Cookery (*Chōri gairon*) — 18 times
Catering Management (*Suiji kanri*) — 4 times
Preparation of Menus (*Kondate chōsei*) — once
(*Ryōyū* 3 [4]: 80–93, Rikugunshō 1941)

Dietary reforms reached the Imperial Japanese Navy much earlier. The outbreak of beriberi through the 1870s led to the establishment in 1883 of the Beriberi Research Committee (*Kakkebyō chōsa iinkai*). One of the individuals involved in the work of the committee was the Director of the Tokyo Naval Hospital and the Head of the Bureau of Medical Affairs of the Navy, Takagi Kanehiro (1849–1920). Takagi, who had studied anatomy

and clinical medicine at St. Thomas Hospital Medical College in London for five years, turned his attention to the fact that beriberi was a typically "Asian" disease, and linked the illness to a diet with a very low protein content (Bartholomew 1989: 78–79). In 1884, the personnel of the experimental ship Tsukuba, who, under Takagi's suggestion, were fed with a diet comparable to that of the British Navy — bread, ship biscuits, salted meat, and beans — reached the destination of Hawaii with no beriberi patients on board. This experiment convinced the Naval leadership that Takagi had found a solution to the beriberi problem. Despite the fact that Takagi's assumption of the link between beriberi and protein intake was incorrect, the measures he took in order to fight beriberi proved effective.[15] Moreover, Takagi was the first researcher to convincingly link beriberi to dietary factors.

Immediately after Takagi's successful experiment, the Naval Ministry ordered all units to shift to a Western-style diet. In 1890, the system of central distribution of ingredients by the Munitions Bureau of the Naval Ministry (*Kaigunshō gunjū kyoku*) replaced the allowance system that had been introduced in 1872 (Kikuchi 1930: 24–25). This marked a new era in naval feeding in Japan, for the Munitions Bureau now determined in detail the kinds and amounts of foodstuffs that were to be consumed aboard the Japanese fleet. This unified system of feeding in the navy resulted in better nourishment than in the army.

Nonetheless, a new wave of reforms reached the navy again after World War I. In 1921, the Military Diet Research Committee was established under the initiative of the Head of the Bureau of Medical Affairs (*Kaigunshō imukyoku*). Among other activities, the committee conducted comparative research into the nutritional value of meat and fish, and worked on the development of a diet for submariners and the air force (Kikuchi 1930: 25–26). The implementation of nutritional research and the modernization of navy cooking took place mainly in the Navy Accounting School (*Kaigun keiri gakkō*). By the 1930s, the menus served aboard the Japanese fleet were very similar to those served in the army.

The distinctive features of the new dishes served in the army and navy was their high calorific value, relatively high protein content, and a strongly non-Japanese character. These characteristics clearly reflected two major tendencies in the food policy of the Japanese armed forces. Firstly, the military strove for the development of highly economized and rationalized menus, which meant a high implementation of nutritional

science. The stress on the supply of energy and protein was distinctive of the early twentieth-century science of nutrition. Serving nourishing and filling meals at the lowest possible cost was the general rule of military cookery, and the adoption of Western and Chinese recipes made this possible. The Japanese premodern diet was too lean to fulfill the energy requirements within the provided budget. Meat, lard, potatoes, onions, cabbage, summer squash and flour were the foreign foodstuffs that were most extensively used by the Japanese army. Non-Japanese cooking techniques, such as deep-frying, pan-frying and stewing, also diffused into the military kitchen. High-calorie fried dishes were a cheap source of energy, and also a method of using up "ingredients of poor quality" (Rikugun ryōmatsu honshō 1924: 204). Stews could "turn tough meat into a relatively tasty meal" (Rikugun ryōmatsu honshō 1924: 110). Water could be used instead of egg yolk for coating fries, and the amount of meat in stews could be reduced. *Mushipan* (steamed bread) was economical, because other inexpensive ingredients could possibly be added to the dough (Rikugun ryōmatsu honshō 1932: 49). Adding curry powder to Japanese-style *nimono* (simmered dishes) and noodles made them less bland, even if the ingredients were flavourless. Curry powder also helped to hide the bad odor of fish and meat. Thus, the incorporation of Chinese and Western dishes into the military diet not only resulted in enriched nourishment, but also was economical and convenient.

Secondly, the armed forces experienced problems in making military menus uniform in order to suit the taste preferences of soldiers hailing from all over the country. De-Japanization proved to be the perfect solution, for the Japanese men were unfamiliar with the taste of Western and Chinese food. Next to the problem of proper nourishment, in the scientific sense of providing a sufficient supply of calories, protein and other nutrients, the matter of bridging regional gaps was given much attention by the armed forces. Along with the quality of food acquiring importance in the military catering of the early twentieth century, regional differences in taste became a considerable problem for army and navy cooks. Recruits hailed from all over the country, and the food they consumed in civilian life varied significantly. For example, during the experiments conducted by Kawashima Shirō (1895–1986) from December 1936 to January 1937, 68 percent of soldiers participating in the experiments found the taste of *miso* soup used during the operations in China to be good, 22 percent found it too sweet, and 10 percent too salty (Kawashima 1980: 64).

The army tried to overcome regional differences in diet by including

dishes originating from different areas, such as *hokkaini* (seafood and soybean stew)[16] from northern Japan and *satsumajiru*[17] from Kyūshū, in army meals (Rikugunshō 1941: 89, 134). Efforts were also made to determine the "average taste" of each unit. The Army Provisions Depot developed methods to uncover the taste preferences of the majority of soldiers in a given unit. The fragment below derives from a manual compiled by the Depot around 1930.

> In the case of military cookery, where in one kitchen meals for several hundred, and even for more than thousand people are prepared, the flavouring can by no means be adapted to the taste preference of each soldier. However, this does not mean that the aspect of taste is completely ignored. Of course, it is impossible to satisfy different likes and dislikes as to minute details, but it is possible to prepare food with a taste that is close to the majority of soldiers. In this way the aim could be reached that, just as the age and bodily exercise of all soldiers are similar, so too can they have relatively similar taste preferences. For this reason, the problem is how to cook meals suited to the taste of as many soldiers as possible. The following points should be considered:
>
> 1. determining the "standard taste" of the military unit
>
> First, I shall explain with the example of *miso* soup how to determine the "standard taste" of the unit, or in other words, which taste is favored by the majority of privates. Prepare three sorts of *miso* soup containing different amounts of *miso* and let it be tested by as many soldiers as possible (when selecting soldiers, take into consideration their occupation before entering the military). The "standard taste" of *miso* soup (the amount of miso to be used) will be the taste most favoured of the three…. The amount of soy sauce and sugar used for cooking fish, and the quantity of vinegar used in *sunomono*[18] can be determined in the same way. In addition to this, according to the same method it is possible to learn about the salt taste of each military unit, and to compare it with the salt taste of the entire army. (Rikugun Ryōmatsu Honshō ca. 1930: 102–106)

However, despite various efforts to make Japanese dishes served in the military uniform, the inclusion of modified non-Japanese (Western and Chinese) dishes into military menus turned out to be the best solution to the problem of regional taste differences. These dishes were not only hearty, relatively inexpensive and convenient to make, but also unknown, and therefore relatively uncontroversial for Japanese palates. It must have been somehow easier for recruits to get used to a completely new taste than to change one acquired at home. Sources indicate that the military men,

indeed, quickly learned to like non-Japanese dishes. By serving them, army and navy cooks evaded regional and social gaps in the military, and by the same token speeded up the process of nationalizing Japanese food tastes.

In 1936, for example, the catering division of the First Guards Infantry Regiment stated that "Westernized dishes with a high fat content, such as deep-fried dishes, meat dishes and salads" were most enthusiastically welcomed by all 1800 members of the regiment (Konoe hohei daiichi rentai suiji bu 1936: 508).[19] The opinion of navy personnel was similar. A study conducted by the accounting division of the second squadron of the navy from March to September 1935 on all battleships of this squadron revealed that the navy personnel had a preference for non-Japanese meat-dishes and dishes with a high fat content (see Table II).

The research study recorded 495 recipes that were chosen by navy cooks as the most popular ones among sailors during the aforementioned period. All the recipes were divided into three categories: Japanese-style, Chinese-style, and Western-style, and almost half of the favorite navy dishes turned out to be non-Japanese. Moreover, more than half of the recipes classified as "Japanese" contained beef, pork or other ingredients that had not been traditionally used in Japanese kitchens, or that used non-Japanese cooking methods, such as stir-frying and deep-frying of breaded fish or meat. Eighty percent of the recipes classified as Chinese-style contained meat.

The fact that the Japanese military fed its troops on novelties, and that these dishes were among the favorites, is extraordinary, considering that the this was against the general rule of military caterers elsewhere, who precisely avoided serving unknown food.

Table 2: Classification of the dishes most favoured by navy personnel, 1935

JAPANESE DISHES	277	56%
beef/pork dishes, stir fried or deep-fried dishes	87	17.5%
dishes with Western ingredients	54	11.0%
other dishes	136	27.5%
FOREIGN DISHES	218	44%
Chinese dishes	93	19%
Western dishes	125	25%
TOTAL	495	100%

Source: Kaigun shukeika 1936

> One of the cardinal rules of military caterers throughout the world is to give the troops familiar food. The last thing the provincial people who comprise the bulk of the enlisted ranks want — the thinking goes — is to experiment with food. In the American armed forces, this meant eschewing regional and foreign dishes and sticking to the kind of basically Midwestern, "All-American" cooking that had become the national norm. (Levenstein 1993: 91)

The nutritional policy of the Japanese armed forces in the early twentieth century was based on a totally different attitude. As practically no "all-Japanese" cooking existed in Japan at that time, and proper nourishment could be achieved economically only by adopting non-Japanese dishes instead of providing traditional food, Japanese military caterers chose to serve hybrid culinary experiments. We may surmise that the fact that these hybrids were served with a mixture of rice and barley eased the resistance towards the unknown food. Rice was the staple of choice for the Japanese (Ohnuki-Tierney 1993), but the conscription experience meant for many farmers' sons and other drafted members of the underclass the luxury of having rice three times a day.[20] Resistance to bread-based meals, which were regularly served in the army in order to accustom the troops to unknown foods that they might encounter outside Japan, sustains this presumption.

By serving non-Japanese food, the military caterers not only improved combat menus, but also greatly influenced the Japanese diet as a whole. Along with Japanese-Chinese-Western dishes becoming the favorites on military menus, the army and navy cooks undermined regionalism and speeded up the process of nationalizing and homogenizing Japanese food tastes. It should be borne in mind that these two consequences were not the final aims of the military cooks. They simply tried to find pragmatic solutions for the various problems of mass cookery in the armed forces.

Popularizing a Military Diet

From their outset in the early Meiji era (1868–1912), the modern Japanese armed forces were separated from civilian society by incorporating Western-style uniforms, beds, cigarettes and other objects totally alien to Japanese daily life. Although this gap narrowed as the modernization and Westernization of the country progressed, it remained the case that in the early twentieth century, military food in all aspects was more nourishing in terms of the amount of protein and calories it provided than the meals consumed by working-class civilian families. The middle- and the lower

classes in Japan fell behind the military's nutritional standards. With the exception of occasional visits to cheap Western-style restaurants, civilian menus were also much less Westernized than those of the navy and army.

Nevertheless, the general public was not left uninformed about dietary developments in the Japanese armed forces. In the 1930s especially, articles describing various military activities, including dietary practices, regularly appeared in mass-circulation magazines. The pictorial weekly news magazine *Asahigurafu* (Asahi Pictorial) featured various scenes of daily life in military schools or on board the Japanese fleet (Figure 1). For example, the March 1930 article "Life aboard a warship" included numerous photographs of the daily activities of navy personnel. In December of the same year, *Asahigurafu* showcased the daily life of an artillery unit, including several photographs of young men bathing, training, cleaning and eating. In 1934, in the same magazine, the catering vessel "Mamiya" was introduced to the public. The 350-man on-board staff produced daily 1,000 kilograms of noodles, 14,000 bottles of lemonade, 2,000 portions of ice-cream, and fresh baked bread for 7,500 people (Figure II).

The general public was informed about the military diet through exhibitions as well. For example, between March 23 and April 30, 1929, a public food exhibition was held at the annex of the Tokyo Museum. The exhibition addressed issues such as agricultural production, fisheries, the food industry, food preservation, and, of course, the military nutritional policy and military catering. The entrance fee was 20 *sen*, which translated to half the price of a cinema ticket or a little more than the entrance fee to the zoo. Reduced fees were available for children and soldiers, and primary school students in groups could enter free of charge. In total, the exhibition was visited by 73,365 people, making an average of almost two thousand visitors per day (Ryōyūkai 1929: 6, 52). Besides the exhibition itself, various additional attractions were organized on its premises, such as lectures and cooking demonstrations (see List II), often performed by military personnel.

Ryōyūkai (lit.: Provision's Friends Association) — the organizer of the exhibition — played until 1945 a critical role in enlarging public awareness concerning nutrition. Established in 1925 at the initiative of a group of officers from the Army Provisions Depot, Ryōyūkai was, in the first place, to act for the sake of improvement of military catering and mass catering at schools and factories. Eventually, it also became involved in activities aimed at nutritional education (Yamashita 1996). It is not surprising that the timing of the establishment of Ryōyūkai coincided with similar

List II: Cooking demonstrations at the 1929 Food Exhibition

Home canning
Easy-to-make homemade bread
Vegetables and how to use them
Fruit recipes
Mutton recipes
Cooking with canned food
Military croquettes
How to make soft drinks
About fat dishes
Camp cookery
How to make doughnuts
Cooking for the sick
Dishes with vitamins
Military cookery
Nourishing dishes
(Ryōyūkai 1929)

developments in Europe. The Japanese professionals were aware of the rise of the so-called "newer knowledge of nutrition," following the discovery of vitamins, and the new initiatives of the League of Nations and other organisations towards the improvement of mass feeding and public nutrition. This continuity with the rest of the world underlined the modern character of the army's reforms.

Officially, Ryōyūkai was neither supported financially by the military, nor was it a part of the military structure. Nevertheless, its headquarters was established at the Central Army Provisions Depot in Tokyo, and its projects were supervised by the Depot's personnel. As of 1927, the Board of the Association was formed by forty members of the intellectual and political elite, such as the director of the Livestock Bureau and the director of the Fisheries Bureau of the Ministry of Agriculture and Forestry, the head of the Practical Education Bureau of the Ministry of Education, the head of the Hygiene Bureau of the Home Ministry, the rector of the Tokyo Agricultural University, and the director of the National Institute of Nutrition. The military leadership was particularly well represented on the board, by, among others, the chief of the Munitions Bureau of the Naval Ministry, the vice-minister of the Army, the head of the Medical Bureau of the Army Ministry, the director of the Army Medical School, the Superintendent General of the Army, and the director of the Naval Accounting School (*Ryōyū* 2 [7]: 44–45).

Ryōyūkai's activities were financed mainly by the food industry. Names such as Masuda Farming, Tōyō Canning, Morinaga Confectionery, Ajinomoto, and the Japan Freezing Association appear on the list of sponsors of events that were organized under the auspices of Ryōyūkai. It is hardly surprising that the Japanese food industry provided financial support for the association. Orders for the army and the navy were essential for the growth of the Japanese food industry prior to World War I. In order to reach the civilian market, it was in the industry's vital interest to popularize military catering and the canned, frozen and processed ingredients it relied on. Ryōyūkai provided a perfect opportunity for the state, the military, and industry to interact while pursuing their own independent goals.

Ryōyūkai made efforts to transmit the military's ideas on healthy and economical catering to the general public in the form of publications, lectures and exhibitions. The military's experience in feeding large numbers of people in a hygienic, nourishing and economical way was popularized through the magazine *Ryōyū* (Provisions' Friend), published monthly for almost twenty years, starting in 1926. *Ryōyū* devoted much of its space to issues of hygiene, nourishment, and the global food supply, and disseminated useful tips about the improvement of the variety and quality of food served at schools, hospitals, and factory canteens. Recipes of dishes most suited for mass catering, designed by the headquarters of the Army Provisions Depot, were published in nearly every edition of the magazine, along with model menus like the ones listed below.[21]

Sunday: Beef and giant radish *nimono* / soybean-curd soup
Monday: *Oden*[22] with pork, flavored with *miso*
Tuesday: Pork Chinese-style / boiled potatoes
Wednesday: Fresh fish and giant radish *nimono*
Thursday: Stew (beef, potatoes, onions, and carrots)
Friday: Buckwheat noodles with beef, leaks, and *aburaage*[23]
Saturday: Fresh fish *karaage*[24]
(*Ryōyū* 1 [10]: 60–62, 1926)

Sunday: Vegetable omelette
Monday: Fresh fish boiled in curry sauce with onions, potatoes and carrots
Tuesday: Rice with vegetables, pork and soybean curd, flavored with soy
Wednesday: Broiled fresh fish
Thursday: Fresh fish *tenpura*[25]
Friday: *Nimono* (beef, carrots, soybean sprouts and *konnyaku*[26])
Saturday: Sweet-sour bean-noodles with fish and cucumber
(*Ryōyū* 4 [6]: 44–46, 1929)

Sunday: Pork boiled in curry sauce with onions, potatoes and carrots
Monday: *Nimono* (cockle, carrots, taros, and lotus root)
Tuesday: Stew (salted fish, potatoes, carrots and onions)
Wednesday: Rice with green peas
Thursday: Stir-fried vegetables Chinese style
Friday: Deep-fried canned-fish balls
Saturday: Fresh fish and green peas *nimono*
(*Ryōyū* 5 [5]: 55–57, 1930)

A characteristic feature of these menus is the use of fat and meat to a greater extent than was the case in an average Japanese household at that time. The same holds for the use of Western foodstuffs such as potatoes and onions, and Western seasonings such as curry powder. Incorporation of Chinese-style and Western-style recipes into Japanese home menus was not yet widely practiced at that time.

Boiling and deep-frying seem to have been the two cooking techniques most often recommended by the magazine, probably due to their convenience for the purpose of mass catering. It should also be pointed out that the menus featured in *Ryōyū* were low-budget — the price of each dish oscillated around an average of 8 *sen*. By comparison, it should be noted that a middle-range restaurant at the Isetan department store served curry on rice and sandwiches at that time for 25 *sen* and chicken rice for 30 *sen*. The lower end of dining establishments served curry on rice for 10–15 *sen* and a bowl of *rāmen* (noodles in soup, at the time known under the name Shina soba) for 10 *sen* (Shūkan Asahi 1987: 29, 41).

Although generally speaking, Ryōyūkai focused on the improvement of mass catering, whether military or civilian, it did not entirely ignore home cookery. For example, *Ryōyū* devoted a number of pages in each issue to advice for housewives on healthy and economical cooking. Aside from *Ryōyū*, articles written by military dieticians, with the indication that they worked for the Army Provisions Depot, also appeared in specialized magazines targeted at women. For example, *Ie no Hikari* (Light of the Household) and *Shufu no Tomo* (Housewife's Friend) regularly carried articles dealing with food written by military dietitians. *Shufu no Tomo* was a monthly magazine with an urban-middle-class readership, and *Ie no Hikari* was targeted at farm households. Kitayama Yoshio and Mitsuta Momoji, both employed by the Army Provisions Depot, were regular writers for these two magazines.

From the late 1930s onwards, the spirit of efficiency, economy, and nourishment, which were originally characteristic of military cookery,

gradually began to prevail in civilian mass catering as well. State propaganda aimed at popularizing the military model of economical and nourishing cooking in every Japanese home.

The growing food shortage was an important factor responsible for the popularization of the rational military diet. Ironically, at the same time that the new, more Japanese-sounding names for baking powder and wheat flour were being invented in order to meet the requirements of the nationalistic language policy of the government, the highly Westernised military diet itself was spreading among the civilian population. For example, the diffusion of the custom of eating bread and potatoes as a staple was very closely related to the shortage of rice, starting in the mid-1930s. As will be explained in the following section, the dissemination of a military diet among the Japanese population continued for many decades to come.

Conclusion: The State, the Military and the Japanese Diet

The development of Japan as a nation-state, and the increasing involvement of Japan in modern mass warfare, helped to generate state intervention in public health issues. Although the expression "an army marches on its stomach" goes back to the time of Napoleon, the introduction of conscripted armies in modern nation-states affected the problem of nutrition beyond the matter of combat food. The development of Japan as a nation-state, and the increasing involvement of Japan in modern mass warfare, were significant factors that generated state intervention in the issue of public health. Disability and disease in the male working-class population, which formed the bulk of national armies, constituted a serious threat to the state's military power. Therefore, as Japan gradually entered the path of open military confrontation, the improvement in health standards of the nation was crucial for the country's performance on the battlefield.

From its outset, the Meiji (1868–1912) government showed a positive interest in nutrition and propagated the consumption of meat and dairy products according to the Western example. Concrete actions for the sake of increasing the production of Western foodstuffs were undertaken, and the growth of the food industry was encouraged by providing professional advice to pioneering entrepreneurs, and by ensuring governmental orders for their products (Shōwa Joshi Daigaku Shokumotsugaku Kenkyūshitsu 1971: 69, 209, 374). Nevertheless, the Japanese government did not truly get involved in constructive dietary reforms before the end of World War

I, coinciding with similar efforts of other industrializing nations and following the increased attention towards nutrition in the Japanese armed forces.

The latter recognized the importance of dietary modernization relatively early. However, it took several decades before the army and navy bureaucrats realized how much the taste and quality of the food served in the military influenced the strength, the fighting spirit and the morale of the troops, and found a way of implementing innovations into everyday practice. From the 1920s onwards, the powerful dietary influence of the military upon the Japanese population at large became apparent.

Generally speaking, the military's influence on the nation's diet was exerted in two ways. During their three-year conscription, young men acquired a taste for the new Western and Chinese foods introduced by the military. Once they returned home, they spread the lore of new dishes in the furthest corners of the country. At the same time, the military's ideas about a healthy diet were transmitted to the public through popular publications and various educational activities that were carried out throughout the 1930s and 1940s, as discussed earlier. Innovations in civilian mass catering in factories, schools and hospitals were often initiated and even coordinated by the military dieticians and accountants.

The increasing involvement of the military in issues of diet and food supply for the population went hand in hand with the nation's increasing doubt that a political solution could be found for the economic crisis which hit Japan in the late 1920s. By the early 1930s, party government had become associated with impasse or failure abroad and at home. On the contrary, the military enjoyed extreme popularity among the population at that time. In the eyes of much of the population, only the military seemed aware of the kind of problems people faced in their daily lives, and "it was increasingly to the military that the people looked for the solutions they hoped would bring them a better future" (Waswo 1996: 88–89). This overall positive attitude towards the military was favorable for the popularization of military dishes and military nutritional policies, especially in the countryside.

By the late 1930s, non-Japanese dishes such as Western croquettes and curries, and Chinese stir-fries acquired a clear military connotation. As is evidently the case in this advertisement for curry powder (Figure 3), these dishes began to be associated with the strong appeal of the Japanese military, rather than being projected as something foreign. For example, in a 1943 propaganda booklet for children, beef steak and beer appeared

as objects of culinary fantasy for hungry Japanese soldiers stationed abroad.

> Soldiers are gluttons. When they notice a cow passing the battlefield they immediately feel like eating a beefsteak. Or, and this is a slightly dirty story, once they see an urinating horse they recall how they drank beer in the homeland. (Muneta 1943: 121)

The amalgamation of Western foods with the image of the Japanese military was so strong that after 1941, the authorities pushed their consumption despite a general policy of removing Japanese vocabulary of Western origin and Western forms of entertainment from Japanese public life. The militarization of society accelerated the de-Japanization of the Japanese diet, as military concepts encompassed civilian lifestyles (Figure 4). The general public was encouraged, through popular and professional publications, to follow the military's nutritional advice. A multicultural diet, which in the meantime became the hallmark of the military lifestyle, was enthusiastically propagated by the military regime. Moreover, the military education of dieticians and mass caterers acquired a high reputation, and the military models were implemented into civilian settings.

It is important to emphasize that this process has by no means been discontinued since Japan's capitulation. Much has changed in the life of the Japanese people after 1945, but nutrition was one of the areas with the greatest degree of continuity between the wartime and postwar periods. The food-supply situation of the mid-1940s was little affected by Japan's capitulation, and neither was the food rationing system. Generally speaking, the Occupation forces continued the food policy of the wartime government, and efforts towards dissemination and implementation of nutritional knowledge among the population were carried on practically undisturbed. The post-war transformation of the Japanese diet was clearly based on the earlier developments described in this article, with the dietary influence of the military continuing long after the disappearance of the Imperial Japanese Army and Navy from the political arena.

Moreover, the same people who were involved in the activities towards the improvement of public nutrition during wartime continued their efforts after 1945. Cooks, dieticians and accountants educated in the 1920s and 1930s under the leadership of Ryōyūkai for many decades thereafter continued to shape post-war gastronomy, nutritional research, education, and public knowledge concerning food. As Chalmers Johnson, Noguchi

Yukio, Nakamura Takafusa and others have argued (Johnson 1995, Noguchi 1995, Nakamura 1985), the year 1945 is not as great a watershed in Japanese history as is often proclaimed. On the contrary, there is a considerable degree of continuity between the earlier and later years of the Shōwa era (1926–1989). The American occupation provided the opportunity and means for Japanese governmental institutions to make changes that were long overdue, but they by no means revolutionized the existing system. Japan's postwar economy heavily relied upon reforms introduced in the financial sector during the late 1930s. The industries that expanded during the war became the major post-war industries; wartime technology was reborn in the post-war export industries. The same holds for Japanese foodways. Much of what is considered in contemporary Japanese diet to be a product of postwar reforms and the 1960s economic growth in fact originated in the changes that began during the reign of the totalitarian wartime regime of the 1930s and 1940s. Westernized military menus were reproduced in restaurants and canteens where military cooks and dieticians found employment after 1945. Nutritional research continued in institutes with new names but unchanged personnel, and the food industry for decades thereafter marketed new products that had originally been designed for air squadrons and combat divisions. Gradually, the militaristic connotation of the food and the innovations implemented by the armed forces disappeared, amalgamated into the mainstream civilian culture of the post-war era.

There should be no illusion that the military leadership was not involved in propagating a healthy diet among the civilian population for its own militaristic purpose. It was obvious that the country's military capacity largely depended on healthy and strong civilians. Daily Life Improvement Campaigns (*Seikatsu kaizen undō*) supervised by the Ministry of Education, and other measures taken by the state in the early twentieth century in order to modify Japanese eating habits, were indeed part of the policy of "social management" employed for the sake of the totalitarian state (Garon 1997). On the other hand, however, it does not seem proper to classify the phenomenon of increased involvement in public nutrition as being solely the result of militarism and the state's totalitarian inclinations. The feeling of personal responsibility for the dietary condition of the population, and the urge for improvement in that dietary condition, must have certainly occupied the minds of military dieticians and other dietary reformers of the time. In any case, regardless of motives, it is evident that the catering reforms and nutritional policies of the military during the

wartime period exerted a powerful impact on contemporary Japanese food habits. One issue that needs further examination is whether and to what extent the Japanese military diet affected the foodways of the peoples under Japan's colonial domination. Such investigation may provide us with yet another example of the role of war as "the single most powerful instrument of dietary change in human experience."

Notes

1. See Liscutin and Haak 2000, Ashkenazi and Jacob 2000, and Cwiertka 1998a, 1998b, 1999 for a more detailed account of the modernization of Japanese foodways.
2. This is mainly due to the fact that the first half of the twentieth century is largely neglected as far as the study of Japanese foodways is concerned. The majority of research in English deals with contemporary issues (see for example, Allison 1991, Ashkenazi 1990, 1997, Ashkenazi and Jacob 2000, Bestor 1999, Ohnuki-Tierney 1997, Richie 1985, and Smith 1992).
3. See Adachi 1982, Harada 1995, Ishige et al. 1989, Watanabe 1986. Higuchi, for example, devotes less than three pages of his 295-page book to the issue of food during World War II (Higuchi 1987: 282-284).
4. See Myers and Peattie 1984, Peattie 1988, and Duus, Myers and Peattie 1989.
5. Japan's role in the modernization of Korea, in particular, has until recently been practically unmentionable and continues to spur emotional reactions (see Shin and Robinson 1999). For example, an intensely emotional discussion followed the author's recent paper presentation at the American Anthropological Association Annual Meeting in Washington D. C. (Cwiertka 2001).
6. A canteen is a snack bar, cafeteria or restaurant attached to a factory or school or other institution, providing meals for large numbers of people.
7. Canteens targeted at female students provide lighter food, with emphasis on salads, fruits and desserts. At male-oriented cafeterias, portions are generally bigger and food is more filling. Deep-fried dishes prevail, along with Western-style stews and Chinese stir-fries.
8. Fermented paste of soybeans and usually either barley or rice, with salt.
9. Simmered food — a major category of Japanese cookery. *Sake*, soy sauce, ginger, *mirin* (sweet liquid flavoring made by fermenting steamed glutinous rice) and *miso* are used as seasonings. All Japanese culinary terms are explained here after Hosking 1996.
10. Luster grilling. Fish, chicken, or vegetables are basted with soy sauce enriched with *mirin* and sugar.
11. Thinly-sliced beef, potatoes, carrots, and onions, simmered with soy sauce.

12. Slices of raw fish and shellfish eaten with a dip of soy sauce and green Japanese horse-radish (*Wasabia japonica*).
13. *Shu* is a premodern monetary unit; 1 shu equals approximately 0.063 yen.
14. The duration of each lecture varied from one to one-and-a-half hours.
15. The effectiveness of Takagi's method is due to the fact that he replaced a diet centered around white rice and pickles with one consisting of wheat, barley, beans, fresh vegetables and meat. As became evident by the 1920s, vitamin B deficiency — which derived from the consumption of white, polished rice with little dietary supplement — was the direct cause of the disease. Most scientists of Takagi's generation assumed that beriberi was of bacteriological origin.
16. Incidentally, the use of tomato sauce for the preparation of *hokkaini* indicates that the dish was at least partly constructed in modern times.
17. Hearty soup containing chicken on the bone with lots of vegetables and flavored with *miso*.
18. Vegetables and/or seafood dressed in vinegar flavored with soy sauce.
19. The term "salad" does not refer here to a green salad, but rather to potatoes, carrots and other vegetables (sometimes with meat or fish) dressed in mayonnaise-based sauce.
20. Grains other than rice, such as millet and buckwheat, were the staples of the Japanese poor. They consumed rice, or a rice-barely mixture, only on special occasions.
21. These dishes (with a few exceptions) were to be served with boiled rice (or a rice-barley mixture), *miso* soup and pickles.
22. A variety of ingredients put to simmer in fish bullion, served hot with mustard.
23. Soybean curd thinly sliced and deep-fried.
24. A method of deep-frying. The ingredients are either deep-fried as they are, or more usually first dusted with seasoned flour. It is a Chinese technique.
25. Seafood and vegetables deep-fried in batter.
26. A gelatinous paste made from the root of the plant known as "elephant's foot" or "devil's tongue" (*Amorphophallus rivieri* var. *konjac*)

References Cited

Achaya, K.T. 1994. *The Food Industries of British India*, Delhi: Oxford University Press.

Adachi, Iwao. 1982. *Nihongata shokuseikatsu no rekishi* (A history of Japanese diet). Tokyo: Nōsangyoson Bunka Kyōkai.

Allison, Anne. 1991. "Japanese Mothers and *Obentōs*: The Lunch-Box as Ideological State Apparatus." *Anthropological Quarterly* 64 (4): 195–208.

Andreski, Stanislav. 1968. *Military Organization and Society*. London: Routledge and Kegan Paul.

Ashkenazi, Michael. 1990. "Anthropological Aspects of the Japanese Meal: Tradition, Internalization, and Aesthetics." In A. Boscaro et al., eds., *Rethinking Japan, Volume II*. Japan Library Limited, pp. 338–349.

———. 1997. "The Can-nonization of Nature in Japanese Culture: Machinery of the Natural in Food Modernization." In P.J. Asquith and A. Kalland, eds., *Japanese Images of Nature: Cultural Perspectives*. Richmond: Curzon Press, pp. 206–220.

Ashkenazi, Michael and Jeanne Jacob. 2000. *The Essence of Japanese Cuisine: An Essay On Food and Culture*. Richmond: Curzon Press.

Bartholomew, James R. 1989. *The Formation of Science in Japan: Building a Research Tradition*. New Haven: Yale University Press.

Bestor, Theodore. 1999. "Constructing Sushi: Food Culture, Trade, and Commodification in a Japanese Market." In S. O. Long, ed., *Lives in Motion*. Ithaca, NY: Cornell East Asia Series No. 106, pp. 151–90.

Cwiertka, Katarzyna. 1998a. "A Note on the Making of Culinary Tradition — An Example of Modern Japan." *Appetite* 30: 117–128.

———. 1998b. "How Cooking Became a Hobby: Changes in Attitude Towards Cooking in Early Twentieth-Century Japan." In S. Fruhstuck and S. Linhart, eds., *The Culture of Japan as Seen Through Its Leisure*. New York: SUNY Press, pp. 41–58.

———. 1999. "Culinary Globalization and Japan." *Japan Echo* 26 (3): 52–58.

———. 2001. "Japan and Dietary Modernization in Colonial Korea." Paper presented at the American Anthropological Association Annual Meeting, Washington D.C., November 29.

Cwiertka, Katarzyna with Boudewijn Walraven, eds. 2002. *Asian Food: The Global and the Local*. Richmond, UK: Curzon Press.

Duus, Peter, Ramon H. Myers, and Mark R. Peattie, eds. 1989. *The Japanese Informal Empire in China, 1895–1937*. Princeton, NJ: Princeton University Press.

Egawa, Tsuneo. 1929. "Rikugun no ryōshoku" (Army diet). In Ryōyūkai, ed. *Gendai shokuryō taikan*. Tokyo, pp. 564–566.

Finlay, Mark R. 1995. "Early Marketing of the Theory of Nutrition: The Science and Culture of Liebig's Extract of Meat." In H. Kamminga and A. Cunningham, eds., *The Science and Culture of Nutrition, 1840–1940*. Amsterdam-Atlanta: Rodopi., pp. 48–74.

Garon, Sheldon. 1997. *Molding Japanese Minds: The State in Everyday Life*. Princeton, NJ: Princeton University Press.

Goody, Jack. 1982. *Cooking, Cuisine and Class: A Study in Comparative Sociology*. Cambridge: Cambridge University Press.

Harada, Nobuo. 1993. *Rekishi no naka no kome to niku* (Rice and meat in history). Tokyo: Heibonsha.

———. 1995. *Kinomi to hanbāgā: Nihon shokuseikatsushi no kokoromi* (From nuts

to hamburgers: A history of Japanese diet). Tokyo: Nihon Hōsō Shuppan Kyōkai.

Higuchi, Kiyoyuki. 1987. *Shinpan nihon shokumotsu shi: shokuseikatsu no rekishi* (A history of Japanese food, new edition: History of diet). Tokyo: Shibata Shoten.

Hosking, Richard. 1996. *A Dictionary of Japanese Food*. Tokyo: Charles E. Tuttle.

Ishige, Naomichi. 2000. "Japan." In *The Cambridge World History of Food*, vol. 2. Cambridge: Cambridge University Press, pp. 1175–1183.

Ishige, Naomichi et al., eds. 1989. *Shōwa no shoku* (Food of the Showa era). Tokyo: Domesu Shuppan.

Ishiguro, Tadanori. 1926. "Rikugun sōsetsu jidai no heishoku" (Diet in the founding days of the army). *Ryōyū* 1(9): 68–71.

Johnson, Chalmers. 1995. *Japan: Who Governs?* New York: Norton.

Kaigun shukeika. 1936. *Kenkyū kondate shū* (Collection of research menus).

Kamminga, Harmke and Andrew Cunningham, eds. 1995. *The Science and Culture of Nutrition, 1840–1940*. Amsterdam-Atlanta: Rodopi.

Kawashima, Shiro. 1980. *Jippei 50 nin o motteseru gun'yō ryōshoku no eiyōjintai jikken no kenkyū* (Experimental study of military provisions for 50 soldiers). Tokyo: Tōmeisha

Kikuchi, M. 1930. "Kaigun heishoku ni tsuite" (About navy diet). *Ryōyō* 5 (5): 24–26.

Konoe hohei daiichi rentai suiji bu. 1936. "Heitai san no yorokobu heiei ryōri" (Favorite military food). *Shufu no Tomo* 5: 508–511.

Levenstein, Harvey. 1993. *Paradox of Plenty: A Social History of Eating in Modern America*. Oxford: Oxford University Press.

Liscutin, Nicola and Rene Haak, eds. 2000. *Japanstudien 12*, München: IUDICIUM Verlag.

Mintz, Sydney W. 1985. *Sweetness and Power: The Place of Sugar in Modern History*. New York: Penguin Books.

———. 1996. *Tasting Food, Tasting Freedom: Excursions into Eating, Culture, and the Past*. Boston: Beacon Press.

Muneta, Hiroshi. 1943. *Heitai to kodomo* (Soldiers and children). Tokyo: Sōeidō.

Myers, Ramon H. and Mark R. Peattie, eds. 1984. *The Japanese Colonial Empire, 1895–1945*. Princeton, NJ: Princeton University Press.

Nakamura, Takafusa. 1985. *The Economic Development of Modern Japan*. Tokyo: International Society for Educational Information.

Noguchi, Paul. 1994. "Savor slowly: Ekiben — the fast food of high-speed Japan." *Ethnology* 33 (4): 317–330.

Noguchi, Yukio. 1995. *1940 nen taisei: saraba 'senji keizai'* (The 1940 system: Farewell to the 'wartime economy'). Tokyo: Toyo Keizai Shinposha.

Ohnuki-Tierney, Emiko. 1993. *Rice as Self: Japanese Identities through Time*. Princeton, NJ: Princeton University Press.

———. 1997. “McDonald’s in Japan: Changing Manners and Etiquette.” In J. Watson, ed., *Golden Arches East: McDonald’s in East Asia*. Stanford, CA.: Stanford University Press, pp. 161–182.

Peattie, Mark R., ed. 1988. *Nan’yo: The Rise and Fall of the Japanese in Micronesia, 1885–1945*. Honolulu: University of Hawaii Press.

Pitte, Jean-Robert. 2000. “The Rise of the Restaurant.” In Jean-Louis Flandrin and Massimo Montanari, eds. (English ed. by Albert Sonnenfeld), *Food: A Culinary History from Antiquity to the Present*. London: Penguin Books, pp. 471–480.

Richie, Donald. 1985. *A Taste of Japan*. Tokyo: Kodansha International.

Rikugun ryōmatsu honshō. 1924. *Guntai chōri sankōsho* (Military catering manual). Tokyo.

Rikugun ryōmatsu honshō. ca. 1930. *Guntai chōri sankōsho* (Military catering manual). Unpublished manuscript.

Rikugun ryōmatsu honshō. 1932. *Shōwa nananen chōri kōshū haifu shorui* (Proceedings of 1932 catering workshop). Unpublished manuscript.

Rikugunshō. 1941. *Guntai chōrihō* (Military recipes).

Roseberry, William, Lowell Gudmundson, and Mario Samper Kutschbach, eds. 1995. *Coffee, Society, and Power in Latin America*. Baltimore: The Johns Hopkins University Press.

Ryōyūkai, ed. 1929. *Gendai shokurō taikan* (Encyclopedia of contemporary food provisions). Tokyo.

Shin, Gi-Wook and Michael Robinson, eds. 1999. *Colonial Modernity in Korea*. Cambridge, MA: Harvard University Asia Center.

Shōwa Joshi Daigaku Shokumotsugaku Kenkyūshitsu. 1971. *Kindai nihon shokumotsu shi* (Food history of modern Japan). Tokyo: Kindai Bunka Kenkyūjo.

Shūkan Asahi, ed. 1990. *Nedan no meiji, taishō, shōwa fūzoku shi: jō* (Manners and customs of Meiji, Taishō, and Shōwa as seen through prices, vol. 1). Tokyo: Asahi Bunkō.

Smith, Stephen R. 1992. “Drinking Etiquette in a Changing Beverage Market.” In J. J. Tobin, ed., *Re-made in Japan: Everyday life and Consumer Taste in a Changing Society*. New Haven: Yale University Press, pp. 143–58.

Tannahill, Reay. 1973. *Food in History*. London: Penguin Books.

Tomlinson, John. 1991. *Cultural Imperialism*. London: Pinter.

Waswo, Ann. 1996. *Modern Japanese Society, 1868–1994*. Oxford: Oxford University Press.

Watanabe, Minoru. 1986. *Nihon shokuseikatsu shi* (A history of Japanese diet). Tokyo: Yoshikawa Kōbunkan.

Watson, James L., ed. 1997. *Golden Arches East: McDonald’s in East Asia*. Stanford, CA.: Stanford University Press.

Westney, D. Eleanor. 1987. *Imitation and Innovation: The Transfer of Western*

Organizational Patterns to Meiji Japan. Cambridge, MA: Harvard University Press.

Yamashita, Teruo. 1995. "Toshika to ryōshoku" (Urbanization and provisions). In M. Takada and N. Ishige, eds., *Toshika to shoku* (Urbanization and food). Tokyo: Domesu Shuppan, pp. 124–130.

———. 1996. "Shūdan kyūshoku no katei e no eikyō" (The impact of mass catering on home meals). Paper presented at Ajinomoto Food Culture Forum, Tokyo, November 28.

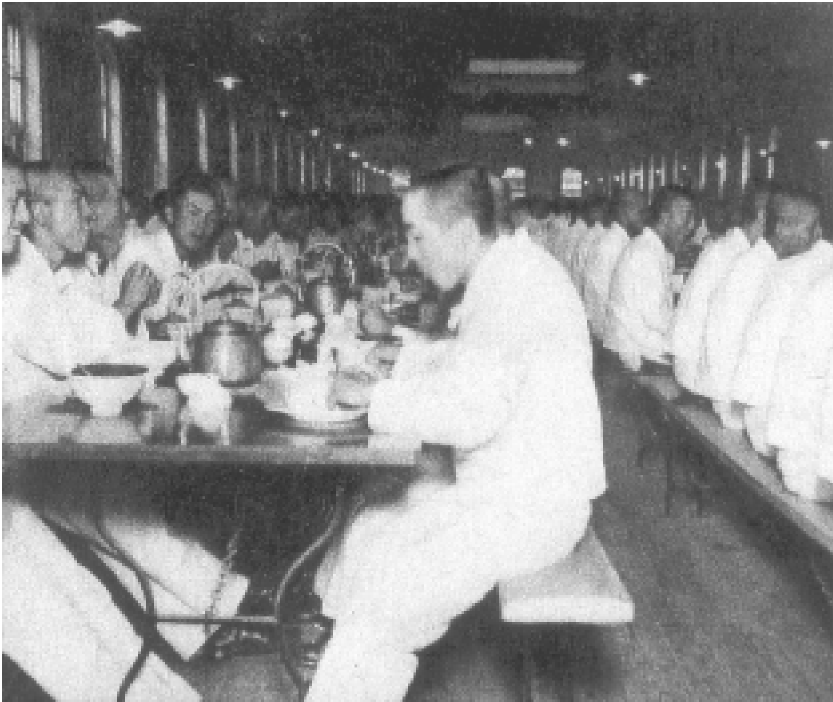

Fig. 1. Students of Edajima Naval Academy taking a meal (*Asahigurafu* 1934)

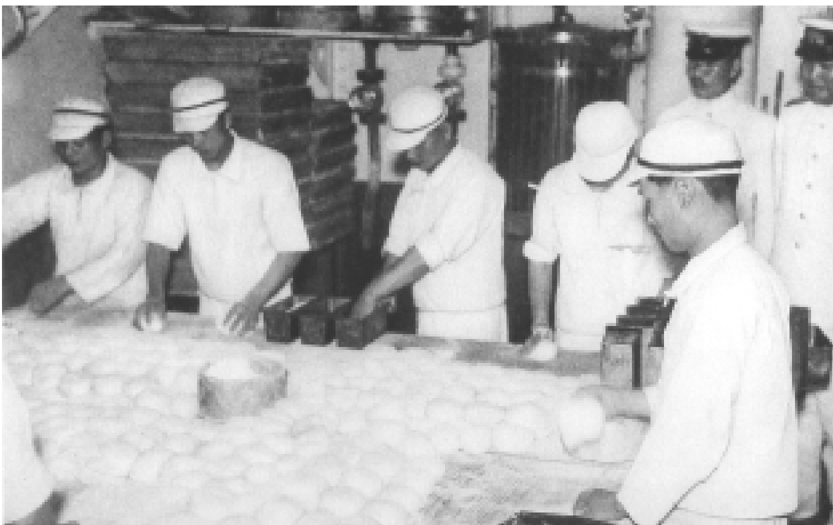

Fig. 2. Baking bread aboard the catering ship Mamiya (*Asahigurafu* 1934)

Fig. 3. Western food domesticated — an advertisement for curry powder (*Asahigurafu* 1938)

Fig. 4. Militarism permeates Japanese society — a biscuit advertisement (*Asahigurafu* 1938)