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Edible Eugenics: Dietary Reform and Nation-building in Modern Japan¹

Today, advertisements for health foods and energy drinks are ubiquitous in Japan, and appear on billboards, in magazines, and on television and radio. Japanese companies like Calpis and Yakult, founded in the early twentieth century, are among the biggest producers in the world of functional foods and nutraceuticals; Japanese consumers constitute the largest Asian market for these products. This article shows how the origin of the health foods industry in history is linked to positive eugenics, which combined dietary reforms and outdoor exercise in growing and strengthening the population of Imperial Japan.

Keywords: Japan, positive eugenics, diet, rice, vitamins, functional foods

Essen und Eugenik: Ernährungsreform und Nation-building im modernen Japan

Heutzutage ist Werbung für Gesundheitskost und Energiedrinks allgegenwärtig in Japan, auf Plakaten, in Zeitschriften, im Fernsehen und im Radio. Japanische Firmen wie Calpis und Yakult, die im frühen 20. Jahrhundert gegründet wurden, zählen zu den größten Produzenten von funktionellen Lebensmitteln und nutraceuticals (biologisch aktiven Inhaltsstoffen) weltweit. Japan ist selbst der größte Markt in Asien für diese Produkte. In diesem Beitrag wird aufgezeigt, auf welche Weise die Gesundheitskost-Industrie historisch mit positiver Eugenik verquickt war, bei der es um Ernährungsreform und Freiluftsport ging, um die Bevölkerung im Kaiserreich Japan zu vermehren und körperlich zu ertüchtigen.

Schlagwörter: Japan, positive Eugenik, Ernährung, Reis, Vitamine, Gesundheitskost

¹ The first iteration of this article was in the form of a keynote lecture in August 2011 at the International conference on “Food in Zones of Conflict”, Leiden University, The Netherlands, organized by Katarzyna Cwiertka. I owe thanks to Irmela Hijjiya-Kirschner for inviting me to contribute this substantially revised version of my earlier lecture. Research for this article was supported by the National Endowment for the Humanities Fellowship/Advanced Research in the Social Sciences on Japan Fellowship (Japan, 2008); Abé Fellowship (2010–2012); John Simon Guggenheim Memorial Foundation Fellowship (2011–2012); and, Faculty Research Grant, Center for Japanese Studies, University of Michigan (2006, 2007, 2008).

Introduction: Functional Foods and Nutraceuticals

Today, advertisements for health foods and energy drinks are ubiquitous in Japan, and appear on billboards, in magazines, and on television and radio. Japanese companies, like Calpis and Yakult, founded in the early twentieth century, are among the biggest producers in the world of functional foods and nutraceuticals; Japanese consumers constitute the largest Asian market for these products. The backstory of the Japanese obsession with “healthy eating” shares a history with eugenics, introduced in the 1880s, which combined nutrition and nation-building in an effort to strengthen and grow the population of around 37.5 million citizens.²

Vitaminology, or the study of vitamins, including their structures, modes of action, and function in maintaining body health, was a significant component of “positive” eugenics, or improvements in the conditions of reproduction through nutrition science, advances in sanitation and hygiene, and the promotion of physical education. “Negative” eugenics, in contrast, includes quarantine and forced exile, marriage or procreative restrictions, forced abortion, involuntary sterilization, and at the most extreme, genocide. The acknowledged importance of vitamins in Imperial Japan was highlighted at an exhibition on bodily health at the Japanese Red Cross Hospital in Nagoya in 1936 (Tanaka 1996, p. 80).³

I focus on dietary reforms and the introduction in Japan of “functional foods” (*kinōsei shokuhin*)⁴ and “nutraceuticals” (*ei-yōhojo shokuhin*) under

² The current population of Japan is about 126.5 million (not including about 2 million non-citizens), nearly 28 % of whom are over 65 years of age. Seniors are one of the largest consumer markets for functional foods and nutraceuticals.

³ The term ‘vitamin’ itself was coined in 1912 (‘vitamine’, or ‘vital amine’, and again renamed in 1920 – ‘vitamin’), and immediately entered the popular vocabulary in Japan as both *bitāmin* and *bitamin*.

⁴ *Kinōsei shokuhin* is often rendered *kinōsei hyōji shokuhin* (certified functional foods). This category of food stuffs was inaugurated in April 2015 to be a “middle road” between two existing food labels: *tokuhō*, short for *tokutei hokenyō shokuhin*, or “foods with certified specific health uses,” and *ei-yō kinō shokuhin* or *kinōsei shokuhin*, or “foods with nutritional benefits”. *Tokuhō*, launched in 1991, allows manufacturers to make certain health claims on their products if the government determines that there is enough scientific evidence of their benefits and safety. The *tokuhō* certification system is tightly regulated but has been criticized by market players as too costly and time-consuming. The label *kinōsei shokuhin*, on the other hand, is less regulated and products thus labeled can be sold without first informing the government as long as they contain certain vitamins and minerals; their safety and efficacy cannot be guaranteed (Otake 2015). Functional foods and beverages are those foods and beverages to which

the auspices of eugenics and empire building. Functional foods are foods into which a new ingredient (or more of an existing ingredient) has been added to give it a new function usually related to health-promotion or disease prevention. Foods whose fiber and calcium content are artificially increased are especially popular in Japan. Nutraceuticals – a relatively new word combining ‘nutrition’ and ‘pharmaceutical’ – refers to food or food products that provide health and medical benefits, including the prevention and treatment of disease. Co-Enzyme Q10 is an especially well-known nutraceutical, the production of which is dominated by Japanese companies.

These early attempts to, literally, re-shape “the Japanese” body laid the foundations for Japan’s dominant status in Asia for functional foods and nutraceuticals, second (22 %) only to the United States (36 %) as the largest global market for such. The shipment (commercial) value of Japan’s health foods market – including food, beverages, sweets and supplements – is expected to reach \$ 7.6 billion in 2018 ().⁵ These food products are grouped into two general categories: FOSHU (Foods for Specified Health Use), of which there are over one thousand, and non-FOSHU. FOSHU products bear the label *tokutei hokenyō shokuhin* (food with certified specific health uses), introduced in 1991. Advertisements for non-FOSHU foods are limited to general claims to treat general conditions; for example, three Kirin Supli drinks were launched in 2017 and advertised widely as effective in reducing stress, fatigue, and insomnia.⁶

Calpis (Karupisu) is arguably the first the modern nutraceutical substance commercialized and widely consumed in early twentieth century

special ingredients are added so that they provide additional health benefits. Regular food items such as cereals, bread, yogurts, snacks, and beverages are converted into functional foods by fortifying them with vitamins, herbs, or other nutrient-rich ingredients. The common ingredients that are added to functional foods and beverages include probiotics, prebiotics, and plant stanols and sterols. As an aside, the English word ‘nutraceutical’, comprised of the words ‘nutrition’ and ‘pharmaceutical’, refers to foods or food products that reportedly provide health and medical benefits, such as the co-enzyme Q10, a powerful anti-oxidant that, until about ten years ago, was mostly manufactured by Japanese companies who today face competition from China.

⁵ [<https://www.statista.com/statistics/820671/japan-health-foods-market-size/>] (15/06/2018).

⁶ Japan Brewery Co., the forerunner of the Kirin Brewing Co., was founded in Yokohama in 1885 and three years later, introduced German-style lager beer under the label “Kirin”. In 1907, the company was renamed Kirin Brewery Co. It is a transnational integrated beverages company with holdings in real estate and pharmaceuticals, among other industries (Kirin Report 2016 (2017)).

Japan.⁷ A cultured non-fat milk drink, Calpis was invented by the trader Mishima Kaiun (1878–1974) following his experience of the restorative effects of *airag* (fermented mare’s milk) while on a business trip to inner Mongolia in 1904. Upon his return to Japan he experimented with lactobacilli, founded the Daigon (Lacto) company in 1917 and launched the Calpis brand and drink as a health enhancer. Two years later, Mishima renamed the company itself Calpis. When in 1941 the military included the drink in their canteens, the company repackaged the drink by adding to its trademark polka-dotted wrapping paper the label, “*gun’yō* Karupisu” (military use Calpis). Now capitalized at nearly € 112 million, the company introduced a Calpis-based drink (AMEAL S) that was awarded FOSHU status in 1997 as product that offset fatigue and stress and adjusted blood pressure.⁸

Calpis may have been the first nutraceutical commercialized in Japan, but Yakult, the producer of another yogurt-like health food in the early twentieth century, has become one of the largest functional food companies in the world, with about € 3 billion in total equity. In 1930, physician and professor of medicine Minoru Shirota (1899–1982) succeeded in strengthening and culturing lactic acid bacteria, and created yakult (*yakuruto*), a probiotic dairy product.⁹ Yakult, the namesake company, was founded in 1935. Today one of the largest functional food companies in the world, Yakult was influential in introducing probiotics to the United States a decade ago.¹⁰

⁷ The nutraceutical properties of “traditional” Japanese foods, such as green tea and sea weed, have been researched and advertised, but my focus is on not Japanese dietary “deep history” per se, but on the targeted application of vitamins and functional foods as an aspect of the Japanese eugenics movement and national project of growing (in all senses) the population in the early twentieth century.

⁸ [<http://www.calpis.info/story/developer/>]; [<http://www.calpis.net/corporate/outline/index.html>]; [<http://www.calpis.net/features/story/index.html>] (15/06/2018).

⁹ Probiotics are living microorganisms that allegedly have health benefits when consumed. Calpis is not a probiotic according to this definition. The health benefits of probiotics were first researched by the Bulgarian zoologist, Ilya Ilyich Mechnikov (or Élie Metchnikoff, 1845–1916), who theorized that aging is caused by toxic bacteria in the gut and that lactic acid (yogurt) could prolong life. He shared the 1908 Nobel Prize in Physiology or Medicine with the German (Jewish) physician/scientist Paul Ehrlich (1854–1915) for their work on immunology. It would appear that Shinoda (Yakult) was influenced by Mechnikov’s pioneering work.

¹⁰ [<http://www.yakult.co.jp/company/history.html>] (15/06/2018); Heller (2008); Yakult Annual Report (2017, p. 3).

You Are What You Eat

You are what you eat.¹¹ In Japan, an epidemic of beriberi (thiamine, or Vitamin B1, deficiency) among imperial army soldiers in the late nineteenth century provoked the first public debates about the relationship between bodily health and diet.¹² Historically, Japanese dietary practices had followed social status – women were the last in their families to eat – and, in the case of affluent households, gastronomic aesthetics superseded nutrition (cf. Cwiertka 2006, p. 108). Only a century ago was the concept of “you are what you eat” given a nutritional interpretation; in Japanese, this expression is translated as “health starts with diet” (*kenkō wa shoku kara*). As I discuss below, the beriberi epidemic was the platform for the new field of vitaminology and functional foods.

Even before the Bitamin gakkai (Vitamin Society) was founded in 1949,¹³ vitamins and nutrition constituted, in the 1920s, a significant component of “positive” eugenics. Whereas “negative” eugenics involves the prevention of reproduction among people deemed “unfit” through segregation and/or involuntary sterilization,¹⁴ “positive eugenics” refers to improvements in the conditions of reproduction through dietary reforms, advances in sanitation and hygiene, and the promotion of physical education. What follows is a brief introduction to eugenics in Japan with a focus on one particular eugenics association that targeted girls and women. Proponents of positive eugenics forcefully argued that only healthy female bodies could birth strong and sturdy babies.¹⁵

The word ‘eugenics’ (“well born”) was coined by the British scientist and sociologist Francis Galton (1822–1911) in 1883, and quickly went global. Gal-

¹¹ This phrase attributed to the French politician and epicure Anthelme Brillat-Savarin (1755–1826) and popularized in the Anglophone world by the American nutritionist Victor Lindlahr (1897–1969) in his 1940 book, *You Are What You Eat*.

¹² Thiamine was discovered in 1897, was the first vitamin to be isolated in 1926, and was first to be made in 1936.

¹³ [<http://web.kyoto-inet.or.jp/people/vsojkn/>] (15/06/2018).

¹⁴ Involuntary/compulsory sterilization was a mainstay of the 1940 National Eugenics Law (Kokumin Yūsei-hō) – subsequently changed in 1948 to the Eugenics Protection Law (Yūsei Hogohō) – until 1996 when “eugenics” was dropped from the title of the newly renamed law, Mother’s Body Protection Law (Botai Hogohō).

¹⁵ For more information in English on the Japanese eugenics movement(s), see Robertson (2010), which includes a list of recommended readings. In Japanese, see Suzuki (1983).

ton's book, *Hereditary Genius* (1869), had already been published in Japanese, and his book on the new "science" of eugenics, *Inquiries into Human Faculty and Its Development* (1883), followed suit.¹⁶ Eugenics movements were quickly established in Japan, as well as in England, Continental Europe, the United States, Brazil, Turkey, China, and elsewhere. By the 1920s in Japan, eugenics had become a regular topic in the popular media and scholarly literature alike; it is not an exaggeration to say that *yūseigaku* (eugenics) became a household word.

The word 'eugenics' was combined from the Greek words for "good" or "well," and "born" – in short, the "well-born science". Galton defined eugenics as "the study of all agencies under human control which can improve or impair the racial quality of future generations". The symbol of the eugenics movement was the image of a massive tree with the caption: "Eugenics is the self direction of human evolution. Like a tree, eugenics draws its materials from many sources and organizes them into an harmonious entity."¹⁷ Its branches bear leaves, but its roots are labeled as scientific disciplines (anatomy, genetics, history, anthropology, etc.), attesting to the interdisciplinary orientation of the "well born" science. Although dietetics and nutritional science are not among the roots, dietary reform, vitamins, and nutrition were examined within the overlapping contexts of biology, physiology and medicine.

Eugenics was one of the most – if not *the* most – influential of the new, global ideologies of the body that were formulated in the late nineteenth and the early twentieth centuries. The well-born science emphasized the links between physical and mental fitness, and between nutrition and physiology. Eugenicians identified the corporeal body as a key site from which to devise strategies for social reform. Because eugenics was an interdisciplinary science there were many heated arguments between advocates of positive and negative eugenics, and even within each of those camps. Thus, supporters of positive eugenics, on which I focus, argued among themselves about different ways to create a stron-

¹⁶ Galton's *Hereditary Genius* was republished in serial form in *Yūsei Undō*.

¹⁷ The image of the tree helps to complicate the stereotypical impression people have about eugenics. Generally speaking, many people equate "eugenics" with Nazi genocide in the late 1930s and early 1940s. However, the history and practice of eugenics starts well before the rise of the Third Reich and continues today in many guises, such as genetic testing and performance-enhancing substances. The first application (globally) of negative eugenics was in 1907, when the state of Indiana (USA) mandated the sterilization of people deemed to be "unfit" to reproduce.

ger and healthier, and more fertile, citizenry. Generally speaking, the corporeal body was framed as a “zone of conflict” in the sense of being the focus and locus of conflicting approaches to the synthesis of biology and sociology.

Bodies, Blood, and Exercise

Just as Japanese bodies were framed as a “zone of conflict”, Japan and the Pacific Rim area formed another kind of “conflict zone” or zone of contention. From roughly the 1870s onward, Japan’s post-feudal pursuit of empire-building engendered the creation of both a New Japan (*shin Nippon*) and a new Japanese citizen (*shin Nipponjin*). Successful empire-building depended on increasing the numbers of a strong and resilient citizenry – and healthy mothers. Eugenicists joined the state in promoting pro-natalism. But, they warned, reproducing for the sole sake of increasing the population was counterproductive and even dangerous. The eugenicists asserted that Japan’s imperial ambitions could only be assured by the reproduction of a biologically healthy and physically fit population.

A brief overview of the central features of the Japanese eugenics movement is needed at this juncture. The discourse of eugenics clustered around two essentially incommensurable positions concerning “blood” as a euphemism for ethnic or “racial” essence. These two positions were the “pure-blood” (*junketsu*) position, and the “mixed-blood” (*konketsu*) position. Pundits favoring the pure-blood position were keen on preserving the eugenic integrity of what was, in their view, the pristine “Japanese race”. Those promoting the mixed-blood position enumerated the benefits of hybrid vigor through the mixing of Japanese and non-Japanese blood through intermarriage – actually, procreation – with white Europeans and Americans. *Kōhaku zakkon*, or “yellow-white mixed marriage”, was thought of as a way to quickly produce stronger, heavier, taller Japanese offspring. Critiques argued that miscegenation “would result in race *transformation* and not race betterment, and would, over the course of several generations, seriously dilute the pure blood – or racial and cultural essence – of the Japanese” (Robertson 2002, p. 198). The value of something called “pure blood” quickly became and remained the dominant ideology.

Yūsei Undō, or Eugenic Exercise/Movement,¹⁸ founded in 1926 by the journalist Ikeda Shigenori (1892–1966), was the first eugenics association to

¹⁸ *Undō* means both physical exercise and social movement.

popularize the positive contributions of nutrition, exercise, and “scientific” spouse selection to improve the overall physiology of Japanese bodies. Ikeda had earned doctorates in eugenics and women studies from Jena University while serving as a foreign correspondent in Germany from 1919–1925. He also inaugurated a journal of the same name, *Yūsei Undō* in January 1927 which ceased publication in January 1930.¹⁹ Ikeda favored the pure-blood position. He declared that the task of eugenicists was not to promote miscegenation in order to produce superior individuals, rather, the mission of eugenics was to educate so-called pure-blooded Japanese – and especially women – in the proper nutrition and exercise necessary for health so that they could birth hale and hearty children. Ikeda tended to define health and fitness by explaining what something is in terms of what it is not. Thus, a healthy, physically fit body or person in his view was one without disabilities, alcohol dependency, tuberculosis, criminal tendencies, mental illness, Hansen’s disease (leprosy), “feeble-mindedness”, and so forth.

Among Ikeda’s professors at Jena University was the philosopher Rudolf Christoph Eucken (1846–1926) who in 1908 had been awarded the Nobel Prize in literature. Eucken’s concept of “ethical activism” inspired, in part, Ikeda’s own social reform mission. In the first issue of the journal *Yūsei Undō*, Ikeda included a congratulatory letter from Eucken, who died the year Ikeda founded his movement. In addition to Eucken, Ikeda’s activism was also inspired by the German Wandervogel movement, a back-to-nature physical fitness movement for youths.²⁰ In May 1927, he founded a Japanese Wandervogel which he called the *Ashi no Kai* (Legs and Feet Society) with the dual aim of alleviating the mental and physical fatigue of urbanites, and forging superior minds and bodies through outdoor exercises and games. Females and males of all ages were welcome, and illustrated reports of the Society’s outings were published in Ikeda’s journal. Several regional branches of the Legs and Feet Society were established, including one in Taiwan, colonized by Japan from 1895–1945.

¹⁹ The journal ceased publication in January 1930. In that year the physician/eugenicist Nagai Hisomu (1876–1957) inaugurated the Japanese Race Hygiene Association (*Nippon Minzoku Eisei Kyōkai*), in which Ikeda served as a regional director.

²⁰ The German Wandervogel was later absorbed into the Hitlerjugend. Ikeda wrote books on the Wandervogel among other German institutions, focusing on how Germany recovered after World War I (Ikeda 1914).

The seventh and eighth outings were referred to in *Yūsei Undō* as *wandaafuōgeru* (Wandervogel), which in general seems to have been used by Ikeda as a synonym for the Legs and Feet Society. The eighth event (August 1927) was unusual in that following the outdoor activities, scholars from several disciplines were invited to give humorous readings of the Japanese classics (*koten*) and to offer lessons in art and music appreciation. Also present was Taguchi Shōta (1885–?), who distributed to all present, his “Vitamin A candies” which he called *nyūmerusu* (new[*cara*]mels), capitalizing on the popularity of Morinaga milk caramels (Kawajiri 1927, p. 26).²¹

Taguchi was the founding professor of the Keio University medical department and a member of the *Yūsei Undō* board of directors. He also directed the association’s eugenic marriage counseling clinic (*kekkon sōdanbu*) in Kyōbashi (Tokyo).²² In 1921, Taguchi established an irrefutable link between beriberi disease and Vitamin B (thiamine) deficiency, one of several scientists to do so. The primary symptoms of beriberi include weight loss, emotional disturbances, impaired sensory perception, weakness and pain in the limbs, and periods of irregular heart rate. Edema (swelling of bodily tissues) is also common. In advanced cases, the disease may cause heart failure and death. Vitamin B supplements were regularly advertised in Ikeda’s magazine (as you see here, see figure 1) and sold at Meidiya, an up-scale Tokyo supermarket. The language of the full-page advertisement underscores Taguchi’s (and Ikeda’s) zealous attempt to reform the dietary practices of Japanese citizens.

Taguchi’s Vitamin B dietary supplement. ... The spirit of the Eugenics Movement. ... Because they eat polished white rice from which the germ (*haiga*) has been removed, the Japanese have a Vitamin B deficiency. ... Here is the natural and scientific remedy. ... If you are going to eat candy, have some newmels and

²¹ Morinaga & Co.’s milk caramels (*miruku kyarameru*) in their trademark pocketable yellow-ochre box, were introduced in the summer of 1917 and have remained the best selling caramel in Japan. The company was founded by Morinaga Taichirō (1865–1937) in 1899 upon his return from the United States, where he lived and worked in San Francisco for a decade. There he discovered milk candies and converted to Christianity. Morinaga milk caramels were followed in quick succession by milk chocolate bars (1918), milk cocoa (1919), dry milk (1920), and Marie (milk) biscuits (1923) [<http://www.morinaga.co.jp/company/about/history.html>]. Morinaga milk products were regularly advertised in *Yūsei Undō*.

²² Ikeda’s marriage counseling clinic had clients fill out autobiographical health questionnaires on the basis of which was dispensed advice about diet, lifestyle, marriage partner and so forth as noted in the advertisement for the clinic in the unnumbered front pages of *Yūsei Undō* 2/8 (1927).

専賣特許

田口ビタミンB

優生運動の魁
 智恵を出さねば、
 「自然に」はほされる。
 出せば、出してで冒瀆の罰、
 とかくに人の世は住みにくい。

◇ 胚芽を無くした白い米、
 あく抜いたお惣菜、
 日本人の栄養には、
 ビタミンBが足らぬ。

◇ 頭がイラ／＼する、
 身体は雨りゆく、
 「自然に！」
 と吾等の科学は叫ぶ。

と
其
食
品

◇ 御菓子を食べるなら
 ビタミンドロップ
 美多民豆
 ニューメルス

◇ 白米を食べる方は、一日
 一度は必ず
 肉味 (大木) 嚼

◇ 身体の弱い人には、
 田口ビタミンB

◇ 材料は侯爵蜂須賀農場の
 米、作つた人は斯界の先覚
 田口博士、発賣所は銀座明
 治屋

◇ 日本人の食口にも、とう
 生理学活用の時代が来た、

全御注意

田口ビタミンB (一箱一
 田五十丸) は優生運動時代
 理想で取扱ひます。
 (電話東京一八九八六)
 (郵便東京六八六五六)

社 会 式 株 東 京 東
 座 銀 屋 治 明 京 東
 (七三六六・一五三・〇五一三 東京電話)
 所 究 研 学 化 物 生 所 造 製

Figure 1: Taguchi Vitamin B drops. (Photo by author from Taguchi bitamin B 1927.)

vitamin drops... For those who eat polished white rice, a daily bowl of meat soup is essential. ...Those with weak bodies need to take Taguchi's Vitamin B supplements, sold at the Ginza Meidi-ya. At last, for the Japanese people, a new age of biological functional food (*seirigaku katsuyō no jidai*) has arrived (Taguchi bitāmin B 1927).

The ad plays with words and ideographs in equating vitamins with beauty: “ビターミンドロップ (*bitāmindoroppu*, vitamin drops) are to 美多民豆 (*bitaminzu*, many beautiful citizens seeds) are to ニューメルス (*nyūmerusu*, new[car]mels).” The equation underscores Ikeda's eugenic priority of

making health itself an aesthetic virtue; he was instrumental in promoting a corporeal ideal of “healthy-body beauty” (*kenkōbi*), especially for girls and women, that became celebrated in the mass media and even beauty contests (Robertson 2001).

The Dangers of Polished White Rice

Despite the medical attention to the beriberi epidemic over two decades earlier, Vitamin B deficiency remained a serious problem in Japan as evident in the attention given in *Yūsei Undō* and other media to dietary reform (see Ray 2012). At this juncture, a brief review of the beriberi epidemic helps to contextualize the urgent attention paid to vitamins and dietary reform by Ikeda and Taguchi, among others.

During the Russo-Japanese War (1904–1905) alone, 250,000 cases of beriberi were diagnosed among the soldiers, 27,000 of whom died from the disease. The epidemic also marked another zone of conflict between the army and navy, who had very different approaches to treating this disease. Whereas the navy physicians early on developed a diet adequate in Vitamin B by adding barley to white rice, army doctors believed that a yet-to-be discovered bacillus was responsible for beriberi. The army eschewed the navy’s approach in part because army leaders felt that it was too similar to *kanpō* or traditional (Chinese) medicine. Army physicians believed that their hypothesis of a beriberi bacillus was more in keeping with modern science. In the 1890s, one army doctor Mori Rintarō (1862–1922) – who is better known by his pen name, Mori Ōgai, the novelist – was especially vocal in dismissing any causal connection between diet and disease. Fifteen years later, facing a beriberi epidemic in the army, it was only through the direct action by Minister of War at the time, Terauchi Masatake (1852–1919), that barley was included in army rations. Terauchi himself had been treated for beriberi by a *kanpō* doctor by eating barley. This incident was part of a larger and longer story involving tensions among army and navy doctors at the time between Western biomedicine – considered to be more scientific – and *kanpō*, or traditional medicine, considered less scientific by the army. These tensions were played out as black and white, either/or positions (Cwiertka 2006, p. 65–75).

What this early conflict between the navy and the army also underscores is that hypotheses, theoretical differences, and ideologies alike are mapped onto biological bodies and help to shape and contour bodies, whether individually

or as a group. However, equally emphasized by this conflict, is that it must be remembered that bodies are *always already* physiological and biological. Therefore, the corporeal body cannot easily be essentialized as, or arbitrarily contracted to fit, any given theory or ideology.

Meanwhile among the *urban civilian* population, the widespread consumption of polished white rice exacerbated a beriberi epidemic that peaked in 1923. Between 1920 and 1935, around 76,000 Japanese died from that disease (Katsura and Oiso 1976, p. 141). No wonder that Ikeda made a eradicating beriberi and other diseases through nutrition and dietary reforms a cornerstone of his eugenics movement initiatives. Taguchi, noted above, was one of dozens of persons, from military officers to doctors and scientists, who supported Ikeda's movement and published essays in *Yūsei Undō* on the importance of nutrition and vitamins. The physician, Shimizu Tomihide (1889–1958), also contributed an article titled “*Bitāmin B no hanashi*” (On Vitamin B), that included a drawing of the anatomy of a rice grain (Shimizu 1927, p. 30–37). Shimizu had studied in Germany (Munich and Freiburg) from 1920–23 with Heinrich Otto Wieland (1877–1957), who was awarded the Nobel Prize in Chemistry in 1927 for his research on bile acids. Shimizu also specialized in digestive functions and was one of the founders of the Japanese Biochemical Society in 1925 (Shimazono 1990, p. 3). Also invested in dietary reform was Ishikawa Kiyota (1859–1932), a retired army officer who published widely in the 1920s on polished white rice and its connection to high infant mortality rates and malnutrition.²³ He published a long article in *Yūsei Undō* on the health benefits of “rice-germ-oil-infused rice balls” for which he provided a recipe for housewives:

Ingredients: 123.75 grams each of unpolished rice with the rice-germ intact (*genmai*), flour, wheat flour, and crushed potato; 15 grams of baking powder; one large spoonful of sesame oil; 5.63 grams of salt; between 18.75 and 22.5 grams of sugar; and .09 to .108 liter of water. Put the rice and wheat flours, baking soda, salt, and sugar into a bowl and mix. Then mix in the potato. Lastly, add the water and mix. On a wooden board, knead the mixture into a ball. Using a rolling pin, roll the doughball to about 1/3 of its thickness. Cut the dough into circles and bake in an oven (Ishikawa 1927, p. 20–21)

²³ [<http://www.ryouken.or.jp/thema/c1-1.html>] is an archive of articles dealing with research on rice (15/06/2018).

The Benefits of Unpolished Rice

Ikeda Shigenori came to eugenics via journalism.²⁴ He worked for the *Hōchi Shinbun*, one of the oldest national newspapers in Japan founded in 1872 and that, in the 1920s, was associated with liberal-leaning politicians, such as Machida Chūji (1863–1946).²⁵ Machida headed the *Hōchi Shinbun* between 1919 and 1926, when he was appointed Minister of Agriculture and served on the newspaper's board. Not only did Machida contribute articles to *Yūsei Undō* but news items from the *Hōchi Shinbun* were often republished in that journal in a column titled “Eugenics Newspaper Scrapbook” (*yūsei kirinuke shinbun*). One such article that originally appeared in the newspaper on 3 August 1927 and was reprinted in *Yūsei Undō* bore the headline “From the standpoint of nutrition, Japanese cuisine is a zero” (*eiyo kara mita Nihon ryōri wa zero*). The anonymous article notes that “Japanese cuisine emphasizes aesthetics over nutrition, and compared to the cuisines of China, Egypt, and other countries, is the lowest in vitamins and protein (meat)”. “Especially troubling”, the piece continues, “is that the majority of Japanese prefer polished white rice over *genmai*” (*Yūsei kirinuke shinbun* 1927, p. 35).

This sentiment was echoed in many pro-*genmai* articles appearing in *Yūsei Undō*, including one by nutritionist Kagawa (née Yokomaki) Aya (1899–1997), who founded the Kagawa Eiyō Gakuen (Kagawa Education Institute of Nutrition) in 1948. Before that, she and her husband Kagawa Shōzō (1895–1945), whom she married in 1930, were based at Tokyo Imperial University (since 1947, University of Tokyo) Medical School where they established the Katei Shokuyō Kenkyukai (Household Diet Research Group), devoted to the study of

²⁴ Born in Akita prefecture, Ikeda attended college in Tokyo. Following his graduation from Tokyo Foreign Language University, he was employed by Kōdansha, a prominent publishing house, to edit the magazine *Taikan* (Outlook). He later joined the *Hōchi Shinbun*, a major daily newspaper, and served as a special correspondent to Germany from 1919 to 1924, where he earned doctorates in eugenics and women's history at Jena University. He was transferred to Moscow in 1925 before returning to Japan and founding his eugenics movement and journal. Ikeda rekindled his journalism career in 1933 by assuming the editorship of the *Keijō Nippō* (Seoul Daily News), based in Seoul. He returned to the *Hōchi Shinbun* as an editor in 1939, and from 1941 through the end of the war worked for Naval Intelligence. After the war he became a prominent “social commentator” (*hyōronka*).

²⁵ In 1949, the paper merged with the *Yomiuri Shinbun* and a sports section, *Supōtsu Hōchi*, was spun off as an affiliated daily.

the dietary treatment of beriberi. In 1935, they launched the journal *Eiyō to Ryōri* (Nutrition and Cooking).²⁶

In her April 1929 article on *genmai* for Ikeda's journal, Kagawa explains in reader-friendly prose, the synergistic metabolism of vitamins A, B, C and E. She also emphasizes the need for dietary supplements, especially cod liver oil – which was regularly advertised in the journal – and casein, a protein in cow's milk (Kagawa 1929, p. 21–25). Significantly, the November 1929 issue of *Yūsei Undō* was devoted to dairy farming – practiced in Japan since the late nineteenth century – and the constituent articles promoted the need for Japanese to follow the military's practice of including cow's milk with meals. Milk was promoted as a “perfect food” containing all the nutrients, except for vitamin C and iron, that humans need to thrive.²⁷

Kagawa's article was preceded by one written by Ozaki Yukio (1858–1954), a journalist and later a prominent liberal politician opposed to militarism. In his essay on promoting health through “the improvement of clothing, diet, and dwelling”, Ozaki criticizes his fellow Japanese for “eating with their eyes”; that is for having an appetite for aesthetic details and not for nutritious content. He went so far as to assert that the Japanese rejected “yellow rice” (*genmai*) in favor of white rice for the same reason that they admired “white skin” over their own “yellow skin”, namely, a “naïve notion of beauty”. Ozaki warned that “while Japanese cuisine may be the most beautiful cuisine in the world, second to none, it is utterly devoid of nutritional value! One cannot exist on white rice. White rice kills! [...] Pigeons fed only polished white rice die within nineteen days” (Ozaki 1929, p. 15–20). It is worth noting here that Ozaki's formidable public-speaking skills provided a model for Ikeda, who augmented his extensive publications (in the form of books, pamphlets, and journal articles) with regular speaking engagements throughout Japan, and especially to his home prefecture of Akita in the northeast. Along with the Legs and Feet Society, public lectures were another venue through which Ikeda promoted his brand of positive eugenics.

²⁶ See Ray (2012) for a detailed history of beriberi in Japan; chapter 6, on the rice germ (*haigamai*) debates, discusses the work of the Kagawas. Ray's Japanese sources while diverse and plentiful, do not include eugenics journals such as *Yūsei Undō*, in which many articles on dietary reform and the importance of vitamins and supplements were published for lay readers. My article augments Ray's focus on the discourse of nutrition in scientific journals.

²⁷ Volume 4, no. 11.

Euro-American Views of the “Japanese Diet”

How was the Japanese diet perceived by scientists and eugenicists in the United States and Europe who also promoted vitamin supplements and dietary reforms as a way of improving the health of citizens? Kagawa mentions in her *Yūsei Undō* article noted above, the important work of the Dutch army surgeon and medical doctor, Christiaan Eijkman (1858–1930). Eijkman established, through scientific experiments with chickens, the “poisonous” nature of polished white rice in causing beriberi (Kagawa 1929, p. 21). He and his teacher, the British biochemist Frederick Hopkins (1861–1947), were awarded the Nobel Prize for Physiology and Medicine in 1929 for their discovery of several vitamins.

One American eugenicist who celebrated the “Japanese diet” was John Harvey Kellogg (1852–1943), a medical doctor based in Battle Creek, Michigan, who ran a sanitarium with a particular focus on nutrition, enemas, and exercise. Kellogg was an advocate of vegetarianism and is best known for the invention of the corn flakes breakfast cereal. A co-founder of the Race Betterment Foundation in 1911,²⁸ Kellogg was in favor of racial segregation and believed that immigrants and non-whites would damage the national gene pool. His eugenics creed was a combination of the positive and negative aspects. In advocating vegetarianism, Kellogg celebrated the Japanese rice diet even as Japanese physicians, eugenicists, and nutritional scientists were broadcasting in Japan the dangers of polished white rice. In his 1923 book, *The Natural Diet of Man*, Kellogg writes,

in 1899, the Emperor of Japan appointed a commission to determine whether it was necessary to add meat to the nation’s diet to improve the people’s strength and stature. The commission concluded that as far as meat was concerned, ‘the Japanese had always managed to do without it, and that their powers of endurance and their athletic prowess exceeded that of any of the Caucasian races. Japan’s diet stands on a foundation of rice’. (Kellogg 1923, p. 285)

He also adds that the Japanese diet was supplemented by the “free use” of peanuts, soy beans, and greens which “supply all that rice lacks, to constitute a wholly sufficient bill of fare” (Kellogg 1923, p. 285). Kellogg did not distinguish white rice from *genmai*, nor did he seem aware of the debates in Japan about the dangers of the former and benefits of the latter. Moreover, in cele-

²⁸ For more information on American eugenics, see [<http://www.eugenicsarchive.org/html/eugenics/static/themes/19.html>] (15/06/2018).

brating the “rice diet” of Japanese soldiers, Kellogg and his supporters neglected to research the experiments with military cuisine in late nineteenth century Japan. As Cwiertka has shown through her archival research, it was in the 1890s that the Japanese military introduced a “Western diet,” that is, meat and fats, to soldiers to increase their stamina and size (Cwiertka 2006, p. 68–85). In short, whereas Japanese eugenicists used the scientific findings of Eijkman and Hopkins to promote an awareness of the importance of rice-germ and Vitamin B, Kellogg praised the white rice diet of mainstream Japanese in advancing his ideology of eugenic vegetarianism.

In this connection, it is important to understand that Ikeda, and the contributors to his journal, did not simply pit a “Western” diet against a “Japanese” diet. Ikeda’s approach to positive eugenics was much more complex, and blurred conventional us-versus-them arguments. My point is illustrated by a satirical cartoon sketch by the graphic artist Ōta Masamitsu (1892–1975) published in the very first issue of *Yūsei Undō*. It is titled “On scolding the stomach with money” (*okane de onaka o shikaru hanashi*). As shown in figure 2, the cartoon consists of a round table set with plates and silverware. A flower vase and a salt-and-pepper set are on the table. A young boy in a sailor-style school uniform is sitting on a chair, head down, hands clasped; the silverware arranged on his plate indicates that he is finished eating. We see that he has left food on his plate. His bespectacled mother is seated at the table in a kimono and a similarly attired woman (waitress or housemaid) stands behind her holding a dish with food on it – perhaps the mother’s leftovers. The boy’s mother asks him, “Why aren’t you eating?” He replies, “My stomach is full.” Mother: “I spent a lot of money on this food so finish it up.” Boy: “But... my stomach...is full...” Mother: “You really aren’t listening to me. From now on I’m not going to give you anything tasty to eat!” (*Okane de onaka o shikaru hanashi* 1926, p. 54).

The relevance of the cartoon is neither clearly explained anywhere in the issue nor does it illustrate a given article or incident. I surmise that the cartoon insinuates that the urban bourgeoisie’s trendy, superficial embrace of European food parallels their consumption of the aesthetically valued polished white rice. The moral of the story is that expensive, tasty foreign foods are not necessarily palatable to even Westernized Japanese – and, apparently, even the mother did not finish her meal. To reiterate my point; namely, Ikeda and his likeminded colleagues did not simply pit an essentialized “Japanese diet” against a similarly essentialized “Western diet.” Rather, they were devoted to



Figure 2: Satirical cartoon about confusing nutrition with cost and novelty.
(Photo by author from *Okane de onaka o shikaru hanashi* 1927.)

revolutionizing the dietary practices of the Japanese not by replacing such staples as rice, but by stressing the importance of eating rice with the rice-germ intact. Their mission was to make Japanese cuisine nutritious and healthy, and not simply Westernized.²⁹

The promotion of milk in the Eugenics Movement may seem to be an exception to this mission, but it too has a military history. Dairy farming was a major industry in the late nineteenth century Japan. Milk and milk-based foods, such as ice cream, milk chocolate, and milk caramels were first introduced to soldiers' diets from the time of the Sino-Japanese War (1894–1895) onward, which influenced the gradual adoption of milk and milk products in the average Japanese diet (Gou 2016, p. 214; Japan Dairy Council 2013, p. 9). Certainly the inclusion of Calpis in military canteens in the 1940s, together with the creation of Yakult, a probiotic, in the 1930s, was illustrative of the steadily growing popularity of dairy products and the expansion of the dairy industry, which by the 1950s was second in productivity to rice production.

As evident in many ads appearing in *Yūsei Undō*, functional foods and nutraceuticals were the subject of sophisticated marketing strategies for which prominent illustrators and writers were recruited.³⁰ For example, an ad appearing in the April 1920 issue of *Akai Tori* (Red Bird), a children's literary magazine published between 1918 and 1936, was drawn by Takei Takeo (1894–1983), a children's book illustrator, and included a short ditty penned by Saijō Yaso (1892–1970), a poet and children's story writer. As seen in figure 3, on the right, a mechanical toy soldier wearing a conical hat uses a rope to lower a bottle of Calpis from an upper-story window. On the left, a maid (or nurse) leans out an upper-story window holding a glass of Calpis. On the ground between the buildings are

²⁹ A good analogy, in fact, is found in the work of the artist who created this cartoon: Ōta Masamitsu, also known as Ōta Gako. Ōta was an artist affiliated with the *shin hanga* (new woodblock print) movement in the early twentieth century. *Shin hanga* artists integrated Euro-American elements without giving up aspects of traditional Japanese woodblock prints. They concentrated on conventional subjects like landscapes, beautiful women, and actor portraits. Inspired by European Impressionism, the woodblock artists introduced the effects of light and the expression of individual moods. Ikeda aimed to do for Japanese cuisine something akin to what the *shin hanga* artists sought to achieve in their hybrid artwork. He appropriated and applied advances in dietetics and vitaminology in creating a nutritious new “Japanese” cuisine that was adapted to a Japanese “bodily constitution” (*taishitsu*).

³⁰ See Weisenfeld (2009) for an analysis of the modernist marketing strategies employed in the 1930s.

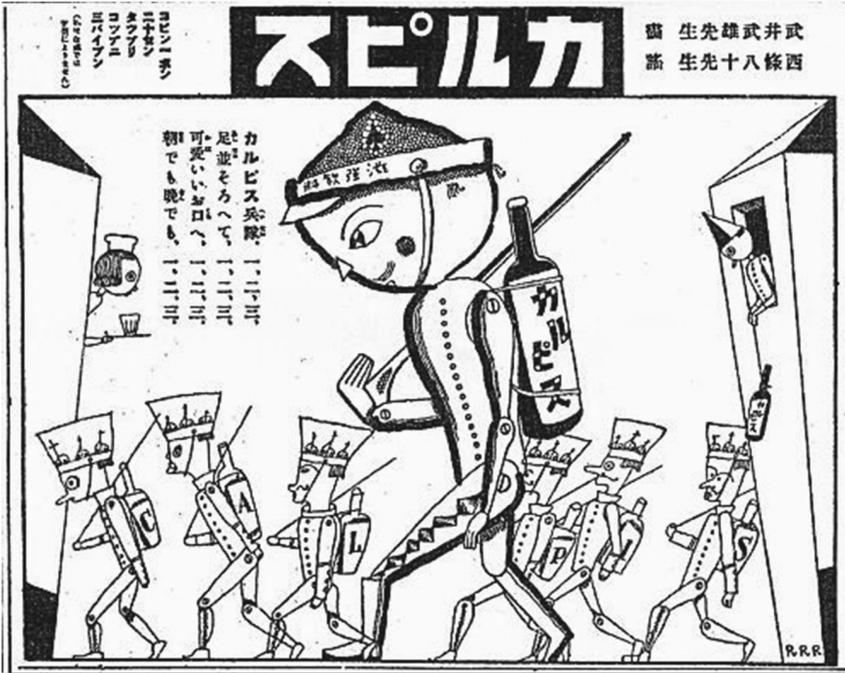


Figure 3: 1920 Calpis advertisement featuring toy soldiers.
(Photo from <http://chinchiko.blog.so-net.ne.jp/2011-05-08>).

six toy soldiers wearing tall hats, each with a rifle in his right hand and a bottle on his back that collectively, from left to right, spells out C-A-L-P-I-S. The soldiers appear somewhat listless. Occupying the center of the picture is a large mechanical toy soldier in a triangular hat with a spade-like insignia and (illegible) script on the hatband. Alert, his cheeks are flushed and he wears a smile as he marches. Unlike his six counterparts, he seems to be full of energy. On his back is a bottle labeled Karupisu (Calpis), suggesting that only he has benefitted from the refreshing drink; the others are only carrying bottles that ostensibly have but one-sixth of the potency of Calpis. The poem³¹ – which blurs the singular and plural – to the left of the central soldier reads:

Calpis soldier(s), 1, 2, 3
Marching in step, 1, 2, 3
Into his/(their) cute mouth(s), 1, 2, 3
[Calpis] in the morning, and evening too, 1, 2, 3

³¹ [<http://chinchiko.blog.so-net.ne.jp/2011-05-08>] (15/06/2018).

Concluding Remarks

Ikeda Shigenori aimed his positive eugenics campaign at an educated but non-specialist audience. A skilled journalist, Ikeda was also a gifted raconteur and public speaker, and during the late 1920s traveled widely in Japan lecturing on the benefits of nutrition and outdoor exercise. Unlike his contemporaries, such as Nagai Sen (1876–1957), a physician and professor of medicine at Tokyo Imperial University, Ikeda was less a scientist and more a producer of “infotaining” materials and activities related to positive eugenics. Nagai, a proponent of negative eugenics, founded the Japanese Society of Racial Hygiene (Nihon minzoku eisei gakkai) in 1930³² and was instrumental in drafting the 1940 National Eugenics Law (Kokumin yūseihō).³³ The last issue of *Yūsei Undō* was published in January 1930, and Ikeda joined the board of Nagai’s Society. Compared with other eugenics journals published in the early twentieth century, such as *Jinsei-Der Mensch* (*Human Life*, 1905–1918) and *Yūseigaku*³⁴ (*Eugenics* 1924–1943), *Yūsei Undō*, in keeping with Ikeda’s popular focus, was distinguished by a wider variety of advertisements, from books and clothing, to functional foods, nutraceuticals, and digestives, to eugenic marriage and health counseling services. Advertisements in the other journals tended to be limited to pharmaceuticals, such as Telatuten used to treat primary diffuse arthrosis (arthritis) with arterial hypertension (Telatuten 1924, p. 30).

Suffice it to summarize here that Ikeda’s objective was nothing less than a revolution in the Japanese lifestyle, beginning dietary reform and outdoor exercises. In practice, Ikeda followed the lead of the military, where male conscripts were introduced to bodybuilding regimens and a “modern” (Europeanized) diet, but directed his focus instead on the health and physical fitness of girls and women. I, in turn, have followed Ikeda’s lead in highlighting the connections between positive eugenics and dietary reform. Japanese cuisine is not a singular, timeless, unified cultural category, but rather a contested domain

³² The society was renamed in 2017 as Nihon Kenkō Gakkai (Japanese Society of Health and Human Ecology).

³³ The law was revised in 1948 as Eugenic Protection Law (Yūsei Hogohō), and again in 1996, when the word “eugenics” was dropped and replaced with “mother’s body” (botai): Motherhood Protection Law (Botai Hogohō).

³⁴ First published as *Yūzenikkusu* (*Eugenics*), the journal was renamed *Yūseigaku* with vol. 2, no. 3 (1924).

inflected and shaped by competing ideas about the relationship between nutrition, health, and nation-building. Imperial Japan in the 1920s was an early context for this clash of ideas about the merits and demerits of certain staple foods, their presentation, and their consumption. Today, functional foods and nutraceuticals are major industries in their own right; just as they maintain the health of “gastronomic capitalism”, they also help to insure the well being of a rapidly aging population. From a historical perspective, it would appear that Ikeda’s definition and practice of positive eugenics remains a salient feature of the public relations campaigns of Calpis, Yakult, and the Japanese functional food and nutraceutical industries in general.

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