

The Introduction of European Liquor Production to Japan

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1. INTRODUCTION

What types of liquors do the Japanese drink and how? The answer to this query can be found in recent statistics on volume of depletion and consumption by type of alcoholic beverage (Table 1). We will look at how this has changed going back as far as possible.

In July 1871, a decree by the then Meiji Cabinet promulgated the “Regulations on the Method of Granting Licenses and Levying Tax with respect to the Brewing of Refined *Saké*, Raw *Saké* and Soy Sauce.” The offertory system established by the Shogunate that was succeeded by the new Meiji government through this ordinance shifted to a uniform national tax system as a result of this decree. A proviso to the first article in this ordinance states “The provisions regarding refined *saké* shall likewise apply to *mirin* and other quality liquors.” Here the term “other quality liquors” refers to *shochu* (currently termed “*Shochu* Class B”) and such quality beverages as medicinal liquor, mulberry liquor, beefsteak plant liquor, rice-cake cube liquor, and *naoshi-zaké* (rectified *saké*).

The content of this “regulation” gradually became clarified as a result of the promulgation of “Regulations on Liquor Tax” of 1875 and of “Regulations on Liquor Manufacturing Tax” of September 1880. The volume of liquor manufactured in Japan in this period is shown on Table 2.

Raw *saké*, *hakushu* (white liquor) and quality liquor found in Table 2 have disappeared from Table 1. On the other hand, *Shochu* Class A, beer, fruit liquor, whisky, spirits and liqueur found in Table 1 were not being manufactured in 1871. Moreover, with the exception of *Shochu* Class B, domestic manufacture of all other Western liquor products had begun in the ten years leading to the promulgation of the “Regulations on Liquor Manufacturing Tax.” In other words, Table 2 represents circumstances with respect to manufacturing at the starting point of the “introduction of liquor manufacturing technology” that is the theme of this volume.

What needs to be noted here is that the old laws specified the applicable scope by item so that the laws did not apply to Western liquor with regards to which manufacturing had only newly commenced. In order to cover this problem, in the “Regulations on Liquor Manufacturing

Table 1. Volume of Taxation (1994) and Consumption (1993 and 1994) of Alcohol BeveragesUnit: *kl*

	Taxed volume in 1994	Consumed volume in 1994	Consumed Volume in 1993
Refined <i>saké</i>	1,307,311	1,262,438	1,256,849
Artificial refined <i>saké</i>	53,134	50,556	43,350
<i>Shochu</i> Class A	374,989	380,650	357,507
<i>Shochu</i> Class B	296,636	267,274	248,887
<i>Mirin</i>	93,537	87,476	84,882
Beer	6,955,009	6,743,946	7,056,792
Wine	159,221	144,294	122,904
Sweet fruit liquor	12,111	12,754	12,971
Whisky	150,587	152,590	164,816
Brandy	33,021	38,091	40,138
Spirit	31,461	31,814	32,526
Liquor	237,184	222,047	192,657
Miscellaneous	244,127	209,424	29,226
(Sparkling liquor included)		(193,539)	(16,855)
Total volume	9,948,353	9,603,358	9,643,503

Source: National Tax Administration Agency

Taxed volume: January-December

Consumed volume: Apri-March (excuding Okinawa)

Table 2. Production Volume of Alcohol Beverages in Early Meiji EraUnit: *kl*

	Refined <i>saké</i>	Raw <i>saké</i>	<i>Shochu</i>	<i>Hakushu</i> (white <i>saké</i>)	<i>Mirin</i>	<i>Meishu</i> (quality <i>saké</i>)
1871(Meiji 4)	533,408	20,363	330	284	3,608	283
1872 (Meiji 5)	588,157	14,915	2,622	287	5,847	402
1873 (Meiji 6)	650,108	12,403	5,874	341	5,671	457
1874 (Meiji 7)	561,398	9,741	6,391	339	4,842	406
1875 (Meiji 8)	540,534	—	5,062	234	4,793	388
1876 (Meiji 9)	448,523	—	3,678	200	3,901	3,058
1877 (Meiji 10)	515,235	3,018	4,890	202	3,820	478
1878 (Meiji 11)	693,320	6,089	8,785	212	5,344	2,148
1879 (Meiji 12)	902,741	11,780	15,073	269	6,944	651
1880 (Meiji 13)	809,719	6,247	13,495	279	5,080	818
Average Volume for Decade	624,314	10,570	6,620	265	4,985	909

Source: Empirical Theory of Refined *Saké* Brewing Volume 3, pp.89-90. Edited by Ono, 1877.

(Compiled by Fumihiko Yokose, Liquor Tax Division of Financial Ministry.)

Tax,” liquors were categorized into brewed liquor, distilled liquor and mixed liquor. Whether Japanese or Western in origin, all were targeted for taxation. However, since “alcohol” was treated as a pharmaceutical, “ersatz Western liquor” made by admixing alcohol still was outside the scope of what was considered liquor. Article 18 of “Regulations on Liquor Manufacturing Tax” states “Those who manufacture wine, beer and other similar products shall be subjected to a license tax but exempt from tax based on manufactured volume” thus indicating that, as discussed further on, the government was making efforts to protect and nurture the manufacture of these alcoholic beverages.

It was not until the promulgation of the “Law on Taxation of Liquor and Beverages Containing Alcohol” in October 1901 that the tax law on alcohol and beverages made using alcohol as raw material finally matured.¹⁾ Around the same time, beer that had been exempt from liquor tax was targeted under the “Beer Tax Law” since the earlier objective of protecting and nurturing the beer industry was deemed to have been achieved. With this, the taxed volume of all alcoholic beverages with the exception of wine became statistically available.

Table 3 shows the status of liquor manufacturing that had at last become clear under the new taxation structure. A full thirty years had passed since domestic manufacture of Western liquors commenced. But even then, wine still does not appear in these statistics. Among ten-year statistics from 1897 to 1906, the figures for 1902 compare with those of 1904, when the Russo-Japanese War broke out, showing a significantly low level of refined *saké*, *shochu* and *mirin* produced. Average figures for the four years immediately preceding commencement of taxation of Western liquor (1897-1900) are appended for reference purposes.

There is a different reason for having listed figures from 1902 to 1914, a period that starts in the year in which, though incompletely, the volume of Western liquor taxed first became available. Beginning in 1902, alcohol production in Japan that was then utilizing single still distillers was converted to continuous stills in ten years. And from around 1911, “New *Shochu* (what is today known as Class A)” was legally produced for the first time using alcohol mass produced with continuous stills and diluted with water. Whereas the 1905 *shochu* figure is limited to Class B, the figure for 1911 obviously includes both Class A and Class B. Until promulgation of the “Temporary Additional Taxation Law” in 1937 that differentiated taxes on Class A and Class B, there was no statistical breakdown for the two types of *shochu*. The above constitutes a diachronic discussion of the commencing point and ending point of the matter to be discussed here and represents the status of liquor production as seen from statistical figures.

In this essay, liquors produced in Japan from the days before the Meiji Restoration will be termed “Japanese liquor” for convenience. Against this, those liquors with regards to which practical production began after the Restoration will be termed “Western liquor.” Looking at liquor consumption today categorized into Japanese liquor and Western liquor, the overwhelming majority falls into the latter category. At first glance this may be misinterpreted as meaning that Western liquor has overtaken Japanese liquor. However, this has mostly to do with the growth of beer consumption, and looking at taxable depletion in volume terms, Japanese liquor has continued to increase until recent years. In other words, by accepting Western liquor, the Japanese have not abandoned Japanese liquor but rather the trend towards overall greater consumption is accelerating.²⁾

Table 3. Production Volume of Alcohol Beverages in Late Meiji EraUnit: *kl*

	Refined <i>saké</i>	Raw <i>saké</i>	<i>Shochu</i>	<i>Mirin</i>	<i>Hakushu</i> (white <i>saké</i>)	Alcohol contained beverages	<i>Beer</i>
1897 (Meiji 30)	760,440	15,393	12,250	7,586	494		
1898 (Meiji 31)	804,616	11,813	11,912	7,457	536		
1899 (Meiji 32)	728,087	10,882	21,813	6,696	629		
1900 (Meiji 33)	847,706	11,425	26,746	7,839	669		
1901 (Meiji 34)	742,250	9,015	30,583	5,839	630		2,418
1902 (Meiji 35)	607,778	7,797	21,126	5,247	574	664	16,388
1903 (Meiji 36)	663,789	7,896	23,390	6,162	556	721	16,794
1904 (Meiji 37)	579,150	7,228	20,973	5,729	532	794	17,108
1905 (Meiji 38)	696,504	6,337	23,099	7,005	662	594	24,014
1906 (Meiji 39)	765,500	6,206	27,196	8,595	867	1,349	28,686
1907 (Meiji 40)	802,465	5,092	31,461	9,694	1,057	2,084	36,206
1908 (Meiji 41)	759,484	3,826	33,442	9,655	1,139	1,630	29,411
1909 (Meiji 42)	720,381	4,168	34,608	9,615	1,178	1,617	27,150
1910 (Meiji 43)	709,186	3,554	35,444	9,674	1,223	1,796	28,033
1911 (Meiji 44)	771,138	2,888	42,158	10,096	1,264	1,944	32,159
1912 (Taisho 1)	758,391	3,034	46,369	9,788	1,268	2,194	35,353
1913 (Taisho 2)	774,531	3,365	49,837	10,812	1,213	2,278	39,916
1914 (Taisho 3)	676,475	3,774	48,410	11,086	1,277	2,028	42,934

2. PATTERNS IN THE EMERGENCE OF WESTERN LIQUOR PRODUCTION COMPANIES

Before getting into a discussion of specifics, it is worth reviewing what was involved in the emergence of companies producing Western liquor in the Meiji period. Such companies can be roughly categorized into the agri-manufacturing type (genuine type) that began with production of the raw materials, and the venture business type (ersatz type) that tried to create product image using petty capital.

The development of agri-manufacturing companies was driven by public works promoted by early productivity and industrialization policies and private sector volunteers under the guidance of such public works, followed by private capital with political connections that bought into such public works. On the other hand, the development of venture business companies was driven by the ambition and effort of private sector entrepreneurs. Needless to say, there were numerous successes and failures at individual levels.

How, then, did these people or the organizations that shouldered production of Western liquor in the introductory period acquire technology for such production? There were two media by which Western production technology was introduced into Japan. The first were "people," namely those foreigners with knowledge about such technology coming to Japan and Japanese citizens traveling abroad to learn such technology. The second was comprised of the statements communicated through books and rumors.

However, reality is not limited to this. At the end of the Shogunate, Western liquor was a reality divorced from the everyday life of the people. Its existence, however, was known. And

when, with the Meiji restoration, “Civilization and Enlightenment” became a political slogan disseminated to the general public, things began to change. Western liquor shone brighter than Western hairstyles or beef bowls as a symbol of Western civilization. As a result, there were people who tried to make ersatz products.

Illicit manufacture of liquor was not uncommon in Europe and the United States in the 18th and 19th centuries. Numerous recipes evidencing such corruption still remain. However, when the first ersatz Western liquor was produced in Japan, such recipes had yet to arrive in the country. In 1871, Japan’s first liqueur was produced by Kurayoshi Takiguchi, a medicinal tradesman working out of Takekawa-cho, Kyobashi-ku, Tokyo. This was an extremely simple concoction that involved adding sugar steeped in madder essence to *shochu* [IMAMURA and YABE 1915: 295]. In creating ersatz Western liquor, it is easy to grasp that the characteristic fragrance of liqueurs and raw materials can be found in traditional herb medicines. As long as the selection of fragrance can be resolved, making ersatz Western liquor requires no special equipment and small amounts can be made using simple appliances while profitability was significant. For this reason, many emulated Takiguchi.

Although in later years, recipes for illicit manufacturing of liquor were translated, it can be said that Takiguchi and others independently arrived at methods of creating this mysterious beverage. However, the method used was not of their invention. This is because already in Japan, there were Japanese liqueurs called “Quality Liquor.” Many of these are made by soaking leaves, roots and the bark of plants in *mirin*. The method of preparing liqueur employed by Takiguchi and others replaced *mirin* with alcohol and sugar to more closely emulate the Western variety.

Another example of trial and error methods being used in the absence of accurate information was in the initial production of wine. According to the Kofu Newspaper, in 1873 Hironori Yamada of Hironiwa-cho, Kofu, attempted to make wine using wild grapes. However, circumstances surrounding this attempt are not known. Hironori Yamada was fond of inventions and it is said that around the same time, he manufactured writing chalk and soap. The following year, Yamada produced white wine using Koshu grapes from Katsunuma and red wine using wild grapes under the *saké* maker Norihisa Takuma of Kofu City. All tools used were those used in brewing refined *saké*. An overview of the method employed can be found in the 165th Edition of Kofu Newspaper (February 10, 1875). According to this report, the grapes were placed in a vat without crushing and squeezed with malt added in an amount equivalent to one-tenth the volume of the resulting juice. The result was stirred with a paddle to promote fermentation. A similar procedure was followed for red wine with no knowledge of brewing with the skin of the grape intact. In other words, the first Japanese domestic wine known to history was made using techniques that had nothing to do with wine brewing techniques of the West.³⁾

One of the reasons why Norihisa Takuma planned to commercialize wine was the stimulus provided by a Masaaki Noguchi, another *saké* maker in Kofu, who had planned and begun preparations towards domestic production of beer in the years 1871 and 1872. Under the guidance of Copeland, a beer brewer living in Yokohama, Noguchi began brewing beer in 1874. Kai, a Shogunal domain during the Tokugawa era, developed close contact with the Yokohama concession through silk trade after the Restoration, and a spirit of enlightenment was nurtured among commercial circles. It can be surmised that there was a spirit of competition between

Noguchi and Takuma, both involved in the same industry, to succeed in beer on the one hand and wine on the other [ASAI 1992: 189].

A person such as Copeland, from whom Noguchi received instruction in commercializing his product, could not be found anywhere in Japan in the case of wine. Even in Europe or the United States, oenologists that could be compared to Braumeister did not exist in the case of wine. Wine was being produced as a home brewed beverage and did not require specialists. But as a Japanese, divorced completely from such a wine making culture, and contrary to the simple concoction of ersatz Western liquor, Yamada clearly did not have the capacity sufficient to engage in full-scale production of wine.

In 1876, Shiro Fujimura, Governor of Yamanashi Prefecture, began plans for a prefectural winery. He sent Matsugoro Ofuji, who had returned after studying wine production in the United States, to Takuma's *saké* brewery to provide instruction. This was in response to a request from Takuma. However, in 1877, Takuma went bankrupt suffering from cash flow problems brought on by poor sales and the investments he had made towards improving quality in expectations of receiving a subsidy from the government [ASAI 1992: 197].

Despite Takuma's failure, numerous ambitious attempts to commercialize wine continued with initiatives in grape and wine production. Behind this was the initiative of the Meiji government towards increasing production and industrialization. In venturing into this unknown business, these people did not follow the route taken by Takuma. Tojiro Fujita, a *saké* brewer in Hirosaki producing the refined *saké* "Shirafuji," received instruction from a Methodist missionary [FUJITA 1987: 33].

A "hired foreigner" was at the helm of the Hokkaido Colonization Office Winery that opened in 1877.⁴⁾ The Dai-Nippon Yamanashi Winery established in the same year sent two employees, Shosei Takano and Sukejiro (Tatsunori) Tsuchiya to France for technical training and began production in 1879 after their return [IMAMURA and YABE 1915: 230]. Moreover, although it was in the year 1884 that the public sector Banshu Vineyard began producing wine, the Ministry of Agricultural Commerce stationed Jiro Katsura, who had studied in Germany and France, under Hayato Fukuba, director of the vineyard, in August 1883. However, Katsura was soon relocated to the Colonization Office Sapporo Vineyard and assumed responsibility for wine production there. For this reason, at the Banshu Vineyard, Suguru Katayori assumed responsibility working with advice from Katsura [ASAI 1992: 112].

Additionally, in the areas of production of wine grapes and supply of vine root stock, there are notable achievements by "Mita Breeder" established by Masana Maeda who had studied in France and was knowledgeable about agricultural matters, "Senshuen" established by Zenpei Ozawa who had worked in a winery in California, and "Gakunosha" established by Sen Tsuda who had studied in Austria.

In order to begin producing wine, the raw material, grapes, must be first obtained. Concerning grapes, the "Agricultural Encyclopedia" [1697] stated that "In order to produce wine, ordinary grapes are not appropriate." After it was recognized in 1870 that what were needed were not the grapes indigenous to Japan, the Ministry of Public Affairs (later Agricultural Department of the Ministry of Finance) and the Hokkaido Colonization Office became active in collecting seeds of various species from abroad. Before these young vines were distributed throughout the nation and a national project towards wine production begun,

initiatives such as those of Takuma, Yamada and most probably others were already in the forefront. In contrast to this, in the case of beer the existence of technicians was clear from the outset of domestic production. In Japan, Komin Kawamoto (1810-1871), a scholar of Western sciences, who test produced beer based on “New Science” that he himself translated, is commonly referred to as the father of domestic beer. However, the first successful attempt in a commercial sense was by Spring Valley Brewery.⁵⁾ This company was established by the American, W. Copeland (1832-1902) in the concession at Yamate 123, Yokohama in 1869. Copeland himself was a technician in beer brewing. After this, the German technician E. Viscount began brewing beer at Yamate 68 in the same concession. This latter initiative was short lived. [INAGAKI 1978: 16].

On the other hand, in Western Japan the plan by Osaka Kaisho-sha that invited Hicknuts Frust, an American brewery technician, in an attempt to enter the beer business came even earlier. Shozaburo Shibuya took over this plan and opened a brewery in Dojima, Osaka, in the year 1872 and launched “Shibuya Beer.” This was the first domestic beer from a company managed by a Japanese citizen. Hicknuts Frust left for home in just a year and Yoshizo Kanazawa who had, though for only a short time, learnt beer brewing under him by experience took over the work [HAMADA 1936: 96]. In 1877, a beer brewery was opened in the Kyoto Industry Promotion Department Seimikyoku. The famed “hired scientist” who supervised this facility from around 1882 was G. Wagener.

Earlier than this, another publicly operated brewery, the Hokkaido Colonization Office Sapporo Brewery, was opened in September 1875. Seibei Nakagawa, who had studied in Berlin, was selected as the brewing technician [Dai Nippon Beer Co., Ltd. Sapporo Branch 1936: 4].

As can be seen, beer brewing in its formative years was initiated by foreigners with specialized knowledge living in Japan or Japanese returning from abroad having acquired expertise. Moreover, the technicians who were involved in the breweries set up by later entrepreneurs were locals who had worked under the guidance of the forerunners. The numerous minor beer brands that sprang up from the mid 1880s to the 1890s can be categorized according to the people responsible for their brewing. In Eastern Japan, there is the genealogy that begin with Kichigoro Murata who studied under Copeland, while in Western Japan, there are genealogies that begin with Yoshizo Kanazawa who succeeded Hicknuts Frust, and Masaaki Noguchi’s “Sanrin Beer” brewed by Sukejiro Yokoyama who had studied under Murata and the Kyoto Seimikyoku.

Production of domestic beer that began in the early part of the Meiji Era was subjected to alcohol tax from 1901 when the “Beer Tax Law” was promulgated, based on the understanding that the objectives of the nurturing policy had successfully been achieved. This move did not come because the business of the many small breweries had stabilized. It was because the companies successively established by big business in the 1890s had steadily increased production so that shipments exceeded those of wine and *mirin*. In this period, beer brewing had transformed from a venture business to an equipment based brewing industry. These companies, which eventually would move towards oligopoly, were Sapporo Beer, Osaka Beer (Asahi), Nippon Beer (Yebisu), The Japan Beer (Kirin) and Marusan Beer (Kabuto and later Union). All these companies possessed low temperature fermentation equipment using freezers and operated under the guidance of German brewing technicians.

Sweet wine was alone among ersatz Western liquors in that it came close to the real thing. Perhaps it is more correct to say that true Western liquor was taken and Japanese modifications applied. The origin of this product goes back to a trading company operating in the foreign concession in Yokohama that dealt with imported liquor. In addition to packing wine from kegs into smaller portions, the company mixed such appetizers as Dubonnet and San Rafael into the wine. Based on experience gained while working for this company, Denbei Kamitani created "Hachijirushi Kozan Wine" and positioning the product as a tonic wine, successfully developed a market different from the table wine market [ASAI 1986: 241].

Kamitani next entered the alcohol business. Sweet wines contained, in addition to imported wine, imported alcohol. It was not until 1905 that domestic industrial production of alcohol became a viable business [SUZUKI 1974: 78]. Kamitani was one of the forerunners in this area. In those days, the primary use of alcohol was as a solvent in the production of gunpowder and pharmaceuticals and high concentration was a requirement. For this use, the then prevalent alcohol produced in single stills as in the case of *shochu* was far too impure, so that the market was dominated by imported alcohol. As a result, two types of continuous still distilling equipment from Germany and from France were imported for domestic production of alcohol. Later, production of alcohol using waste theriac as raw material became a going concern and by the 1910s, supply exceeded demand.

Kamitani was aware of the value of alcohol as a base for ersatz Western liquor from an early stage, while the Settsu Refined Sake Brewery actively entered this field shortly after. At around the same time, a new type of *shochu* produced by mixing a small amount of *shochu* into raw grain alcohol was created and was highly successful in the Tokyo market. This resembles the situation in England where grain whisky produced in continuous stills, that had been confronted with problems in developing a sales route, was successfully blended with malt whisky produced in a single still for the London market. However, here the similarities cease. The new type of *shochu* pursued purity of alcohol and moved closer to vodka to become what is known today as *Shochu Class A*.

In the Meiji and Taisho eras, plants using continuous distilling equipment produced industrial alcohol on the one hand while on the other, acted as manufacturers of new type *shochu* or ersatz Western liquor and maintained a position of strength on a par with refined *saké* and beer. While Kamitani possessed strong brands of ersatz Western liquor such as sweet wines and "Denki Bran," Settsu was almost solely responsible for order based production of Western liquor in the Kansai area and developed into what may be called a secondary processor of alcohol.

In an attempt to move forward from ersatz liquor to the genuine product, the Settsu Alcohol Production Joint Stock Company sent an employee abroad in 1916 to study techniques of producing Scotch whisky. This man was Masataka Taketsuru who would later be involved in the establishment of Suntory Whisky and would himself found Nikka Whisky. Whisky that occupied the prime position among domestic Western liquors after the Second World War and in the period of high economic growth had in fact been significantly delayed in terms of introduction of technology. In the period when production and industry were promoted, whisky did not have the justification for preferential treatment that wine and beer had, and when the future of Western liquor seemed at last to hold some promise with the growth of sweet wines,

for the producers that had begun with very little capital, moving from the ersatz to the genuine was not an easy conversion.

3. INTRODUCTION OF TECHNIQUES FOR PRODUCTION WESTERN LIQUOR AND THE PERIOD OF ENLIGHTENMENT

In the previous section, an overview of how production of Western liquor began in Japan and in particular the manner in which techniques were disseminated was presented.

We now ask, why did the Japanese attempt to produce Western liquor domestically? First, social trends nurtured the opportunity. The slogans “Civilization and Enlightenment” and “Propagation of 100 Industries” spurred entrepreneurs to action earlier than the policy of the Meiji government to promote production and industry. Second, there appeared a divergence in methodology. This divergence took the form of two opposite approaches, the production of “genuine” versus “ersatz” alcoholic beverages.

Genuine alcoholic beverage production began as a national project coupled with the introduction of Western agriculture (fruit and livestock farming, large scale farming through land clearing, use of slopes as opposed to rice paddies, and wheat farming). The latter involved methods of admixing using alcohol as a base with wholesalers of medicinal herbs playing a central role. The method of dissolving medicinal herbs or fragrance into alcohol and seasoning with syrup (made from refined sugar) is fundamentally no different from the method used in Galenic pharmacy. The method is the same as the origins of liqueur. For this reason, among those involved in producing Western liquor in the medicinal herb wholesaler fashion, awareness of the product being “ersatz” was probably not strong at the outset. However if the resulting product were to be called whisky, this would obviously be a case of ersatz Western liquor. The methods used were often brought from the United States. The United States was ahead of Japan in this respect and possessed recipes for ersatz liquor.

In the introduction of techniques of producing Western liquor, the media, as previously explained, were primarily technicians and books. However, there are other reasons why production of Western liquor grew dramatically while in competition with indigenous *saké* production. On the one hand, there was the introduction of hardware (equipment and machines) that was in step with the global progress being made in Western liquor production, and on the other there was the software aspect of increased demand for Western liquor in Japan.

The most notable results were seen in the production of beer. As has been explained earlier, with respect to beer in the early stages, an abundance of medium to small breweries was born. In its infancy beer attempted to emulate ale produced by the British company Bass and used the infusion method of saccharification and fermentation at ambient temperature. This method requires little specialized equipment. Both raw materials and equipment could be obtained from imports.

However, around this time a new method of producing beer at low temperature was becoming the norm. The reason Seibei Nakagawa, who studied beer brewing in Berlin, labeled the Ministry of Development beer as being “Cold Brewed” was this. However, this involved using water from the river Toyohira and storing ice for refrigerating in the brewery and thus lowering the temperature for fermentation [INAGAKI 1978: 70], and was not possible to operate

throughout the year.

It was in 1876, the very year in which the brewery of the Ministry of Development (Kaitakushi) opened, that the German engineer Karl Linde (1842-1934) created efficient refrigerating equipment using ammonia and applied this technology to the refrigerator. Use of the refrigerating equipment in industry spread in fisheries and breweries at a rapid pace and this advanced technology was introduced into Japan at an early stage. In the late 1880s the large beer businesses were undergoing restructuring as explained in the previous section, and this resulted from the need to obtain large investments in order to introduce advanced equipment in a timely manner. As a result, Japanese beer companies rapidly completed their transition to an equipment based industry using the German style low temperature fermentation method. Moreover, this made possible the promulgation of the Beer Tax Law. At the same time, medium to small breweries producing English style beer were left behind.

The invention of refrigerating equipment and refrigerators that made use of such equipment accelerated progress in the modern beer industry. Beer in Japan was blessed with luck since rapid growth coincided with this period. The fact that the army consumed a vast volume of beer, nurtured beer drinkers and, by returning veterans to all parts of Japan, was instrumental in creating a national market cannot be ignored [Kirin Beer 1984: 183].

The continuous still was to distilling what the freezer was to beer in leading to a breakthrough in production. The reason why whisky, rum and vodka became such giant products distributed throughout the world was because the continuous still brought about dilution of indigenous features (and through this, achieved product characteristics appropriate for mass markets) and allowed mass production using inexpensive raw materials.

What meaning did the continuous still have for the production of Western liquor in Japan? In Scotland the Coffey type of continuous still was used in the production of grain whisky while in Europe, improved types were used in the production of grape spirits, korn, schnapps, and vodka. Canadian whisky, American whisky, and white rum were also produced using the continuous still. Although vodka and schnapps are exceptions, fundamentally the products were distilled products with the fragrance of the raw materials remaining.

The product that was born through the introduction of this equipment to Japan is *Shochu* Class A. Since this product is listed together with *Shochu* Class B, there is a tendency to think of the product as indigenous to Japan but in reality, the product was born of technology brought into Japan after Meiji and in this sense should be put in the category of Western liquor. Moreover, in the sense that the indigenous aspects of the raw materials are kept out by the equipment used, it is a highly civilized beverage.

However, with improvements made in the continuous still in its ability to separate alcohol from impurities, close to 100% purity was attained. In a sense, technological progress towards a goal took the continuous still to a level that, while being a distilling machine, was tantamount to self-rejection as equipment for producing liquor.

In the latter part of the 19th century, around the time wine production was about to begin in Japan, technology for producing liquor in Europe was extremely vague and uncertain when it came to wine. Two youths from Iwai Village in Yamanashi Prefecture who traveled to France wrote as follows about what they had learnt after great effort.

The art of making wine is indeed facile. All that is involved is to crush the grapes and to place this in a cask. After boiling and cooling, the concoction then becomes liquor. [TAKANO and TSUCHIYA 1878].

In those days, there were none in France who explained wine-making technology in academic terms. Nor was there ready access to know-how accumulated through experience, as in the case of beer technicians. If grapes are crushed and placed in a cask, the fermentation process begins naturally, and by squeezing the resulting concoction, wine can be obtained. This is the wisdom of those who lived in cultures where wine is produced. In their notebooks, the youths left more information about the tools and equipment used than on the process of wine making. But these tools could, for the most part, be substituted by tools used for making refined *saké*.

However, production of domestic wine did not meet with success in the Meiji era. There are two reasons for this. The first was due to the fact that production of the raw material (grapes) failed as a result of phylloxera. The second was the difficulty in introducing table wine into the dining habits of the Japanese. Even the military that actively adopted beer used wine only in small quantities as a pharmaceutical. Imported wine was consumed only among the Imperial family, the peerage, and the very wealthy.

In the meantime, sweet wine disseminated widely among the ordinary people and wine, the raw material, continued to be produced in small quantities. Reemergence as table wine had to wait until after the Second World War. And even from a global perspective, it was not until the 1960s that wine production achieved highly significant results as a result of improvements in equipment and machines and rationalization of labor using scientific methods. During the 100 years since the Meiji restoration when technology that could be adopted was not to be found, wine making in Japan borrowed the tools used in the production of refined *saké* and became in a sense indigenous. This was a phenomenon that replicated itself in many regions worldwide, and when these producing regions moved towards modernization in the 1970s, so also did wine production in Japan.

4. CONCLUSION

Looking at the total picture of the introduction of European liquor technology to Japan, beer was easily introduced together with the brewing facilities as its technology was well established and clearly identified. The introduction of wine-making technology, on the contrary, was much more problematic. Wine production was undifferentiated from agricultural production and therefore, for the Japanese who wished to introduce a new technology in order to create a wine industry, the existence of such technology was exceedingly difficult to identify. With respect to distilled liquor, rather than introducing genuine technology, production of ersatz liquor which was possible with very little investment was conducted, and as a result domestic production of malt whisky had to wait until capital was amassed through the success of sweet wine. In the interim, continuous stills were imported from Europe in order to fill the demand for industrial alcohol, and *Shochu* Class A was born. With quality alcohol at low prices available, various ersatz Western liquors appeared but the greatest success was that of artificial refined *saké*. Moreover, with the improved performance of the continuous still, triple-fold

brewing achieved practical application. Today, the ratio of indigenous to Western beverages consumed by the Japanese is overwhelmingly in favor of Western as a result of the growth of beer, but this does not signify that indigenous products are disappearing in the face of Western products. *Shochu* Class B is growing at a rate that poses a threat to whisky, while with refined *saké* quality local varieties with distinct personalities are firmly entrenched. Within such an environment in which both imported and indigenous forms are players, internationalization of the market and the coexistence of Western and Japanese liquors are progressing.

This paper has primarily focused on liquor production, but the situation changes in tandem with demand so that the question of whether or not the market will continue to provide impetus for the production of Western liquor cannot be overlooked. It is also worth noting that the current Western liquor market was formed in the 50 years since the end of the war [ASAI 1995: 493]

NOTES

- 1) Under Ministry of Finance Ordinance B-12 of 1879, it was determined that alcohol would be deemed a pharmaceutical product. The 1882 amendment of the “Regulations on Liquor Manufacturing Tax” introduced taxation on alcohol at the level of *shochu*, but as a result of subsequent tax hikes and the resultant rise in the price of liquor, illicit manufacture using alcohol became more prevalent. In 1893, the “Alcohol Business Tax Law” and in 1896, the “Mixed Liquor Tax Law” were promulgated thus targeting for taxation ersatz Western liquor made from alcohol and other beverages by mixing liquor with some other liquor or with some other beverage. However, since the tax rate on alcohol was the same as for *shochu*, illicit manufacture using taxed alcohol continued. The “Alcohol and Alcohol Containing Beverage Tax Law” introduced taxation by alcohol content, thus resolving these problems.
- 2) An accurate analysis of drinking patterns shows that consumption of refined *saké* peaked in the years 1973 to 1975 and has since begun to decline, while consumption of whisky peaked in 1983 and is now on the decline. This indicates that when the liquor market in which Japanese and Western liquors coexisted became saturated, competitive principles other than those involving Japanese and Western liquors are at work to change the structure of the market.
- 3) With respect to the origin of domestic wine, there are theories being disseminated that experimental brewing by Takuma and Yamada took place in 1870 or 1871, but there is no basis in fact and this contention should thus be amended.
- 4) The number of foreigners employed by the Colonization Office in the early Meiji period numbered 63 people from 6 countries. There are no records as to who among them was responsible for brewing. However, in the year preceding the year in which the breweries were opened, an experiment in brewing wine was conducted using wild grapes. The person responsible for this experiment was a botanist by the name of Louis.
- 5) Although a Briton brewed wine at 46 Yamate earlier than Copeland, this business ended within a short period.

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