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4

Racializing Bodies through Science in Meiji Japan: The Rise of Race-Based Research in Gynecology

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Introduction

In his 1908 paper discussing the reproductively active years of women of various ethnic backgrounds, physician Yamazaki Masashige (1872–1950) emphasizes the idea that many different "races" reside in the Japanese empire other than the Japanese race, which he describes as "the race descended from the imperial line" (*tenson shuzoku*).[1] These so-called inferior races included the Ainu, the Chinese in Taiwan, Taiwanese aborigines, and the people who inhabited the Ryūkyū islands (the Ryūkyūans). Discussing the relations between the Japanese and these other races, Yamazaki draws on Social Darwinist thinking: "According to the law in which the superior conquers the inferior, weaker races will be subordinated by stronger ones. These [inferior] races would either assimilate to a superior one or perish. [As such,] they will never preserve the original racial characteristics."[2] Believing that these non-Japanese "races" would eventually become extinct, Yamazaki felt it urgent to study their racial traits, including differences among the different races in the onset of menstruation and menopause, while these racial groups still existed. Yamazaki was one of numerous Meiji scientists who appropriated from Europe and the United States the notion of race as a scientifically valid category along with Social Darwinist ideas. Focusing on Yamazaki's paper, I examine the way sexed and racialized bodies emerged from scientific and medical discourses in Japanese history. I also explore how scientific and medical discourses on race were developed in conjunction with discourses and policies associated with Japan's nation- and empire-building projects in the late nineteenth and early twentieth centuries. This case study shows that scientific and medical research, while at times maintaining a certain autonomy, was never immune to political, social, and economic forces.

DEBATES ON "RACE" IN MEIJI JAPAN

Race was an important concept in European scientific and medical practices during the eighteenth and nineteenth centuries. Attempts to classify people into different groups based on the racial characteristics manifested in human bodies constituted a significant part of medical and anthropological research. Scholars used increasingly sophisticated methods and instruments, including photography, for measuring various body parts and identifying racial traits with precision. In the late nineteenth and early twentieth centuries, many anthropologists used the evolutionary paradigms made available by Social Darwinism to divide people into different racial groups. Differences in specific physical characteristics, such as the size of the skull, were used not only as markers for classifying people but also as a means of locating certain racial groups within a linear civilizing process that mankind inevitably is meant to undergo. By replacing "species" with "race" in the Darwinian struggle for survival, they also asserted that some races were destined to perish while others would prosper.[3]

As a scientific concept, race was introduced and popularized in Japan in the late 1870s and in the 1880s through the adoption of Social Darwinism, eugenics, and anthropological methods. Scientific studies of race in Japan had been initiated by European and American scholars who went to Japan beginning in the early 1870s.[4] The American zoologist Edward S. Morse (1838–1925) introduced anthropological and biological methods in Japan for the first time in the late 1870s.[5] As a visiting professor at Tokyo Imperial University, Morse introduced Darwinian evolutionary theory, even preceding the publication of Japanese translations of Darwin's works.[6] Morse also contributed to the development of anthropology in Japan through his famous discovery and excavation of the shell mounds of Omori. Morse's interest in Japanese prehistory also led him to explore the racial formation of the people who lived in Japan during that period.

By the mid-1880s, Japanese intellectuals were engaged in vociferous discussions on the history and contemporary issues concerning the Japanese race and its relationship with other racial groups; Social Darwinist thinking from Europe and the United States played a large role in these discussions. Once Morse had introduced Charles Darwin and Herbert Spencer's evolutionary theories, prominent Japanese scholars at Tokyo Imperial University, such as Toyama Shōichi (1848–1900), Katō Hiroyuki (1836–1916), and Oka Asajirō (1868–1944), enthusiastically embraced Social Darwinism to explain the state, politics, human society and history. A version of Social Darwinism that many Japanese intellectuals adopted postulated the state as a natural organism and people as individual cells. Based on this thinking, these scholars argued for the importance of protecting the interests of the state, which presumably constituted the core of this living organism, even when it meant sacrificing the well-being of individuals. Furthermore, they used Social Darwinism to justify economic, political, and social inequality among individuals as a natural outcome of the theory of natural selection with its need

for continuous struggle to ensure the ongoing improvement of the race. Japanese thinkers also extended the notion of individuals competing with each other in a "struggle for existence" to nations and racial groups, which they envisioned as going through a similar process.[7]

Accepting the notion of an evolutionary scale indicating the level of advancement reached by each nation, Japanese intellectuals from the Meiji period generally believed in the inferiority of Japanese people vis-à-vis European populations. However, this did not lead them to argue that the Japanese were destined to be defeated in the competition between nations and racial groups. Rather, they suggested that by implementing adequate social, economic, educational and public health policies, Japan would be able to improve its citizen's physical and mental capacity to advance its civilization, and to compete against European nations and the United States.

This thinking was demonstrated in the debates about whether Japan should abolish restrictions on the areas where foreigners were allowed to reside within Japan and give them freedom to choose their own residences. Those who supported mixed residency argued that the presence of Westerners would promote economic, entrepreneurial, and cultural developments in Japan. Some even proposed that the Japanese should promote interracial marriages with Westerners in order to strengthen their racial stock. Others vehemently opposed mixed residency because they thought it would result in Westerners taking advantage of them economically and monopolizing Japanese resources. Drawing on Herbert Spencer, some of them suggested that interracial marriages between the Japanese and Westerners would lead to the demise of the Japanese race because of the rule that the blood of the superior race would subordinate that of the inferior race when they were blended by marriage.[8] Although there were a number of viewpoints in this debate, they were all framed by Social Darwinist thinking.

In addition to contemplating relations between the Japanese and European races, both European and Japanese scholars sought to redefine various racial and ethnic groups in East Asia by using newly introduced anthropological methods. In addition to Edward Morse, German scholars and physicians teaching at Tokyo Imperial University led these research efforts. For example, based on the data obtained by measuring skeletal specimens, anatomist Wilhelm Dönitz presented a theory about the racial formation of modern Japanese people. He hypothesized that the Japanese race derived from the mixing of two different races: the Malay and the Mongoloid.[9] Dönitz claimed that the Mongoloid race included two different types, one of which was the Ainu.

Contrary to Dönitz, who formed his hypotheses based almost exclusively on people's physical traits, Erwin von Baelz (1849–1913), a professor of internal medicine at Tokyo Imperial University, incorporated differences in cultural customs into his racial typology. He regarded the Ainu as a separate racial group from the Japanese belonging to the Caucasian race. He divided the Japanese group into two distinct types, both of which derived from the Mongoloid race. The first was what he called the Chōshū type, a group

whose ancestors migrated from the Chinese continent through Korea and spread through the Chōshū area—the southwestern tip of Japan's main island. They possessed a slender body, a long head, a long face, up-turned eyes, a nose of a medium height, and a small mouth. Baelz claimed that this type was often found among upper-class Japanese as well as upper-class Chinese and Koreans. A second type called the Satsuma type also belonged to the Mongoloid race but resembled the Malays. According to Baelz, a larger number of Japanese people, particularly commoners, belonged to this group. Their ancestors also migrated from the Korean peninsula, but unlike the first group, they initially settled in southern Kyūshū—one of the four Japanese islands located in the south—before they conquered the rest of Japan. Their facial and bodily traits were marked by short and stocky stature, short head, wide and short face, high cheekbones, eyes that were less slanted, a flat nose, and a large mouth.[10]

The Korobokkuru Debate and the "Original" Japanese

Following the lead of these European scholars, Japanese anthropologists also embarked on research on races in Japan and its vicinity. During the 1880s, while Social Darwinism became increasingly popular among Japanese intellectuals, they began to show a strong interest in studying the racial identity of the Japanese, especially that of the "original inhabitants" on Japanese islands during prehistoric ages. This interest culminated in the so-called Korobokkuru controversy. This debate centered on the question of who lived in the Japanese islands during the Stone Age, before various groups of people migrated from the Eurasian continent and islands in Southeast Asia and the Pacific. The leading anthropologist Tsuboi Shōgorō (1863–1913) and his followers maintained that the "original Japanese" were the so-called Korobokkuru tribes who appeared in Ainu mythology, and who were presumably forced out by the thriving Ainu people at the time. Another group of anthropologists, including the prominent physical anthropologist and anatomist Koganei Yoshikiyo (1859–1944), argued that the legendary Korobokkuru people were in fact an Ainu tribe that inhabited Japan during the Stone Age.[11]

Tsuboi's 1888 research trip to Hokkaidō convinced him that his own hypothesis was correct. After excavating shell mounds and other prehistoric remains in Hokkaidō, Tsuboi asserted that the Stone Age people (i.e., the Korobokkuru people) possessed specific customs and cultural artifacts, such as living in pits and making clay pottery and stoneware, which were different from the Ainu culture.[12] Taking issue with Tsuboi was Koganei, who accompanied Tsuboi on the same research trip. Koganei developed his own theory based on reports that some Ainu tribes in islands north of Hokkaidō had engaged in the same cultural practices ascribed to Stone Age people in question. Tsuboi's thesis eventually lost credibility due to the findings of Torii Ryūzō (1870–1953) on his 1899 research trip to the Chishima islands.

Torii discovered that the Ainu tribes in the Chishima islands lived in pits and used similar stoneware and clay pottery. The Ainu people whom he interviewed demonstrated that such customs had been handed down to them by their ancestors, not left by other peoples. Moreover, they did not have any legends about aborigines who had lived on the land before they settled there.[13] Such facts suggested the probability that the mythological Korobokkuru people were an offshoot of the Ainu tribes.

What is of interest here is not the validity of these various arguments, but the preoccupation that Japanese anthropologists and the general public developed in the Ainu as a racial "other." Both Tsuboi's and Koganei's factions shared the basic understanding of the Ainu as an inferior, uncivilized, and "dying" race.[14] Such attitudes about a "primitive race" were only made possible by the Japanese intellectuals' appropriation of ethnocentric interest, methods, and attitudes as embedded in racial theories produced in Europe and the United States.

The ways in which Japanese scholars discussed racial differences involving racial or ethnic groups in East Asia were more complex than similar debates in Europe. As opposed to Europeans, who could often posit an unambiguous boundary between themselves and "non-European" races, Japanese scholars could not deny certain affinities between the Japanese and what they considered other racial groups in East and Southeast Asia. Japanese intellectuals often strategically cited differences or affinities between the Japanese and other races in East Asia to pursue political agendas. In order to clarify how, when, and why specific strategies of exclusion and inclusion were adopted, we need to conduct extensive research encompassing diverse fields and historical periods.[15] The following case study aims to contribute to such scholarship.

Yamazaki Masashige and Women's Bodies

Many physical anthropological studies from the late nineteenth century focused on studying the differences between the Ainu and the Japanese, racial categories that many anthropologists had accepted as indisputable.[16] However, by the turn of the twentieth century, when Ryūkyū and Taiwan had become Japanese colonies, some Japanese anthropologists and physicians asserted that the racial composition of people living within the Japanese empire was more complex than a simplistic division between the Ainu and the Japanese. For example, the obstetrician–gynecologist Ogata Masakiyo (1864–1919) severely criticized German researchers for failing to classify the Japanese and groups such as the Chinese, the Koreans, and the Ainu as separate races.[17] Some Japanese anthropologists began publishing papers on the anatomical characteristics of Koreans and a Japanese outcast group that had been called the "*eta*" or "*kawata*" during the Tokugawa period (1603–1868). Thus, Japanese researchers developed a great deal of interest in clarifying racial divisions, including the physical and mental traits specific to each race, in Japan and nearby countries. Yamazaki Masashige's (1872–1950)

paper "On Menstruation of Women of Four Races: The Japanese, the Ainu, The Ryūkyūans, and the Chinese" responded to the kind of criticisms leveled by Ogata and attempted to establish a more complex framework for dealing with racial differences among East Asian peoples.[18]

Yamazaki was a leading obstetrician–gynecologist during this period. He followed a typical career trajectory for an elite physician, studying at the medical school of the Tokyo Imperial University and receiving his graduate education in Germany. Upon completing his medical studies, Yamazaki assumed supervisory positions at several different publicly funded hospitals. The above-mentioned paper was written while he was presiding over the gynecology and obstetrics division of Kumamoto hospital, an institutional affiliation that facilitated access to his research material—women's bodies. This work was also facilitated by the professional network he developed while attending Tokyo Imperial University and working at public hospitals, both of which provided opportunities to collect data on women of ethnic minorities.

Yamazaki's paper begins by underlining the importance of studying women's reproductive capacity for national purposes and deploring the fact that Japan lagged far behind European nations and the United States in this area of research. Studies by European and American researchers, he observes, indicate that the timing of menarche and the onset of menopause differ in response to a variety of environmental factors, including geographic location, climate, custom, the degree of civilization, status, profession, living standards, nutrition, and health. European researchers had also discovered that the length of active reproductive years depended on specific conditions pertaining to each individual, such as certain hereditary traits, personality, and physique. Yamazaki contends that, even though some Japanese physicians had conducted statistical research similar to that in Europe and the United States, they had not sufficiently explored racial differences pertaining to women living in various parts of the Japanese empire.[19]

Filling this gap was in fact Yamazaki's main goal. His study is based on Social Darwinist notions, appropriated from European studies in which physicians attempted to correlate the reproductive physiology of different races and classes to the degree of cultural and material progress each group had supposedly attained. While Yamazaki shared the basic Social Darwinist assumptions of European physicians, however, his justification for claiming the Japanese race to be the superior to other races in the Japanese empire was unique. His science is mingled with ideas about the mythical past of a mighty Japanese race that had presumably driven away inferior races such as the Ainu from Japan's main island.

Yamazaki and Japan's Colonial Project

Yamazaki attributes the dispersion and assimilation of the Ainu to the spread of the cultural and political influence of the Yamato race, or as he calls it, "the race that descended from the Japanese imperial family (*tenson shuzoku*)."[20] During this conflation of mythical, prehistoric, and historic events, Yamazaki

even invokes the court-appointed general Sakanoueno Tamuramaro's (758–811) campaign to fight against the *ezo*—the "toad barbarians" in the East—in the late eighth and early ninth centuries as evidence of the strength of the Japanese race and the biological feebleness of the Ainu.[21]

Yamazaki pursues this argument by describing the dire health conditions of Ainu communities and the rapidly declining Ainu population. He contends that the Ainu had once been a physically robust people, but had deteriorated because of the conversion of their hunting fields to agricultural settlements, depriving them of sufficient game to maintain their traditional meat-based diet.The rate of infant mortality, according to Yamazaki, was also very high among the Ainu.[22] Yamazaki ignores, however, the Meiji government's aggressive colonial policies, which had developed agricultural settlements in Hokkaidō and thereby deprived the Ainu of their land. Another reason for the decline of the Ainu population was new diseases transmitted by Japanese colonizers.[23] In Yamazaki's view, however, inferior races such as the Ainu were fated to vanish as a result of natural law (*shizen no tensoku*).[24] In this way, the net effect of Yamazaki's Social Darwinist argument is to conceal the political and economic processes that were transforming the lives of the Ainu.

In contrast to his discussion of the Ainu, Yamazaki emphasizes the racial affinity between the Ryūkyūans and the Japanese, leading him to conclude that as time passed the former would be increasingly assimilated to the latter, finally losing their particular racial characteristics. Although he dismisses Japanese colonial policies that subjected Ryūkyūans to Japanese rule, Yamazaki makes the curious argument that Ryūkyū had been annexed to Japan earlier in the Meiji period than any of the other colonies because of the Ryūkyūans' racial affinity to the Japanese. In this view colonization is a natural process caused by the presumed biological and cultural similarity of the two races. As such, the Ryūkyūans' assimilation to the Japanese was an inevitable result of biological principles. According to Yamazaki, this process of acculturation began immediately after the annexation and had been rapidly advancing through interactions with the Japanese and their superior civilization.[25]

Yamazaki was also certain that the Chinese people and Taiwanese tribes in Taiwan would eventually be assimilated into the Japanese race—either that or they would vanish. In Yamazaki's view these races had benefited by adopting Japanese ways after being subjected to Japanese rule following the 1895 Sino-Japanese War. Unfortunately, there were some Taiwanese aborigines—Yamazaki refers to them as "raw" aborigines (*seiban*)—who, unlike "mature" aborigines (*jukuban*), had refused to receive the benefits of civilization. Yamazaki writes that these tribes resided deep in the mountains and maintained their barbaric customs, refusing to adopt even Chinese civilization. Yamazaki predicted that these "raw" natives would follow the same fate as the Ainu—losing their indigenous customs and eventually disappearing as a race.[26]

The predicted permanent loss of original racial traits in these presumably inferior races, whether by assimilation or extinction, posed a serious challenge

to Yamazaki, who considered it extremely important for scientists to study such distinct racial characteristics before they disappeared.[27] This sense of urgency was shared by many other Japanese scholars and intellectuals in diverse fields. Looking upon these "dying races" as objects of intellectual inquiry, the Japanese researchers deemed it imperative to preserve their languages, customs, and artifacts in the form of scholarly research, collections of indigenous literature, and museum exhibits.[28] While some Japanese scholars found their way into indigenous communities as researchers, these intrusions almost always occurred in collaboration with other types of colonial projects in such diverse fields as politics, business and education.

Yamazaki's research, too, was facilitated by the network of colonial institutions, particularly the publicly funded medical schools and hospitals presided over by the colonial administration. Indeed, it was by contacting physicians and educators working on educational projects and in public medical facilities in the Ryūkyū islands, Taiwan, and Ainu communities in Hokkaidō that he obtained most of his research data. For example, Yamazaki collected data on Ryūkyūan women with the help of assistant directors of the Okinawa prefectural hospital. Likewise, the physician Takagi Eisen, who directed research on Chinese women, was one of Yamazaki's friends who had once practiced in Kumamoto and was working at that time as a government-appointed physician in southern Taiwan.[29] Data collection on Ainu women was carried out by Oyabe Zen'ichirō (1867–1941), an American-educated missionary teacher who was stationed in the Iburi area in southwestern Hokkaidō. Oyabe's own research was supplemented by information gathered by Japanese educators who resided in other towns in the area.[30]

Collecting Data

In order to gather data, Yamazaki and his collaborators needed the cooperation of women who were able and willing to provide information about their menstrual cycles. In this regard, Yamazaki confronted many difficulties in obtaining data from women of minority ethnicities, who were resistant to discussing menstrual issues with male researchers.[31] Even among willing subjects he encountered other problems. Many of the women, for instance, did not know their correct date of birth or the date of their first menstruation. Yamazaki was condescending to women of ethnic origins about their ignorance of their bodily processes and their unwillingness to share information about their menstruation cycles with the researchers—an attitude he viewed as an indicator of cultural backwardness. For example, Yamazaki remarks that the type of research he wanted to conduct was extremely difficult to carry out in Taiwan because Chinese women were in the habit of keeping matters of menstruation strictly among women. According to Yamazaki, this practice was a manifestation of their "obstinate adherence to old customs" dictating that contact with men was distasteful.[32]

In their research with the Ainu, Yamazaki and his colleague Oyabe encountered a general aversion to interacting with the Japanese. They also

found that both Ainu women and men felt very ashamed when asked to talk about their private parts (*inbu ni kansurukoto*), including menstruation. These researchers considered the Ainu's ignorance about menstruation appalling. Yamazaki lists his findings as follows: Ainu mothers taught their daughters about menstruation, but their explanation consisted only of several words; some Ainu women never even learned the Ainu words for menstruation; and the men, he believed, often knew nothing about menstruation since Ainu women never talked with them about menstruation, even with their fathers and husbands. Yamazaki and Oyabe also refer to the Ainu's association of menstruation with defilement, a belief that prevented women from worshipping gods during their menstrual periods, as evidence of backward attitudes and beliefs.[33] The difficulties of conducting research on women of ethnic origin provided Yamazaki an excuse for relying on a small number of samples, and allowing him to declare that the data that he managed to collect were invaluable despite their modest scope.[34]

Yamazaki's frustrations with collecting data from women of ethnic origin sheds light on the process by which women were transformed into modern subjects who could provide biographical and physiological information about themselves in a language intelligible to medical researchers. Yamazaki wanted the women to be compliant informants, but transforming them into model interviewees required an exhaustive colonizing process. Women had to be taught to communicate in the proper way, whether it was in their native language or the language of the researchers, and it was necessary to equip them with new ideas and attitudes in order to break down their deep-seated reluctance to discuss reproductive issues with strangers and men in general.

This educational process involved replacing an existing local understanding about bodily phenomena with one provided by modern medical science. In order for this to happen, women had to recognize the authority of medical researchers in a form that would make them responsive to the researchers' requests. In other words, the women had to be made into acquiescent modern subjects with certain views and attitudes who would collaborate with the modern medical establishment in accumulating discursive knowledge. The efforts by Yamazaki and his colleagues to gather knowledge about indigenous women's bodies was thus facilitated, and in some cases enabled, by state-supported medical projects that were first established in Japan and gradually extended to its colonies.

Yamazaki's accounts of his failure in conducting research on Taiwanese aborigines, however, indicate the limits of colonial institutional practices beyond mainland Japan in 1908, the year he published his study. Japanese colonial power in its military, political, and cultural forms had not yet penetrated into the society of these Taiwanese tribes, a fact that made it difficult or impossible for Yamazaki to gather data from them. Yamazaki believed that acculturating these so-called savages would be extremely difficult; he depicted them as barbaric, violent, cruel beings who preferred killing to civilized means of resolving disputes.[35] However, the militant customs he discussed with such hostility, frustration, and fear also effectively prevented

Table 4.1 Average age of menarche for Japanese, Ainu, Ryūkyūan, and Chinese women

	Japanese	Ainu	Ryūkyūan	Chinese
Number of informants	23,754	80	184	135
Average age of the onset of menstruation	15 years, 1st month	15 years, 2nd month	16 years, 1st month	16 years, 7th month

Source: Yamazaki Masashige, "Nihon, Ainu, Ryūkyū, oyobi Shina yon shuzoku fujin no gekkei ni tsuite," *Ogata fujin kagaku kiyō* 1908, 2: 148–170.

Japanese colonial power from reaching these aboriginal Taiwanese tribes and turning their women into docile subjects ready to collaborate with modern medical research.

The difficulties in obtaining data from women of ethnic origins were reflected in the immense discrepancy between the number of Japanese informants and those of women in other categories. In order to calculate the average age of menarche for Japanese women, Yamazaki used research results of thirteen other scholars as well as his own: the total number of women interviewed was 23,754. In comparison the number of informants from ethnic communities was significantly smaller; 80 Ainu women, 184 Ryūkyūan women, and 135 Chinese women[36] (see table 4.1). This data suggested that Japanese women began menstruating at the earliest age, 15 years and 1 month, followed by the Ainu women, whose average age for menarche was 15 years and 2 months. The average ages of the Ryūkyūan and Chinese women were 16 years and 1 month, and 16 years and 7 months respectively.[37]

Understanding the Data

Having obtained these results, Yamazaki proposes an initial hypothesis in his paper: that climate is the major factor determining the average age of menarche. The warmer the climate, the earlier women would start menstruating. According to this theory, Chinese women in Taiwan would commence menstruation the earliest, followed by the Ryūkyūans, the Japanese, and the Ainu.[38] However, Yamazaki's data obviously contradict this assumption. In order to explain this paradox, Yamazaki asserts that the climatic variations among Hokkaidō, the Japanese islands, the Ryūkyūan islands, and Taiwan were not as significant as the Japanese imagined.[39] If people considered Hokkaidō's altitude, he argues, they would realize that its position was actually comparable to other "civilized nations" in Europe.[40] Yamazaki supports his claim by citing the German physician Erwin von Baelz, who suggested that the climate of Hokkaidō was similar to that of his home country.[41] At the same time, Yamazaki alleges that although some parts of Taiwan belong to semi-tropical zones, the heat of the summer is mitigated to a large extent because it is an island surrounded by the ocean, thus making its climate comparable to that of Kyūshū.[42] In this way, Yamazaki portrays the climatic influences as minor, if not completely irrelevant.

If climatic variation did not explain the differences in the timing of menarche among women of diverse racial groups, what did? At this point Yamazaki invokes the notion of cultural practices. Viewed through his ethnocentric lens, these practices provide an explanation for differences in race-specific female reproductive physiology. According to Yamazaki and his collaborator Takagi, Chinese women in Taiwan commenced menstruation later than women of other racial groups because their adherence to backward customs prohibited them from receiving both the "social stimulus" (*shakaiteki shigeki*) and physical exercise these researchers deemed indispensable for developing a healthy body. Takagi observes that Chinese women, particularly those from upper-class families, lived in the dark interior of their mansions and never interacted with men. Some of them, he continues, even used the lavatory inside their rooms. Yamazaki concludes that such a sedentary and withdrawn lifestyle, reinforced by the practice of foot-binding, results in a weak constitution. Chinese women, in his view, also lacked access to "social stimuli" due to the presumed fact that their society lagged behind the Japanese in terms of worldly progress and civilization.[43]

Yamazaki implies that Ryūkyūan women shared some of the backward customs maintained by Chinese women in Taiwan; however, the degree to which they had adopted modern civilization was greater than their Chinese counterparts.[44] Because of this, he suggests that Ryūkyūan women generally started menstruation earlier than Chinese women. While cultural backwardness and a lack of physical exercise explained the relatively late ages at which Chinese and Ryūkyūan women started menstruation, Yamazaki focuses solely on the benefits of exercise for rationalizing Ainu women's early menarche. Unlike the inactive and secluded life of Chinese women, Yamazaki describes the majority of Ainu women as engaging in fishing and farming in ways not so different from men. According to Yamazaki, this helped Ainu women to develop a stronger constitution.[45]

While this reasoning solved the problem of why Ainu women experienced menarche at an earlier age than Chinese and Ryūkyūan women, it does not explain why some Ainu women started menstruation earlier than Japanese women. Since Ainu society was presumably so culturally backward (*kaimei no teido otori*) and Ainu people lived in a colder climate, these research results presented him with a disturbing problem.[46] In response, Yamazaki develops the idea of "innate racial characteristics" embodied in the body's physiology.[47]

Yamazaki believed that these "racial peculiarities" would be mitigated and even offset by climatic and other factors over a long period; however, such innate racial traits would sometimes become a major determinant of certain physiological phenomena. Yamazaki cites the example of English women born in India, who started menstruating later than Indian women, just as women in England did. In this case, intrinsic, racially specific physiological processes overpowered the climatic influence.[48] Yamazaki suggests that there must be inborn racial particularities governing the body's physiological processes. These were responsible for the Ainu women's early menstruation,

even though modern medical science had not yet elucidated the physiological mechanism for these mysterious race-based attributes.[49]

The notion of "racial peculiarities" served as a convenient *deus ex machina* that could be used to explain away contradictory evidence as a product of unspecified racial differences. The selective application of racially determined bodily differences sustained Yamazaki's racial hierarchy, along with its underlying Social Darwinist assumptions, by preventing a rethinking of the theoretical framework, despite the presence of discordant data. Perhaps an even more important consequence was that the concept of race-based biological difference, in collaboration with other scientific ideas and practices, substantiated and legitimized "race" as a category endowed with scientific authority. This is especially true if one considers that Yamazaki's proposal of race-specific differences as the cause of differences in the timing of menarche was little more than an unsubstantiated assumption. In Yamazaki's thinking, however, this notion played a major role in reifying racial differences and for sustaining the Social Darwinist theories his research data supposedly support.

Yamazaki also invokes Social Darwinism to explain the reproductive cycles of women from the same racial group but different social backgrounds. However, he only applies this analysis to Japanese women, not other ethnic minorities. In fact, he fails to mention any diversity at all among women of ethnic communities. By consigning the women of each ethnic group to a singular category, Yamazaki reinforces the idea that their bodies were characterized by overriding "racial" traits. There are also striking methodological problems with his investigation of the influence of class, occupation, geography, and other factors on Japanese women's reproductive years. In general, these analyses lack solid numerical evidence. Nor does he provide a convincing explanation of exactly how Social Darwinism accounts for the supposed differences among different classes within the same racial group.

His ill-defined research method is illustrated by the way Yamazaki categorized 1,583 Japanese female informants according to the routes through which he gained access to them as research samples (see table 4.2). The first group included 900 female patients who visited the obstetrics and gynecology division of the Kumamoto prefectural hospital. Their average age of menarche

Table 4.2 Average age of menarche for Japanese women of different categories at the Kumamoto Prefectural Hospital

	Regular patients	Students in nursing and midwifery	Licensed prostitutes[a]
Number of informants	900	112	572
Average age of menarche	14 years, 10th month, 15th day	14 years, 6th month, 12th day	15 years, 1st month, 11th day

Note: [a] While Yamazaki does not specify in his paper, they most likely visited the hospital for state-mandated examinations and treatment of venereal diseases.

Source: Yamazaki, p. 126.

was the fifteenth day of the tenth month of the year when they were 14 years old. The second category was 112 students of nursing and midwifery, who on average began menstruating on the twelfth day of the sixth month at the age of 14. The third group was comprised of 572 licensed prostitutes, who on average began menstruating the eleventh day of the first month at the age of 15.[50] Despite his presentation of this numerical evidence, Yamazaki provided no explanation for these data.

Yamazaki also classified women according to the occupation of their fathers or families. He claims that women whose families ran restaurants and hotels started menstruation the earliest, followed by daughters of fishermen, public servants, physicians, attorneys, and teachers. Next were women whose fathers were unemployed, who worked for commercial and industrial establishments, and who engaged in farming. Daughters of laborers commenced menstruation the latest of all.[51] Here Yamazaki even fails to provide numerical data or explanations for the research results.

This rudimentary presentation of the influence of social background on women's reproductive physiology is followed by very general remarks about the effects produced by class differences and the urban or rural environment in which women were brought up. Yamazaki concludes that women from "higher society" (*jōtō shakai*) tend to commence menstruation at an earlier age than those from "lower society" (*katō shakai*), a conclusion reinforced by his comment that the average age of the first menstruation of women from wealthy households was earlier than for women from poor families. In addition, he claims that women who lived in cities and towns generally began menstruating earlier than those who lived in rural areas.[52] Although the exact reasons for these differences are unclear, this section continues to show the influence of Social Darwinism in its assumption that menarche is hastened by exposure to a "civilized" lifestyle, and the rather strange corollary that women who start menstruating earlier are somehow more "advanced" than women who start later.

Taken in sum, Yamazaki's analysis reveals the emergence of medical discourses predicated on the notion of biological differences among the bodies of different classes; however, the extent to which Yamazaki explores that line of examination is quite limited. Unlike some European scholars of the time, Yamazaki does not rigorously argue that there are differences in reproductive physiology between women from the upper and middle classes and those from working class and impoverished peasant families. Moreover, he does not explicitly invoke Social Darwinist theory to explain the differences in the timing of menarche for women from different social backgrounds. Yamazaki does not seem to be overtly influenced by scientific, medical, and popular discourses of the time that were increasingly defining the minds and bodies of lower-class people, criminals, and prostitutes as deviant from those of "normal" people of upper- and middle-class backgrounds. Nor does he allude to ethnocentric discourses prevalent at that time, which described the "peculiar" living conditions and cultural habits of lower-class Japanese women and poor peasant women in rural areas. This could be partly due to the fact that at the turn of the twentieth

century when Yamazaki wrote this paper, these discourses had not yet been as well-developed and widely circulated as they were after the 1910s.[53]

Yamazaki's perfunctory class-based analysis suggests the primacy of race in his analytical framework. The preeminence of racial difference in his thought is reinforced by the ethnocentric comments he makes about Chinese and Ainu women's attitudes and practices. These comments seem designed to emphasize the distance between the women of other races and Japanese women, who appear in Yamazaki's discourse as the bearers of a desirable progressive spirit. Despite his attempts to draw a rigid boundary between women in the two categories, however, the very backward attitudes that he ascribes to women of other ethnic origins are precisely those that many Japanese health reformers had identified in Japanese women and wished to change. For example, public officials and medical experts often viewed Japanese women's inactive lifestyles vestiges of an obsolete feudal past that could seriously hamper their efforts to nurture the healthy bodies and minds that the nation's women required. Moreover, associating menstruation with defilement, a custom both Yamazaki and Oyabe observed among Ainu women, was a pervasive and deep-seated belief among the Japanese as well. Publicly minded physicians and midwives viewed these attitudes as unenlightened and advocated replacing them with an understanding of menstruation provided by modern medical science.[54] Yamazaki fails to mention any of these views of Japanese medical professionals concerning the practices of Japanese women.

In light of these issues, Yamazaki's censure of the perceived backward attitudes among women of ethnic origins may well have been a projection of his own unacknowledged anxieties about Japanese women's practices and bodies. As in many other colonial discourses, undesirable elements pertaining to Japan as well as its colonies are looked upon as something embodied by the "Other," making Japanese society look clean and flawless. Emphasizing the "backwardness" of the indigenous practices of ethnic minorities and keeping silent about similar Japanese practices helps to reinforce the presumed racial boundaries, consigning the Japanese to a dominant position. If we follow the Japanese scholar Tomiyama Ichirō, who attributed the formation of a specifically "Japanese" identity to the exploration of other racial and ethnic groups, Yamazaki's research was part of a conceptual process of establishing the "Japanese people" as a unitary group that belonged to a superior civilization defined in opposition to other racial or ethnic groups within Japan and its vicinity.[55]

CONCLUSION

Between the 1880s and 1910s, the period in which Japan emerged as an imperialist power in East Asia, Japanese scholars pursued ongoing research into racial differences in Japan and Asia. As a result, both women and men presumed to belong to different racial groups became objects of medical and scientific investigations. As demonstrated in Yamazaki's work, their bodies were subordinated to particular discursive methods of measurements and

statistical computation. Through school education and exposure to modern medical and scientific knowledge provided by medical practitioners and the popular press, people in both Japan and its colonies were eventually transformed into subjects who could and would provide information about their bodies' condition and history to researchers in an intelligible language. Ultimately, such studies substantiated racial differences and reinforced the idea of a particular racial hierarchy.

It is also crucial to remember that particular theories and methods for defining race emerged at a particular historical period and are replaced by other methods sooner or later. For example, the enthusiastic appropriation of Social Darwinism across various fields occurred largely before the 1920s. This is evidenced by the sociologist Shimoide Sōkichi's remark that very few students were reading Herbert Spencer by the late 1920s.[56] Also, while the tradition of physical anthropology remained a significant academic discipline until the late twentieth century in Japan, its popularity was eclipsed by the rise of ethnology and folklore studies from the 1910s onward.[57] This shift was marked by Japanese scholars' increasing preference for the more culturally embedded notion of "*minzoku*" to indicate a racial/ethnic group or a people, instead of the more biological term "*jinshu*." Thus, certain scholarly disciplines and methods provided particular definitions of what the Japanese called the *jinshu* and *minzoku*, depending upon the historical period.[58]

Keeping this in mind, we should strive to understand the changing dynamics among different scholarly fields, how they produced various racial theories, and the effects of these shifting disciplinary configurations in reshaping both academic and public discussions on race, ethnicity, and nation. This chapter attempts to contribute to advancing such scholarship by exploring the genealogy of race science in Japan in the late nineteenth century and the turn of the century, but it does not discuss the development of the scientific studies of race after the 1920s. Given the strong interest among historians of science, medicine and technology in studying the implications of race science and its effects, I am hopeful that rigorous and creative research will continue to be carried out to expand our knowledge in this area.

Notes

1. "*Tenson*" refers to "descents from the heaven" or "descents from the Japanese imperial line." The latter meaning originates in the idea that Japanese emperors are direct descendants of the Sun Goddess Amaterasu, and all Japanese are presumably descended from the first emperor Jinmu.
2. Yamazaki Masashige, "Nihon, Ainu, Ryūkyū, oyobi Shina yon shuzoku fujin no gekkei ni tsuite," *Ogata fujin kagaku kiyō* 1908, *2*: 108–177, on pp. 110–113.
3. For the development of modern race science in Europe and the United States, see, e.g., Nancy Stepan, *The Idea of Race in Science: Great Britain, 1800–1960* (Hamden, Conn.: Archon Books, 1982); Frank Spencer, "Anthropometry," *History of Physical Anthropology: An Encyclopedia*, ed. Frank Spencer (New York and London: Garland Publishing Inc., 1997), pp. 80–89; Stephen Jay Gould, *The Mismeasure of Man* (New York: Norton, 1996); Lee Baker, *From Savage to Negro: Anthropology*

and the Construction of Race, 1896–1954 (Berkeley: University of California Press, 1998); John S. Haller, "Race and the Concept of Progress in Nineteenth Century American Ethnology," *American Anthropologist* June 1971, *73* (3): 710–722; Paul Weindling, *Health, Race and German Politics between National Unification and Nazism 1870–1945* (Cambridge, U.K.: Cambridge University Press, 1989); Benoit Massin, "From Virchow to Fischer: Physical Anthropology and 'Modern Race Theories' in Wilhelmine Germany," in *Volksgeist as Method and Ethic: Essays on Boasian Ethnography and the German Anthropological Tradition*, ed. George W. Stocking (Madison, Wis.: University of Wisconsin Press, 1996), pp. 79–154.

4. Some scholars from the Tokugawa period engaged in ethnological studies of racial groups they considered to be different from the Japanese. Such studies, however, did not seem to have had a major influence on the type of scientific studies on race I consider in this chapter. It is possible that the views of race developed in the Tokugawa period had an impact in shaping the type of research Tsuboi Shōgorō and his followers developed in cultural anthropology. However, such a line of investigation is out of the scope of this paper. For ethnological studies in the Tokugawa period, see, Margarita Winkel, "Academic Traditions, Urban Dynamics and Colonial Threat: the Rise of Ethnography in Early Modern Japan," in *Anthropology and Colonialism in Asia and Oceania*, eds. Jan van Bermen and Akitoshi Shimizu (Richmond, Great Britain: Curzon Press, 1999), pp. 40–64.
5. Morse had studied under the prominent naturalist Louis Agassiz (1807–1873) at Harvard University. In 1859, the year after Morse became Agassiz's assistant, Charles Darwin published *On the Origin of Species by Means of Natural Selection*. Although Agassiz was highly skeptical of Darwin's theory of evolution in its entirety, Morse, who was studying brachiopods, was intrigued by Darwin's hypothesis. Yoshioka Ikuo, *Nihon jinshu ron no makuake: Mōsu to Omori kaizuka* (Tokyo: Kyōritsu Shuppan, 1987), pp. 32–33.
6. Morse's lectures on Darwinism were transcribed and translated by Ishikawa Chiyomatsu (1860–1935), and published as *Dōbutsu shinkaron (Animal evolutionism)* (1883). Suzuki Zenji, *Nihon no yūseigaku* (Tokyo: Sankyō Shuppan, 1983), pp. 24–25.
7. Akira Nagazumi, "The Diffusion of the Idea of Social Darwinism in East and Southeast Asia," *Historia Scientiarum* March 1983 (24): 1–18; Eikoh Shimao, "Darwinism in Japan, 1877–1927," *Annals of Science* 1981, *38*: 93–102; Saitō Shōji, *Nihon shakaigaku seiritsu shi no kenkyū* (Tokyo: Fukumura Shuppan, 1976), pp. 111–206; Unoura Hiroshi, "Samurai Darwinism: Hiroyuki Katō and the Reception of Darwin's Theory in Modern Japan from the 1880s to the 1900s," *History and Anthropology* 1999, *11* (2–3): 235–255; and "Kindai nihon ni okeru shakai dāwinizumu no juyō to tenkai," in *Kōza shinka vol. 2: Shinka shisō to shakai*, ed. Shibatani Atsuhiro, Nagano Kei, Yōrō Takeshi (Tokyo: Tokyo Daigaku Shuppankai, 1991), pp. 119–152; Watanabe Masao, "Meiji Nihon ni okeru shinka ron no juyō," *Dāwin to shinkaron* (Tokyo: Kyōritsu Shuppan, 1984), pp. 192–210. Regarding the reception of Darwinism in Japan, Watanabe stresses that Japanese intellectuals primarily accepted Darwinism as a simplified form of Social Darwinism to shape social scientific views, rather than a scientific theory to be discussed in the field of biology. Watanabe also asserts that Darwinism was readily accepted by Japanese students because there was very little opposition against Darwinian evolutionism based on Christian beliefs. Watanabe's explanation seems still insufficient to account for the widespread influence of Darwinism in Meiji intellectual scenes, and more research is needed. For a discussion of various appropriations of evolutionism

by political theorists and activists during the Meiji period, see Julia A. Thomas, *Reconfiguring Modernity: Concepts of Nature in Japanese Political Ideology* (Berkeley and Los Angeles: California University Press, 2001).

8. Shimoide Sōkichi, *Meiji shakai shisō kenkyū* (Tokyo: Asano Shoten, 1932), pp. 224–231. A critic who advocated interracial marriage between the Japanese and European races was Takahashi Yoshio, a student of Fukuzawa Yukichi. Katō Hiroyuki presented a counterargument against Takahashi's assertion. Suzuki Zenji discusses this controversy in Suzuki (1983), pp. 32–44. See also Takahashi Yoshio, *Nihon jinshu kairyō ron* (Tokyo: Jiji Shinpōsha, Maruzen, etc., 1884). More on the debate on racial mixing in Meiji Japan, see Morris Low, "The Japanese Nation in Evolution: W. E. Griffis, Hybridity and the Whiteness of the Japanese Race," *History and Anthropology* 1999, *11* (2–3): 203–204.
9. Terada Kazuo, *Nihon no jinruigaku* (Tokyo: Kadokawa Shoten, 1981), p. 30; Oguma Eiji, *Tan'itsu minzoku shinwa no kigen* (Tokyo: Shinyōsha, 1995), p. 22. See also, W. Dönitz, "Beobachtungen an Becken von Japanerinnen," *Mitt. d. Deutsch. Gesellschaft f. Natur-und Volkerkunde Ostasiens*, Heft 11, November 1876. This paper is cited in Ogata Masakiyo, *Nihon sanka gakushi* (Tokyo: Kagaku Shoin, 1980, reprint, originally published in 1914), pp. 1087–1089, 1228.
10. Erwin Baelz, "Die Koerperlichen Eigenschaften der Japaner," *Mitteilungen der deutschen Gesellschaft f. Natur-u. Volkerkunde ostasiens*, Heft 32, 1885, pp. 35–103. A partial Japanese translation of this paper is found in Yasui Hiroshi, *Berutsu no shōgai* (Kyoto: Shibunkaku, 1995), pp. 275–315. See also Suzuki Hisashi, "Koganei Yoshikiyo sensei to Erwin von Baelz hakushi," *Jinruigaku zasshi* March 1974, *82* (1): 6; Kudō Masaki, *Kenkyūshi: Nihon jinshu ron* (Tokyo: Yoshikawa Kōbunkan, 1979), pp. 67–69; Terada, *Nihon no jinruigaku*, p. 30; Oguma, *Tan'itsu minzoku shinwa no kigen*, pp. 22–23. Baelz's research did not influence the development of anthropological studies in Japan extensively. This is partly because he only taught courses in medicine and did not teach anthropology to Japanese students or even meet with those who belonged to the anthropological study group at the university. Moreover, his measuring method was different from the one that was adopted in the 1882 Frankfurt agreement that established a standard measuring system. Suzuki Hisashi speculates that due to this fact Japanese anthropologists who were active after Baelz's time could not use Baelz's research results. Suzuki Hisashi, pp. 5–6.

    About Baelz's life in Japan, see Toku Berutsu, *Berutsu no nikki* (Tokyo: Iwanami Shoten, 1951–1955); F. Shottorendā, *Eruuin fon Berutsu* (Tokyo: Ōzorasha, 1995, a Japanese translation of Erwin von Baelz by Felix Schottlaender, published in 1928); Yasui, *Berutsu no shōgai*, op.cit.; Shumitto-Muraki Masumi, *Hana Berutsu e no tabi* (Tokyo: Kōdansha, 1993).
11. The Korobokkuru debate started in 1884 when Watase Shōzaburō suggested at the Japan Anthropological Society's annual meeting the possibility of the historical existence of the Korobbokuru as a distinct people. Basing his theory on his studies of prehistoric remains in Hokkaidō, he implied that the Korobbokuru, who appeared in Ainu mythology, may have once actually existed. However, this hypothesis was rebuffed by Shirai Kōtarō (1863–1932), one of the original members of the Anthropological Society. In his 1887 essay published in *The Journal of Anthropology (Jinruigaku zasshi)*, Shirai argued that the Korobokkuru people was likely to have been one of the Ainu tribes, and not a separate racial group from the Ainu. Tsuboi, for his part, endorsed Watase's thesis by referring to the discoveries of remains in Hokkaidō that indicated the presence of people whose

lifestyle had a distinct cultural pattern from that of the Ainu. Kudō, *Kenkyūshi*, pp. 83–92; Terada, *Nihon no jinruigaku*, pp. 55–59.

12. Ibid., pp. 93–96; Ibid., pp. 59–62.
13. Ibid., pp. 116, 120–124; Ibid., pp. 63, 81–82.
14. For example, Koganei believed that the Ainu race, which had once been the inhabitants of Japan, was expelled from Japan's main island due to the invasion of the presumably stronger and superior Japanese race. As a result, they were living only in Hokkaidō by the time Koganei conducted his research. More specifically, he considered the Ainu as a declining racial group compared to the thriving Japanese race which he thought possessed a more advanced civilization than the one that the Ainu maintained. Kudō Masaki, "Ikakei jinruigaku no seiritsu to sono tokushitsu," *Tōhoku rekishi kan kenkyū kiyō* 1978, *4*: 4–5. For various representations of the Ainu as a "dying race," see Richard Siddle, *Race, Resistance and the Ainu of Japan* (London and New York: Routledge, 1996), pp. 76–112.
15. In *Tan'itsu minzoku shinwa no kigen*, Oguma Eiji makes a valuable contribution on this issue. Oguma (1995). See also his more recent work, *Nihonjin no kyōkai: Okinawa, Ainu, Taiwan, Chōsen, shokuminchi shihai kara fukki undō made* (Tokyo: Shinyōsha, 1998). A discussion of Japanese appropriations of race theory and evolutionism in the larger context of the colonization of Asia and the Pacific is found in Christine Dureau and Morris Low, "The Politics of Knowledge: Science, Race and Evolution in Asia and the Pacific," *History and Anthropology* 1999, *11* (2–3): 131–156.
16. See, e.g., Y. Koganei and G. Osawa, "Das Becken der Aino und der Japaner," *MittheilungenI Aus Der Medicinischen Facultat Der Kaiserlich-Japanischen Universitat Zu Tokio*, IV. Band., 1900. A Japanese translation of this paper is found in Ogata, pp. 1227–1269.
17. Ibid., pp. 1090–1091.
18. Yamazaki, "Nihon, Ainu, Ryūkyū, oyobi Shina yon shuzoku fujin no gekkei ni tsuite," op.cit., pp. 108–177. According to Ogata's *Nihon sanka gakushi*, this paper was also published in 1909 in German as M. Yamazaki, "Ueber den Beginn der Menstruation ei den Japanerinnen, mit einem Anhang ueber die Menge bei den Chinesinnen, den Riukiu-und Ainofrauen in Japan." Ogata does not indicate where the German version was published. Ogata, p. 1762.
19. Ibid., pp. 108–110.
20. Ibid., p. 110. The Japanese word, "*minzoku*," which was used by Yamazaki for the translation of "race" as a scientific term, also connotes "people" or "ethnic group." It seems that Yamazaki took advantage of the word's ambiguity to conflate the scientific definition of "race" with "people," implying a grouping by historical and cultural factors.
21. Ibid., pp. 111–113. Whether the *ezo* from the eighth and ninth centuries was identical to the Ainu has been a point of contention among Japanese scholars. However, it is highly likely that Yamazaki assumed that the *ezo* was the ancestor of the Ainu from the Meiji period because the term, *ezo*, was used to indicate the Ainu since the thirteenth century. See William Wayne Farris, *Heavenly Warriors: The Evolution of Japan's Military, 500–1300* (Cambridge, Mass.: Council on East Asian Studies, Harvard University, 1995), pp. 82–83.
22. Yamazaki, op.cit., p. 112.
23. For health conditions of the Ainu in the late nineteenth and early twentieth century, see, e.g., Fujino Yutaka, *Nihon fashizumu to yūsei shisō* (Kyoto: Kamogawa Shuppan, 1998), pp. 216–259.

24. Ibid., p. 111. For Japanese policy toward the Ainu during the Meiji (1868–1912) and Taishō (1912–1926) periods, see Enomori Susumu, *Ainu no rekishi* (Tokyo: Sanseidō, 1987) and Takagi Hiroshi, "Ainu minzoku e no dōka seiseku no seiritsu," in *Kokumin kokka wo tou*, ed. Rekishigaku Kenkyūkai (Tokyo: Aoki Shoten, 1994), pp. 166–183; Richard Siddle, "The Ainu and the Discourse of 'Race', " in *The Construction of Racial Identities in China and Japan*, ed. Frank Dikötter (Honolulu: University of Hawaii Press, 1997), pp. 136–157; David L. Howell, "The Meiji State and the Logic of Ainu 'Protection', " in *New Directions in the Study of Meiji Japan*, ed. Helen Hardacre, with Adam L. Kern (Leiden, New York, and Köln: Brill, 1997), pp. 612–634. For Tokugawa state policy toward Ainu over the issue of vaccinations, see Brett L. Walker, "The Early Modern Japanese State and Ainu Vaccinations: Redefining the Body Politic 1799–1868," *Past & Present*, May 1999, *163*: 121–160.
25. Yamazaki, "Niton, Ainu, Ryūkyū, oyobi Shina yon shuzoku fujin no gekkei ni tsuite," p. 112.
26. Ibid., pp. 110–113.
27. Ibid., pp. 112–113.
28. About this issue, see Murai Osamu, "1910 nen nêshon and narêshon: teikoku no katari/metsubō no katari," a paper presented at the annual meeting for the Association of Asian Studies, April 1996; and also *Nantō ideorogî no seiritsu* (Tokyo: Ōta Shuppan, 1995), pp. 164–166.
29. Yamazaki, "Nihon, Ainu, Ryūkyū, oyobi Shina yon shuzoku fujin no gekkei ni tsuite," pp. 118, 166.
30. Ibid., pp. 118–119, 157–158.
31. Ibid., pp. 119–120, 157.
32. Ibid., pp. 119–120.
33. Ibid., pp. 156–157.
34. Ibid., pp.119, 120.
35. Ibid., pp. 110–111.
36. Ibid., pp. 158–159, 162, 166, 194.
37. Ibid., pp. 157, 163, 167, 169.
38. Ibid., pp. 171–172.
39. Ibid., p. 172.
40. Ibid., pp. 172, 174.
41. Ibid., p. 174.
42. Ibid., pp. 172–173.
43. Ibid., pp. 174–175.
44. Ibid.
45. Ibid., p. 174.
46. Ibid., p. 175.
47. Ibid.
48. Ibid., p. 173.
49. Ibid., pp. 173, 175.
50. Ibid., p. 126.
51. Ibid., p. 126.
52. Ibid., p. 127.
53. See, e.g., Michael Weiner, "The Invention of Identity: Race and Nation in Pre-war Japan," in *The Construction of Racial Identities in China and Japan*, ed. Frank Dikötter (Honolulu: University of Hawai'i Press, 1997), pp. 96–117.

54. See Yuki Terazawa, Chapter Five, "The Role of the State, Midwives, and Expectant Mothers in Childbirth Reforms in Meiji and Taishō Japan," and Chapter Six, "Women's Health Reforms in Japan at the Turn of the Twentieth Century," in "Gender, Knowledge, and Power: Reproductive Medicine in Japan, 1690–1930," unpublished Ph.D. diss., UCLA, 2001. For the discussions of menstruation by Japanese obstetrician–gynecologists trained in European medicine, see, e.g., Kinoshita Seichū, "Fujin ni hitsuyō naru eiseijō no chūi," *Fujin eisei zasshi* April 1901 (137): 1–20.
55. Tomiyama Ichirō, "Colonialism and the Sciences of the Tropical Zone: The Academic Analysis of Difference in 'the Island Peoples,' " *Positions* 1995, *3* (2): 367–391; also, Tomiyama, "Sokutei to iu gihō: jinshu kara kokumin e," *Edo no shisō*, July 1996 (4): 119–129.
56. Shimoide Sōkichi, "Miru to Supensā: Meiji bunka ni oyoboshita eikyō ni tsuite," in Shimoide, op.cit., pp. 34–49.
57. On this issue, see in particular Shimizu Akitoshi, "Colonialism and the Development of Modern Anthropology in Japan," in *Anthropology and Colonialism in Asia and Oceania*, ed. Bermen and Shimizu, op.cit., pp. 115–171.
58. On the question of how the issues of "*jinshu*" and "*minzoku*" were discussed during the early twentieth century, the 1930s and the World War II, see, e.g., Kevin M. Doak, "Culture, Ethnicity, and the State in Early Twentieth-Century Japan," in *Competing Modernities: Issues in Culture and Democracy, 1900–1930*, ed. Sharon Minichiello (Honolulu: University of Hawai'i Press, 1998); Tessa Morris-Suzuki, "Debating Racial Science in Wartime Japan," in *Osiris* 1998, *13*: 354–375; Sakano Tōru, "Kiyono Kenji no Nihon jinshu ron: Daitōwa kyōwaken to jinruigaku," *Kagakushi, kagaku tetsugaku kenkyū*, *11*: 85–99; "Jinruigakusha tachi no 'minami': senzen nihon ni okeru mikuroneshia jin kenkyū wo megutte, Part I," *Kagakushi kenkyū*, January 1997 (200): 239–250; and "Jinruigakusha tachi no 'minami': senzen nihon ni okeru mikuroneshia jin kenkyū wo megutte, Part II," *Kagakushi kenkyū*, April 1997 (201): 9–18; Sumiko Otsubo and James R. Bartholomew, "Eugenics in Japan: Some Ironies of Modernity, 1883–1945," *Science in Context* 1998, *II* (3–4): 133–146; Sumiko Otsubo Sitcawich, "Eugenics in Imperial Japan: Some Ironies of Modernity, 1883–1945," unpublished Ph.D. diss., Ohio State University, 1998; Fujino, *Nihon fashizumu to yūsei shisō*, op.cit. (1998): Yuehtsen Juliette Chung, *Struggle For National Survival: Eugenics in Sino-Japanese Contexts, 1896–1945* (London and New York: Routledge, 2002).