

Chapter 16

JAPANESE BIOMEDICAL EXPERIMENTATION DURING THE WORLD-WAR-II ERA

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INTRODUCTION

DIMENSIONS OF THE PROBLEM

WHO KNEW?

- The Medical and Academic Professions
- The Japanese Military
- The Japanese Government

HISTORICAL CONTEXT AND NATIONALISTIC RACISM

- Nationalistic Racism and Militarism
- The Emergence and Power of Secret Military Societies
- The Influence of Militarism on Military Medicine in Japan

GOVERNMENT-SPONSORED BIOMEDICAL RESEARCH

- Ishii Shiro and the Origin of Japanese Biomedical Programs
- The Establishment of the Ping Fan Research Facility
- Other Biomedical Research Facilities in Occupied Territories
- Biological Warfare Laboratory Experiments
- Biological Warfare Field Tests

“FREE-LANCE” MEDICAL PROCEDURES AND EXPERIMENTS ON PRISONERS OF WAR

- Procedures for Medical Training Purposes
- Experiments for Research Purposes
- Vivisection and Immediate Postmortem Dissection

POSTWAR DEVELOPMENTS

- Prosecution of Japanese War Criminals
- The Postwar View of Japanese War Crimes
- American Interest in Japanese Research Results
- Postwar Medical Careers of Japanese Biowarfare Personnel

JAPAN IN THE 21ST CENTURY

CONCLUSION

ATTACHMENT: PHOTOGRAPHS FROM PING FAN MUSEUM

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“Bacili pestis were injected into human bodies for observing the course of pathological changes.” This painting is part of an exhibit found in the Ping Fan Museum, Harbin, China. The hypodermic in the physician’s hand (forefront of the artwork) both literally and figuratively illustrates the breakdown of medical ethics in the biowarfare program in wartime Japan. Rather than using the hypodermic to treat disease, these physicians used it to initiate disease for the sole purpose of gaining information to further the use of disease as a weapon—the very antithesis of the medical profession.

Photograph of painting (including captions) from displays at the Ping Fan Museum, Harbin, Manchuria, China, from the collection of Sheldon Harris.

INTRODUCTION

I am a war criminal. I served in Manchukuo, that phony country created by Japan...[As an officer in the Kempeitai, the Japanese secret police in Manchuria] I received orders from my unit commander to send four of the arrested men to Unit 731. At the time I had no sense that I was a party to any killing. I only filed the papers and sent the men to Unit 731.¹(pp200-201)

Subjects had to be dissected before death for our purposes, because with time bacteria would make the body rot.²

I did it [performed vivisections] because I thought I was serving the Emperor. At first I felt very bad, but after a few operations I got used to it. What is scary, is that I don't get nightmares.³

The logs [human research subjects] were there for experimental purposes. There was no guilt associated with the process. I take pride in having taken part in this work. I have no regrets. It was war.⁴

At the beginning he looked intelligent and had fair skin; at the terminal stage [of an experiment on plague] he looked different and his skin turned black.⁵

Atrocities, including those committed by military medical personnel, occur in every modern war. World War II is a classic example. Virtually every participating country was responsible for atrocities committed by their armed forces. But Germany and Japan, alone among the combatants, employed extensive biomedical research using large numbers of involuntary human subjects. These experiments ultimately led to the deaths of thousands of people.⁶⁻¹⁵ (Although there is anecdotal evidence suggesting involuntary testing of assassination weapons, including poisons, on prisoners held in the Soviet Union throughout the Soviet period [1917-1989], there is no evidence of large-scale human subject testing similar to that conducted by the Germans and the Japanese. As access to the archives of the Soviet period improves, scholars may have an opportunity to examine this issue in greater depth.¹⁶)

Any discussion of wartime medical atrocities, especially those on the scale attributed to Japan and Germany, requires an examination of the overall context in which they occurred. Such an examination must begin with a brief review of international sentiment and accords in the period preceding the events, as well as a review of the culture of the specific countries engaging in unethical biomedical experimentation. (Chapter 23, Military Medicine in

War: The Geneva Conventions, examines the evolution of these international treaties in some detail. However, Japan, and, to a lesser extent, Germany, ignored the Conventions and treaties during the period preceding World War II as well as during the war itself.)

In the immediate period following the end of World War II, world public opinion deemed such experiments, especially those publicly detailed to have occurred in the Third Reich, to be war crimes, that is, crimes against humanity. Very little, however, was said about Japanese biomedical experimentation. Thus, despite world public opinion, Japanese doctors were not held accountable for their behavior, nor was the Japanese populace mobilized against the crimes perpetrated during the war on their Chinese neighbors to the north, or to other captive populations in East and Southeast Asia.

Those who governed Japan in the decade or so following the end of the war did offer some compensation to governments of former occupied lands. Little, if anything, however, was given to individual victims of Japanese oppression.¹⁷⁻¹⁹ Japan did not undergo a catharsis of self-examination. Textbooks did not mention Japanese wartime excesses until the early 1990s.²⁰⁻²⁴ With the cooperation of American Occupation officials (for reasons that will be explored further in this chapter), the Japanese government, in Professor John Dower's word, "sanitized" the more horrendous aspects of Japan's recent past.^{14,25,26} The outcome of these "sanitizing" actions has been that postwar international public opinion was never focused on Japanese doctors with the same intensity that German medicine experienced. Most average citizens worldwide had no appreciable understanding of the extent and range of Japanese biomedical research and experimentation until the 1980s and 1990s.

The question sometimes arises as to why one should now revisit the horrors of Japanese biomedical research after the span of more than half a century. The answer is twofold. The fact that the perpetrators of these crimes were not charged or convicted does not lessen the nature of their deeds. Furthermore, to attempt to prevent their recurrence anywhere, Japan's biomedical research programs, and the atrocities that all too often accompanied them, must be explored.

This chapter, then, will detail the state of medical ethics in the period preceding World War II, as well as historical context and nationalistic racism in Japan during this period, before exploring the specifics of the extreme biomedical experimentation

activities practiced by Japanese researchers. Those activities involve not only those officially sanctioned by the government, but also those of a freelance nature that the government did nothing to prevent. The chapter will conclude with a discussion of the actions of Japan and other countries in the postwar period. Although the atrocities that

were all too often part of the experimental process were clearly immoral, unethical, and illegal, it was more than a case of “evil” doctors turned loose on a captive population. This chapter will demonstrate that what happened in Japanese military medicine was complex and cannot be explained in simplistic pseudocultural terms.

DIMENSIONS OF THE PROBLEM

During the years leading up to World War II and throughout the war, Japanese military and civilian medical personnel conducted experiments on human subjects without their consent that rivaled and, at times, exceeded those of the most inhumane Nazi doctors. (Proctor has provided figures of German medical experiments that, compared to the figures coming out of China, suggest that the Japanese doctors murdered many more persons in their experiments than did the Nazi doctors.²⁷) The scope of professional involvement is demonstrated in Exhibit 16-1, which details the medical and nonmedical officers and “experts” located at the notorious Ping Fan installation and satellite units at the time of Japan’s surrender.

These doctors, surgeons, dentists, microbiologists, veterinarians, research technicians, and their staffs, were financed, equipped, and supported in

other significant ways by those in power in Japan from the mid-1920s until the Japanese surrender in August 1945. Their crimes, which are estimated to have resulted in the deaths of several hundred thousand individuals, fell under the rubric of official Japanese government policy covering biomedical research with human subjects, beginning as early as 1930 and lasting until 1945. The concerns of the researchers were to develop viable chemical and biological warfare weapons to be employed in future wars. The various chemical and biological programs alone ultimately involved many thousands of technically trained people, both civilian and military. Hundreds of others participated in the freelance actions. This exploration will begin with a discussion of the extent to which the official Japanese government was involved.

WHO KNEW?

Who in Japan knew of these violations of the pledges contained in the various Hague and Geneva conventions, and when did they know? Of those who were aware of the transgressions, did any group or any one individual attempt to bring to an end the widespread abuses of power? Three groups bear primary and shared responsibility: (1) the medical and academic professions; (2) the Japanese military; and (3) the Japanese government (both the royal family and civilian members of the bureaucracy).

The Medical and Academic Professions

The Japanese medical and academic professions provided the expertise necessary for the biomedical projects. Many of these highly skilled, well-educated professionals directly participated in the killings. Their expertise was essential to the development and implementation of the research programs. The pursuit of scientific “truth,” or the advancement of one’s career, led these individuals to commit crimes of extreme cruelty. Others who did not actually engage in the killings nonetheless looked upon the acts of their colleagues dispassionately and with-

out any sense of guilt.²⁸ Civilian university medical professors also knew of the conduct of their colleagues. However, few, if any, questioned the abuse of medical ethics.

Medical schools, dental schools, and veterinary schools supplied their best students for the biological warfare (BW) and chemical warfare (CW) programs. Directors of these laboratories recruited students at some of Japan’s finest schools—for example, Tokyo Imperial University and Kyoto Imperial University—by holding public lectures and by showing motion pictures and photographs of human experiments.^{29–33} University professors encouraged their brightest students to enlist in these programs.^{30–32,34} Medical ethics were never discussed during the periodic recruitment drives.^{31–34} As Naito Ryoichi, founder of the Green Cross Company, once remarked, “Most microbiologists in Japan were connected in some way or another”^{6(p184)} to the human experimentation programs. In the case of support staff, many joined in the work because “the pay was good. At eighteen or nineteen years of age, we were getting higher salaries than the teachers who had educated us a long time ago, back in school.”^{6(pp217–218)}

EXHIBIT 16-1

PROFESSIONAL INVOLVEMENT IN BIOMEDICAL ATROCITIES



Caption: "1939 group photograph of Unit 731's leading scientists, taken at a banquet in Harbin." Photograph (including caption) of display at the Ping Fan Museum, Harbin, Manchuria, China from the collection of Sheldon Harris.

At the time of Japan's surrender, the following numbers of medical officers, pharmacist officers, pilots, non-medical officers, and "civilian experts" were stationed at Ping Fan and satellite units:

- Medical Officers: 154, of which 141 were graduates from medical schools, and at least 22 were licensed medical doctors.
- Pharmacist Officers: 21, of which 15 were graduates from pharmacist schools, including one major general, four colonels, three lieutenant colonels, five majors, four captains, and several other unidentified officers.
- Pilots: Four, of which three were graduates from medical schools.
- Nonmedical Officers: More than 125, including two Lieutenant Generals, seven major generals, 17 colonels, 24 lieutenant colonels, 58 majors, 19 captains, four first lieutenants, and several other unidentified officers.
- "Civilian Experts": 101, of which 43 were graduates of medical schools, including 18 licensed physicians, one from dental school, four from pharmacist schools, five from veterinarian schools, and 19 from faculties of agriculture, natural sciences, and engineering schools. Six civilians were described as experts of x-ray, power, glass work, and construction. One was known for his expertise as a jailor.

Source: Hata I: *Nippon Rikukaigun Jinmei Jiten (Who's Who of The Japanese Army and Navy)*. Tokyo: University of Japan Press, 1991. Professor Shabata Shingo kindly provided the author with an English translation of the figures cited in this exhibit.

The Japanese Military

Organized, structured, systematic, involuntary human experimentation was a feature of Japanese military planning during the decade before the outbreak of World War II as well as during the war itself.^{35(pp149-155)} As noted below, extraordinary quan-

tities of resources were allotted by the authorities in Tokyo for projects that ultimately "sacrificed" (the euphemism formally employed to describe killing victims) the lives of hundreds of thousands of Chinese, Korean, Formosan, Indonesian, Burmese, Thai, and other Asian nationalities. (There is also evidence that some European and American pris-

oners were “sacrificed”¹⁴[pp154–160] during the course of BW and CW research.)

Most members of Japan’s military medical units must have been aware of the actions of their colleagues. There was a long list of senior officers who either knew of the brutal treatment of civilians and prisoners of war (POWs) under their command, or actually gave orders to conduct it.¹⁴ Likewise, a great number of naval officers of comparable rank knew of the criminal activities of their subordinates.¹⁴(pp168–178)

In addition to those who actually engaged in the experiments, the high command of the Kwantung Army³³(pp273–284) was aware of these activities. (The Kwantung Army was a semi-independent military force stationed in Manchuria to safeguard Japan’s interests there. Although under the control of the command structure in Tokyo, the Kwantung Army, on occasion, was known to have ignored Tokyo’s commands.) Moreover, although the high command in Tokyo later denied any knowledge of these activities, there is ample evidence that the generals responsible for military planning and the allocation of limited resources enthusiastically supported biomedical research and other programs involving human experiments.¹⁵(pp132–146) It is now known, for example, that the annual expenditures for human biological warfare research were approximately \$90 million in 1998 dollars.³⁶ How could the high command in Tokyo sign off on such a large sum of

money without knowing for what purposes the recipients were utilizing the funds?

Free-lance experiments (experiments that occurred outside the officially sanctioned biomedical research programs, but not necessarily outside military facilities or without military or professional participation) sometimes took place in the Home Islands, but more frequently occurred in the remote areas controlled by the military. Exhibit 16-2 details free-lance experiments involving human vivisection. Considering the frequency and locale of these activities, it would appear that the various commanders must have known of their occurrence.

The Japanese Government

The involvement of the official Japanese government was also essential to the implementation and success of these biomedical experimentation programs. The budgets, personnel, and materiel needs were such that government assistance would be required. Foremost would be the involvement of the Royal family.

The Royal Family

The Royal family bears considerable responsibility for the biomedical experimentation program. Emperor Hirohito (who became emperor of Japan on 25

EXHIBIT 16-2

A DESCRIPTION OF FREE-LANCE VIVISECTION

In 1958, the distinguished Japanese novelist Endo Shusaku published a novel titled *Umi to Dokuyaku* (*The Sea and Poison*).¹ The novel was well-received by the reading public and achieved critical acclaim, winning two literary awards, one of which was the Akutagawa prize. *The Sea and Poison* is both a harrowing and a haunting novel, telling the story, in thinly disguised fiction, of the vivisection of an American airman who was a prisoner of war (POW) in the city of Fukuoka. The vivisection was performed by a senior physician on the staff of a local hospital. The surgeon was assisted by a team of associate doctors, interns, and nurses. In the actual event, no one protested his or her assignment,^{2,3} although in the novel one of the interns refuses to participate in the operation, but remains to observe his superiors’ performances.

The most impressive aspect of the novel is Endo’s exploration of the motives of those men and women who engaged in the vivisection. Endo demonstrates convincingly, albeit fictionally, the total lack of consideration for the victim of experimentation. There was no sense of an obligation to respect minimal medical ethics on the part of senior surgeons or their associates and assistants. The nurses, all female, fulfilled their duties during the vivisection, and demonstrated an equal lack of compassion for, or interest in, the fate of the patient. The fact that the novel was both a critical and a popular success suggests perhaps that many Japanese in the 1950s and 1960s did not deny the wartime excesses of their countrymen.

Sources: (1) Endo S. *The Sea and Poison*. Gallagher M, trans. London: Peter Owen, Ltd.; 1972. (2) Daws G. *Prisoners of the Japanese: POWs of World War II in the Pacific*. New York: William Morrow & Co.; 1994: 322–323. (3) Tanaka Y. *Hidden Horrors: Japanese War Crimes in World War II*. Boulder, Colo: Westview Press; 1996: 241 (note 63).

December 1926 upon the death of his father) implicitly, as well as sometimes literally, signed off on these enterprises.^{33(pp104-105)} Members of the extended royal family (Emperor Hirohito's younger brothers, uncles, cousins, and various relatives by marriage) played important roles in the projects.^{33(pp104-106),34} Exhibit 16-3 details some of the biomedical research activities of the royal family.

The emperor's role in the biomedical ethical controversy is somewhat unclear. Under the Japanese Constitution, Hirohito was an absolute ruler, but in practice his powers were extremely limited and he was aware of that. Hirohito by nature was a cautious, self-effacing person. By most accounts he was a decent, well-intentioned, somewhat liberal-leaning individual. There is no doubt that he was a man of peace.

However, he was also a strong nationalist who dedicated his life to preserving the integrity of the monarchy. As such, he rarely, if ever, contradicted or overruled decisions taken by either his civilian governments or his armed forces. He once said, "The Emperor cannot on his own volition interfere or intervene in the jurisdiction for which the ministers of state are responsible....I have no choice but to approve it [proposed government policy] whether I desire it or not."^{17(p39)} If he chose to deny govern-

ment wishes, he "would clearly be destroying the constitution. If Japan were a despotic state, that would be different, but as the monarch of a constitutional state it is quite impossible for me to behave in that way."^{17(pp71-72)} There is evidence to indicate that Hirohito accepted virtually every government proposal during his long reign, no matter what he personally thought of the plan.^{17,37(pp14-20,163-169)}

Who delivered these government proposals to the emperor? The aristocracy provided Emperor Hirohito with his most trusted advisers and confidants. These men had close ties to the military, and were briefed periodically as to the various projects the armed forces were supporting. Because the emperor, under the Japanese Constitution, was required to sign off on any action the military proposed undertaking,^{17(pp29-32)} Hirohito's advisers probably were told of the BW and CW programs incorporating human experimentation and all that such tests implied. He surely consulted with his most important advisers, the members of the Privy Council, before he issued two Imperial decrees in 1936 authorizing the formation of two Army Units that conducted these biowarfare research programs.^{33(pp104,112-113)}

Hirohito is described as sitting through meeting after meeting in total silence from the time of his

EXHIBIT 16-3

BIOMEDICAL EXPERIMENTATION AND THE ROYAL FAMILY

Several members of the Imperial family, along with leading figures within the aristocracy, and the closest advisors to the Emperor, either participated in various ways in these programs of biomedical experimentation or knew of their existence. Prince Chichibu, Emperor Hirohito's younger brother, was an ardent disciple of the ultra-right-wing militarists who increasingly influenced Japanese military policy in the immediate prewar era.^{1,2} He attended lectures and vivisection demonstrations delivered by Ishii Shiro, one of the principal proponents of biological warfare research. Hirohito's youngest brother, Prince Mikasa, also visited facilities associated with human experiments and vivisection.

The Emperor's uncle, Prince Higashikuni Naruhiko, was one of his principal advisors. The Prince toured some of the facilities engaged in biomedical research during frequent inspection trips to the Japanese colony of Manchukuo (Manchuria) and personally witnessed the human experiments conducted by the military physicians.³ In addition, he was closely allied with the military commanders of the Kwantung Army, who supplied the money, the men, and the equipment for human experiments.⁴

One of Hirohito's cousins, Prince Takeda Tsuneyoshi, served in Manchukuo during the war as Chief Financial Officer for the Kwantung Army. He controlled the money given to the camps engaged in human experiments. He visited these facilities frequently on inspection tours and also controlled access to them as his office issued permits to visit the camps.^{5,6} Takeda was literally the "Keeper of the Gates" for the death camps under Kwantung Army jurisdiction.

Sources: (1) Harris SH. *Factories of Death: Japanese Biological Warfare, 1932-45, and the American Cover-Up*. London: Routledge; 1995: 142. (2) Address by Surgeon Colonel Ishii. *Current Events Tidbits* (The Military Surgeon Group Magazine). Tokyo: April 1939. No. 311. (3) Interview by the author with the Deputy Director of the Ping Fan Museum, Mr. Han Xiao, 7 June 1989. (4) Large SL. *Emperor Hirohito and Showa Japan, A Political Biography*. London: Routledge; 1992: 67-68, 134, 117-119, 144-145. (5) *Japan Times*. Tokyo: 2 March 1963:3. (6) *Japan Times*. Tokyo: 22 April 1964:3.

accession to the throne in 1926, until days before Japan surrendered in August 1945. Although the emperor was briefed on Japan's military plans and activities throughout the war, he never expressed his views openly concerning the decisions taken by the military.^{17(pp77-78)} Hirohito might blink one eye, or shrug a shoulder during the briefing. He might even utter a sigh, or cough during discussions. His advisers were free to interpret his body movements as either agreement or disagreement.^{17(Chap1,4)}

Hirohito, however, was a trained biologist and thus was quite familiar with the minimum ethical standards practiced in scientific and medical research. In addition, Hirohito took his duties seriously as sovereign. He read carefully all reports submitted to him. He paid close attention to the briefings of his subordinates. He examined the annual military budgets closely, because he was deeply concerned that expenditures not impose too great a burden on the nation's resources.^{37(pp89,167)} Although it is doubtful whether the emperor was ever accurately informed of the extent of the use of humans in tests designed to produce weapons, it is certain that he was aware of some of the actions of his medical units.^{37(pp14-20,163-169)} (The Japanese archives that might hold a definitive answer to the questions of what the emperor knew, and when did he know it, are closed to scholars, and will remain closed for the foreseeable future.) If the emperor wanted additional information about these activities, he only had to ask those members of his extended family who were intimately involved in the biomedical research.

The Civilian Government

The modern Japanese Constitution (1889) provided ultimately for a bicameral *Diet*, or parliament (1890). The Upper House, similar to the British House of Lords, was made up of Peers of the Realm, the nobility. The Lower House of Representatives did not represent the people. Instead, until universal male suffrage was introduced in 1925, it consisted of males elected by male voters over the age of 21 who paid significant annual taxes. The result was that the House of Representatives was controlled by an oligarchy of wealthy businessmen who represented the major industrial conglomerates (the *zaibatsu*), the career bureaucrats, and representatives of the army and the navy. The *Diet* passed the laws, and supplied the members of the revolving governments who ruled in the name of the emperor.

Initially, this oligarchy was moderate in its policies, but the men who dominated the early parliamentary governments began to die out by the 1920s. The new oligarchy that replaced the founding fathers of modern Japan was far more radical and nationalistic. It increasingly came under the sway of the military. By the late 1920s and early 1930s, public policy was determined increasingly by young, ultra-right-wing, fanatical middle-level army and navy officers, who intimidated their superiors by various methods including assassination. The *Diet*, following these trends, reflected increasingly the extremist nationalistic views of the military.^{38(pp108ff),39(pp70ff)}

HISTORICAL CONTEXT AND NATIONALISTIC RACISM

Prior to 1937, reported Japanese treatment of prisoners of war was comparatively humane.^{40(pp96-97)} There were no POW horror stories concerning Japan's conquest of Korea, or its piecemeal acquisitions in China and in Manchuria. Nor were there any reports of major atrocities in the 1905 Russo-Japanese War or in World War I. None of these earlier encounters engendered accounts comparable to those in China after the 1937 invasion, or in World War II.^{6,14} The ancient and revered Japanese warrior code of *Bushido* emphasized the nobility of the warrior, and the necessity to treat the enemy with courtesy and honor (see Exhibit 16-4). The code would seem to preclude the violation of medical ethics that became so routine within Japanese medical units after 1937. Consequently, the explanation for the extraordinary change in the handling of prisoners of war, and of those civilians who fell under

Japanese control from the mid-1930s onward, has intrigued and challenged Western students of Japanese martial behavior over the past half century.^{14,37,40,41}

Nationalistic Racism and Militarism

It is commonly accepted that the Japanese nation is composed of a remarkably homogenous and ethnocentric people. An island nation, Japan was isolated from other cultures for many centuries. Its population, with the exception of a small percentage of aborigines and a smattering of Koreans imported after 1910 to work at menial tasks, is of one basic nationality. A unique culture emerged during the long period of isolation that set Japan apart from most other Asian countries, and from the Western world. It was in this climate that a sense of racial superiority became a dominant factor in Japanese

EXHIBIT 16-4

BUSHIDO, THE “WAY OF THE WARRIOR”

Bushido traces its origins to the ruling Samurai class in medieval times. Heavily influenced by Confucian philosophy, the Samurai adopted a code of ethics that, with some modifications, persisted as the dominant attitude of the military class through much of the modern era in Japan. The virtues of *Bushido* were obedience to superiors, respect for the gods, loyalty, simplicity, self-discipline, and courage. The concept, which was basically an unwritten ethical code, instilled in the warrior the notion of personal improvement, responsibility for leading others in righteous ways, for working to maintain peace and stability in the community, and for achieving honor and fame. To abuse or humiliate an enemy was antithetical to the basic Confucian ethic of *Bushido*.^{1,2} Consequently, the conduct of much of the Japanese armed forces prior to and during World War II was a direct repudiation of the Samurai *Bushido* tradition.^{3,4}

Sources: (1) Reischauer EO. *Japan, Past and Present*. 3rd ed rev. New York: Alfred A Knopf; 1967: 87. (2) Beasley WG. *The Rise of Modern Japan*. New York: St. Martin's Press; 1990: 17. (3) Tanaka Y. *Hidden Horrors: Japanese War Crimes in World War II*. Boulder, Colo: Westview Press; 1996: 206–211. (4) Harries M, Harries S. *Soldiers of the Sun: The Rise and Fall of the Imperial Army*. New York: Random House; 1991: 24–25, 338–339.

society.⁴¹ It was believed widely in Japan that the Japanese “race” was of a higher order than any other race or ethnic group. The Japanese accepted a concept of a divine origin as a “select people.”

The mid-20th century was a period in which overt racism flourished throughout the world. Nazi Germany was only one of several European countries that openly practiced an extreme form of racism. The United States was not blameless, harboring deep hostility to minorities of color and of religion. Asians were as racist as their European and American brothers and sisters. Racism in Japan, as in most other cultures, was born of religion and skin color. Japanese racism, however, exceeded that of any other Asian country in both theory and practice.^{41,42}

The Shinto faith, essentially the official state religion, was older than Christianity. Its basic tenet positioned the Emperor of Japan as the direct descendant of a goddess who created the Japanese people. The emperor, under this concept, was accepted by many to be a living god. Others thought of him as god-like. All citizens were taught to revere the emperor as the embodiment of Japan's soul. Within this highly nationalistic society that Japan had become at the beginning of the 20th century, the general population was taught to believe that the emperor's expressed wishes must be obeyed blindly by all his loyal subjects.

Hirohito considered himself, however, to be an instrument of the will of his subordinate advisors. Thus, militarists could, and did, exploit his status as the symbol of the nation to further their own

goals and ambitions. This need to follow without personal thought the dictates of the emperor, as filtered down to the lower ranks through the military hierarchy, became a fundamental tenet of the Japanese military system.^{17(pp25ff),37(pp68ff)} As one former pharmacy officer explained, the rationale for his having participated in unethical practices during the war was that he did not consider ethics in his work. Rather, “We did not think that way. We did as we were told. I thought General Ishii [one of the major figures in human BW research] was a great man, an important man.”^{43(p10)}

Skin color contributed greatly to Japanese racism. The Japanese people, on the whole, are lighter in color than most Asians, which set them apart from other Asians, and furthered nationalistic sentiments of racial superiority. Ultimately, Japanese racism, as exploited by ultranationalists, became indistinguishable from that of the Nazi concept of the superiority of the Aryan race. To the militarists, Asians and most Westerners became sub-races.^{41(pp11–73,228–259)}

They were not regarded as truly human, or worthy of the respect accorded to humans. This belief provided a perfect basis for the ill-treatment of prisoners of war and of civilians, who were considered to be worthless.

It was nationalistic racism that led to two of the principal developments in 20th century Japanese history. Japanese militarists exploited nationalistic racism to justify imperial adventures in East and Southeast Asia. Economic, political, and military imperialism took on a racist complexion. More im-

portant, perhaps, was the fact that nationalism combined with racism by the 1920s contributed to a moral decline in virtually every component of Japanese society. The passing of the old oligarchy led to the passing as well of the old traditions of personal improvement, moderation, peace, and stability in the community. The new leaders of the ruling oligarchy rejected the teachings of their elders. They opted instead for policies of arrogance and contempt for traditional ethics or morality.^{38,44} It was this moral decay that pervaded the military, academia, business and finance, the sciences, and the medical profession.

Consequently, military medical personnel no longer concerned themselves with the well-being of their patients, especially those who were of foreign nationality. The humane treatment meted out to Russian prisoners during the Russo-Japanese War as well as German prisoners captured in World War I was no longer a benchmark for Japanese medics.^{14(pp197ff),18(pp74ff)} This approach was abandoned in the third decade of the 20th century. Instead, when engaging knowingly in unethical practices, military medical personnel believed they were performing these experiments on inferiors. They felt free to try any test of stamina, for instance, to determine the minimum quantity of food necessary to sustain life for these "creatures,"^{14(pp89-90)} or to undertake any form of surgery on these "test animals"^{14(pp150-151)} that their imagination provided.

Decade after decade as the 20th century advanced, Japanese ultranationalists assumed increasing power both in the military and in civil government. Liberals and moderates were on the defensive throughout the 1920s as Japan experienced difficult times that added to the growing moral decay in society.^{18(pp142ff),37,31(p8)} In the early 1920s, there was post-World-War-I disillusionment by those nationalists who had expected Japan would gain great benefits in territory and natural resources from having chosen the winning side. Japan joined the victorious Allies in the war, but in fact received few rewards for its efforts. The Europeans and the Americans dominated peace negotiations with Germany, and awarded Japan little territory in the Far East or any other tangible spoils of war.^{14(pp145-150)}

Following this disappointment, there was the devastating 1923 Tokyo earthquake that essentially leveled the city, causing several hundred thousand deaths and enormous physical and economic losses. The country's exploding population seemed to the militarists to be getting too large for the nation's poor natural resources to sustain, except on a subsistence level. This was intolerable for a people who

believed they were destined to play a dominant role in Asia and, perhaps, elsewhere in the world. Finally, the stock market crash of 1929 in the United States affected the Japanese economy greatly and climaxed a 10-year period of perceived disgrace and disaster. The Japanese parliament, the *Diet*, proved ineffective in coping with these problems,^{38,39,44} and no other segment of the ruling elements seemed to offer satisfactory solutions to the nation's suffering.

The Emergence and Power of Secret Military Societies

Militarists were the only ones, seemingly, who benefited from Japan's woes. They recruited more followers with each tragedy or disappointment. Secret societies proliferated within the military, numbering more than 500 by 1940.⁴⁵ Although there was an inevitable overlap in membership, these societies did attract a large following within the military. They were especially popular with mid-level officers, many of whom came from relatively poor families in rural areas of Japan. They harbored grievances against those who controlled the country's wealth and dominated the nation's politics. This mid-level officer corps, including those in medical, dental, and veterinarian units, came increasingly to believe in a corporate state similar to that of Fascist Italy or Nazi Germany. Their goal was to eventually establish a national socialist state in Japan by using the emperor as the instrument for gaining control over the organs of state.^{39(Chap11),44(ChapIX)}

The ultranationalists in the military became increasingly fanatical in their beliefs and in the tactics they chose to achieve their goals in the late 1920s and early 1930s^{17,18} (Exhibit 16-5). In the early 1930s, they ignored high command policy and initiated military moves without permission. For example, the actions that triggered the so-called Manchurian incident from 1931 to 1932, leading ultimately to Japan setting up a puppet colony there, were initiated by mid-level officers in the Kwantung Army. They presented Tokyo with, in effect, a *fait accompli*, having acquired for the nation an important storehouse of mineral resources and abundantly rich agricultural lands. Manchuria, the three northeastern provinces of China (Liaoning, Jilin, and Heilongjiang), was rich in coal and iron. It produced annually abundant crops of wheat, tobacco, millet, and other important food nutrients. The region was sparsely populated, and could serve as an overseas outlet for settling Japan's seeming surplus population. It also brought Japanese troops to the border with their hated enemy, the former Soviet Union. From the militarists' viewpoint, Manchuria was an

important step in Japan's inexorable and rightful expansion on the Asian mainland.

These officers believed in a Japanese form of Manifest Destiny.^{15,41} Japan, according to their views, was destined to become the dominant power in Asia. Some believed Japan should first move south in the Pacific and acquire oil- and mineral-rich colonies controlled by Europeans and Americans. Others postulated that Japan's future lay on the mainland of Asia by way of China, and ultimately in the Asian portion of the former Soviet Union. Despite this disagreement, all sides were united in the belief that Japan was destined to expand overseas. The euphemism for the Japanese version of old-fashioned imperialism was something the expansionists labeled "The Greater East Asia Co-Prosperity Sphere."^{41(pp283-286)}

When threats and bluster failed to convince reluctant superiors of the action the ultranationalists sought, they turned to outbreaks of violence and extortion.^{15,17,19,45} By the early 1930s, these ultranationalists began to assassinate suspected unsympathetic officials in both the government and the military hierarchy. In 1932, members of one of the secret societies murdered the government's finance minister because he was believed to be opposed to military expansion. In 1936, a disgruntled Army officer,

Lieutenant Colonel Aizawa Saburo, killed General Nagata Tetsuzan, a favorite of Emperor Hirohito, and one of his principal military advisers. Aizawa assassinated Nagata in an especially brutal way, first slashing him across the face and chest with his sword, before executing the fatal blow. This was his way of showing extreme disrespect for an officer who had spent his entire adult life in the service of his country. Other leaders, including Prime Minister Inukai Tsuyoshi, were eliminated by adherents of the secret societies. The killers received surprisingly light punishments, and some were not prosecuted at all by the intimidated authorities.^{37(pp104-141)}

Assassinations were a prelude to coup attempts by the militarists. Some of the coup plots were so amateurish that they were almost comic when the plotters tried to put their plans into effect, such as the abortive March and October coup attempts of 1931, and the 15 May 1932 coup attempt. Others were far more serious. The Mukden incident, which led to Japan's acquisition of Manchuria in 1932, began as a result of plots by young officers in the Kwantung Army.^{37(pp85-102)} A rebellion in February 1936 was led by junior army officers, and nearly toppled the government before it was suppressed. There were many other plans to either take control of the army and of the government, or to force these

EXHIBIT 16-5

ULTRANATIONALIST FANATICISM WITHIN THE JAPANESE MILITARY

A conservative estimate suggests that in 1941 there were between 800 and 900 fanatical, emperor-worshipping secret societies within the Japanese Armed Forces.¹ Many of these groups' memberships overlapped, but a majority of the officer corps belonged to one or more of these societies. The Cherry Society, organized in 1927, was perhaps the most powerful of the organizations, with members reaching into the High Command structure.

In the 1930s it was not uncommon for political and military leaders to be targets of assassination plots by factional leaders within the military. Prime Minister Hamaguchi Osachi was assassinated by an ultranationalist in November 1930.² In 1932, a group of young Army cadets and Naval officers killed Premier Inukai Tsuyoshi. No one was punished for this crime.³ Earlier, in 1928, Komoto Saisaki put in motion a plot to kill Marshall Chang Tso-lin, Manchuria's war lord. Komoto expected that with the death of Chang, Japan could move into Manchuria. The plot was successful, Komoto escaped prosecution, and, within 4 years of Chang's death, Japan did succeed in controlling Manchuria.^{1,2} Ultrarightists inspired several dozen assassinations, or attempted assassinations, of prominent politicians and military leaders in the decade of the 1930s.

The ultrarightist militarists attempted coups against the lawful government in 1931, 1932, 1933, 1934, 1936, and in the closing days of World War II. While these efforts failed, they cost the lives of many leading Japanese officials. The February 1936 "rebellion" was the most dangerous of all the attempts.³

Sources: (1) Anonymous. The Brocade Banner: The Story of Japanese Nationalism, 23 September 1946, pp. 49-50, 61. Record Group 319, Publication File, 1946-51, Box 1776. The National Archives. (2) Harries M, Harries S. *Soldiers of the Sun: The Rise and Fall of the Imperial Army*. New York: Random House; 1991: 142-154. (3) Large SL. *Emperor Hirohito and Showa Japan, A Political Biography*. London: Routledge; 1992: 50-52, 60-75.

institutions to bend to the will of the ultranationalists. All the plots and attempted coups were promulgated by the instigators in the name of the emperor, or on his behalf, in order to restore him and Japan to their rightful place in the world.^{17(pp65–69),46} The fanatical plotters' real objective, however, was to use the emperor, or, if he was unwilling, one of his more pliable brothers, as the figurehead leader of a nation controlled by this extreme faction in the armed forces.

These military officers were determined to manage Japan's future by any means necessary to achieve their objectives. Even though their plots, overall, failed, they nonetheless accomplished what they set out to obtain. The ultramilitarists so intimidated the armed forces officer corps by the mid-1930s that they dominated military strategy and objectives. They injected a sense of arrogance and belligerence within the high command, leading to the 1937 invasion of China, border wars with the former Soviet Union in 1938 and 1939, and, ultimately, in 1941, war with the United States, Great Britain, and their allies. Under the relentless prodding of the ultranationalists, the army, and to a lesser extent the navy, had become a state within the state. The history of the Japanese armed forces during this period is one of almost a manic fixation on aggression, even at the cost of defying orders from the civilian government.

The Influence of Militarism on Military Medicine in Japan

It was within the context of these turbulent times that medical school students who planned to become career medical officers received their training. Some students were enrolled directly in army and navy medical schools such as the Tokyo Army Medical College or the Kwantung Army Medical College in Mukden (Shenyang), in Japanese-occupied northeast China. Others attended prestigious civilian medical schools. These students became candidates for an officer's commission upon graduation from their home institution.

It made no difference, however, whether candidates trained at army or navy medical colleges, or in civilian universities because all students received basically similar training. Their courses in microbiology, anatomy, chemistry, pharmacology, and other subjects were undoubtedly of excellent quality. The one obvious educational deficiency in all the medical institutions in Japan was the absence of formal courses in medical ethics. Occasionally, a senior professor might take a promising student aside and

discuss the nature of ethics as applied to medical situations. Otherwise, they were taught to treat the sick, and, in time of war, the wounded. Neither ethical nor moral considerations entered into the students' diagnoses or their course of prescribed treatment.^{47,48} Medical school graduates were not exposed to the Hippocratic Oath, or to a Japanese equivalent. There were no laws in Japan safeguarding patients from unauthorized or nonconsensual medical treatment, something that many countries in the West attempted to provide their sick and disabled.⁴⁹ In Japanese medical schools, it was assumed by their professors that medical students would treat their patients well.⁵⁰

Although it is equally true that most North American medical and dental schools during this time period did not provide students with formal courses in medical ethics or bioethics, there were nonetheless certain significant differences between these medical schools and those in Japan. Many of the American medical schools were affiliated with religious institutions, and the moral atmosphere of the controlling religious order or sect permeated the medical students' studies.^{51,52} Medical school professors routinely instructed their students in the healing responsibilities of the medical profession and most Western medical schools trained their students in ethical conduct by having them observe how their mentors treated patients. Students learned standards of medical conduct by observing their instructors as they treated patients with at least a modicum of compassion and concern. Moreover, as noted previously, all medical students were required to take the Hippocratic Oath as part of their graduation requirements.^{53–55} The latter was no guarantee that a doctor would not behave unethically in treating patients, but the Hippocratic tradition was so strong that it did govern the conduct of the vast majority of physicians, civilian and military.^{56,57}

There were nonetheless occasional lapses in medical ethical conduct in the United States and Canada during this period. The Tuskegee syphilis study of 400 rural Southern black patients covering a 40-year period that began in 1932 is perhaps the most notorious example of such lapses. (The United States government, through the action of President Clinton, formally apologized to the survivors of the study in 1997.⁵⁸ Earlier, in 1974, the victims or their heirs were granted monetary compensation by the government [see Chapter 17, *The Cold War and Beyond: Covert and Deceptive American Medical Experimentation*, for a further discussion of Tuskegee].)

Once admitted into the Japanese military in the 1930s and early 1940s, the new medical officers'

orientation did not provide time for ethical or moral discussions. The physicians and scientists continued to train in their fields of interest or specialization, but such continuing education did not include lectures on ethics; nor were they provided with any military manuals that contained sections dealing with the issue.^{31,59–62}

The Japanese military after 1920^{40(pp96–98)} showed less interest in humanitarian or human rights concepts than it displayed earlier in the century. These concepts were ignored, even though Japan was a party to the Hague Convention. It is true that Japan did not ratify the 1929 Geneva Protocol on Treatment of Prisoners but from time to time the government did announce that it would adhere to its provisions.^{14,18(pp478ff)} Medical officers were exposed to a few hours of lectures on international law relating to prisoners of war, but these symposia or discussions were almost without exception an analysis of “Japanese law.” Mid- and junior-level Japanese medical and scientific personnel in the military knew nothing of their obligations under international law.^{14(pp199–211),63}

Increasingly under the sway of fanatical militarists who showed no compassion to their own compatriots, the military did little to control the passions that corrupt soldiers in time of war. When mid-level officers casually assassinated generals (Exhibit 16-5) and leading government officials to further their aims, and knew that their punishment would be minimal, it was not surprising that they set an example for medical officers to emulate. Medical corps officers assumed that they could undertake nonconsensual experiments with prisoners in any manner they chose, with no fear that they would be held accountable.

Soldiers were brutalized routinely. Corporals slapped privates, sergeants manhandled corporals, lieutenants beat up sergeants, and so on up the line of command.^{14,18} Medical officers accepted this conduct to be the norm within the armed forces. Therefore, their subsequent inhumane treatment of prisoners placed in their custody became part of everyday military routine.^{14(p198)} It is not hard to imagine that if a military man, whether officer or soldier, treats

his own troops brutally, he would treat the enemy even more brutally.

The doctors and their professional colleagues acted in a manner consistent with the harsh, often cruel, environment created by the machinations of the ultramilitarists. Those individuals who joined the armed forces fresh out of their medical, dental, or veterinarian schools, and those who joined them after completing doctorates in microbiology or another science subject, were not inherently evil people. In fact, many were basically decent and idealistic in their instincts, but they lacked the moral courage to oppose the system. Few even considered the possibility of refusing to follow orders to perform unnecessary procedures, or to kill patients. In essence, most members of the medical units were the product of their times and of the environment in which they lived and flourished, no matter what inner doubts they may have harbored.^{14(pp197–211),41}

These three factors—(1) nationalistic racism and militarism, (2) the emergence and power of secret military societies, and (3) the influence of militarism on military medicine in Japan during this era—combined to produce programs of biomedical experimentation that were unequaled for their size, scope, and lack of compassion or concern for research subjects. These activities can be divided into two major categories: (1) those that were government sponsored and (2) those that were free-lance activities. It is important to distinguish between the two activities. If one does not separate the two, the full magnitude of each can get lost in the overall discussion. Government-sponsored biomedical research was a huge undertaking in wartime Japan, as the following section will amply demonstrate. At the same time, the commission of free-lance atrocities not only indicates the degree to which the Japanese failed to control elements within their empire, it also aptly demonstrates what many might view as the obvious outcome of the barbarization of the military. Government-sponsored research was massive and intentional; free-lance atrocities were widespread and allowed to occur. Both represent the breakdown of medical and military ethics.

GOVERNMENT-SPONSORED BIOMEDICAL RESEARCH

Before discussing the specific research programs, both in the laboratories and in the field, it is necessary to briefly review the history of how these programs were developed and funded, as well as the acquisition or construction of the facilities themselves. Ishii Shiro was the key organizing force behind the massive biomedical experimentation programs.

Ishii Shiro and the Origin of Japanese Biomedical Programs

Ishii Shiro (Figure 16-1), a young Army doctor, was the impetus for inducing the Japanese military to embrace BW as a major element of the armed forces arsenal of weapons in future wars. He would



Fig. 16-1. Ishii Shiro at two points during his military career. Photographs courtesy of Mr. Shoji Kondo.

also be the linchpin of Japan's 15-year sponsorship of BW studies utilizing humans in involuntary experiments. These are briefly summarized in Exhibit 16-6. Ishii was brilliant, unstable, charismatic, flamboyant, mercurial, and a spell-binding advocate for causes he supported. He was also an ultranationalist, who sought fervently to further his country's leadership role in Asia and, at the same time, to advance his career through the promotion of BW research.^{18,31,64,65}

He earned his medical degree in 1920 at Kyoto Imperial University. Joining the army as a Surgeon Lieutenant shortly after receiving his medical diploma, Ishii rose rapidly up the ranks. By 1926, when he was completing his doctorate in microbiology from Kyoto Imperial University, Ishii was a member of several of the secret societies that influenced the military.⁶⁶ He also had become a convert to the concept that BW was the weapon of the future.^{15(pp13-21)}

Employing his powerfully persuasive skills, Major Ishii came to the attention of influential personalities in the military. He convinced former Army Surgeon General and onetime Minister of Health Koizumi

Chikahiko to act as his patron. Koizumi had some doubts about Ishii, remarking once that "Ishii is a strange one, but I think he is good at his work."^{59(p49)} Despite his reservations, Koizumi was instrumental in securing Ishii an appointment as Professor of Immunology at the Tokyo Army Medical College, Japan's most prestigious military medical school.^{18,31,59,64} Ishii, because of his undoubted brilliance, and his political-military connections, was promoted routinely every 3 years, rising ultimately to the rank of Lieutenant General.

General Nagata Tetsuzan was another of Ishii's patrons. Nagata, who in 1934 was the Army's Chief of the Military Affairs Bureau, was extremely helpful to Ishii, extricating him from one of several brushes with the law.^{67(p11)} War Minister General Araki Sadao was still another important Ishii supporter.^{67(pp9-10)} Ishii also enjoyed the backing of several of the ultraradical colonels who served on the Army's General Staff, and who wielded considerable power behind the scenes.

In his role as Professor of Immunology, Ishii began to conduct secret limited involuntary experi-

EXHIBIT 16-6

BIOLOGICAL WARFARE RESEARCH OPERATIONS THROUGHOUT THE JAPANESE EMPIRE

- Tokyo Army Medical College, Department of Immunology; earliest biological warfare research (1930), conducted by Dr. Ishii Shiro, a microbiologist; site lacked privacy; Ishii moved to Harbin.
- Harbin, Manchukuo (1930); designated as “The Togo Unit,” named after Admiral Togo Heihachiro; commanded by Dr. Ishii; staffed with 300 men; larger facility but still lacked necessary privacy; Ishii moved to Beiyinhe.
- Beiyinhe, Manchukuo (60 km south of Harbin) (1932–1934/1935); locals called the site “Zhong Ma Castle”; commanded by Dr. Ishii; investigated blood loss, electrocution, plague, and glanders, using vivisection for immediate pathological examination of organs; several hundred human subjects were killed there; secrecy breached by prisoner insurrection; Ishii closed site and relocated to Ping Fan.
- Ping Fan, Manchukuo (24 km south of Harbin) (1936–1945); designated the “Anti-Epidemic Water Supply and Purification Bureau” but also known as Unit 731; commanded by Dr. Ishii; staffed by approximately 300 medical and scientific personnel and 2,700 support personnel.
- Changchun, Manchukuo; second largest research unit, was designated as the “Anti-Epizootic Protection of Horses Unit” but also known as Unit 100 (1936–1945); commanded by Dr. Wakamatsu Yujiro, a veterinarian; agents investigated were plant toxins, pesticides, defoliants, snake venom; conducted experiments on humans.
- Mukden Army Medical College (1932–1945); commanded by Dr. Kitano Masaji, a microbiologist; used humans extensively.
- Hailar, Inner Mongolia (1936–1945); designated as Unit 2646; subdivision 80 conducted secret human experiments.
- Beijing (1937–1945); designated as Unit 1855; commanded by Colonel Nishimura; at least 300 human subjects were killed there.
- Nanking (Nanjing) (1939–1945); a major BW unit, it was designated as Unit Ei 1644; commanded by Masuda Tomasada; agents investigated were plague, anthrax, typhus, typhoid; killed hundreds of Chinese research subjects; also supplied germs for Unit 731; 28 human skeletons discovered at the site in 1998.
- Canton (1937–1945); designated as “The South China Prevention of Epidemics and Water Supply Unit,” also known as Unit 8604 or the “Wave Unit”; commanded by General Sato; staffed by approximately 300 medical and scientific personnel and another 500 military support staff; jurisdiction extended over all of southwest China; mass grave discovered in 1997.
- Singapore (1942–1945); designated as Unit 9420; initially commanded by Dr. Hareyama Yoshio, then by Dr. Colonel Naito Ryoichi; staffed by approximately 150 physicians and scientists; produced huge quantities of pathogens; human skeletal remains discovered in late 1980s indicate possibility of small-scale human experiments conducted at this site.

ments on humans in his Tokyo laboratory. These experiments commenced as early as 1930. However, it soon became apparent to Ishii and his supporters that Tokyo was an unsatisfactory venue for conducting large-scale human BW experiments. He required a secluded site that would not be open to scrutiny by hostile forces in the outside world. Ishii discov-

ered such a location in 1932, when Japan acquired Manchuria. Through his connections in the military high command, he was able to immediately secure a posting to the newly renamed puppet colony of Manchukuo.^{15(pp13–21)}

The Kwantung Army leaders approved of Ishii’s BW plans, and assisted him to assure success for

the venture. Ishii commenced operations in 1932 in the northern cosmopolitan city of Harbin, not too far from the Soviet Siberian border. He arranged with the local authorities to commandeer an entire block of buildings, including a sake factory, in a run-down part of the city. The researcher quickly established his headquarters in this complex, and built a laboratory that was stocked with the latest equipment. His superiors made certain that he was provided with sufficient staff (300 men) and funds (200,000 yen) to begin secret BW experiments. To further disguise the nature of his work, Ishii's command was designated as "The Togo Unit," named after Admiral Togo Heihachiro, the hero of Japan's 1905 war with Russia, and a special Ishii favorite.

It soon became apparent that Harbin, as with Tokyo, was too open to curious observers for Ishii to continue research there on humans. He quickly found a better location for his work in the tiny, isolated, hamlet known as Beiyinhe, some 60 kilometers south of the city. Enlisting once more the cooperation of local authorities, the Japanese forced peasants in and around Beiyinhe to sell them their property.⁶⁸ In late 1932, Ishii and his men proceeded to construct an enormous facility on the site. Part of the complex consisted of a research laboratory. Another section was a prison that housed political prisoners as well as ordinary criminals.⁶⁸

Locals christened the site the Zhong Ma Castle, because the main building from the outside took on the appearance of a palace. From 1932 until 1934 or 1935, Ishii and his co-workers experimented on hundreds of prisoners at this facility. Subjects usually were political prisoners, however, when political prisoners were not available, the Japanese turned to the general prison population for additional experimental subjects. Some of the prisoners were captured guerrillas who had continued to fight the Japanese after the occupation of Manchuria. Others were known communists.

The experiments were crude, even by the standards of the times. They consisted of the taking of great quantities of blood, on a routine basis, from prisoners until they became so weak they were no longer of value to the researchers.^{15(pp22-30)} The prisoners would then be "sacrificed." Others were subjected to electric shocks of varying degrees of power.⁶⁹ If the electric shocks did not kill the victim, he was "sacrificed" shortly after the tests were completed. Tests were also conducted for plague and glanders. The Japanese employed vivisection whenever they required a body part for examination. Orders would go out to prison guards, a prisoner would be rendered unconscious with a blow to the head with an ax, and the specific organ re-

quested would immediately be excised from the body and sent to the laboratory for study.^{69,70}

In either late 1934 or early 1935, the wall of secrecy surrounding Beiyinhe was breached by a prisoner insurrection, and by a mysterious explosion at the facility that attracted the curiosity of people in the vicinity. It became apparent that a more secure and isolated facility was required to continue the research.

The Establishment of the Ping Fan Research Facility

Ishii convinced the Kwantung Army commanders and major proponents in the Tokyo High Command that his work was of unusual value to the armed forces. Emperor Hirohito, either by design or through ignorance,^{37(p163)} greatly assisted Ishii's plans by issuing an Imperial decree on 1 August 1936, establishing a new army unit, the *Boeki Kyusui Bu*, the Anti-Epidemic Water Supply and Purification Bureau. Ishii was appointed head of the Bureau, thus offering him a perfect cover to establish "water purification" laboratories wherever he wished. The laboratories would engage in legitimate water purification work, but they would also be the disguise for secret BW research with humans.^{15,33} Ishii merged the old Togo Unit with a complement of new scientific recruits and a group of fanatically loyal soldiers from his hometown in Japan. The new unit was called the Ishii Unit. (To maintain even greater secrecy, the Ishii Unit was later given a numerical designation, Unit 731. All subsequently established BW units also were given numerical designations to further conceal their true assignments.)

Ishii was given additional funds, equipment, and skilled researchers in order to continue work on perfecting BW weapons. He was also provided with a piece of land located 24 kilometers south of Harbin's city center. The large tract, actually a cluster of peasant villages, was called Ping Fan, and covered an area of approximately 6 square kilometers. Construction was begun in 1936, and the entire complex of more than 150 buildings was finished in 1939 (Figure 16-2). The facility there became Ishii's Manchurian headquarters until 1945; it is known to scholars as the Ping Fan BW "death factory." (The Chinese characters suggest that the name should be spelled Ping Fang, but Ping Fan is commonly used by students of Japanese biowarfare activities.)

It was the most complete and modern BW research facility of its time. Ping Fan housed dozens of specialized laboratories. The complex included a refrigerated chamber used to study frostbite, stables for horses and other large animals, build-

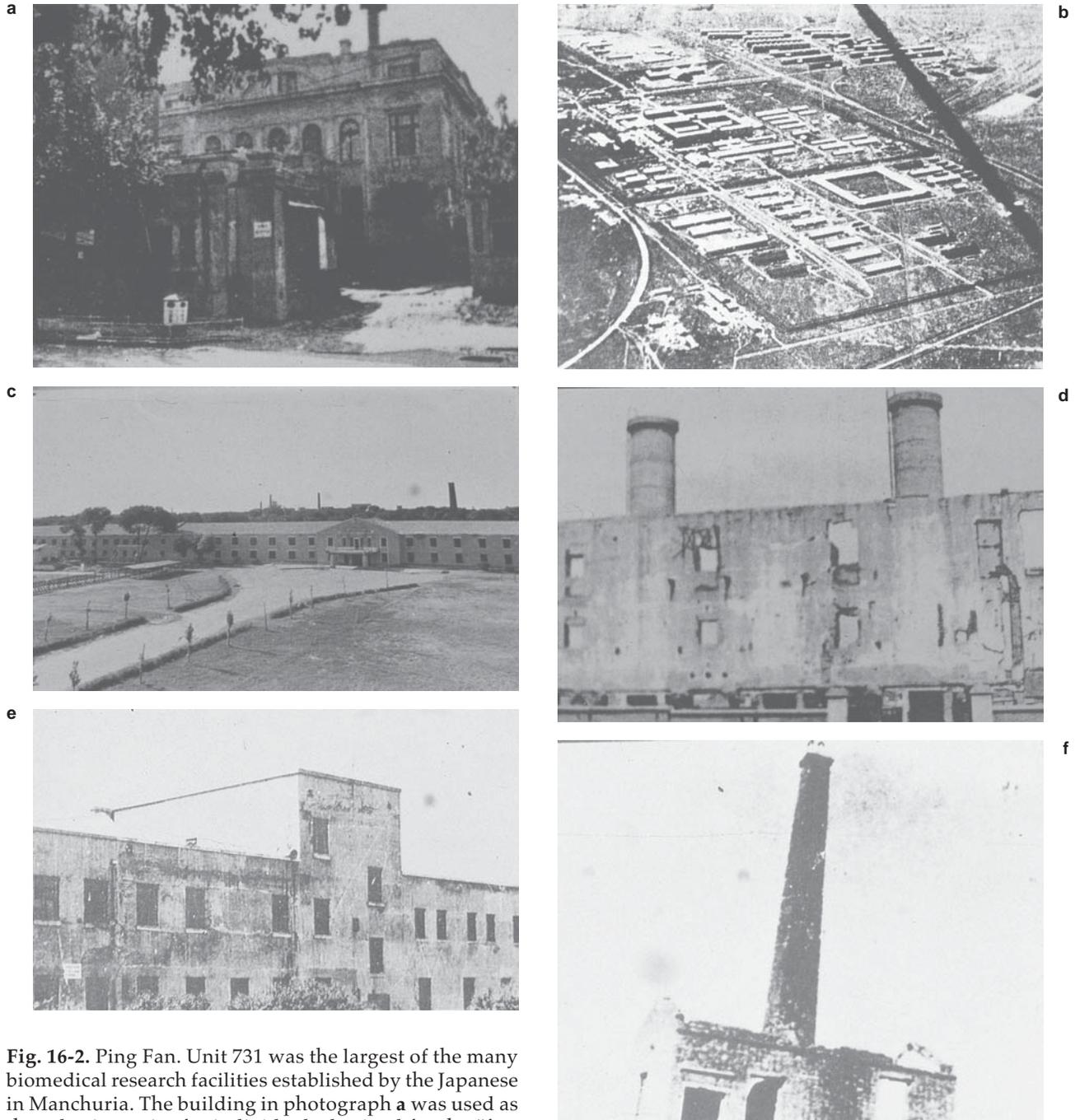


Fig. 16-2. Ping Fan. Unit 731 was the largest of the many biomedical research facilities established by the Japanese in Manchuria. The building in photograph a was used as the selection point for individuals destined for the “factory.” Photograph b, an aerial view of the complex, does not show the entire facility but gives a sense of its size, as do photographs c–f. Photographs of exhibit materials (including captions) from displays at the Ping Fan Museum, Harbin, Manchuria, China, from the collection of Sheldon Harris.

ings equipped to handle thousands of small research animals, and two prisons, one holding only males, the other for both males and females (including children). Three crematoria were also part of the complex. There were barracks for soldiers guarding the area, schools for the children of civilian and

military personnel, a huge administrative building, a library, and provisions for recreational activities, including a large swimming pool and two brothels (staffed, presumably, with Comfort Women).⁷¹

Ping Fan was surrounded by several 3-meter-high brick fences, a moat, and a series of electric

and barbed wire barriers. No one, including Japanese nationals, could enter Ping Fan without securing a pass from a Kwantung Army official. The local residents were told only that the Japanese were building a lumber mill. Among themselves the Japanese researchers furthered the image of a "lumber mill." Candidates for experiments in the BW camps were referred to by the medical researchers there as "*marutas*"^{30,33,60,61,72,73} or logs. Logs were brought into the lumber mills, examined or tested for an assortment of "impurities," cut up (autopsied), and then (to continue with the metaphor) burned as firewood in the camp's incinerators.^{15(pp57-82)}

With the completion of the Ping Fan facility, satellite research stations, or units, were also established throughout Manchuria. The most important of these smaller facilities were located at Anda, 140 kilometers north of Harbin, and Darien (Dalian), southern Manchuria's seaport that is free of ice throughout the year. Ishii's influence spread beyond Manchuria to parts of occupied China, Inner Mongolia, and to many of the territories Japan acquired during the first days of World War II. At the height of his power, Ishii commanded a fleet of airplanes, several thousand medical and scientific personnel, and a sizable army of soldiers. Most important, he exercised total control over huge annual expenditures. Ishii had created a BW empire and he was its sovereign ruler.

Other Biomedical Research Facilities in Occupied Territories

Research establishments were located in more than two dozen sites altogether. Each location was manned by an army unit composed of medical and scientific personnel and ordinary soldiers required to protect the facility. Some of the BW secret laboratories were quite large, although none equaled the extent of the Ping Fan installation. Others were small satellite or support resources. Many units were labeled Water Purification Units and were under the direct command of either Ishii or one of his close associates. Still others operated independently of Ishii, and held designations that rivaled in imagination the Water Purification nomenclature. It is reasonable to estimate that overall the BW project enlisted more than 20,000 civilian and army personnel.

Most of the BW units did not concentrate on one or two pathogens. Instead, their investigations covered an extraordinary variety of diseases, from anthrax to yellow fever. Workers were given assignments to study plague, typhoid, paratyphoid A and

B, typhus, smallpox, tularemia, infectious jaundice, gas gangrene, tetanus, cholera, dysentery, glanders, scarlet fever, undulant fever, tick encephalitis, "songo" or epidemic hemorrhagic fever (probably similar to Hantavirus in the United States), whooping cough, diphtheria, pneumonia, epidemic cerebrospinal meningitis, venereal diseases, tuberculosis, and salmonella, as well as diseases endemic to local communities within range of a unit's resources. Physicians and scientists studied also the effects of frostbite and the pressures a human body could endure in high-altitude flying. The agrarian units, such as Unit 100, studied the killing possibilities of hundreds of plant and animal poisons.^{32,74-76}

The second largest BW research operation (Ping Fan being the largest) was also created by Imperial decree in 1936.^{33(pp40,51-55)} It was given the camouflaged designation, "Anti-Epizootic Protection of Horses Unit," and was posted in a suburb of Changchun, the capital of the puppet colony of Manchukuo. This new unit was commanded by Major Wakamatsu Yujiro, a veterinarian, who was given jurisdiction over a plot of land that measured 20 square kilometers, more than three times the size of Ping Fan. (Like Ishii, Wakamatsu had been promoted every few years, rising to the rank of major general in 1945.) Initially the unit, in keeping with Japanese tradition, was known as the Wakamatsu Unit. But, in 1940, at the same time that the Ishii Unit was given the number 731, Wakamatsu's troops were allotted the unit number 100.

Crops of known poisonous plants were grown on Unit 100's farms. The unit's agronomists also tried to cultivate new forms of deadly toxins derived from plant life. Pesticides and defoliants were another prime research area. Poisonous snakes were bred for their venom. Other animals, both domestic and wild, were raised for testing purposes. Humans were also subjected to various experiments with the poisons and then were "sacrificed" and dissected, although not as many people were killed here as at Ping Fan.¹⁵

Kitano Masaji (Figure 16-3), a longtime bitter Ishii rival, ranked slightly behind Wakamatsu as the third most important figure in the BW enterprise. Kitano received his medical degree at Tokyo Imperial University in 1922. He continued graduate studies there, joined the army, and was sent to Manchuria in 1932. As with Ishii, Kitano moved up in status every 3 or 4 years, ultimately achieving the rank of lieutenant general in the Medical Corps. He was brilliant and scholarly, but lacked Ishii's flamboyance.

Kitano was appointed Professor of Microbiology at the Mukden Army Medical College, and pro-

ceeded to build a BW research laboratory there that used humans extensively in studies he and his colleagues pursued. Kitano published widely in scientific journals in Japan and abroad for more than 20 years; a significant number of his papers were based on human experiments. His readers became aware of certain code words that indicated findings based upon his research with humans. If Kitano referred to “monkeys” in his papers rather than to a specific primate, the reader understood that “monkeys” meant humans. His lectures to students at the Mukden Military Medical College also contained frequent references to his research on monkeys.⁴⁸ Hundreds, if not thousands, of Chinese, Korean, and other nationals were “monkeys” in Kitano’s research.^{15(pp50–81)}

Many BW research facility locations are unknown at present. There are, however, many confirmed

locations. They stretch from Hailar (Unit 2646, whose subdivision, Unit 80, conducted secret human experiments) in the bleak, frigid landscape of Inner Mongolia, south to Singapore and other tropical venues. BW laboratories were established in Beijing (Unit 1855) and a satellite station at Chinan. The Beijing Unit was housed near the Temple of Heaven, and was led by a Colonel Nishimura Yeni (Chinese pronunciation of Nishimura’s given name). At least 300 people were killed in Unit 1855 laboratory experiments.^{6(pp51–53)} Rangoon (Yangon) in Burma (Myanmar) and Bangkok in Thailand were other important research centers, although little is known currently of their activities. There is some evidence^{77(pp160–164)} to suggest that the Japanese established laboratories in Shanghai (Kitano was stationed there in the closing days of the war), Manila, and in the Dutch East Indies (Indonesia).

A major BW research center was situated in the center of Nanking (Nanjing) in a sequestered Chinese hospital. Nanking had been the focus of world attention ever since the infamous 1937 “Rape of Nanking” had occurred there. Nevertheless, Unit Ei 1644, commanded by Masuda Tomasada, killed hundreds of Chinese in plague, anthrax, typhus, typhoid, and other pathogen tests.⁵⁹ The Nanking facility acted also as a germ supply factory for Unit 731.

Canton (Guangzhou) was the home of “The South China Prevention of Epidemics and Water Supply Unit.” The Japanese Army designated this miniature version of Ishii’s Ping Fan Water Purification Bureau as Unit 8604, known in Chinese as Bo Zi, or “Wave Unit.” General Sato Shunji commanded the 800 men and women who served in the unit. The unit was composed of approximately 200 civilian medical and scientific personnel, 100 commissioned officers, many of whom were physicians or held doctorates in a scientific field, and 500 soldiers and noncommissioned officers assigned to guard the research center. Unit 8604’s jurisdiction extended over all of southwest China, including the newly conquered Hong Kong territory. It was in the area of Hong Kong that the unit carried out some of its most horrendous experiments.⁷⁸

Singapore was also an important BW base. A BW laboratory was established there within days of the Japanese conquest. It became one of the largest of the BW installations outside the China mainland. Initially, Unit 9420 (the numerical designation for the BW unit) was under the command of Hareyama Yoshio, but in 1942, Lieutenant Colonel Naito Ryoichi, one of Ishii’s most trusted colleagues, assumed control of the facility for several years. It was staffed with approximately 150 physicians and sci-



Fig. 16-3. Kitano Masaji. Caption: “Lieutenant General Kitano Masaji, the second commander of Unit 731 (Medical Major-General).” Photograph (including caption) on display at the Ping Fan Museum, Harbin, Manchuria, China, from the collection of Sheldon Harris.

entists, and produced huge quantities of pathogens annually. One of the lab technicians recalled that in 1944 he was sent back to Japan to bring rats for breeding fleas in Singapore. Two planes were required to transport the rats, estimated to number approximately 30,000.⁷⁷(pp160-164) Naito and his staff worked primarily with typhus, plague, and pesticides. It is unknown whether Singapore was a BW research facility, or whether it was simply a laboratory employed to produce pathogens for use elsewhere. However, because Naito Ryoichi is known to have been of great assistance to Ishii in the Ping Fan installation, it would not be improbable that he tested some of the pathogens produced in Singapore on prisoners under his control.⁷⁷(pp160-164),^{79,80} (The locations of the research facilities are

shown in Figure 16-4.)

This section has discussed some of the other research facilities that are known to have existed. Others may be found in the years to come. What they demonstrate, however many there may be, is that this was a huge research program. Its goals were to change the nature of warfare by introducing bioweapons.

Biological Warfare Laboratory Experiments

Ishii Shiro once stated succinctly the then-current philosophy. In a speech to new recruits at Ping Fan, Ishii declared,

Our god-given mission as doctors is to challenge



Fig. 16-4. Map showing locations of Japanese biomedical experimentation facilities. Reproduced with permission from Harris SH. *Factories of Death: Japanese Biological Warfare, 1932-45, and the American Cover-Up*. London: Routledge; 1995: xii.

all varieties of disease-causing microorganisms...to block all roads of intrusion into the human body; to annihilate all foreign matter resident in our bodies; and to devise the most expeditious treatment possible.^{31(p71)}

But, Ishii urged his fellow researchers to put aside all feelings of compassion for their patients. The new approach to research in medicine must be based upon

the dual thrill of 1), a scientist to exert efforts... probing for the truth in natural science and research into, and discovery of, the unknown world and 2), as a military person, to successfully build a powerful military weapon against the enemy.^{15(p44)}

The promoters of BW research had several objectives in mind. They had to determine the feasibility of producing massive quantities of the germs selected. They needed to manufacture viable delivery systems. Pathogens could not be a valuable weapon unless they could be introduced into enemy territory. And they wished to discover those pathogens that could best be used in BW. To do this they needed to fully understand the effects of pathogens on humans.

Pathogen Production

The Ping Fan facility produced enormous quantities of pathogens. Laboratory technicians bred, or imported, enormous numbers of animals to help produce pathogens. Fifty thousand or more rats and chickens were expended in an average year at the Ping Fan installation alone. At one time, General Ishii issued a requisition for one million rats, although it is unlikely that he achieved his goal.⁷³ Research was not confined to pigs, rabbits, goats, sheep, monkeys, horses, and other animals that are normally found in a research laboratory. The technicians also handled animals that would be considered exotic in the context of a BW laboratory: camels, lions, tigers, water buffalo, bears, and similar non-traditional animal research material.^{15(p4)}

Ishii personally designed the duraluminum oven cultivators used at Ping Fan. Each oven contained 15 trays for cultivating bacteria. The facility was equipped with 500 incubators and six boilers, each capable of manufacturing 2 tons of culture liquid.^{31,60,61,81} It is estimated that Ping Fan, alone, could turn out 3 trillion microorganisms every few days. Agar was the medium (6.78 quarts per oven) usually employed to grow bacterium. Enteric organisms were manufactured in batches every 24 hours,

7 days each week, 52 weeks each year. Anthrax, plague, and glanders pathogens took twice as long to cultivate. Anaerobes were harvested on a weekly basis. Ping Fan's laboratories' output was so large that Ishii and his colleagues could use 150 or more kilograms of a specific pathogen in periodic field tests.^{33,60,61,76,82} The other BW Units laboratories were as active as those at Ping Fan. The amount of pathogens Japanese BW Units produced each year was so great that the total is incalculable.^{81,83}

Research Into Effective Delivery Systems

The Japanese BW researchers were, however, unable to develop effective delivery systems for the massive quantities of germs their BW facilities were capable of manufacturing. Ping Fan was the major center for delivery systems research and development, but all the other BW installations also devoted manpower and materials in an effort to construct weapons. The units worked with different types of artillery shells, such as a conventional gas shell and a 75-millimeter high-explosive shell whose explosive charge was replaced partly with bacteria. After extensive tests, the shells were discovered to be impractical for BW and were abandoned.^{74(p1),84}

BW engineers hoped that bombs filled with pathogens could be used effectively. They worked on a single-purpose, steel-walled, high-altitude model that they believed would be successful with anthrax spores, however, their efforts failed. Researchers tried for more than 6 years to produce steel-walled bombs that could house pathogens and survive the explosive force once the bomb was placed on target. They conducted tests with several types of bombs. More than 6,000 bombs were used in these tests, but none of the tests yielded positive results.^{33(pp13-14,39,56)} The researchers then turned to porcelain as a possible bomb-making material capable of sustaining bacteria during delivery. They also experimented with high-altitude balloons that, if successful as a BW delivery system, would have been deployed against the United States. All these devices also were unsuccessful as BW weapons.^{15(pp59-61)}

Research on Pathogen Effects

Although the search for BW dissemination devices stumbled, research on human effects proceeded briskly. BW researchers tested the pathogens on prisoners daily. As the pathogen effects became more pronounced, acquiring research data became more difficult. Ueda Yataro, who was a Unit 731 lab technician, recalled many years after the war ended

that one day he was assigned to extract blood from a dying *maruta*. It was important to obtain this blood because the previous day's tests revealed an exceptional change in the "material's" blood and rate of infection. Ueda was fearful that his "material" would die before he could complete his assignment. Ueda had the prison guards force other prisoners to lift the dying man's arm so that he could begin his work. The man's hand was already turning purple, and felt cold. Ueda observed that, "More important to me than the man's death was the blood flowing in the human guinea pig's body at the moment before his death."^{14(p162)} Ultimately, he was able to obtain ten cubic centimeters of blood as a sample. "For people in laboratory work, this is ecstasy, and one's calling to his profession."^{14(p162)} He concluded his comments by saying, "Showing compassion for a person's death pains was of no value to me."^{14(p162)}

In 1995, Matsumoto Hiroshi, a former medic in Nanking's Unit Ei 1644, testified that he and his fellow medics would inject prisoners with many different pathogens and would then observe their reactions over a period of time lasting no longer than 3 or 4 months. Blood samples were taken from subjects periodically. When no longer of further use to the researchers, the prisoners would be executed, their bodies dissected, and burned in the unit's incinerators.⁸⁵

Unit 731 used the facility at Anda as a testing area for a variety of human experiments. Infected prisoners were taken there by airplane from Ping Fan. They were then exposed to the elements in an effort to determine the effect, if any, extreme cold had on different pathogens. Healthy prisoners were tested for frostbite by having certain parts of their bodies exposed to temperatures of -40°F or lower. They were then rewarmed at dissimilar levels of temperature. Still other prisoners at Anda were tied to stakes at measured distances from each other for various experiments. Sometimes bombs filled with shrapnel and bacteria were dropped in a predetermined location where prisoners were held. The prisoners were wounded by the shrapnel, and later examined for possible infection caused by the bacteria-laden bombs. At other times, explosives filled with bacteria were detonated on the ground. Those prisoners who survived the tests were later killed, dissected for their organs, and their bodies disposed of by the usual methods.^{15(pp58-60,66-70)}

It is impossible to calculate with precision the number of prisoners killed in laboratory experiments. Rough estimates can be made, however, on the basis of statements in the postwar period by members of the various BW units. Major General Kawashima Kiyoshi testified in December 1949 that

he knew from personal experience that "the number of prisoners of Detachment 731 who died from the effects of experiments in infecting them with severe infectious diseases was no less than about 600 per annum."^{33(p57)} Kawashima was stationed at Ping Fan beginning in 1941, and was captured there by Soviet troops in August 1945. By his calculations, 3,000 prisoners died during his tenure at Ping Fan.

However, Ishii and his confederates began killing human research subjects in Tokyo as early as 1930. A total of many thousands more were exterminated in Harbin, Beiyinhe, and Ping Fan from 1936 to 1941, and in Unit 731's satellite facilities. Thousands more were destroyed by Units 100, Ei 1644, the Hailar, Beijing, Canton contingents, and their numerous support units. Consequently, the known evidence suggests that a most conservative estimate of total fatalities would be between 10,000 and 12,000 men, women, and children killed in research conducted at the various facilities. The Nazi doctors, by comparison, are estimated to have killed about 1,000 individuals in their experimental laboratories.⁸⁶

Biological Warfare Field Tests

Once pathogen production was accomplished on a large scale, the BW researchers sought to evaluate the effectiveness of pathogens on populations in greater numbers than could be determined in laboratory studies. In their view, there was no difference between killing individuals in laboratory experiments, or using BW on large populations of people, civilian or military, outside the confines of the laboratory. Their primary concern was to learn whether they were making progress in developing BW weapons.

The first reports of the use of CW and BW weapons in field tests began to surface in China as early as 1937.^{15(pp71-73)} Most of the stories were dismissed as propaganda by Chinese forces who were enduring humiliating defeats by advancing Japanese armies. Some of the reported attacks over the next several years, however, were confirmed by independent sources.^{87,88}

The Nomonhan Incident during July and August 1939 is the first major event in which BW and CW were tested extensively against opposing military forces. (Although the recognized authority on the incident disputes this claim,⁸⁹ documentary evidence proves conclusively that BW and CW was employed on a large scale.⁹⁰) The field test utilized the combined resources of Units 731, 100, and their satellite units. Two thousand artillery shells laden with bacteria were aimed at Soviet forces. In addi-

EXHIBIT 16-7

PATHOGEN TESTS ON CIVILIAN VILLAGES IN CHINA

Ningbo

The most significant pathogen test in China during Japanese occupation took place in October 1940 in Ningbo, an important port near Hangzhou, and approximately 12 hours south of Shanghai by coastal steamer. It also was the birthplace of Chiang Kai Shek, the Chinese leader. Ningbo had experienced periodic Japanese bombing raids from the opening days of the war in 1937. The common pattern was for three to six planes to fly at high altitudes and to strike early in the day, dropping bombs in or around the port area. Casualties were usually high after each raid, but the local population became accustomed to the sound of planes approaching the city, and took whatever precautions they could for their safety.

The raid of 27 October 1940, described in the diary kept by an American missionary, the Reverend Archie R. Crouch,¹ was most unusual. This time the attack came late in the afternoon. Instead of the typical three to six airplanes, Reverend Crouch noted that, "A lone plane circled slowly over the heart of the city[, a] plume of what appeared to be dense smoke billowed out behind the fuselage. I thought it must be on fire, but then the cloud dispersed downward quickly, like rain from a thunderhead on a summer day, and the plane flew away."¹

The plane scattered wheat into the city center. People began to sweep it up to use to feed their chickens, not knowing that the wheat contained plague-infected fleas. Reverend Crouch did not realize what had happened until a few days later, when "the first bubonic plague symptoms appeared among people who lived in the center of the city."¹ Twenty people died within a few days of the pathogen delivery. On November 2nd, Reverend Crouch wrote in his diary, "16 more people died....The Chinese newspapers carried full descriptions of the cause, symptoms and cures [for plague]."¹ Schools were closed. People diagnosed with plague were taken to a special hospital outside the city. Brick masons built a 14-foot-high wall around six square blocks in the city center, the area most heavily affected by the disease. Residents within the six square blocks were evacuated through decontamination sheds that were erected next to the gates. They were hosed down with a disinfectant by the authorities, and all of their clothing and household goods were destroyed as a preventive measure.

In early December, as the plague continued, the city fathers decided that the only feasible way to halt the epidemic's spread was to burn down Ningbo's city center. "Trails of sulphur were laid out like a rat maze through the condemned area. Ignited at strategic places, fires from the burning sulphur raced through the maze like sparkling snakes....The heart of the city was quickly reduced to a pile of glowing embers, and the assumption was that no rat and no flea could possibly escape."¹ The Chinese authorities inoculated most of the population with an antiplague vaccine. Afterward, a Japanese plague decontamination unit arrived and "forced the entire population, including our family, to be injected with its anti-plague serum even though we had already been injected with serum provided by the Chinese."¹

The official Chinese records account for 100 deaths from plague. Many others died, but were not counted because of the chaos in social services caused by the outbreak. Hundreds more became ill with plague, but recovered. The worst effects of the Ningbo BW raid were over 2 months after the wheat was dropped, but scattered cases of plague were recorded for another 4 months.

Chang Teh

Led by Ishii loyalist Colonel Ota Kiyoshi, a contingent of 100 members of Unit 731 concentrated on introducing plague into Chang Teh (Changde), a major business and communication center in Hunan Province. Thirty bacteriologists took part in the operation. They began a series of raids in April and May 1941 dropping plague-infected fleas mixed in wheat and other grains over the city by airplane, similar to the operation at Ningbo.²

This was followed up with additional assaults in the autumn. Chang Teh was attacked by a single plane early one morning in November 1941. No bombs were dropped, although the airplane did circle the city at least three times. Instead, wheat pellets, grains of rice, cotton padding, strips of paper, and other

(Exhibit 16-7 continues)

Exhibit 16-7 continued

unlikely objects fell from the sky as the plane continued to fly over the city. Within 10 days after this unusual incident, the city authorities were informed that a case of bubonic plague had been discovered. Others became ill with plague over the following weeks. In all, several thousand, or more, Chang Teh residents were infected with plague. Many died of the disease, although the exact number is unknown.³ There is no doubt, however, that at least 500 persons died of plague in and around the city as a result of Colonel Ota's efforts. Chang Teh had had no previous history of plague outbreaks.⁴

Congshan

In August of 1942, the Japanese repeated the earlier Ningbo maneuver. An airplane circled Congshan, a tiny village of 1,200 inhabitants, spraying "a kind of smoke from its butt," and flew away. Two weeks later, large numbers of rats began to die in Congshan. Then, people began to die. Plague ravaged Congshan for more than 2 months, killing 392 of the approximately 1,200 inhabitants.⁵

Japanese medical personnel came to the village and set up a hospital in the nearby Buddhist temple. Many of the local residents were given legitimate care. Others, however, were exposed to plague germs in the guise of receiving vaccines. After completing their experiments, the Japanese burned the homes of plague victims on 18 November 1942.⁵

Sources: (1) Crouch AR. *Japanese Biological Warfare in China: One Family's Encounter*. Typescript copy of a diary kept by Reverend Archie R. Crouch that was provided to the author. Quotations from the manuscript were taken with Reverend Crouch's permission. (2) Williams P, Wallace D. *Unit 731, The Japanese Army's Secret of Secrets*. London: Hodder & Stoughton; 1989: 95-97. (3) Harris SH. *Factories of Death: Japanese Biological Warfare, 1932-45, and the American Cover-Up*. London: Routledge; 1995: 79. (4) *Materials on the Trial of Former Servicemen of the Japanese Army Charged with Manufacturing and Employing Bacteriological Weapons* [also known as the Khabarovsk Trial]. Moscow: Foreign Languages Publishing House; 1950: 260. (5) Tyler PE. China villagers recall horrors of germ attack. *The New York Times*: 4 February 1997:A1, A6.

tion, pathogens were delivered using more primitive methods, such as dumping them directly into rivers under the cover of darkness, anticipating that the enemy would drink from the infected water.

Personal accounts of the "suicide squads" sent on these river missions have since been published. For instance, in 1982, a Mr. Tsuruta told a reporter for the Tokyo *Mainichi Shimbun*⁹¹ that he was one of 24 men in a "suicide squad" that engaged in a night foray into Soviet territory to drop kilos of typhoid germs in water used by Soviet troops. Seven years later, in 1989, three former servicemen recounted to another reporter their BW role in the Nomonhan struggle. "With our own hands, we threw large quantities of intestinal typhoid bacteria into the river..."⁹² The men hand-carried 22 or 23 18-liter oil drums over swampy ground to the river bank. "The pathogens were cultured in a vegetable gelatin. We opened the lids, and poured the jelly-like contents of the cans into the river. We carried the cans back with us so we wouldn't leave any evidence."⁹²

None of the Nomonhan tests of different delivery mechanisms were successful. The pathogens dumped into the river lost their virulence almost immediately upon contact with the water. However, the Japanese themselves suffered at least 1,300 casualties due to epidemics related to the BW tests. It also was disclosed some time later that at least 40

men in the BW squads who had been exposed to the pathogens during the mission had died shortly thereafter.⁹⁰ Nevertheless, Ishii and Wakamatsu were able to convince their superiors that the BW tests were successful. Both their units received commendations from Emperor Hirohito, a most unusual gesture of recognition for medical units.^{15(pp144-145)}

Several plague tests were conducted by a number of BW units in 1940, 1941, and 1942. Exhibit 16-7 details the 1940 Ningbo pathogen test, the follow-on pathogen test conducted in 1941 on Chang Teh, and a comparable test in Congshan in 1942. Similar operations were conducted against cities, towns, and hamlets all over central China, and in Manchuria. Sometimes the target was attacked by airplanes. At other times, plague-infected rats were turned loose on a community. They mated with local rats, thus spreading the infectious material, and eventually causing a major plague eruption. A particularly insidious tactic was to send a team of Japanese doctors and their associates to a community. They would announce that plague had been discovered nearby, and that all residents must be inoculated against the dread disease. The people were not given an antiplague vaccine. Instead, plague germs were injected into the local citizens. This was a tactic employed by both Unit 100 and Unit 731 in Manchuria.^{15(pp96-99)}

Cholera was also tested extensively. Beijing's Unit 1855 commander once boasted that his laboratory produced sufficient cholera germs to wipe out the entire world population. A typical operation involved injecting prisoners with cholera germs, and then releasing them among the general population. Cholera would spread, then the Japanese would send in medical personnel to examine the sick and the dying, and to try different methods of treatment. Dogs were also used by Unit 1855 as vectors for cholera transmission. They were fed pork that was infected with cholera germs and then released. When the cholera infected the dogs and made them vomit, other dogs would ingest the vomit and become infected. Diarrhea would follow, and the dogs' feces would spread the disease among animals and people. At least 20% of those infected with cholera by this method died. Army Captain Kojima Takeo was a member of the cholera team that participated in the operation.⁹³ Fifty years later, he recalled that,

The Chinese had a saying about us, that Japan had a 'three-way complete policy: burned completely, killed completely, and pillaged completely.' Yet, when we were doing those things, we had no sense of guilt, or of doing something wrong. It was for the emperor—for the country!^{93(p250)}

Contaminating wells with pathogens was another BW warfare method. Unit members dropped hundreds of kilos of typhoid, typhus, paratyphoid A and B, cholera, and other pathogens into thousands of wells throughout China and Manchuria.^{31,33,59,67,90} In 1942, villagers in Zhaiqian drank water from contaminated wells and a typhoid epidemic erupted within a short time. Survivors later counted 400 deaths from an original population of roughly 600.⁹⁴ Wells in and around Harbin were filled with barrels of typhoid pathogens in 1941 and 1942. Results were similar to those achieved in Zhaiqian, only on a larger scale.^{34,39,67} There is at least one report that BW troops in July 1942 distributed bottles of germs along the Zhejiang-Jiangxi Railway

line, causing outbreaks of typhoid fever that led to the deaths of more than 10,000 people.⁹⁵

Different foods contaminated with an assortment of pathogens were also used extensively to spread disease. One incident involved the distribution to villagers of 3,000 sweet buns containing pathogens. Many died after eating the treats.^{33(p286)} Food was scattered by the roadside in other incidents. It would then appear to local Chinese as if the Japanese abandoned their food during a hasty retreat. The Chinese would eat the food; most became sick and many eventually perished.^{15(pp77-78)}

In summary, the BW units explored almost any mechanism that might be feasible to distribute germs from the multitude of pathogens their laboratories manufactured. Few parts of China or Manchuria escaped Japanese medical units testing the prototype BW weapons being developed. Large-scale field BW tests were halted in 1943, although the reasons for terminating the tests have not been disclosed. One possibility may be that with the war beginning to go badly for the Japanese, the army could no longer afford to expend huge sums of money, other resources, and highly skilled technicians to conduct large-scale experiments. Villages and towns continued to be exposed to BW incursions until the Japanese surrender in 1945, but these later episodes were on a diminishing scale. Nevertheless, BW field tests were responsible for hundreds of thousands of casualties in China and elsewhere.^{33,90,96-100} This estimate does not include a calculation of postwar deaths. These losses were caused by a series of epidemics that can be traced directly to infected animals released by the Japanese from their research facilities in the closing weeks of the war. Harbin and environs experienced eruptions of plague throughout the late 1940s, and suffered at least 30,000 deaths.¹⁰¹ Changchun and its suburbs were exposed to epidemics of plague, glanders, and anthrax, in 1946, 1947, and 1951. The death rate there was very high. Parts of the city were uninhabitable until the mid-1950s. Communities located near other research facilities endured similar disasters.^{15(pp99-100)}

"FREE-LANCE" MEDICAL PROCEDURES AND EXPERIMENTS ON PRISONERS OF WAR

The Japanese won a series of stunning and rapid victories in the few months that followed their December 7, 1941, attack on Pearl Harbor. They conquered much of Southeast Asia, and captured approximately 140,000 European soldiers and 180,000 Asian troops, along with territorial plunder. Thousands of Asian soldiers died in the first few weeks of captivity. The rest were freed within the following months.^{40(pp17-18)} The Europeans who survived

their capture were destined to endure 4 years of captivity characterized by nearly unbearable suffering. Some of these prisoners also were subjected to medical procedures, whether for purposes of training medical staff, conducting research, or securing organs for various reasons. These activities are characterized as "free-lance" in this discussion because they did not necessarily come under the control of any established research program.

Procedures for Medical Training Purposes

Senior medical officers used prisoners to teach students the art of surgery. These training exercises were performed throughout China during the war.^{6,35} There was an ever-increasing shortage of field doctors, with the result that many people with little or no previous surgical training were pressed into service. Elderly men who had a modicum of medical training, but who could not even handle surgical instruments, as well as ophthalmologists and pediatricians, were being sent into the field.^{102(p146)} They received on-the-job training by participating in demonstration lessons on healthy prisoners. Three of these demonstration “lessons” will be presented, although there were many others.

One such demonstration took place in the Philippines in 1942.¹⁰³ A surgeon ordered some soldiers to bring a healthy Filipino male into a field where he had gathered some students as observers. The surgeon spread a sheet on the field, placed a mask over the nose of the victim, and anesthetized him. He then surgically opened the man’s abdomen, “removed his appendix and sewed him back up. Then, the lesson over, the surgeon pulled out a gun and shot and killed the patient.”¹⁰³

A somewhat more medical demonstration lesson occurred in January 1942 in a municipal hospital in China’s Shansi province. After lunch one day, the hospital director met with seven or eight young doctors, an accounting officer, a dentist, and a pharmacist, telling them that they were about to observe an “operation exercise.” Two healthy Chinese men were brought into the operating room. One was given certain procedures that the gathering did not observe. The other was anesthetized by a female nurse who also cooed to the victim in Chinese, “sleep, sleep, sleep.” One of the medical observers asked the surgeon “who was about to administer... lumbar [*sic*] anesthesia if he wasn’t going to disinfect the point of injection. ‘What are you talking about? We are going to kill him,’ he replied.”^{102(p149)} Once asleep, the patient’s healthy appendix was removed. Then, one of the doctors amputated one of the patient’s arms. The Japanese doctor also practiced techniques on this patient for suturing intestines.^{102(pp147-149)}

Sometimes even the experienced senior doctor did badly due to overwork and exhaustion. On one occasion, a hospital director, whose surgical training was evidently limited, cut into an intestine and then showed his audience how to suture the intestine. He was called away to answer a telephone call, and “one doctor observed the director’s work and noticed something wrong: ‘It’s sewed up back-

wards!’ We all laughed.”^{102(p149)}

These three examples, although not representative of all such procedures, demonstrate that this approach to “training” clearly reduced the human subject to an expendable material. As I indicated earlier in the chapter, the commission of these free-lance procedures indicates the degree to which the Japanese failed to control elements within their empire, whether military or civilian. These are the product of the collapse of military and medical ethics.

Experiments for Research Purposes

Prisoners were used in a number of “free-lance” research efforts in territories occupied by Japan. Japanese doctors conducted two of their most notorious experiments—one on malaria, the other on nutrition—at Rabaul on the island of New Britain. Captain Hirano Einosuke of the Malaria Prevention Section of the Water Purification Department (a *nom de guerre* of the Japanese BW program) on the island sought to discover a cure for malaria. In one experiment using nine POWs as research subjects, he injected several of the men with malaria-contaminated blood extracted from Japanese soldiers suffering from the disease. The subjects were known to be malaria-free, and Hirano hoped to develop a technique that would provide immunity to malaria. He failed in this experiment.^{14(pp151-154)} In another experiment, Hirano used blood from local villagers known to be immune to malaria, and injected this blood into several other POWs thought to be malaria carriers. He told one of the prisoners that, “he wanted to see what would happen.”^{14(p153)} Two of the men died shortly after receiving the injections.

Dr. Hirano was also interested in nutrition, specifically how little food humans required to stay alive. Hirano and another doctor, Lieutenant Fushita Shigeo, began an experiment in September 1944 on 13 prisoners.^{14(p150)} Each of the prisoners was weighed by one of two medical orderlies, their weight being recorded in a book. Fushita then told the men that they were going to be fed a daily diet that consisted exclusively of 660 grams of peeled cassava root per meal. The peeled cassava root was supplemented each meal with about one-quarter pint of a liquid that was called soup, and one-half pint of water. They were fed this diet for 30 days. At the end of the 30 days, two of the men had died. The remaining 11 prisoners were weighed again, and their new weights were recorded in the medical orderly’s book. They again were given the 30-day diet of peeled cassava root, thin soup, and water. Two more men died. The remaining nine men were

EXHIBIT 16-8

GOVERNMENT-SPONSORED HUMAN VIVISECTION

Human vivisection on prisoners of war (POWs) and civilians also occurred within the confines of Imperial Japan's most prestigious medical schools and universities. For example, the medical school of Kyushu Imperial University (located in the city of Fukuoka on Kyushu Island) was one of the most important medical training facilities in Japan. Its professors were considered to be among the finest scholars within the Empire. Senior professors took part in the vivisection experiments,¹ while young interns either assisted their superiors in the experiments, or observed the activity. These experiments included: replacing blood with sea water; excising lungs, stomachs, livers, and other organs from POWs; interrupting blood flow from arteries of the heart to determine the time death would occur from such a procedure; and drilling holes in craniums, then inserting scalpels into the brain to determine what, if anything, medically useful could be discovered from the procedure.^{2,3}

Vivisections and dissections were also used for nonmedical purposes. Ishibashi Naokata worked as a civilian assistant in several Japanese army laboratory facilities. While stationed in Hangzhou, China, Ishibashi observed a number of prisoner vivisections and dissections in 1940. He recalled later that the Japanese secret police, *the kempeitei*, used vivisections and dissections as convenient execution weapons. He remembered vividly one incident in which two Chinese prisoners suspected of being guerrilla soldiers were killed. It was near supper time one day when he and some of his friends were told that a "dissection" was to take place. He went to the execution site, observed that a large hole had been dug in the ground, and that two blindfolded Chinese were sitting near the hole. A soldier decapitated them. "Blood from the carotid artery shot up two meters into the air, as if it were gushing from a hose."^{4(p217)} The two men were immediately dissected. "The chest cavity was opened and the heart was removed and placed on a scale for weighing. The heart was still beating, and it made the scale weights clank together."^{4(p217)}

Researchers investigating the problem of venereal disease in "Comfort Women" (women forced into sexual service) used vivisection to learn about the various stages in the development of the infection. Failing to achieve results by injecting women with syphilis, the doctors turned to a "system of direct infection through sexual contact."^{5(p163)} Prisoners, one of whom had been identified as suffering from syphilis, were forced to have sexual intercourse. The healthy partner's progress was monitored carefully. Once he or she became infected, the "progress of the disease would be observed closely to determine, for example, how far it advanced the first week, the second week, and so forth."^{5(p164)} At a certain stage in their studies, the researchers engaged in "live dissection to investigate how different internal organs are affected at different stages of the disease."^{5(p164)}

Several episodes of vivisection involved captured American airmen. One took place in the South Pacific on Dublon Island, Truk. Surgeon Captain Iwanami Hiroshi commanded a group of medical officers on the island. In July 1944, he asked his group if any of them would like to experiment on some prisoners. Surgeon Commander Okuyama and Surgeon Lieutenant Nabetani agreed to perform some experiments. Eight prisoners were used in these tests. Two of the men had tourniquets tied tightly around their arms and their legs. The tourniquets were kept in place for 7 or 8 hours, interrupting blood circulation to the extremities. The two men died of shock within minutes after the tourniquets were removed from their limbs. They were dissected, and different portions of the bodies were examined. Dr. Iwanami kept the skulls as souvenirs; these were eventually sent to the Naval Medical School in Japan.^{2(pp164-165)}

One of the most notorious examples of vivisection performed by Japanese medical practitioners occurred at Kyushu Imperial University.² This case involved 14 physicians and a nurse. Eight captured American Airmen had been placed in a detention barracks. On learning of the airmen's capture, one of the university's doctors cajoled the prison commander to turn the fliers over to the university's medical school for experimentation. Operations on the men were performed on at least 4 separate days in May and June 1945. In one operation, a lung was removed from each of two prisoners. On a second occasion, doctors removed the stomach, heart, and liver from two other POWs. The third experiment led to the death of an airman whose brain was damaged in the course of surgery to examine the function of the trigeminal nerve. Three American fliers were used in the fourth and final test. The doctors operated on stomachs, gall bladders, livers, and hearts. All eight men used in the experiments died on the operating table, which, as Professor Roland notes, "was a poorly equipped dissecting room in the anatomy department."^{2(p158)}

Sources: (1) Daws G. *Prisoners of the Japanese: POWs of World War II in the Pacific*. New York: William Morrow & Co.; 1994: 322-323. (2) Roland CG. Human vivisection: The intoxication of limitless power in wartime. In: Moore B, Fedorowich K, eds. *Prisoners of War and Their Captors in World War II*. Oxford: Berg; 1996: 149-155. (3) Tanaka Y. *Hidden Horrors: Japanese War Crimes in World War II*. Boulder, Colo: Westview Press; 1996. (4) Statement of Ishibashi Naokata. In: Gold H. *Unit 731 Testimony*. Tokyo: Yen Books; 1996: 214-218. (5) Statement of Nishino Rumiko. In: Gold H. *Unit 731 Testimony*. Tokyo: Yen Books; 1996: 159-166.

permitted to return to the normal prisoner diet: one-half pound of cooked rice and a pint of soup daily, supplemented on occasion with a small sweet potato or one-half of a coconut per meal. Captain Hirano was reported to have been disappointed at the results of his test. He expected the men would gain weight on the diet. They did not.¹⁰⁴

These two “experiments,” although clearly unethical and lethal, are not the worst of the atrocities committed upon prisoners. That distinction must clearly be held for the vivisection and immediate postmortem dissections that were done by some Japanese military and medical personnel.

Vivisection and Immediate Postmortem Dissection

Japanese war crimes trials in the postwar decade, and published personal recollections of participants, demonstrate conclusively that both civilian and military medical personnel engaged in vivisection and immediate postmortem dissection practices on a massive scale. For purposes of clarification, vivisection is the dissection of a living animal or being,

usually, but not always, accomplished with the aid of an anesthetic. Immediate postmortem dissection refers to those instances in which death, usually accomplished for the purposes of facilitating research, was instantaneously followed by dissection. Doctors, and their support staff, conducted both vivisections and immediate postmortem dissections throughout the extensive Japanese empire. Sometimes, as described above, these were employed as teaching tools. At other times, they were utilized as the final stage of an experiment. They were also employed as one of the devices used to extract confessions from prisoners. Finally, vivisections and immediate postmortem dissections were carried out to rid prisons of common criminals, or prisoner of war camps of individuals who had offended Japanese officers in command of the camp. A hygiene specialist, who preferred to remain anonymous, spoke for many who participated in the vivisections and immediate postmortem dissections. He told an audience in 1994 that, “personally, I feel no shame. I thought that I was really doing a good thing.”¹⁰⁵ Exhibit 16-8 details several examples of these cases.

POSTWAR DEVELOPMENTS

Criticism in the West of Japan’s postwar lack of remorse for its past behavior cannot be dismissed as merely judging an Asian nation by Western Judeo-Christian moral standards. Many Asian countries (the People’s Republic of China, South Korea, the Philippine Islands, Vietnam, and Thailand, for example), remain openly bitter at the Japanese for their country’s failure to demonstrate what they see as genuine contrition for the atrocities committed in previous decades. To fully appreciate the degree to which these individuals escaped punishment, I will first briefly review the prosecution of Japanese for war crimes, then look at the society into which the major perpetrators were assimilated after the war.

Prosecution of Japanese War Criminals

Within Japan, some Japanese political and military leaders who qualified under the “A” Class war crimes definition (individuals deemed responsible for planning actions that were known to be violations of international conventions) of the victorious Allies, were tried, convicted, and sentenced to death or to prison terms in the “Tokyo War Crimes Trial,” convened in 1946 and concluded in 1948.¹⁰⁶ (The court’s full title was: International Military Tribunal of the Far East [IMTFE].) Among these war criminals was Tojo Hideki, Japan’s prime minister during World War II.

Determined to punish free-lance medical war criminals, Allied nations in the Pacific region (but outside of Japan) conducted extensive manhunts designed to capture and to place on trial as many as possible of those doctors who survived the war and could be located. Some individual free-lance perpetrators of medical atrocities were tried in Australia and other Pacific countries in the late 1940s, as well as in the decade of the 1950s.^{14,40} In addition, a handful of relatively unimportant biological warfare (BW) and chemical warfare (CW) individuals known to have either worked in the biomedical research facilities, or to have supported the efforts of those who engaged in BW and CW involuntary human experiments, were tried by the Soviets in December 1949 in the Siberian city of Khabarovsk.^{33(pp104,112–113)}

The same diligent pursuit of medical war criminals was not applied to those who engaged in government-sanctioned BW research. None of the principals, or their associates, were ever brought before a tribunal to account for their crimes. Ishii, Wakamatsu, and Kitano (the BW “Big Three”), and their closest lieutenants—for example, Ota, Masuda, and Naito—escaped prosecution. Thus there was no Tokyo Doctors trial and no Tokyo version of the Nuremberg (Doctors) Code. The crimes committed by these Japanese physicians and others faded into history. Their immoral, unethical, and unprofessional behavior was known to those who held high office in

Japan, and among the triumphant Allied nations, but Japanese and American authorities ignored their crimes and did not prosecute them.¹⁵ Those who survived in the postwar era continued to receive government support. They were protected by the men in power from any accounting for their war crimes. Many enjoyed flourishing careers in medicine and science.^{6,15,67,107} Before discussing why the Allies chose to overlook these heinous deeds, it is necessary to first examine why the Japanese themselves did not demand accountability from these medical professionals.

The Postwar View of Japanese War Crimes

The postwar societal integration of physicians who had conducted biological and chemical warfare research can best be understood within the overall Japanese response to World War II, as well as the burgeoning American military needs in the dawning Cold War. In the postwar years, a number of views arose in Japan to explain, and even attempt to validate, these activities. For example, 50 years after his execution as a war criminal, Tojo Hideki, Japan's wartime prime minister, has been portrayed in a Japanese motion picture (*Pride: A Fateful Moment*) as a kindly grandfatherly figure who was a great patriot unfairly maligned by the vengeful victors of World War II. The film's principal financial backer called for Japanese film makers, historians, print media, and other molders of public opinion to provide the coming generation with a history of Japan that will restore national dignity and pride.¹⁰⁸

On those occasions when public discussion is directed toward Japan's role in World War II, the government's official response generally has been that their country was not the aggressor. Newspaper headlines as late as 1996, 1997, and 1998 reveal official Japan's rejection of the verities of the past: "OKAYAMA Enters Sex-Slave Fight; Prefectural Assembly Seeks to Cut Description from Texts"¹⁰⁹; "Koreans Lose Forced Labor Suit, Government Can't Be Held Responsible, Court Rules"¹¹⁰; "Set Masochistic History Texts Right: Group Members Claim No Evidence to Prove Force Was Used on 'Comfort Women'"¹¹¹; and, finally, "'Comfort Women' Report Hurts UN."¹¹²

Some members of Japan's academic community have organized to counter any material in textbooks that portrays Japan unfavorably. In a follow-up to the articles cited above, History Professor Fujioka Nobukatsu of Tokyo University declared that

the tendency of historians to depict Japan as an evil aggressor had its roots in two major foreign influ-

ences—the Soviet Union and the United States...These negative views of Japan demonstrated by the world's two major powers were combined and provided the basis for postwar education here...¹¹³

Professor Fujioka is a prominent member of "The Group to Make New History Textbooks," whose objective is to produce textbooks for Japanese students that will end the "Japan bashing" that the group believes it finds in current textbooks. In reality, history textbooks in Japan faithfully follow the government view of World War II, avoiding any criticism of the military, and never acknowledging Japanese wartime excesses.¹¹⁴ Fujioka and his supporters are members of the respectable right wing in Japanese politics. They believe that even the minimal discussion in current textbooks of Japan's role in World War II goes too far. They want an approach to teaching history that is unambiguously nationalistic. They are attracting a considerable and influential following.

Within the mainstream of the Japanese hierarchy the argument continues to be that Japan attempted to liberate, by any means necessary, much of Asia from European and American colonial domination. Their view is that Japan should not be condemned for its activities in World War II. Instead, other Asian nations should appreciate that the Japanese helped liberate them from Western imperialism. (However, there does not appear to be much support among these "liberated" nations for this contention. For the past 50 years, Chinese, Korean, Indonesian, and other Asian nations' media have bitterly and continuously criticized Japan for its wartime activities in their respective countries. The "Comfort Women" and human medical experiments scandals resonate today in print media and on television. Throughout Asia, Japan's failure to offer an appropriate apology or to provide adequate compensation to victims for its wartime misdeeds is a constant refrain in the press.)

Another popular Japanese belief is that because the United States dropped atomic bombs on Hiroshima and Nagasaki, Japan was a "victim" rather than an "aggressor" in the war.¹¹⁵ Still others plead "ignorance" of the facts, and that whatever happened in the past is "history." The old generation is dead. Why hold the sins of the fathers against their children and grandchildren?^{116,117} In all fairness it should be noted that the victorious Allies had not required that the Japanese populace view the death camps to see for themselves what their government had been doing during the 1930s and 1940s. This made it easier for the Japanese people and their government to simply ignore or rationalize what had happened in China.

American Interest in Japanese Research Results

Why didn't the Allies require the Japanese people to view the camps? Why did Ishii, Wakamatsu, and Kitano escape punishment? Clearly their crimes were well-known to the Allies,¹¹⁸⁻¹²³ but two elements intervened to prevent these major war criminals from being brought to trial: (1) the advent of the Cold War and (2) American interest in human BW data.

The first of these elements—the changing relationship between the former Soviet Union and the United States that would evolve into the Cold War—was already in play when US forces gained access to the Japanese biomedical researchers. Soviet and American interests had begun to collide during the closing days of World War II. While the United States was forced to temper its aims in Europe with a series of compromises with its Allies, especially the Soviet Union, it was not under similar constraints in the Far East. Despite the formal policy that the United Nations was responsible for restoring peace to that devastated country, Japan was under American occupation. Soviet representatives in Tokyo pressed the United States relentlessly for an opportunity to interview the Japanese BW experts, ostensibly to determine whether evidence existed to try them as war criminals. The reality was that the Soviets were eager to acquire BW research data from the Japanese in order to further their own extensive BW program. The United States, already suspicious of its ally's motives, did everything possible to prevent the Japanese BW specialists from being interviewed by the Soviets.

The other consideration was American interest in securing data on human reactions to BW experiments. The United States had inaugurated its BW program in 1942, establishing a research center at Fort Detrick in Frederick, Maryland. The Detrick scientists, a remarkably talented group of microbiologists, physicists, and chemists, made astonishing progress in developing prototype BW weapons by the end of the war.¹²⁴ However, American scientists achieved their success by employing traditional methods of research.¹²⁴⁻¹²⁶

Army Intelligence had discovered in 1943 that the Japanese were using humans for testing purposes. This information interested the scientists at Fort Detrick as well as their superiors in the United States Army Chemical Corps. Americans were denied by law, and by medical ethical considerations, from testing humans without their consent. Researchers at Fort Detrick assumed that the Japanese, having had no such restrictions, must have been

ahead of the United States in developing BW weapons. They, as well as those American government officials who were told about the BW projects, wanted this extremely valuable human research data.

Delegations of scientists were sent from Fort Detrick to Tokyo in the autumn of 1945 (led by Lieutenant Colonel Murray Sanders)^{65(pp75-91)}; in 1946 (led by Lieutenant Colonel Arvo Thompson)⁷⁴; in 1947 (led by Dr. Norbert H. Fell, Division Chief of Planning Pilot-Engineering Section)^{123,127}; and in 1948 (led by Dr. Edwin V. Hill, Chief of Basic Sciences).¹²⁸⁻¹³² Each delegation negotiated with Ishii, Kitano, and other leading Japanese BW specialists. The Japanese remained adamant on one sticking point: They wanted firm, written assurances that they would not be prosecuted for their war crimes. They said they were prepared to turn over to the Americans all of their human test data, but only after they had an agreement on immunity that could not be broken. In the end, the highest government officials in Washington agreed to these demands. None of the BW specialists were prosecuted, and, in return, the Japanese experts submitted to the Americans some limited intelligence on their work.^{15(Chaps13-15)}

As part of the agreement to forego prosecution of the Japanese physicians who had conducted fatal biomedical research on humans, a number of debriefings were held and reports were written. One such physician, "A," provided detailed information on the anthrax research program. His report to the Chemical Corps Research and Development Command, Biological Warfare Laboratories, Fort Detrick, Frederick, Maryland, was simply titled "The Report of 'A.'"¹³³ It was regraded as "unclassified" on 6 May 1960. The report is approximately 400 pages in length with schematics detailing the fatal progression of anthrax in humans. The following material is excerpted from this report (the typist of the report made numerous typographical errors):

I have investigated 30 cases of anthrax disease, which could be classified into 3 groups: (a) percutaneous infection...; (b) peroral infection...; pernasal infection....

(a) Percutaneous infection: 1 case...7 days. Localised [*sic*] cutaneous ulcers and perifocal phlegmons (r-thigh). Some parenchymatous degeneration: Heart: Intense degeneration and interstitial edema. Liver: Hepatitis serosa III, accompanied with some hemorrhagic changes. Kidney: Glomerulonephrosis, with vacuolar degeneration of epithliums. Spleen: Splenitis infection.

(b) Peroral infection: 9 cases were infected perorally

with some food stuffs, which contain some quantity of anthrax bacillus and all patients died definitely after several days by acute abdominal symptoms and severe hemorrhagic ascites. In alimentary canals: occurred [sic] no remarkable changes in stomach and extraordinary [sic] severe hemorrhagic changes (fungous swelling of mucous membrane with hemorrhagic leucocytic reactions) of intestines, especially at ileocecal portions [sic], lower parts of ileum or sometimes all over the intestinal tracts (upper parts of ileum, duodenum [sic], jejunum [sic] or large intestine), accompanied with intense gelatinous (exudative) swelling of mesenterial fatty tissues and following severe hemorrhagic ascites, which caused the death.

(c) Pernal infection: It occurred [sic] suddenly an epidemic of anthrax disease in some prison. About 20 men in the prison were affected successively with soiled air, who [sic] which contained some quantity of anthrax bacillus and died all of them definitely after several days by severe thoracic or abdominal systems. At first they complained of

acute Tonsillitis: tonsil was the main entrance port. Then intense hemorrhagic changes, due to anthrax infection spreaded [sic] in 2 manners: a) perbronchially and b) sometimes perorally.

The report cover and one of the pages concerning disease progression in the lungs (as documented in the autopsy reports) are reproduced as Figure 16-5.

In summary, although it was clear to the American forces that the Japanese doctors had participated in activities that were clearly war crimes and were comparable to those to be prosecuted by the Nuremberg Tribunal, the Japanese doctors were not tried.

Postwar Medical Careers of Japanese Biowarfare Personnel

The Japanese medical profession also fell victim to the postwar relaxation of moral standards. It did not engage in meaningful reforms once freed of

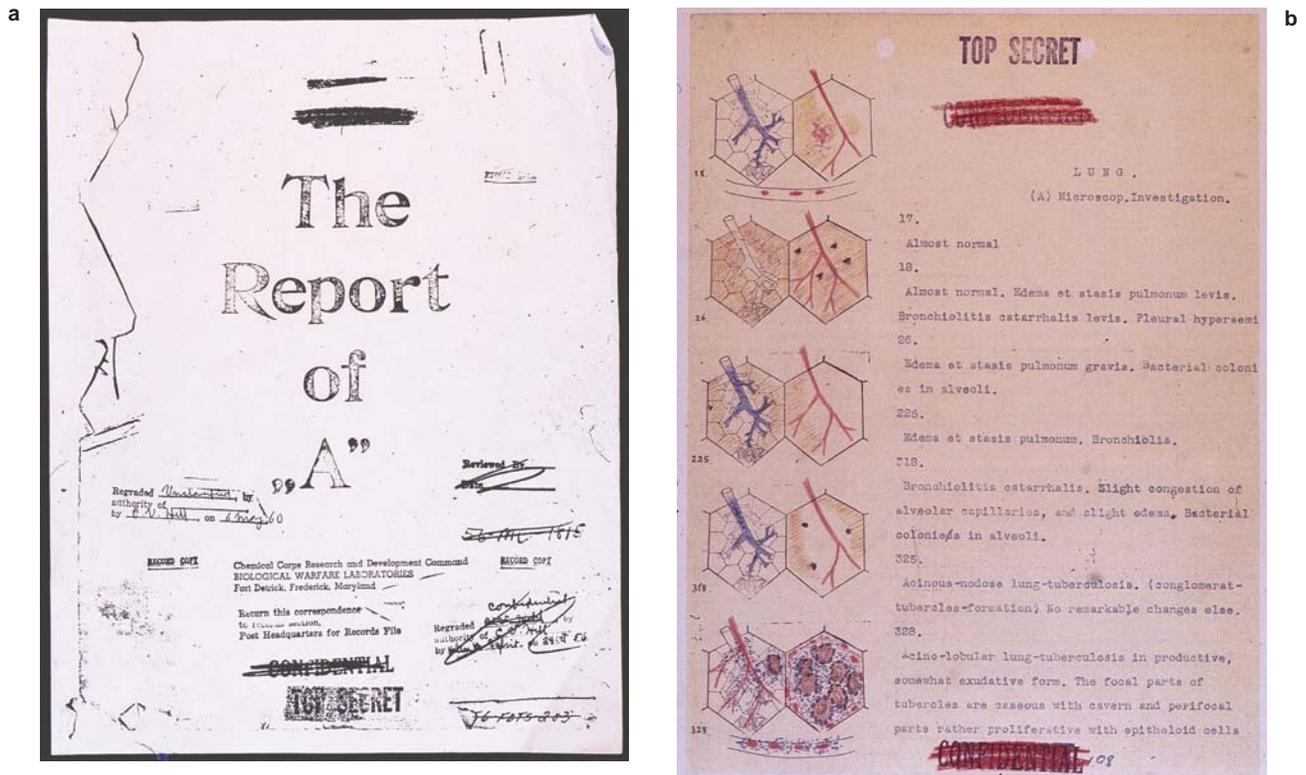


Fig. 16-5. The Report of "A." The cover page (a) and one of the interior pages (b) of a 400+ page document detailing the fatal progression of anthrax as reported by a Japanese physician involved in Japan's wartime biomedical experimentation program. [Note: This report was declassified on 8 May 1960. The "Top Secret" stamp on the top of the interior page shown as "b" should have been lined through at that time.] The information was obtained in exchange for amnesty from prosecution for war crimes.

militaristic controls. Instead, it continued along the questionable moral path outlined in the prewar and wartime decades. Few within the profession urged a return to the higher ethical standards that were so noteworthy of the medical profession in the late 19th and early 20th centuries. Thus, once freed of the danger of war crimes trials, alumni of the BW units were able to assume leading roles in the postwar Japanese medical and scientific communities. Many became presidents of universities; others served as deans of medical schools; still others continued to do research while holding professorships in Japan's most prestigious universities.^{67(pp279ff),134} Some worked in private industry, or in government agencies, achieving distinction and public honors for their contributions to medicine and science.^{6,67,135} (Exhibit 16-9 lists the postwar activities of several

of these men.)

The alumni of the biowarfare units were also able to participate actively in the most important medical institution created by the Japanese government in postwar Japan. Following a "request" by United States Occupation authorities, the Japanese government established the Japanese National Institute of Health (JNIH) on 21 May 1947. From its inception until 1983, every director of the JNIH, with the exception of Nakamura Keizo (May 1958–December 1966), had previously served in a BW unit.^{134(pp1-2)} Four of the eight men who were appointed as director during this period are known to have conducted human experiments, including vivisections.^{134(pp1-2)} Many of the vice directors received their training in BW units, and also had engaged in human tests. Wakamatsu Yujiro, previously the commander of

EXHIBIT 16-9

POSTWAR ACTIVITIES OF JAPANESE BIOMEDICAL RESEARCHERS

Kitano, one of the "big three" in World War II Japan's human biomedical experimentation program, published scores of papers in scholarly journals. Many of his findings were based on experiments that he and others had conducted previously in Mukden, in Shanghai, and at Ping Fan. Dr. Yoshimura Hisato, who later became President of the Kyoto Prefectural University of Medicine, published three important papers on frostbite in the *Japan Journal of Physiology* in 1950 and 1952. His papers were based upon frostbite research he conducted on humans while stationed at the Ping Fan facility. Professor Amitani Shogo of Tokyo University Laboratory for Communicable Diseases won the Asahi Prize for outstanding contributions in his field, based on research he had conducted as a member of Unit 731. Other biological warfare experts received recognition from international organizations such as the World Health Organization (WHO).^{1(pp80ff,141ff),2(pp286ff)}

Of all the biological warfare principals, Naito Ryoichi, who had been one of Lieutenant General Ishii's closest associates, enjoyed the greatest personal success in the postwar era. Taking advantage of the American demand for blood products during the Korean War, Naito founded the *Midori Fuji*, or Green Cross Company, in 1951. Futagi Hideo, an outstanding graduate of Unit 731's training program, was a principal member of the company. Kitano headed the Tokyo branch of the organization. Relying upon their previous experience, Naito recruited at least 30 former Unit 731 scientists to serve in key positions in his company. The Green Cross Company prospered over the years, and became one of Japan's leading drug companies, even establishing branches overseas.^{1(pp140-141),2(pp291-292)} Naito became known for his philanthropy, having donated tens of millions of yen annually to worthy causes. His prior service in biological warfare units was never mentioned publicly.

In 1988, however, it became public knowledge that the Green Cross Company knowingly distributed imported blood infected with human immunodeficiency virus (HIV). The contaminated blood was given to hemophiliac sufferers in Japan, leading to at least 400 deaths.³ The Green Cross Company and four other pharmaceutical companies, with the approval of Japan's Ministry of Health and Welfare, had sold HIV-infected blood to approximately 1,800 hemophiliacs.³ The company was forced to agree in 1997 to pay 24 billion yen (\$195 million US dollars) as its share of the settlement agreement between the drug companies and the hemophiliac victims families. At the same time, the Alpha Therapeutic Corporation, Green Cross' American branch, became a party to a settlement with 600 HIV-infected hemophiliacs in America. Its name badly tarnished, Green Cross was absorbed by Yoshitomi Pharmaceutical Industries Ltd., in late February 1997.³

Sources: (1) Gold H. *Unit 731 Testimonies*. Tokyo: Yen Books; 1996. (2) Williams P, Wallace D. *Unit 731, The Japanese Army's Secret of Secrets*. London: Hodder & Stoughton; 1989. (3) Pollack A. Japan blood supplier, facing HIV penalty, to be acquired. *New York Times*. February 25, 1997:C-7.

Unit 100, joined the JNIH staff during its early days. Kaneko Junichi (a former Unit 731 surgeon and an expert on constructing bacteria bombs), Asahina Shojiro (who had headed Unit 731's Department of Entomology), and Umezawa Hamao (one of the BW units' most prolific publishers of scientific papers based upon human experiments) were among the JNIH's leading staff members.^{134(pp1-2)} At least half the JNIH staff came from the Institute of Infectious Diseases, which was associated with Tokyo University. Most of its members had served in BW units known to have engaged in human experimentation.¹³⁴ The rest came from the Laboratory for Infectious Disease Control (LIDC), an organization formerly based at the Imperial Army Medical College, in Toyama, Shinjuku-ku, Tokyo, the site of Ishii's old Tokyo headquarters.

The JNIH was charged officially with doing research on pathogens and vaccines, and conducting quality control studies of biological products for their safety before permitting their sales to the general public. However, from its beginnings, the JNIH had other, less overt, projects. The American Occupation Authorities and the Japanese government jointly ordered the JNIH to cooperate with the American-run Atomic Bomb Casualty Commission's (ABCC) branch offices in Hiroshima and Nagasaki. The JNIH and the ABCC were interested in observing and recording the progress of the Hiroshima survivors' (the *Hibakushas*) assorted medical problems. As Kojima Saburo, one of the first Vice Director's of the JNIH (and a former Tokyo University Professor who had also served at the Ping Fan research facility) later wrote, "We, the intelligent scientists had equally thought that we must not miss this golden opportunity"^{115(p119)} to study the effects on humans of atomic radiation.¹¹⁵

The JNIH helped the ABCC to coerce *Hibakusha* to cooperate in their radiation studies. Victims were required to come to ABCC facilities, remove their clothing, be x-rayed, and provide researchers (primarily JNIH staff) with blood samples.^{115(p120)} Families of *Hibakusha* who died of their burns were pressured by the JNIH to permit autopsies to be conducted on their loved ones.

Researchers at the JNIH also performed experiments on patients. There is documentary evidence that for more than 30 years, JNIH staff tested patients with pathogens and unapproved vaccines without the patients' consent.^{134(pp1-2)} For example, Dr. Kitaoka Masami, known to have conducted human experiments during the war, used *Rickettsia tsutsugamushi* on mental patients in Niigata Prefecture without their consent from 1952 to 1956. Eight patients died; another committed suicide. Dr.

Kitaoka served as JNIH Vice Director from March 1970 until November 1973.^{134(pp2-4)}

In 1951, Dr. Fukumi Hideo conducted experiments on infants hospitalized at the First National Hospital. He acknowledged that he had the babies ingest what he called the "alpha" and "beta" types of *Escherichia coli*, and he found them to be "pathogenic."^{134(pp1-2)} Fukumi conducted similar experiments in 1952 at an orphanage in Nagoya City.^{134(pp1-2)} In the next decade, Dr. Fukumi and his associates tested members of Japan's Self Defense Forces with vaccines still in the developmental stage. None of the vaccines were approved for use outside the laboratory. Nevertheless, from 1967 to 1971, Dr. Fukumi and others used *shigella* on unsuspecting soldiers, and then injected them with the unapproved vaccines. Of the 1,089 men in the tests,^{134(p5)} 577 became ill with *shigellosis*.

By the early 1970s most, if not all, of the former BW units' members had either retired or were dead. However, they had trained their successors. In particular, JNIH staff followed the dictates of drug companies, rather than pursuing practices more consistent with promoting the national health. They held up free distribution of polio vaccines for 3 years (1959-1961), made mandatory smallpox vaccination and influenza vaccination for children of kindergarten age (although the smallpox vaccine was too strong and had side effects), and used an influenza vaccine that was untested. It is estimated that the smallpox vaccination program resulted in the deaths of 20,000 children from 1971 to 1980.^{134(p5)}

In 1982, the JNIH was warned that blood products could transmit the human immunodeficiency virus (HIV), which causes acquired immunodeficiency syndrome (AIDS). The warning was ignored; the JNIH continued until December 1985 to approve for distribution blood it knew was contaminated. The result was the Green Cross scandal.¹³⁵ Other scandals plagued the JNIH until 1 April 1997, when its reputation had become so tarnished that the JNIH was forced to change its name to the National Institute of Infectious Diseases (NIID). It is too soon to know if the name change will result in a change in the postwar culture within this agency concerning research and medical ethics.

In summary, at the end of World War II, the majority of the Japanese biowarfare experimenters were easily assimilated back into the society and profession from which they had come. They assumed significant roles in universities, industries, and the newly founded Japanese National Institute of Health. Unfortunately, they had not relinquished the values and views that had manifested themselves in the excesses of the biowarfare program.

They trained their successors who then assumed these positions and their practices. The result was that the problems continued in these institutions, as evidenced by the Green Cross scandals. A new generation is now poised to assume these positions,

a generation with no personal contact with the biowarfare experimenters. Only with time will it be known whether or not the influence of these biowarfare personnel continues within the medical establishment.

JAPAN IN THE 21ST CENTURY

The Japan that has entered the new millennium is a different country from the Japan that existed before World War II. The ultramilitarists no longer dominate society. Emperor-worship is essentially a thing of the past. The current emperor is a fixture in society akin to that of the British monarch. The nation is essentially a democracy, albeit one that is politically conservative. Although there is poverty in Japan as well as great wealth, there is a healthy, vibrant, middle class that wields some influence over economic and political decisions. Japan, overall, is a rich and peaceful country.

Japan, despite having changed so much outwardly, is like any other country that has a long cultural history. Change may come to everyday activities, but the underlying culture and moral standards are more slow to change. Within Japan there has been a struggle for the past 50 years to shape the story of Japan's history in World War II. There are those who have pushed for full disclosure and discussion of Japan's wartime biomedical experimentation programs. And there are those who have attempted to shield the Japanese public from any discussion, especially in textbooks, of Japan's activities. These struggles have been worked through

the judiciary system, and not long ago reached the Supreme Court in Japan, which ruled in favor of the inclusion in history textbooks of an account of Japan's BW and CW wartime programs. For more than 50 years the judiciary had endorsed censorship of textbooks, despite postwar Constitutional guarantees of freedom of the press and speech. That has finally begun to change. For example, Professor Ienaga Saburo sought for several decades to publish in his history textbook the fact that Unit 731 and other BW units were part of the Japanese military, and that they had engaged in human experiments. He struggled through the courts for 33 years before he received an affirmative ruling in August 1997. The Supreme Court, the highest judicial authority in Japan, by a three-to-two vote, agreed that there were sufficient uncontested historical facts to justify the inclusion in history textbooks of an account of Japan's BW and CW wartime programs. All five justices endorsed the general concept that the government has an inherent right to employ textbook censorship.

However, the three justices who ruled in his favor agreed that, "A country whose textbooks lie...will inevitably collapse."^{136(pA16)}

CONCLUSION

EDITORS' NOTE: *Dr. Harris, the author of this chapter, died before this conclusion was finalized. The following conclusion represents the opinions of the editors.*

In the process of writing and finalizing this chapter, a number of reviewers commented on what was succinctly characterized by one of them as: "The chapter seems to be a catalog of medical abominations." In some regards that is exactly what this chapter is, but it is more than just that. The listing was lengthy because the programs were extensive. The Japanese biowarfare program was an attempt to fully explore biowarfare as a new type of warfare, unlike anything that had been used before. Ishii Shiro, the architect of the program, viewed germs as a new weapons system. With that rationale, it is easy to understand the depth and breadth of his biomedical research programs. In addition, within the context of the social and political forces in Japan at that time, it is perhaps more understandable how these massive programs came to be. The purpose of this chapter, however, has not been merely to catalog the experiments and their associated human costs. It has also been to review, perhaps painfully, the role that the United States played, not in initiating or supporting these activities directly, but in trading prosecution for information that served our own national interests. Whatever else one may wish to believe about that era, the hard truth is that at the same time the Allies were prosecuting the Nazi doctors and sentencing them to death, we were gathering data from the Japanese doctors and sheltering them from prosecution. The fundamental lesson to be understood by doctors is that when they stray from the traditional concepts of medicine—saving lives, healing, and ameliorating pain and suffering—they enter into a territory that is fraught with danger, not only for their patients, but also for the morality of medicine as a profession.

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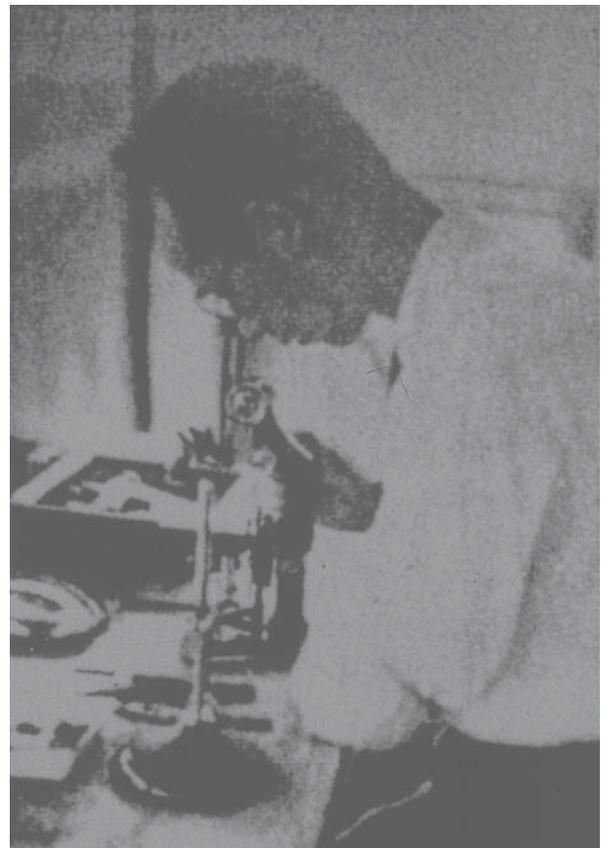
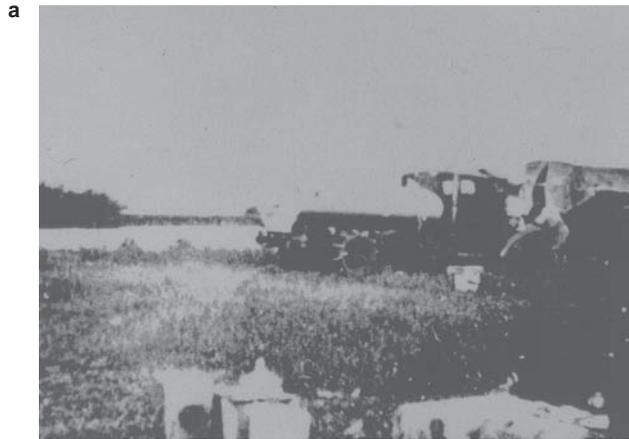
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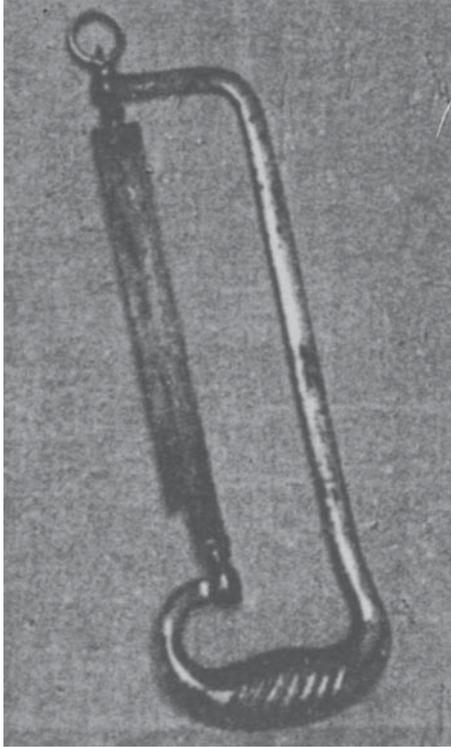
**Chapter 16: ATTACHMENT
PHOTOGRAPHS FROM PING FAN MUSEUM**

Photographs of exhibit materials (including captions) from displays at the Ping Fan Museum, Harbin, Manchuria, China, from the collection of Sheldon Harris.

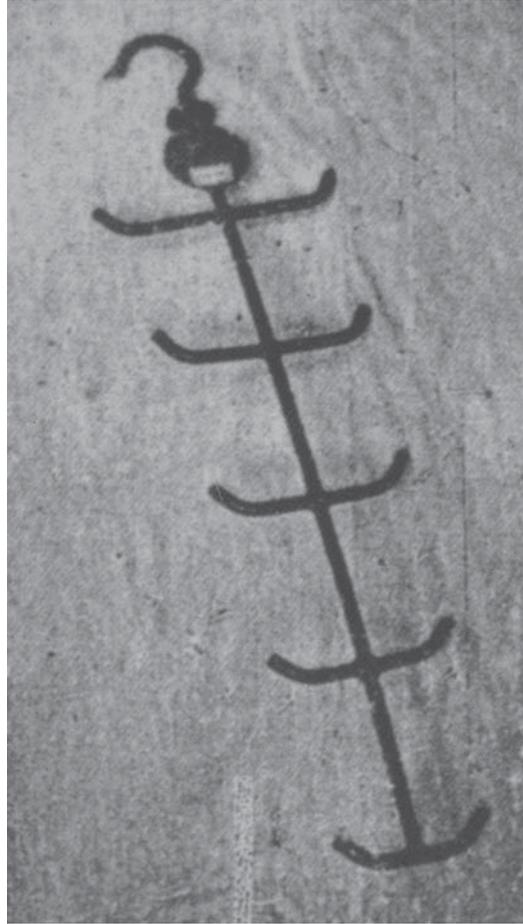
Field Tests: (a) "The sterilization vehicles of the puppet municipal government of Harbin City were ordered to come to the epidemic area." (b) "The members of the Japanese germ troops were investigating disease source in an epidemic area." (c) "The members of the Japanese germ troops were anatomizing dead bodies in an epidemic area." (d) "The members of the Japanese germ troops were gathering germ strains from the epidemic area to be examined under the microscope."



e

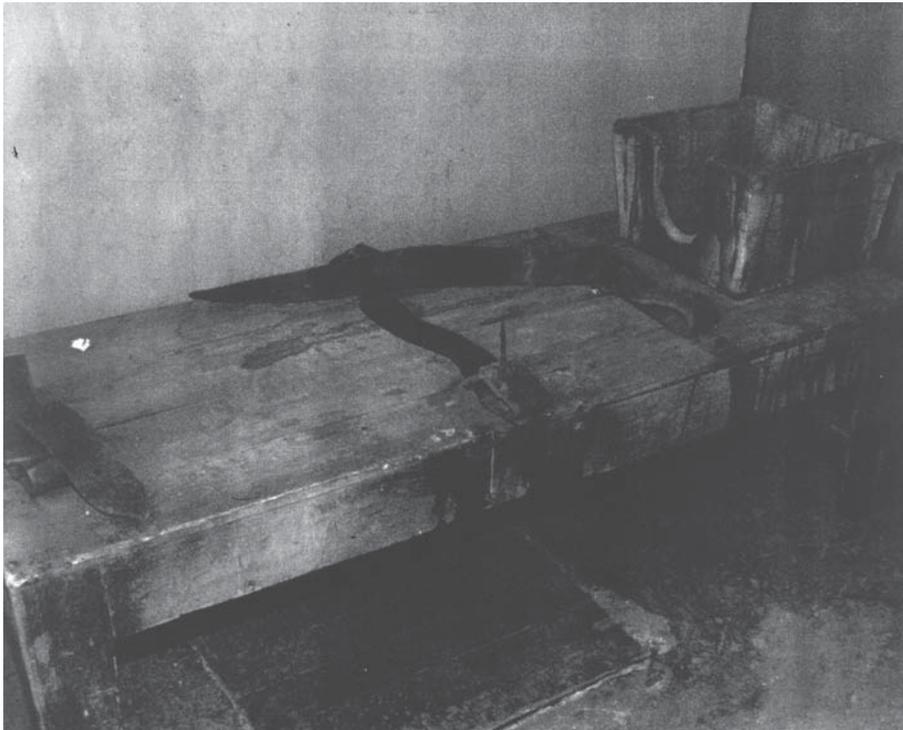


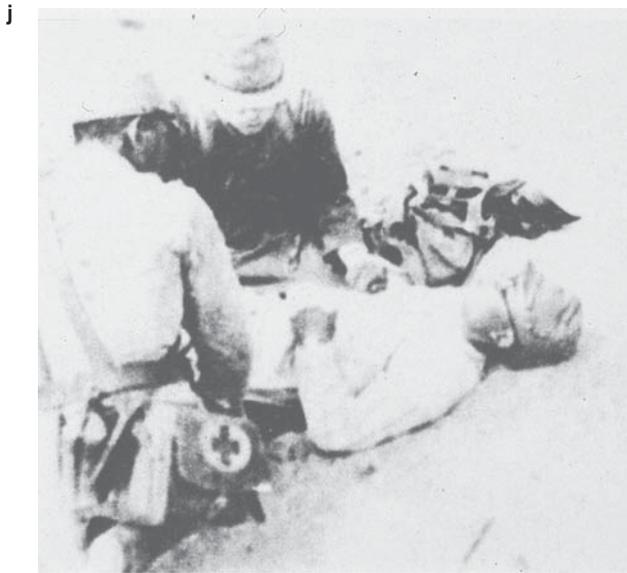
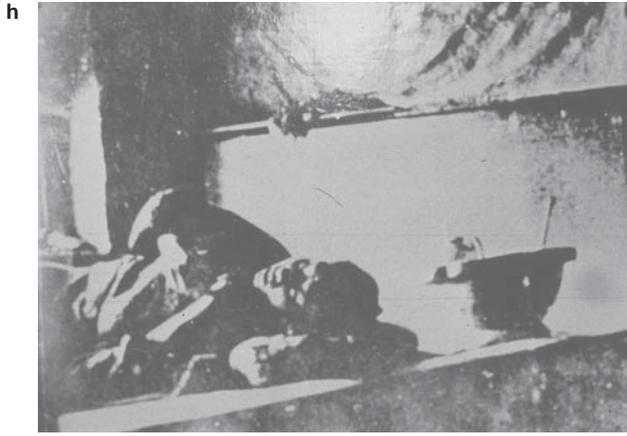
f



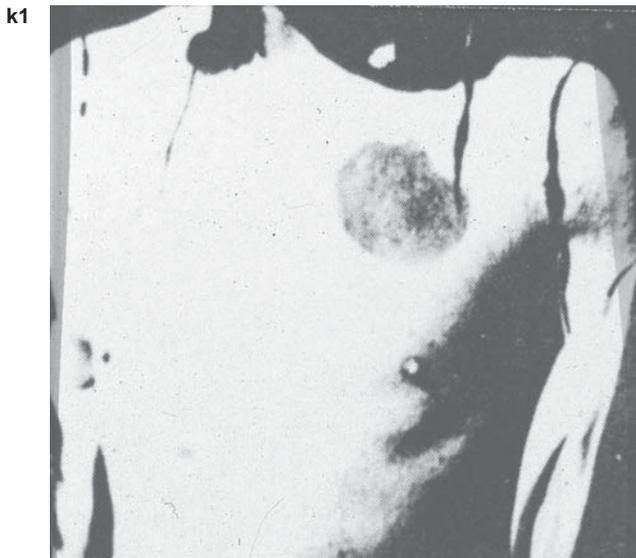
Medical Implements: Implements used by Japanese pathologists to dissect BW victims (e and f); vivisection/dissection table (g). Photographs of exhibit materials from displays at the Ping Fan Museum, Harbin, Manchuria, China, from the collection of Sheldon Harris.

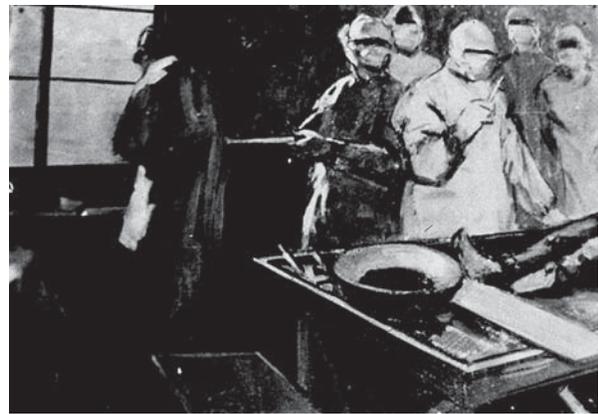
g





Research Victims: The numbers of victims of Japanese biomedical experimentation in China will probably never be known. These photographs show some of the human subjects of the experimentation program. Photographs of exhibit materials (including captions) from displays at the Ping Fan Museum, Harbin, Manchuria, China from the collection of Sheldon Harris. (h) "The troops 731 scattered bacilli pestis in Liaobei, Tonghso, etc. After liberation, infectious plague disease occurred in these areas. The picture shows a patient suffered [sic] from plague." (i) "Plague victim near Ping Fan, c. 1946." (j) "Japanese victim of a misdirected BW field test." (k1) and (k2) "Some results of CW and BW human experiments."





Artwork from Ping Fan: These four paintings are artists' representations of the Japanese biomedical experimentation program involving Chinese prisoners. Photographs of exhibit materials (including captions) from displays at the Ping Fan Museum, Harbin, Manchuria, China, from the collection of Sheldon Harris. (l) "The victims staked as part of the bacterium experiment." (m) "The persons after the bacterium experiments were dissected alive by the Japanese army meds." (n) "On August 10, 1945 ISHII SHIRO issued the order for executing all patients in custody." (o) "The troops 731 destroy the documents and materials w[h]ich would show their crimes."