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With Compliment
of the Author

REPORT

OF THE

Director of the

CENTRAL SANITARY BUREAU,

TO

H. E. THE MINISTER OF THE HOME DEPARTMENT,

ON

CHOLERAIC DISEASES

IN

JAPAN,

During the 10th year of Meiji

(1877).

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BAT. GENOOTSCHAP VAN KENW.

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PREFACE.

The following pages contain a short history of cholera in Japan, and a report on the choleraic disease which prevailed more or less, during the period from the 1st day of the 9th month to the last day of the 12th month of the 10th year of Meiji (1877), in three cities, in thirty-two préfectures and in the districts under the jurisdiction of the Kaitaku-Shi, the Department for the colonization of the northernmost part of the Empire.

Although it is generally admitted by the epidemiologists of the present time, that the Asiatic cholera is endemic only in India; especially in lower Bengal, the Sunderbunds and other alluvial lands from Jagannath to beyond the mouth of the Brahmaputra, yet I venture to remark that there are as yet no proofs sufficient for an absolute decision as to whether this disease exists, or does not exist in an endemic state temporarily or permanently, in some of the oriental countries. It is true that the genuine Asiatic cholera, in a really endemic state, has never been observed in any part of Europe, Asiatic Turkey, the Caucasus, the North of Africa or in America; but it is a recognized fact, that the varieties of cholera, commonly called in America "*Cholera morbus*" and in Europe "*Cholera nostras*," are common endemic maladies in various parts of the United States and Europe, at the close of

the Summer Season and at the beginning of Autumn.

Although it seems to me probable that the genuine Asiatic cholera does not exist in an endemic state, yet a common cholera exists in Japan in an endemic state, by the name of *kwaku-ran* (霍亂) according to old Japanese medical writers, just in the same state as cholera morbus and cholera nostras exist in Europe and America.

The prominent characteristics and symptoms being identical in both kinds, it is, in most fatal cases, very difficult to decide which of the two does actually exist. In order to ascertain, with any degree of certainty, whether some of the fatal cases of cholera reported, were or were not the genuine Asiatic cholera, reports embracing the following particulars are absolutely necessary viz: particulars of importation, portableness, infectiousness, synchronous appearance of the disease at many localities remote from each other, duration of attack and also the number of cases and death-rates. A single observation of symptoms in one patient, is insufficient to influence an opinion as to the varieties and dangers of cholera and also as to a further spread of the malady.

For instance, when in the 6th year of Meiji (1873), a fatal choleraic disease prevailed in the valley of the Mississippi, visiting over, as it is fully stated in a "Narrative of Cholera Epidemic in the United States," 200 towns and cities, and causing many deaths, the opinion of medical practitioners, about this epidemic, was so divided, that in their official reports they designated the disease by not less than six different names, to wit: "*Cholera morbus*," "*Cholera spasmo-*

dica," "Apparent cholera," "Cholera sporadica," "Cholera nostras" and *"Cholera Asiatica."* In the same way, during the prevalence of the epidemic among us, this year, such designations as *Choleraic Diarrhœa, Genuine Cholera, Mild form of Cholera, and Kwaku-ran* were used to indicate the disease. These names were applied, based upon the diagnosis of only a few cases, even experienced physicians finding the greatest difficulty in deciding, upon the evidence of the symptoms and characteristics of the malady, whether it was true Asiatic cholera or whether it was merely some form of a choleraic disease. At the same time they recognised that it was epidemic and rapid and severe in its infectious character.

I shall now proceed to give a general report of the choleraic disease which prevailed, during several months in the 10th year of Meiji (1877), in this country. I shall only give the facts and statements, from which the reader must draw his own conclusions, for it seems to me, that the first task of the Central Sanitary Bureau is to gather as many facts as possible about every epidemic, the number of cases, death-rates and all other circumstances connected with these diseases, so that a continuous and exact observation may prepare the ground on which a decided opinion or conclusion may rest, in future, with safety.

The Central Sanitary Bureau and its work, are still in infancy and do not possess as yet, such a number of scientific facts as would permit me to arrive at a decisive conclusion at present. There are, however, some few interesting facts, which tend to affirm the opinion that cholera, *whenever it has been observed in Japan*

in a great epidemic state, has been *introduced* into this country either from Java or from China, and there are also many reasons for the belief, that isolated cases of common cholera and even weak epidemics of choleraic diseases, have always existed and do still exist in Japan in an endemic state.

NAGAYO SENSAI,
DIRECTOR OF THE
CENTRAL SANITARY BUREAU.

The 11th month of the 10th year of Meiji.

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A SHORT HISTORY

OF THE

CHOLERA DISEASE

IN

JAPAN.

The first Japanese record of epidemic cholera, worthy of mention, is dated fifty-six years ago, one in which it is stated that:—"Cholera made its first visi-"tation in this country, in the 8th month of the 5th "year of *Bunsei* (1822), when the disease appeared "in the provinces of *San-in-do* (Mountain back circuit) "and in those of *San-yo-do* (Mountain front circuit), in "the western part of the island of Nippon, its progress "being so rapid, that in a month, the disease had ex-"tended to the *Kinai*, the regions surrounding Kioto. "The epidemic was so severe, that members of almost "every family were attacked by it, and in many in-"stances, all the members of a family were carried "off. Several celebrated physicians of the Capital "(Yedo), after having observed many cases, declared "the disease to be the true Asiatic cholera."

Considering the great ravages the disease made

in the western provinces of Japan, there exists no doubt that the disease was the genuine Asiatic cholera.

However difficult it may be to ascertain with certainty its first origin or introduction into this country, still, it is highly probable that the disease was imported at that time, in the Dutch ships which came from Java to Nagasaki, then the only port in the Empire open to the Chinese and Dutch traders.

Two years previous to this outbreak of cholera in Japan, there had been a severe epidemic of cholera in Java, which continued during the years 1820 and 1821, with an increasing severity, and almost all of the persons who were attacked by this dreadful disease, succumbed under it.

A celebrated Dutch physician, Dr. Bowier, studied the disease in all its details and proposed a new method of treatment, by which many persons were cured.

When the disease broke out in Japan, the Chief of the Dutch factory at *Deshima*, Mr. Jan. Cock Blomhoff, presented, in the beginning of the 5th year of *Bunsei*, to our Government, Dr. Bowier's pamphlet on its treatment, and this work was immediately translated into the Japanese language by a Yedo physician named Udagawa Yo-an and published under the title of "Remarks on Cholera." But unfortunately no records were then taken of the sanitary state of the crews of the Dutch vessels that came to Japan that year (1822); nor are there any facts recorded concerning the Dutch ships which had come from Java during the two previous years, when cholera was

raging in Netherlands India.

It must therefore remain a mere supposition, though it can not be accepted as a certain fact, that the great cholera epidemic of 1822 in Japan, was possibly introduced by the Dutch ships which came from Java to Nagasaki.

Besides this first outbreak of cholera, there was another about twenty years later. This second outbreak was on the coast of the province of *Mutsu* (the northern part of the main island) and in the two provinces of *Kodzuke* and *Shimodzuke*, (north-west and north of Tokio); but as no further particulars became known about this epidemic, we can not trace the first cause of the infection, nor tender any account of the nature and severity of the disease. It seems, however, that this northerly epidemic did not make such ravages as the one of the 5th year of *Bunsei* (1822), in the western part of Japan.

But another most serious outbreak of cholera took place in the 5th year of *Ansei* (1858), and did not end until the close of the first year of *Manyen* (1860), after having continued for nearly three years.

Before this outbreak and in the second year of *Ansei* (1855), the Dutch at Nagasaki reported to our Government as follows:—"Java and the neighbouring "islands of the Malay archipelago had suffered greatly "from a continuous heavy rain-fall and by a sub-"sequent outbreak of cholera, and that part of Europe "which was then the seat of the Crimean war suffered "also by the frequent overflows of rivers, and a large "number of soldiers were attacked and lost by the "disease."

In the 6th month of the 5th year of *Ansei* (July, 1858), the first case of cholera broke out in Nagasaki. One month later, the disease spread itself to and in Yedo, in the most frightful manner. From the beginning until the middle of the 8th month, several thousand persons died daily, and the total number of deaths in Yedo, at the end of the same month, was estimated at over one hundred thousand.

In Nagasaki, the people were quite in dismay; and they ascribed the general calamity to the opening of the country to Foreigners.

The plague was noticed in the 8th month, in the cities of Kioto and Osaka, while it was also noticed in Hakodate, in the island of Yezo, in the 7th month. All these places suffered greatly, but in a less degree than Yedo.

As the season became cooler, the disease disappeared, but only for a time, for the germ of the pestilence was lurking to sweep through nearly every part of the country with furious ravages, the next year. In the eastern and northern parts of the country, the people called the disease (沙病) "*Sha-biyo,*" a word of Chinese origin, which means "the *gravel struck,*" from the fact that people who travel in the southern districts of China, during the hot summer months, over the sand or gravel-plains, are often attacked by this disease. In the western part of Japan, the disease was called "*Mikka-korori,*" which means sudden death within three days. It is very curious that the word "*Korori*" bears a singular resemblance to the foreign word, "Cholera."

As to the great epidemic of the 5th year of *Ansei*

(1858), it is generally believed that the first case, which broke out at Nagasaki, was brought there by the United States' man-of-war, "Mississippi," coming from China with cholera-patients on board. This belief was confirmed by the testimony of Dr. Pompe van Meerdervoort,* who was staying at that time in Nagasaki.

From Nagasaki, the disease progressed eastward to Osaka and Kioto. Yedo and Hakodate were probably infected from another source, but what that source was, we are unable to state.

It is a fact, however, that the epidemic which prevailed, during the following year (1859), in nearly the whole country, commenced to decrease in the first year of *Manyen* (1860), and that in the next year (1861), no more cases were found. Nevertheless, the country was not yet wholly freed from the pestilence, as was clearly shown in the second year of *Bunkiu* (1862). In the Summer of that year, an epidemic of measles had passed through several provinces, and scarcely had this ended, than cholera broke out again and prevailed, especially in those localities, and attacked patients who had lately suffered from measles.

The Shogun's Government, alarmed by this sad experience, ordered several teachers and literati of the Government colleges in Yedo and Nagasaki, to translate the most important information obtainable upon cholera, its treatment and prevention, from Dutch and other European medical and hygienic works. This translation was printed and widely distributed under the title of "*Translations for the Prevention of Cholera.*"

* See Dr. Pompe's work: "Vyf jarey in Japan" 2 dul. pag. 188.

The great ravages caused by the Asiatic cholera during the last century, in Europe as well as in Asia, awakened the attention of several European Governments, and they held two congresses, during the decade 1865—1874, and consulted as to the possibility of defending their states against the frequent attacks of cholera.

The first of these international conferences, lasting more than seven months, was held at Constantinople in 1866; the second, lasting a month, at Vienna, in the 7th year of Meiji (1874), from 1st July to 1st August. The Sanitary conference at Constantinople was convened at the instance of the French Government, with reference to the great choleraic invasion, which had, in 1865, spread from Alexandria to all parts of Europe; the Vienna Congress was due to the initiative of the Austro-Hungarian Government, and its first object was to discuss the state of cholera in Europe during the years 1870—1874, with the view of establishing, if possible, a complete understanding between the Governments which had been convoked, as to the national and international measures that should be taken for preventing the spread of that disease. The second object of the Vienna Conference was to consider the question of instituting a permanent or temporary International Sanitary Commission, for a further investigation of epidemics and of preventive measures. Besides every European State, Persia and Egypt were also represented, making the number of states represented 22, each of which sent as many delegates as it thought fit; but each state had only one vote.

The discussions at the two Sanitary Conferences,

have not lead to the result expected, that of establishing a perfect uniformity and understanding as to the means of preventing the Asiatic cholera; but they have undoubtedly been of the greatest value in forcing the adoption, by the different nations, of clearer and more concise provisions. Several important scientific questions have been definitely answered in regard to the origin of cholera, its transmission by persons, infected objects, food, living animals, merchandise, the corpses of cholera-patients and by the atmosphere, together with the period of incubation, the necessity of disinfection, etc. The questions of quarantine, land quarantine, maritime quarantine, medical inspection and of river quarantine, were, by the International Sanitary Commissions in Persia, Constantinople and Alexandria, either thoroughly discussed or alluded to.

There can be no doubt, that those countries that did not take a part in the congress, like Japan, China and the United States of America, have largely profited by the full account of the proceedings of the Vienna Conference, published in the "Procès-Verbaux et Relevé des Conclusions."

REPORT ON THE PREVALENCE OF CHOLERAIC DISEASE IN JAPAN DURING THE 10TH YEAR OF MEIJI (1877).

The first information about cholera in the 10th year of Meiji was a telegram received from the Japanese Consul at Amoy in China, addressed to H. E. the Minister of Foreign Affairs, on the 13th of July.

The report of the Consul was as follows :—"Cholera "appeared at Amoy; the cases are very malignant. "Innumerable deaths have occurred in less than "twelve hours from the time of the first attack. "Deaths are about one hundred daily. It is said "that the disease was brought into this port from "Singapore."

Upon the receipt of this report, the Minister of Foreign Affairs immediately communicated the same to the Home Department.

An order was soon issued by the Home Department, addressed to three *kens* of Kanagawa, Hiogo and Nagasaki, to make the necessary arrangements for establishing a quarantine hospital at an island or the like, distant from any inhabited places, and to appoint some competent medical officers to inspect every ship before she entered the harbour, and in case there should be any infected person on board, to take care of them in the lazaret.

A communication was also sent to the Mitsu Bishi Mail Steam Ship Company, that, as their steamers had regular communication with Chinese ports, they were required to be inspected by medical officers, before entering any Japanese ports, and the Company was ordered to adopt, as much as was in their power, precautionary measures.

On the 24th of the 7th month (24th July), the Chief Secretary of the Department of Foreign Affairs forwarded to this Central Sanitary Bureau of the Home Department a copy of "Regulations for Inspection at the Open Ports in Japan," which had been agreed upon, in the 6th year of Meiji (1873), by the respective

Ministers of the Treaty Powers and our Minister of Foreign Affairs.

Before commencing to put all and every article of these Regulations into operation, the Central Sanitary Bureau sent a telegram to the Japanese Consul at Shanghai (24th July, 1877), requesting him to inquire into the state of Cholera in Chinese ports and to send an answer as quickly as possible.

On the 26th day of the same month, the following reply was received:—"Cholera is raging at Amoy, "and a malignant diarrhœa of somewhat similar "character is also prevalent at Shanghai, especially "among the natives, many of whom have been carried "off by the disease."

Having received this confirmatory answer, the Central Sanitary Bureau decided to carry out the regulations for inspection, and to take rigorously all such precautionary measures as were commandable and justifiable under the existing circumstances.

Accordingly the Central Sanitary Bureau requested the Foreign Department, on the 27th of the same month, to instruct the Japanese Consuls in Amoy, Hongkong and Shanghai, to take, after consultation with Consuls of other Powers, the necessary measures for medical inspection of ships bound for Japanese harbours, and to give a certificate of health to the non-infected passengers, destined to Japan.

When the preventive measures were ready to be adopted by the Bureau, the Minister of Home Affairs communicated to the Minister of Foreign Affairs on the 28th of the same month, requesting him to consult with the Foreign representatives in this

country and to amend any articles, if necessary, before the above regulations were carried out at the open ports.

These regulations were solely aimed at the prevention of the ingress of the plague into this country, and were therefore desirable and necessary both for Japanese and Foreigners alike; it was not expected that after the agreement of the 6th year of Meiji (1873) upon this matter, there would be any impediment in the way of enforcing these regulations, only for a certain time, upon all vessels coming from China to our ports.

Nevertheless on the 31st of July 1877, the following reply was received from the Foreign Office:—
"It is not necessary to establish, at present, qua-
"rantine hospitals at Yokohama and other open ports
"of Japan, for a telegram from H. E. the Governor
"of Hongkong, sent in reply to the inquiry of H. E.
"the British Minister at Tokio, says, that there seems
"to be no fear of a further spread of the disease at
"Amoy, according to the latest despatch received here
"from that port. Accordingly the establishment of
"medical inspection or quarantine is not needed in
"Japan, under the present circumstances."

When this letter was received, the Central Sanitary Bureau was obliged to issue immediately an order to the Governors of the three *kens* of Kanagawa, Hiogo and Nagasaki, to *postpone* the execution of the regulations for the medical inspection of ships, coming from Chinese ports.

The plagues of the 5th year of *Bunsei* (1822) and of the 5th year of *Ansei* (1858) had given us a dreadful

experience, as to how rapidly such a disease as the Asiatic cholera does spread all over the country, after having been once allowed to enter.

Therefore this Bureau drew up a series of instructions regarding precautionary measures for the prevention of cholera; and presented the same to the General Government for approval. The first series of these instructions was intended to instruct the Tokio Central Police Office, and the *fu* and *ken*, about the public measures to be taken by them. The second and third series of the instructions were intended for the public, and to be obserbed by all for their own safety, as well as for that of their neighbours. The latter two were published, after approval by the General Government, in the "Bulletin No. 5 of the Central Sanitary Bureau," dated the 24th of the 8th month (24th August), and the first series was notified to all proper authorities, by the Home Department Instruction No. 19, marked 'B.', dated 27th August, 1877. These Instructions will be found hereafter in the appendix.

Scarcely a week had passed, when two cases of cholera were observed in the *ken* of Kanagawa, on the 5th of the 9th month (5th September, 1877). They were at first regarded by the Local Authorities, as a kind of diarrhœa of choleraic character; but a subsequent examination of the patients, by several physicians, proved it to be "the true *Asiatic Cholera*." The report from the Kanagawa *ken* on these cases stated the following particulars:—"Two cases of cho-"lera have been observed here, one is the case of a "married woman, living in Rioshimachi, and the other, "that of a young girl in Ise-cho, Yokohama. Both

"patients were employed in the tea-firing-places of a "foreign firm in the settlement. They were first "taken sick, while working with tea, and were soon "taken home. It seems probable that the infection "was caused by the merchandise which had come "from Amoy, and was kept in the godown of the "firm."

These two are, as we know, the first two cholera cases observed in this country, during the year 1877.

Soon afterwards the Central Sanitary Bureau received a report from Nagasaki, stating thus:—"Cho-"lera had appeared in the beginning of the 9th month "(September), in Oura and Naminohira, both of them "suburbs of Nagasaki. The disease soon commenced "to spread over the whole city."

The medical report from the Nagasaki Hospital said this:—"The first case was that of a boat-man "who was engaged in carrying cargo from and to "foreign men-of-war and merchant vessels, lying at "anchor in the harbour. This man died soon after he "had been attacked by the disease."

We next received the following information from a naval officer:—"A Prussian officer told me, on the "6th of the 9th month (6th September, 1877), that a "case of cholera had been found on board the British "man-of-war in the harbour, and warned me not to "have any communication with the ship, in order to "avoid the infection. Soon after this warning of the "Prussian, I saw, on the 8th day of the 9th month "(8th September), the "British man-of-war with her "flag hoisted half-mast. I sent a lieutenant to in-"quire into the matter and was informed that a sailor,

"on board the ship, had died of cholera. On the "same day, I saw two boats from the man-of-war, "with a guard of officers and sailors, going towards "Oura, and afterwards I heard three volleys of guns, "for the funeral ceremony of the dead sailor. After "this event, the disease broke out in that portion of "the city, which lies in the neighbourhood of the Oura "Cemetery."

If the above information be found correct, it is quite possible that the disease was brought to Nagasaki by foreign vessels, and thence to Yokohama, though it seems to us, from the fact of their simultaneous appearance, that the infections of Nagasaki and Yokohama were caused seperately and independently.

It is very difficult and almost impossible to check the progress of the plague, after it has once broken out in a country; the only measure for preventing the importation of the pestilence into an insular country, like ours, is quarantine for all vessels coming from infected quarters.

It is our conviction that Japan is one of those countries most favourably situated for the prevention of the entrance of infectious diseases from abroad, by a system of medical inspection, isolation of the infected and of disinfection. We cannot, therefore, but regret that the measures proposed in the 10th year of Meiji (1877), by the Bureau, for the establishment of medical inspection, were not carried out.

The epidemic of the 10th year of Meiji (1877) was, I am glad to state, far less severe than any of two plagues of 1822 and of 1858; but it remains still an open question, whether the lives of the seven thousand

eight hundred persons, who died of cholera in 1877, might not have been saved, if measures of medical inspection had been adopted at the open ports, at the time of the receipt of the telegram from our Consul at Amoy, when there had not yet been one case of cholera reported in our country.

On the 14th of the 9th month (14th September, 1877), the first case was observed in the *fu* of Tokio, at Yamabushicho, Waseda, in the ward of Ushigome, At the request of the Sanitary Bureau, the attending physician gave a report of the state of the disease and recognized it as *"Cholera."* But I am glad to state that the disease did not increase in such a furious way in Tokio as it did in Yokohama and Nagasaki; so that the number of victims, who died in Tokio, was relatively small, compared with that of those who died of it at the former ports. The districts in Tokio principally attacked by the pestilence were Honjo, Shinagawa, Hamacho, Minatocho and Honshiba, although there were a few cases in other parts of the capital. It is generally believed that the disease was brought into Tokio by the people who ply their junks daily, between Ko-amicho, in Tokio, and, Yokohama, and perhaps also by the fishing-boats of Haneda near Shinagawa, which had frequent communication with Yokohama. The disease may, also, have been brought over by land.

In the provinces around the capital, the disease appeared a little later on. In the Chiba *ken* (province of Shimosa), the first case was reported on the 13th of the 9th month (13th September, 1877); in the Yamanashi *ken* (province of Kai) on the 14th; in the

Ibaraki *ken* (province of Hitachi), on the 26th; in the Sakitama *ken* (province of Musashi), on the 29th of September. The Gunma *ken* (province of Kodzuke) was first visited by the disease, on the 3rd of the 10th month (3rd October), and the Nagano *ken* (the province of Shinano), on the 28th of that month. Into the Sakitama and Ibaraki *kens*, the pestilence was said to have been carried from Tokio; into the Chiba *ken*, by the people of Yokohama, and the Yamanashi, Gunma and Nagano *kens* were probably infected from Yokohama, for the silk-merchants of these three *kens* had frequent commercial intercourse with the people of Yokohama.

According to the reports, the Tochigi *ken* (province of Shimodzuke) was infected, on the 6th of the 10th month (6th October), from the Gunma *ken*.

The first case of cholera in the Miye *ken* (province of Ise), happened on the 19th of the 9th month (19th September), in the district of Ago-gori. In the Fukushima *ken* (province of Iwashiro), the disease appeared on the 26th; in the Niigata *ken* (province of Yechigo, Takata), on the 27th; in the Shidzuoka *ken* (province of Suruga, port of Kaketsuka), on the 29th of the 9th month (29th September). The Aichi *ken* (province of Owari, district of Chita-gori) was first infected on the 6th of the 10th month (6th October). The *kens* of Shidzuoka, Miye and Aichi were directly infected from Yokohama, and the other *kens* caught the disease from Tokio. Thus eleven *kens* were infected probably, either from Yokohama or Tokio.

In those portions of the country which were infected from Nagasaki, as the centre, were the Kagoshima

ken (province of Satsuma), where the first cases were reported on the 17th, then the Osaka *fu* and Hiogo *ken*, on the 22nd; the Kumamoto *ken* (province of Higo), on the 23rd. The first case in the Kaitakushi (the island of Yesso) occurred on the 25th of the 9th month (25th September).

From the Osaka *fu*, the Wakayama *ken* (province of Kii) was infected on the 28th of the 9th month. The Awomori *ken* (province of Mutsu) and the Akita *ken* (province of Ugo) caught the first infection from Hakodate (the Kaitakushi), on the 20th and 27th of the 10th month (20th and 27th October).

The Ishikawa *ken* (province of Kaga) reported cases of cholera on the 2nd of the 10th month (2nd October); the Okayama *ken* (province of Bizen) and the Shimane *ken* (province of Idzumo), on the 6th of the 10th month (6th October); but the source of infection is not known, as to these *kens*.

Although cholera had thus scattered itself during the 9th month, over the places above mentioned, yet the cases were in most instances few and sporadic. It was not very malignant until the time of the suppression of the Kagoshima insurgents.

The disease had been conveyed from Nagasaki to the seat of war, where it developed so furiously that many soldiers died in a few weeks.

When the troops of the expedition began to return by sea, on board the over-crowded ships, during the hot season, the disease became more intense and malignant.

On the 1st of the 10th month (1st October), the steamers "*Sumida*," "*Hiogo*," "*Toshima*," "*Tsuruga*,"

"Tokio," "Sumiye" and *"Heian"* arrived at Kobe with the troops, nearly at the same time, bringing with them many cases of cholera. The steamer *"Wakanoura"* also arrived with many infected persons on board. Six soldiers died on the voyage, fifty were nearly dead at the time of her arrival in Kobe, sixteen died in the boats, while they were going to land, and forty new cases broke out after the landing.

Thus Kobe was threatened with a serious out-break of the disease, and the people were much excited and frightened. Some soldiers, disregarding the directions of the officers, to remain on board, until the inspection and necessary precautions for landing were finished, landed forcibly, brandishing their swords and muskets, and threatening to revolt. Measures for the prevention of a further spread of the cholera were strictly observed, but under the above circumstances, the disease commenced to spread over Kobe, Hiogo, Osaka and Kioto, and also over the Shiga *ken* (province of Omi). Previous to this sad event, the Central Sanitary Bureau requested the Departments of War and of Navy, to take precautionary measures at the time of the landing of the troops at Kobe and at other ports, where soldiers, coming from Kagoshima, were to land; but before replies had been received from these Departments, the Local Authorities of Hiogo, Kioto and Shiga reported to the Bureau, the dangerous condition of these places, if the landing of the troops should go on in the same irregular way. To prevent the recurrence of such outrageous acts, the Prime Minister issued, on the 3rd of the 10th month (3rd October), an instruction to the Home Department to the following effect:—"That

"proper precautionary measures should be taken and "enforced by the Central Sanitary Bureau, after due "consultation with the Departments of War and Navy. "The troops returning from the seat of war by land, "should be inspected at Hakone, before they can pro- "ceed any further. Those returning by sea, should "submit to a medical inspection at Mujinagaya. The "march of the troops was to be stopped at these "places, whenever the inspecting medical officers "considered the examination of the troops neces- "sary."

In compliance with this order, some officers of the Central Sanitary Bureau were despatched to the districts lying along the Tokaido (the road from Tokio to Kioto by the Sea), to consult with the Local Authorities and also with the medical officers of the troops returning by the Tokaido, in regard to measures for the inspection of the troops, and the isolation of the infected persons whenever necessary, and the disinfection of all the objects which had been in contact with the patients. These officers were also ordered to instruct the Local Authorities of the said districts, in bringing into operation the general measures for protection against cholera. An officer was also despatched from the War Department to the Tokaido, in order :—"To instruct the offi- "cers of the returning troops, that whenever any soldier "or person connected with the troops was attacked "by cholera, he should at once remain in the place "where he became sick and not be allowed to be "transported further. After consulting with the "Local Authorities, the patient should be isolated "from others and active measures for his treatment

"and for the arrest of any further spread of the "disease should be taken."

A great meeting was held in the Temporary Office of the War Department at Osaka, on the 3rd of the 10th month (3rd October), where were discussed precautionary measures to be taken among the returning soldiers. It was decided that the land travel of troops destined to Tokio, should be stopped for a while, and that the troops should be inspected at Osaka, by the medical inspectors. Those who were proved not to be in perfect health, were to be detained further. Since this measure was adopted, the spread of the disease among the returning soldiers began to decline; but after their return to Tokio, many new cases broke-out among them again, about the middle or last of the 10th month (October).

The War Department ordered all the infected persons to be removed to a temporary, isolated cholera-lazaret at Kobinata. After the 25th of the 10th month (25th October), several cases were found among the newly enlisted soldiers, who had just returned from the seat of war with cholera, and the epidemic became again more violent in Tokio.

In the *kens* of Oita (province of Bungo) and of Fukuoka (province of Chikuzen), the first cases were observed on the 2nd of October; in the Yehime *ken* (province of Iyo) and in the Yamaguchi *ken* (provinces of Nagato and Suwo), on the 3rd; in the Hiroshima *ken* (province of Aki), on the 4th and in the Gifu *ken* (province of Mino), on the 11th of the 10th month (11th October).

All these *kens* were infected from the soldiers who

were returning from the seat of war.

Although the number of cases and the death-rate in every *ken* and *fu* may be found in the annexed table, yet we will give here the following general account of the disease.

KANAGAWA KEN.

The disease first appeared on the 5th of the 9th month (5th September). From this date to the 21st, the number of cases was 194 and the number of deaths 49. On the 2nd of the 10th month (2nd October), the disease reached its maximum of severity. From the beginning of the 11th month (November), the disease greatly decreased and after the 16th of the 12th month (16th December), no new case was reported throughout the jurisdiction. During the whole epidemic, 719 persons were attacked within the port, of Yokohama, of whom 324 were cured and 395 died; in the other parts of the jurisdiction, 428 persons were attacked, of whom 159 were cured and 269 died; making the total number of persons attacked throughout the jurisdiction 1,147, and the deaths 664. These numbers give in the port of Yokohama, the proportion of 11.228 persons attacked and 6.168 deaths for every thousand inhabitants, and in the places outside of the port, the proportion of 0.626 persons attacked and 0.393 deaths per one thousand. This shows that the port suffered more than any other place in the *ken*. With the exception of the port of Nagasaki, the port of

Kanagawa has the highest percentage of persons attacked by the disease. The Local Authorities of this *ken* exerted themselves in a very praiseworthy manner to prevent the progress of the disease. The towns of Yokohama and Kanagawa were divided into two Sanitary Divisions, each of which was under the supervision of the Medical and Sanitary Officers of the *ken*, who inspected every house, and took every care for the disinfection and removal of all matter ejected by the infected. The officers of the Yokohama Shiyakujo (Laboratory of the Central Sanitary Bureau of the Home Department) inspected with the Local Officers all the wells of drinking water; and all the wells supplying water of insufficient purity—which were many—were closed. An elaborate report of the Yokohama Laboratory on water and drains will be given in my annual report on the public health. The diligent efforts of the Sanitary Officers of the Kanagawa *ken* have not only given a good result directly, but they have also awakened the attention of the people to Sanitary matters in general, to which, before this year, they had never given any thought.

NAGASAKI KEN.

From the beginning to the 14th of the 9th month (14th September), there were 350 persons attacked, of whom 14 died. From the middle until the last of the 9th month (September), the disease reached the maximum of its severity. From the 9th of the 10th month

(9th October) the cases gradually decreased in number, and after the 20th of the 12th month, the disease had disappeared altogether. From the beginning to the end, there were 656 persons attacked, within the port of Nagasaki, of whom 201 were cured and 277 died; in other places under the same jurisdiction, 880 persons were attacked, of whom 345 were cured and 390 died.

These numbers give the proportion of 13.614 persons attacked and 5.75 deaths for every thousand of inhabitants in the port of Nagasaki, and in places out of the port, the proportion of 0.757 persons attacked and 0.335 deaths per thousand.

Here we have the same phenomenon as in Yokohama, and the port of Nagasaki suffered more than other places within the jurisdiction. The same efforts for the isolation of the infected, the disinfection of matter ejected by the patients and other hygienic measures that were taken in Kanagawa *ken*, were also carried out in the Nagasaki *ken*, where the Local Authorities, aided by the officers of the Laboratory of the Central Sanitary Bureau, succeeded in checking the further progress of the epidemic.

TOKIO FU.

From the 14th of the 9th month—when the first case was reported in Tokio—until the 23rd of that month, 36 cases of cholera were reported, of whom 11 died. The epidemic was severest during the time that

elapsed between the 26th of the 10th month (26th October) and the 2nd of the 11th month (2nd November), when there were upwards of 200 cases under treatment.

From the beginning of November, the disease commenced gradually to decrease. The temporary cholera-lazarets, established by the Central Police Office at Ichigaya, Mukogaoka and Midoricho, were closed on the 21st of the 11th month; the hospital at Shinagawa remaining open for sometime longer, for there were still some few cases in the portion of the city, near the sea-side. In the cholera-lazaret of the War Department at Kobinata, the number of patients gradually decreased after the middle of the 11th month (November), and no more new cases were carried there after that time.

The few patients who remained there still, on account of weakness brought on by the desease, were taken to the central hospital of the War Department, on the 21st of the 11th month, for there was then no danger of infection. During the 12th month, many days were passed without a single case; the last who was attacked died on the 28th of the 12th month (28th December). The total numbers of persons attacked in Tokio was 693, of whom 223 were cured and 459 died; 11 cases remained uncertain; in the places outside of the city, 196 were attacked, of whom 22 were cured and 155 died, 19 cases remained uncertain. This gives in Tokio, the proportion of 1.202 persons attacked, and 0.8 deaths, for every thousand inhabitants, and in other places outside of Tokio, the proportion of 0.624 persons attacked and of 0.493 deaths

per thousand. These numbers clearly show that Tokio has suffered far less than the Nagasaki or the Kanagawa *kens*, and the disease could scarcely be called epidemic in the capital.

The officers of the Tokio *fu* and of the Central Police Office, the chemists of the Laboratory of the Central Sanitary Bureau, and various medical practitioners greatly exerted themselves to carry out all precautionary measures.

KAGOSHIMA KEN.

On the 17th of the 9th month (17th September), there were 40 cases of cholera, of whom 11 died. The number increased very rapidly and there were 273 cases, of whom 72 died, during the five days from the 20th to the 24th included. The disease reached its maximum of severity from the 27th of the 9th month to the 3rd of the 10th month, when there were over 360 cases and 50 deaths. From the beginning of October, the disease began to decrease gradually and finally disappeared on the 1st of the 12th month.

There were in all 1,081 of the inhabitants of the Kagoshima who were attacked, of whom 513 were cured, 557 died and 11 remained uncertain.

Among the Imperial soldiers, there were 577 attacked, of whom 300 died in the cholera-lazaret of the War Department, at Kagoshima.

Although the percentage for the Kagoshima *ken*

seems small, yet the disease was really very severe in the city, and the proportion in the table is calculated from the enumeration of the population of the whole *ken*. The soldiers especially suffered greatly from the disease.

OSAKA FU.

The first case appeared here on the 22nd of the 9th month (22nd September). The disease spread so rapidly that, in the middle of the 10th month, there had been 370 cases and 98 deaths. From the 28th of the 10th month (28th October) to the 3rd of the 11th month (3rd November), it reached its maximum of severity, there being then from 30 to 70 new cases daily. From the 4th of November, the disease commenced to decrease; but did not entirely disappear until the beginning of the next year. From the first outbreak to the 31st of the 12th month, the total number of cases within the *fu* amounted to 1,636, of whom 1,239 died. Besides these, there were, in the lazarets of the War Department, 200 soldiers, of whom 104 died.

The proportion of cases and deaths, within the city, was 4.007 attacks and 2.95 deaths for every thousand. In the suburbs, the proportion was much less, for the attacked numbered 1.814 and the deaths 1.46 per thousand.

The cases in Osaka were extremely malignant and ended there far oftener in death than in any other place.

HIOGO KEN.

Between the 22nd of the 9th month (22nd September) and the 3rd of the 10th month (3rd October), there were 23 cases of cholera in this *ken* and 10 deaths.

But soon after the troops who were just returning from Kagoshima by sea, had landed at Kobe, the number of cases increased.

In the temporary hospital of the War Department at Kobe, there were, in three weeks (26th September —16th October), 414 cases, of whom 255 died.

With the exception of the soldiers, there were in the Hiogo *ken*, 488 persons attacked, of whom 355 died. Within the port, the proportion of the attacked was 6.494 and of deaths 5, for every thousand, while in the places outside of the port, the proportion of the attacked was only 0.311, and of deaths 0.216. The Hiogo *ken* stands, therefore, third in the list of those *ken* where the disease carried off the most victims.

KUMAMOTO KEN.

This *ken* had a large share of the epidemic. From the 23rd of the 9th month (23rd September) to the 3rd of the 10th month (3rd October), there were 60 cases reported, of whom 31 died. The disease increased up to the 25th of the 10th month (25th October), when it reached its maximum of severity with 92 new cases per day, of whom 46 died.

After this date, the disease commenced to decrease slowly; the number of new cases per day, down to the 14th of the 11th month (14th November), was between 17 and 60, (two days excepted when there were less than 10 cases).

From the beginning of the plague to the 18th of the 10th month (18th October), the *ken* erected fourteen temporary cholera-lazarets, which were taken down and cleared away on the 29th of the 11th month (29th November), with the exception of one in Kumamoto, for there were then no more new cases of cholera. The total number of persons attacked within the *ken* was 1,698, of whom 984 died. This gives the proportion of 1.738 attacked and of 1.007 deaths, per thousand inhabitants.

CHIBA KEN.

The number of cases of cholera, including those of a similar character, was, from the 18th to the 27th of the 9th month (18th—27th September), 89, of whom 8 died. After this date, the number of new cases greatly varied; but the disease was the severest and most widely spread, on the 3rd of the 10th month (3rd October), when there were 69 cases, 37 of them were new, and 17 deaths were reported in one day.

Fishermen were mostly attacked at sea. After the 21st of the 12th month, the disease wholly disappeared. There were in all 611 persons attacked, of whom 356 died. This gives the relatively small pro-

portion of 0.576 attacked and of 0.335 deaths, for every thousand inhabitants.

THE JURISDICTION OF THE KAITAKUSHI.

From the 23rd of the 9th month to the 30th of the 11th month (23rd September—30th November), cholera prevailed in Yesso, especially at Hakodate.

During this period, there were in all 128 persons attacked, of whom 93 died, which gives the proportion of 0.856 attacked and of 0.622 deaths, for every thousand inhabitants.

The cholera-lazaret was closed at the end of the 11th month, when the disease had wholly disappeared within the jurisdiction. The origin of cholera in the Kaitakushi, was the returning of the soldiers to Hakodate, who brought the infection with them from Kagoshima.

FUKUOKA KEN.

During the three days from the 21st to the 23rd of the 10th month (21st—23rd October), the disease reached here its maximum of severity, when there were 64 cases, of whom 26 died. Afterwards it decreased, and after the 25th of the 11th month, there was no new case reported. There were in all 644 per-

sons attacked, of whom 390 died. This gives the proportion of 0.61 attacked and of 0.37 deaths, for every thousand inhabitants.

KIOTO FU.

Cases of cholera were very few at first, but the disease became very prevalent when the soldiers began to return from Satsuma, bringing the infection into the *fu*, on the 1st of the 10th month. In the cholera-lazaret of the War Department at Kioto, there were no less than 326 soldiers under treatment, during the period between the 1st of the 10th month and the 15th of the 11th month (1st October—15th November), of whom 154 died.

Among the people living in the city, only 67 cases were reported, of whom 43 died, which gives the very small proportion of 0.267 persons attacked and of 0.171 deaths, for every thousand inhabitants.

The other *kens* had the disease more or less, but sporadically, varying from 0.3 to 26 persons attacked, for every hundred thousand inhabitants.

During the period of the prevalence of the cholera, reports were kept of the number of persons attacked, cured, and deceased, and of the proportion of attacks and of deaths, for every ten thousand inhabitants, all of which will be found in the table annexed, showing the number of cases of cholera and of their proportion,

in the different *fu* and *ken* in Japan:—The army suffered greatly, many soldiers and officers, were attacked by the plague and died on their way back home.

The hospitals of the War Department at Kagoshima, Kobe, Nagasaki, Kumamoto, Osaka, Kioto, &c. were filled with the infected soldiers, who had just escaped from the risks and dangers of the war.

More than 2,000 soldiers and officers were taken to the different cholera-lazarets, and out of them 1,046 died.

The Navy suffered relatively less than the army, although some sailors were attacked and died. There were special cholera-lazarets established by the Navy Department in Tokio, Shinagawa, Yokohama, Yokosuka and Uraga. The total number of cases under treatment in these lazarets was 58, of whom 16 died. On board the men-of-war, there were 16 cases, of whom 6 died.

On board the Mitsu Bishi Mail steamers, there were 59 cases during their voyages or at their anchorage in the harbours of Kagoshima, Kobe, Yokohama and Hakodate. Summing up the records of the different *fu* and *ken*, as found in the table annexed, it follows:—

1° That the period, during which the disease was most widely spread, runs from the 1st of the 10th month (1st October) to the beginning of the 11th month (November).

2° That the places that most suffered from the disease, were Nagasaki, Kanagawa, Hiogo, Osaka, Kumamoto and Kagoshima; in these places, the death-rate during the epidemic, was from 10 to

61 for every ten thousand of the population, and from 39 to 80 for every hundred of the persons attacked.

3° That the disease did not prevail in such a furious way in the following places, as it did in other various districts: namely, Tokio, the Kaitakushi, Fukuoka, Chiba, Kioto, Wakayama, Sakai, Oita, Okayama and Yamaguchi; in these places, the death-rate during the epidemic, was only from 1 to 8 for every 10,000 of the population and from 50 to 79 for every 100 persons attacked.

4° That the disease was only sporadic and could not be called epidemic, in the following 20 *ken*: Kochi, Yehime, Miye, Yamanashi, Hiroshima, Shidzuoka, Ibaraki, Saitama, Aomori, Shiga, Fukushima, Ishikawa, Gunma, Shimane, Gifu, Tochigi, Niigata, Aichi, Nagano and Akita. In all these *ken*, the death-rate during the time of the plague, was less than one for every 10,000 of the population and from 0 to 83 for every 100 persons attacked.

5° That the disease appeared in many localities remote from each other and from anything that could be considered as a common cause, and also at dates synchronous or nearly so.

6° That there was a general diffusion of the disease (in not less than 3 *fu*, 32 *ken* and the Kaitakushi) over the population of 32,512,155, without causing a great epidemic.

7° That the total number of persons attacked, was 13,710 and that of those who died 7,967. This gives the proportion of 3.99 persons attacked and

2.46 deaths, for every ten thousand inhabitants.

8° That the number of males attacked (10,214) was nearly three times larger than that of females (3,496).

During the epidemic, the Central Sanitary Bureau received daily from every *ken*, where cholera prevailed, reports of the number of cases, of the cures and deaths, from which the Bureau made an extract and published it in the daily newspapers of Tokio. Besides this, weekly reports were made and presented to the General Government, stating the number of cases and all particularities about the character, progress or decrease of the disease.

The method for the treatment of cholera, was described in the Bulletin No. 6, issued on the 22nd of the 9th month (22nd September).

In answer to the request of the General Post Office, instructions were sent in regard to the measures which should be taken, if a death by cholera, should happen on board a Mitsu Bishi steamer.

By a special instruction issued on the 4th of the 10th month (4th October), the Local Authorities of the open ports were instructed, that the inspection of mail-steamers and of merchant-ships coming to and departing from these ports, should be made at their discretion, in accordance with the provisions of Instruction No. 79, marked 'B.', issued on the 27th of the 8th month (27th August); but for the inspection of foreign vessels coming into these ports, the Local Authorities should consult with the Foreign Consuls and Medical Officers, in accordance with the provisions of the said instruction. As to the inspection of our men-of-war and

transport-ships, the consultations should be held with the Medical Officers and Captains of the Army and Navy. On the 6th of the same month, instruction No. 91, marked 'B.', was issued to all the other *fu* and *ken*, to take proper measures in compliance with the instruction made to the open ports.

On the 17th of the same month, the Home Department proposed to the General Government that a special instruction should be given to the Kaitakushi, the *fu* of Osaka and the *ken* of Kanagawa, Hiogo, Nagasaki and Niigata, explaining to the Local Authorities the special mode of inspecting the ships and mail-steamers, and directing them to detain them for five days in quarantine, if cholera should be found on board, and also explaining the mode of disinfecting passengers, luggage and ships.

Written instructions for the disinfection of ships were forwarded to the officers of the Mitsu Bishi Company, through the General Post Office.

On the 19th of the 10th month (19th October), the Home Department proposed to the War Department that all the Mitsu Bishi steamers and their transport-ships from the seat of war, or from Nagasaki, Kobe and other places, coming to Tokio or Yokohama, should be inspected by the Medical Officers of the War Department, on the sea near Oihama (province of Sagami), with the exception of the men-of-war under the sole control of the Army and Navy Departments.

On the 23rd of the 10th month (23rd October), the Central Sanitary Bureau requested the General Post Office to direct the Mitsu Bishi Company to observe

strictly precautionary measures and to cleanse the transportships thoroughly, after the discharge of all cargo, to renew the ballast, wash the ship carefully, open the air holes and other openings and to admit the free passage of light and air throughout the ships; because owing to frequent trips since the spring, the ships of the Company were not in a clean state, essential to health, and that complaints had been often made of the Company's negligence in cleansing their vessels. Cleanliness is always one of the principal things to be observed for the preservation of health; especially so when any infectious disease is prevailing, and uncleanliness augments the development and danger of the disease.

The great influence of cleanliness and of other hygienic measures, in checking the progress of the disease, was observed by this Central Sanitary Bureau; and in the tenth number of the Sanitary Magazine, the Bureau published popular directions for the use of disinfectants and advocated the great importance of proper care for public and personal cleanliness. This magazine was largely distributed and had undoubtedly some good effect.

At the Laboratories of the Sanitary Bureau established in large cities, the drinking water was examined. A full report of the results was sent to the Local Authorities, with advice to supply better drinking water, where this was possible and to close all the wells containing impure water. The Chemical and Sanitary Analysts of the Yokohama Laboratory (Shiyaku-jo) first inspected all the wells, drains and streets, at the request and with the aid of the Local Authorities of

Kanagawa; and afterwards the Local Authorities of Osaka, Tokio and Nagasaki, followed the same example.

Impure drinking water is always dangerous and especially so when the water is contaminated by the sewerage matter of patients suffering from zimotic disease—cholera, typhoid fever, etc.—therefore the analysis of drinking water is always the first step to be taken for the suppression of an epidemic.

Consequently this Central Sanitary Bureau published, in the Sanitary Magazine No. XI., an article on the use of pure drinking water and on the methods for determining its fitness for use.

I feel it my duty to recognize the numerous efforts of Local Authorities, for the suppression of the disease. They appointed special Sanitary Commissioners, either from the Bureau of General Affairs, or that of Educational Matters and assigned to them full power to act according to circumstances. However great the good will and energy of many of these commissioners may have been, they had no special knowledge in regard to sanitary matters and often adopted measures which were not at all needed. Some of them, not satisfied with the disinfection of rooms and of articles which had been in direct contact with the infected person, applied disinfection even to all the neighboring houses, streets and water courses. Mirrors and lamps were sometimes burnt, while articles made of copper were roasted. Children in primary schools, were to be sprinkled with carbolic acid or have put in their sleaves quicklime, made from oyster shells. Therefore much useless and unnecessary expense was

incurred and some amusing episodes were noticed by educated observers.

Although I regret all this, it was unavoidable, because the importance of sanitary matters was very little understood in our country. Moreover, it was only a few years ago that even the General Government became aware of their importance and established the First Sanitary Bureau. Most of the Local Authorities had no special sanitary office; so, very few among the Local Officers, were able to act as sanitary ones.

While I praise the good will of those officers and commissioners, I regret the want of knowledge about sanitary matters that exists in our country. I hope that some suitable means will be adopted for making this important branch of social science to be understood more generally, and that sanitary measures will be carried out with strictness and energy.

[APPENDIX.]

TABLE.

THIS SHOWING THE NUMBER OF PERSONS ATTACKED BY AND WHO DIED OF CHOLERA, IN THE DIFFERENT FU AND KEN OF THE EMPIRE, DURING THE LAST FOUR MONTHS OF THE 10TH YEAR OF MEIJI (1877.)

FU, KEN AND OTHER ADMINISTRATIONS.	Total number of Patients.	Total number of Deaths.	Patients on every ten thousand of the population.	Deaths on every ten thousand of the population.	Percentage of deaths among patients.
Nagasaki ken — Within the port	656	277	136.14	57.50	42.23
Nagasaki ken — In other parts of the ken	880	390	7.57	3.36	44.32
Kanagawa „ — Within the port	719	395	112.28	61.67	54.94
Kanagawa „ — In other parts of the ken	428	269	6.26	3.93	39.49
Hiogo „ — Within the port	87	67	64.94	50.01	77.01
Hiogo „ — In other parts of the ken	401	288	3.11	2.23	71.82
Osaka fu — Within the city	1,130	832	40.07	29.50	73.63
Osaka fu — In other parts of the fu	506	407	18.14	14.60	80.43
Kumamoto ken	1,698	984	17.38	10.07	57.95
Tokio fu — Within the city	693	479	12.02	8.00	66.23
Tokio fu — In other parts of fu	196	155	6.24	4.94	79.08
Kagoshima ken	1,081	557	8.94	4.60	51.53
Kaitakushi	128	93	8.56	6.22	72.66
Fukuoka ken	644	390	6.10	0.96	60.56
Chiba „	611	356	5.76	3.35	58.27
Kioto fu — Within the city	67	43	2.67	1.71	64.18
Kioto fu — In other parts of the fu	25	16	0.45	0.29	64.00
Wakayama ken	154	90	2.66	1.55	58.44
Sakai „	224	159	2.48	1.76	70.98
Oita „	155	79	2.19	1.12	50.97
Okayama „	153	105	1.57	1.07	68.63
Yamaguchi „	123	65	1.46	0.77	52.85
Kochi „	108	63	0.94	0.54	58.33
Yehime „	126	65	0.91	0.47	51.59
Miye „	69	41	0.85	0.50	59.42
Yamanashi „	28	10	0.75	0.27	35.71
Hiroshima „	86	47	0.73	0.40	54.65
Shidzuoka „	69	43	0.72	0.45	62.32
Ibaraki „	60	39	0.70	0.45	65.00
Saitama „	58	21	0.65	0.24	36.21
Aomori „	24	10	0.52	0.22	41.67
Shiga „	36	22	0.51	0.31	61.11
Fukushima „	19	2	0.25	0.02	10.52
Ishikawa „	29	17	0.16	0.94	58.62
Gunma „	6	1	0.11	0.02	16.67
Shimane „	9	3	0.09	0.03	33.33
Shimane „	6	5	0.08	0.06	83.33
Gifu „	3	...	0.06	...	...
Tochigi „	9	4	0.06	0.03	44.44
Niigata „	6	3	0.05	0.02	50.00
Aichi „	3	...	0.03	...	...
Nagano „	2	2	0.03	0.03	100.00
Akita „	2,062	1,046	...	...	50.73
Officers, Soldiers &c. under Army	74	22	...	...	29.73
„ „ „ „ Navy	59	25	...	...	42.37
On Board Mitsu Bishi Mail Company's Ships	...	...	...	...	...
Total	13,710	7,967	3.99	2.46	58.11



GOVERNMENT NOTIFICATIONS.

Home Department Instructions No. 79, marked 'B.':—

It is hereby instructed to the Heads of *Fus* and *Kens* (Tokio *Fu* excepted) that Special Instructions concerning precautionary measures for the prevention of cholera, are detailed in the following pages, and that should the disease break out in this country, all necessary directions will, from time to time, be given, to be followed according to the above special instructions; but it is of the greatest importance that every preventive measure shall have been taken before the malignant infection enters our territory; therefore the following instructions are now issued for general information.

(Signed) OKUBO TOSHIMICHI,
MINISTER OF HOME AFFAIRS.

The 27th day of the 8th month of the 10th year of Meiji
(27th August, 1877).

Instructions concerning precautionary measures for the prevention of cholera:—

ART. 1.—At the outbreak of cholera in any foreign country, the Naimusho (the Home Department) shall order the quarantine regulations to be enforced. The Governor or Chief Officer of such *Fu* or *Ken* as contains a port open to foreign trade, shall select Medical Practitioners, Sanitary Officers and Police Officers, and appoint them members of a Sanitary Committee, to carry out preventive measures. This Sanitary Committee shall consult with the Foreign Consuls, in accordance with the said regulations.

ART. 2.—On the arrival of any ship from a place infected with cholera, the medical inspector shall visit the ship at a designated place outside of

the port, ascertain, through the master and medical officer of the ship, whether there is on board, any person infected with cholera, or the body of any person who has died of cholera, and if necessary, shall examine all who are on board.

If any person is infected with cholera or with any other disease resembling cholera, the patient shall be removed to a hospital established for the purpose; and if there is no infected person on board, the ship shall be detained outside of the port, for a certain number of days.

ART. 3.—An islet or other place isolated from any habitation, at the entrance of the port, shall be selected for the site of a hospital, designed for the removal thereto and treatment therein of cholera-patients from on board vessels.

When circumstances require, the same hospital may also be used for the occupation and treatment of patients, who are infected with the disease, within the jurisdiction of the *Fu* or *Ken*.

NOTES:—In establishing hospitals, care should be taken to erect only those that are absolutely necessary and to avoid all unnecessary works. A hospital should consist, if possible, of three separate buildings, or of one building with three different wards, in order to give separate accommodation, according to the nature of diseases: The first ward should be for patients of severe cases, the second for lighter ones and the third for convalescents.

ART. 4.—A yellow flag, with the letter Q, in black, shall be hoisted at the said hospital and notices shall be posted on the boundaries thereof, strictly forbidding any communication from or with the outside. The servants, in the regular employment of the hospital, for the purpose of procuring such necessary things as articles of food, should never be allowed to enter the apartments of patients, or to come within the reach of infection, or to be exposed to any infected object.

ART. 5.—When a patient has recovered from the disease, he shall receive a certificate of his recovery from the Sanitary Committee, and be allowed to quit the hospital, after his clothing and other effects have been thoroughly disinfected. No patient shall be allowed to quit the hospital, unless he has obtained a certificate from the Sanitary Committee.

ART. 6.—A burial ground for those who have died in the hospital, shall be selected by the Sanitary Committee. No corpse shall be buried without permission from the Sanitary Committee. If a per-

son who has died in the hospital, had a burial lot within the district, the Sanitary Committee may grant permission to transport the body of the deceased thither, after it has been thoroughly disinfected.

NOTE:—The foregoing six articles are especially intended for such localities wherein are the ports open to foreign trade, and they are to be enforced in such localities, with reference to and in accordance with the quarantine-regulations. The following articles are intended as general measures in every locality, at the outbreak or prevalence of cholera.

ART. 7.—The Local Authorities on receiving a physician's report of a case of Asiatic cholera within their jurisdiction, shall ascertain its type and nature. If the case is one of true cholera, they shall appoint a Sanitary Committee consisting of Medical, Sanitary and Police Officers, who shall put the precautionary measures into operation.

The Chief of the Local Authority shall report the case or cases to the Naimusho and shall also inform the neighbouring Local Authorities thereof.

ART. 8.—When a physician finds a patient to be infected with cholera, he shall immediately report the fact to the Local Authority, either through the District Officers (*Kucho* or *Kocho*) or through the District Sanitary Officers.

ART. 9.—The Local Authorities shall collect the reports of physicians made from time to time and shall send a summary of them every Saturday to the Naimusho, stating the total number of patients attacked and the deaths which have occurred during the week, within their jurisdiction.

ART. 10.—When cholera has become very severe, the Chief of the Local Officers shall issue a daily report of the number of deaths occurring within his jurisdiction.

ART. 11.—The proprietors of hotels, boarding houses, ships at anchor, boarding schools and factories, shall, within twenty-four hours, report to the District Officers (*Kucho* or *Kocho*) or to the District Sanitary Officers, each and every case of cholera, breaking out among those under their charge.

ART. 12.—The Commandants of garrisons, and those of war-vessels, shall, within twenty-four hours, notify the Local Authorities of every case of cholera, occurring among the soldiers or sailors under their command.

ART. 13.—If any member of a family is attacked with cholera, the other members should, if possible, be removed to another place and their communication with the patient stopped, leaving in the infected

house only the attendants of the patient. The children of the family shall not be allowed to attend school, unless ten days have elapsed since the recovery or death of the patient, and they themselves have been thoroughly disinfected.

ART. 14.—During the prevalence of cholera in a certain locality, the Chief of the Local Authorities shall prohibit all religious celebrations, public amusements, the opening of markets and all proceedings that will bring together an assemblage of people from other places.

ART. 15.—At the outbreak of cholera, the Chief of the Local Authorities shall immediately establish temporary hospitals in the towns and villages within his jurisdiction, for the purpose of the isolation and of the treatment of cholera-patients. Persons found in hotels or other places where cholera has broken out, shall also be removed to those hospitals in order to be thoroughly disinfected.

ART. 16.—The Sanitary Committee shall paste at the door or entrance of every house or gangway of every ship infected with cholera, a piece of paper, bearing in large characters "Cholera here," and shall prohibit any outside communication, except for business absolutely imperative.

ART. 17.—The special attention and care of the Sanitary Committee are required in regard to the removal of the discharges of patients. The family or attendants of the patient must be informed as to how to dispose of the discharges, and they must be particularly warned not to throw them into water-closets, drains, garbage-depositories, manure-heaps, farms, gardens, rivers, or canals.

NOTE:—As for the manner of disinfecting and of removing the discharges, see the Appendix.

ART. 18.—The Sanitary Committee shall take charge of the disinfection of houses and ships infected with cholera. Clothing and bedding must also be disinfected and if they are soiled by the discharges, the Sanitary Committee shall buy them, with the permission of the Chief of the Local Authorities, and either burn or bury them, according to the mode best fitted for preventing a further spread of cholera.

NOTE:—See the Appendix.

ART. 19.—When cholera prevails or is expected to appear, the Sanitary Committee must first look to general cleanliness and especially to the state of water-closets, garbage-depositories, manure-heaps, drains, ditches, and gutters; but they must bear in mind that the cleaning and removing of drains, ditches and garbage-depositories, during the prevalence of cholera, may sometimes produce results much worse than if they were left uncleaned; therefore the use of disinfectants or of chemical

substances which prevent fermentation, is especially recommended in some cases.

NOTE:—See the Appendix.

ART. 20.—It is forbidden to transport a cholera-patient from one place to another; infected persons are prohibited from travelling; the clothing, bedding or any other article which has been in contact with a cholera-patient or with the body of a deceased one, shall not be sent out of the house nor used by other persons, unless they have been thoroughly disinfected. All other careless acts, by which the pestilence may spread, are prohibited.

ART. 21.—The Chief of the Local Officers shall make any suitable regulations in accordance with these instructions, for the transporting of cholera-patients to the hospital or to their own houses. He shall prohibit any disorderly conduct in transporting such patients, and he shall also prohibit the employment of ordinary vehicles and furniture, daily used by the public. The special vehicles, chairs and beds used for the transporting of cholera-patients, shall be disinfected each time they have been used. He shall make regulations as to the mode of transportation or of burying of the discharges, clothing and bedding of cholera-patients.

NOTE:—See Appendix hereto.

ART. 22.—The body of a person that has died of cholera, shall not be transported to any place, except to the burial ground fixed by the Chief of the Local Officers, and in transporting the same, the nearest road shall be taken and the vehicles used for this purpose shall not be again used by a living person.

ART. 23.—If a ship that plies between any of the ports of this country has a cholera-patient on board or has had one who has died of it, within ten days previous of her arrival, the master of the ship shall immediately report the fact to the District Officers (*Kucho* or *Kocho*) or to the Sanitary Officers of the place of arrival, and he shall moor his ship at the place indicated to him by them.

The ship shall entirely cease all communication with other ships and shall not be allowed to go to any another place, unless she has been disinfected and has obtained permission from the Sanitary Committee so to do.

ART. 24.—In places where cholera prevails, shops for the sale of disinfectants shall be established.

Where there are apothecaries, they shall be ordered to sell the disinfectants; but where there are none; temporary shops shall be opened,

and a uniform price for disinfectants shall be fixed by the Sanitary Committee, who shall explain at the same time, the mode of using them.

Poor people may be supplied with disinfecting chemicals, free of charge.

APPENDIX

to Instructions concerning precautionary measures for the prevention of cholera.

DISINFECTANTS and DISINFECTION.

(A.)—GENERAL REMARKS.

Neither an exact knowledge of the true cause of cholera, nor any special description of the principle by which cholera is propagated, is obtainable at present; but the opinion universally accepted by medical men is, that specific contagious poison resides in the matter vomitted and discharged by patients.

The discharged matter does not propagate the pestilence immediately; but after a short interval of time, when it is in a state of decomposition or fermentation, and moreover, the spread of this disease is strengthened, if the discharges of patients are allowed to become mixed with other matter, which itself is in a state of decomposition or fermentation; therefore the mixing of the discharges with the feces and urine of other persons, and the throwing of them into ordinary water-closets, garbage-depositories and drains, ought to be strictly forbidden, in order to prevent a further spread of the disease.

The contagious poison is produced by decomposition or fermentation of the discharges in different manners:—

1° Through the medium of drinking water. When the discharges are buried in the ground, the poison often percolates into the sources of drinking water, rivers, streams and permeates into the neighborhood.

2° Through the medium of food. Meat, fish and shell-fish may contain the poison; vegetables may have been cultivated with manure infected also with the poison, or some small insect or worm may be in the meat, or vegetables which carries the poison with it.

3° By a person entering into and using a water-closet containing choleraic-discharges.

4° By contact with persons, with bodies, clothing or bedding which are infected with the poison. It is therefore almost impossible to check the outbreak of cholera but by means of quarantine regulations both on land and sea, and the process of disinfection has recently become the most important of all the measures for the prevention of cholera. Its benefits are proved by experience in foreign countries. Considering its great importance, the disinfection of choleraic-discharges and of every thing infected with its poison, ought not to be left to people's will, but must be recommended, and if necessary, made compulsory by the Government for the benefit of people at large.

Rigidity in the system of disinfection is absolutely necessary for preventing the spread of cholera. Disinfection has not only the power of checking the spread of cholera-poison, but it will—when strictly carried

out with other hygienic measures—even destroy a further development and extinguish the source of the pestilence. Many foreign countries have adopted of late the system of isolation and disinfection, notwithstanding the heavy expenses thereby entailed.

The most efficacious disinfectant known at present has been proved to be Carbolic Acid. The system of disinfection has much been improved since the discovery of this substance in late years. Sulphurous acid comes next in the list.

A mere application of ferrous sulphate or of other metallic salts has the power of preventing fermentation and of neutralizing offensive odours; but it is not strong enough to destroy the poison.

Ferrous Sulphate may be used mixed with Carbolic Acid.

(B.)—DIRECTIONS FOR THE PREPARATION OF DISINFECTANTS.

1°—Crude Carbolic Acid.—This is more or less a coloured liquid, containing from forty to sixty parts of phenol (phenic acid). It is not wholly soluble in water. It possesses a disagreeable odour, when mixed as usual with other impurities.

2°—Carbolic Acid Powder.—This is a mixture of Crude Carbolic Acid with charcoal, sand, ashes and saw-dust coarsely powdered.

3°—Crystallized Carbolic Acid (Phenol or Phenic Acid).—This is a colourless, or slightly coloured, crystallized substance, wholly soluble in

forty parts of water.

4°—Carbolic Acid Water.—This is a solution of one part of the Crystallized Acid in one hundred parts of water.

5°—Carbolic Acid Solution.—This is a solution of two parts of the Crystallized Acid in one hundred parts of water.

6°—Mixed Solution of Ferrous Sulphate and Carbolic Acid.—This is prepared by mixing one kilogram of Ferrous Sulphate with fifteen litres of water, and by adding to this mixture, three hundred to three hundred and fifty grammes of Crude Carbolic Acid. As it can not be kept long without losing its power, this mixture should be prepared as wanted.

7°—Carbolic Acid Vapour.—Either Crude or Crystallized Carbolic Acid may be used, according to circumstances. The vapour is produced by heating the acid in a porcelain dish, over a gentle fire or over an alcohol lamp.

8°—Sulphurous Acid Gas.—This is produced by burning sulphur or brimstone in a fire.

(C.)—DIRECTIONS FOR THE APPLICATION OF DISINFECTANTS.

The matters to be disinfected are :—

1° All the matter vomitted and purged by cholera-patients, clothing, bedding, pieces of paper or linen, all other matter infected with the cholera poison and the bodies of persons who have died

of cholera.

2° Houses, rooms, cabins of ships, hospitals, camps, in which cholera-patients have either resided or stayed for a time.

3° Water-closets, garbage-depositories, drains, ditches, etc., which require special care for cleanliness.

I.—MATTERS DIRECTLY INFECTED WITH CHOLERA DISCHARGES.

(a.)—VOMITTED MATTER AND EXCREMENTAL DISCHARGES.

All vessels to be used for receiving cholera discharges should be previously filled with one *go* of the mixture No. 6* (the mixed solution of Ferrous Sulphate and Carbolic Acid). After the discharges, the vessel should at once be taken out of the room, and the contents should be removed according to the following rules and washed clean, so that it may be filled again with the same quantity of the mixture No. 6 and brought back to the room.

Discharges, the liquids used for cleaning the vessels and infected paper or linen must not be thrown into a ditch, drain, manure-heap, garden or field, for they will produce the spread of the pestilence when mixed with other matter in a state of decomposition or fermentation. Nor should the contents of the vessels be emptied or thrown into water-closets, where they could

* The number indicates each of the disinfectants, previously mentioned.

be mixed with the excretions of uninfected persons. All the discharges should either be buried deep in the ground or burned in a hole in the ground. When they are buried, plenty of Carbolic Acid Powder No. 2 should be thrown over them, and the hole be filled up with earth and sods.

The burning of the discharges is highly recommended, for this is a most efficacious disinfection. This is done in a shallow hole dug in the ground, in which some dry straw or shavings is put; then the discharges are thrown into it and some other straw or shavings is again spread over the discharges and the whole is sprinkled with some kerosine-oil and lighted with fire. Oil should be sprinkled constantly, over the mass so that the fire may not become feeble or extinct, before everything has been burned thoroughly. When all is reduced to ashes, the hole should be filled up with earth and sods. It is not necessary to burn each discharge separately, but it may be collected in the hole and burnt once in a day.

The discharges and all other infected matter, should be buried without the distance of seven *ken* (12.75 metres) from house or well, neither should they be buried in too large a quantity in one hole.

Where there is no place for burying or burning the discharges near the house of patients, they may be left disinfected, as already mentioned, and shall be carried away two or three times in a day, to the places designated for burying or burning. The Sanitary Committee should previously select and designate a proper place for such purpose.

When the discharges are sent to this place, the

Sanitary Committee shall destroy them either by burning or burying, as already mentioned. Infected paper or linen should be burnt together.

(b.)—CLOTHING AND BEDDING.

Clothing capable of being washed shall be put into a tub containing solution of Carbolic Acid No. 5 and kept immersed a day and night, after which it is to be taken out of the tub and boiled in hot water for four minutes. It is then to be washed in cold water and dried.

Clothing incapable of being washed without damage shall be fumigated either by Sulphurous Acid Gas No. 8 or by Carbolic Acid Vapour No. 7 according to the nature of the clothing.

The outside clothing of those, who have been contact with a cholera-patient or his remains, should be disinfected either by sprinkling it thoroughly with the solution of Carbolic Acid No. 5, or by rubbing it with a sponge, soaked in the same solution.

The clothing should then be exposed to fresh air and finally brushed off carefully; but when the clothing is stained with cholera discharges, it must be put through immersion or fumigation as already explained.

The bedding should also be put through the same process of disinfection as the clothing.

Bedding incapable of being washed without damage, must be put through the fumigation process by the use of Carbolic Acid Vapour No. 7, or by rubbing it with a sponge soaked in the solution of Carbolic Acid No. 5.

All clothing, bedding, mats, etc., which may be badly stained with cholera discharges, should be purchased and destroyed by the Sanitary Committee.

(c.)—FURNITURE.

Wooden furniture and wooden utensils should be disinfected by rubbing them with a sponge soaked in Carbolic Acid Water No. 4 and afterwards washed with soap and water and finally dried; but such furniture as is incapable of being washed without damage, should be fumigated either with Sulpurous Acid Gas No. 8, or with Carbolic Acid Vapour No. 7.

The best method for the disinfection of furniture and utensils, is to fumigate them first in the room where the patient has been treated and to wash them afterwards with Carbolic Acid Water No. 4.

(d.)—BOOKS, NEWSPAPERS, ETC.

Books, Newspapers and the like, which have been kept in the room of patients, should be opened and fumigated with Carbolic Acid Vapour.

(e.)—CHIRURGICAL INSTRUMENTS, ETC.

All the surgical and obstetrical instruments, and all the tools should be thoroughly washed with Carbolic Acid Water No. 4.

(f.)—FOOD.

All infected or suspected food must be thrown away; but the process for the disinfection of food is sometimes left to the care of the Sanitary Committee.

(g.)—DEAD BODIES.

The bodies of persons who have died of cholera, must be removed as soon as possible, wrapped in cloth, thoroughly soaked with the solution of Car-

bolic Acid No. 5.

During this time, the uninfected persons should be kept away. The coffin should be filled with a large quantity of the Carbolic Acid Powder No. 2 and the solution of Carbolic Acid No. 5, should be sprinkled over it from time to time.

II.—HOUSES, SHIPS, ROOMS, AND HOSPITALS.

(a.)—ROOMS, HOUSES, ETC.

The rooms wherein cholera-patients are treated or their remains are left must be fumigated with Carbolic Acid Vapour No. 7. The Crystallized Acid must be used and the amount of Vapour must be so regulated that the air in the room does not become too acrid for patients.

After the recovery of a patient or the removal of his remains, the room must be thoroughly fumigated, by burning a large quantity of sulphur and by closing all the windows and doors; and the room should be left in this state for from six to eight hours. After this, the windows and doors shall be opened and everything in the room should be dusted in the open air.

But previous to the fumigation of the room, articles of gold and silver, writings, pictures, paintings, silk-articles, etc. should be removed from the room; and some other suitable process be taken for the disinfection of these things. After the fumigation, the wooden materials of the room, such as ceilings, windows, doors,

etc. should be sprinkled or sponged with Carbolic Acid Water No. 4, and washed thoroughly with soap-water and aired.

(b.)—VEHICLES FOR THE TRANSPORTATION OF PATIENTS.

Boats, carriages, chairs, etc. employed for the conveyance of cholera-patients or of their remains, must, after every time they are used, be washed with Carbolic Acid Water No. 4; or fumigated with Carbolic Acid Vapour No. 7, or with Sulphurous Acid Gas No. 8.

Everything used in the boats or carriages, should also be disinfected according to the process already explained.

III.—WATER-CLOSET, CARBAGE-DEPOSITORIES, DRAINS, ETC.

(a.)—WATER-CLOSETS.

The vaults of water-closets should always be kept clean and partly filled with the mixture of Ferrous Sulphate and Carbolic Acid No. 6. Whenever an offensive odour arises, this mixture should again be sprinkled about them.

(b.)—GARBAGE-DEPOSITORIES.

These should be cleaned previous to the outbreak of cholera, for the cleaning and removing at the time the pestilence is prevailing, is very likely to be pernicious, on account of obnoxious gases stirred up from a

state of decomposition or fermentation; therefore, the garbage-depositories should be left untouched and covered with Carbolic Acid Vapour No. 2 from time to time. If the garbage-depositories must be removed, they must previously be sprinkled with the mixture of Carbolic Acid and Ferrous Sulphate No. 6.

(c.)—DRAINS AND DITCHES.

The drains and ditches must be emptied and well cleaned every day; but when there is an accumulation of filth, they should be disinfected with the mixture of Carbolic Acid and Ferrous Sulphate No. 6, or by Carbolic Acid Water No. 4.

Home Department Notification No. 91, marked 'B.' to *fu* and *ken*:—

It is hereby notify to every *fu* and *ken* that the accompanying special Instruction, which was issued on the 4th instant to such *fu* and *ken* as have ports open to foreign trade within their confines, shall also be universally observed by the authorities of all other *fu* and *ken*, so that they shall all adopt the same measures as are described in that Instruction, whenever any of our men-of-war or of our transport-ships enters a harbour within their jurisdiction.

(Signed) OKUBO TOSHIMICHI,
MINISTER OF HOME AFFAIRS.

The 6th day of the 10th month of the 10th year of Meiji,
(6, October, 1877.)

[ACCOMPANIED.]

It is hereby instructed to such *fu* and *ken* as have ports open to foreign trade within their confines, that the following regulations shall be

observed by their Authorities.

Since the issue of Instruction No. 79, dated the 27th of the 8th month (27th August), the Authorities are ordered, on account of the prevalence of cholera, to inspect mail steamers and merchant vessels coming to, or departing from the ports within their jurisdiction. It is perhaps necessary to instruct the Local Authorities as to the inspection of foreign ships, of foreign settlements in the open ports and also of our men-of-war and transport-ships which are bringing the troops from the seat of war.

In the former cases, it is necessary to consult with, and obtain the co-operation of Foreign Consuls and Medical Officers, in accordance with the provision made in the 1st to the 6th articles of the Instructions regarding precautionary measures for the prevention of cholera (Instructions No. 79, marked 'B.')

In the latter cases, the Medical Officers and Captains of the Army or Navy shall be consulted before the inspection by the Local Authorities.

The Local Authorities are required to act, in this matter, with as much prudence as possible and to avoid the occurrence of any misunderstanding with the officials above named.

They shall apply for the decision or advice of the Minister of Home Affairs, in all difficult questions which may occur and which cannot be settled by themselves.

(Signed) OKUBO TOSHIMICHI,
MINISTER OF HOME AFFAIRS.

The 4th day of the 10th month of the 10th year of Meiji,
(4th October, 1877.)

END.

ADDENDA:

PAGE.	LINE.
20,	17.—Add "3 remained uncertain" to the end of the line.
22,	6.—Insert "178 remained uncertain" after the word died.
20,	8.—Add "145 remained uncertain" to the end of the line.

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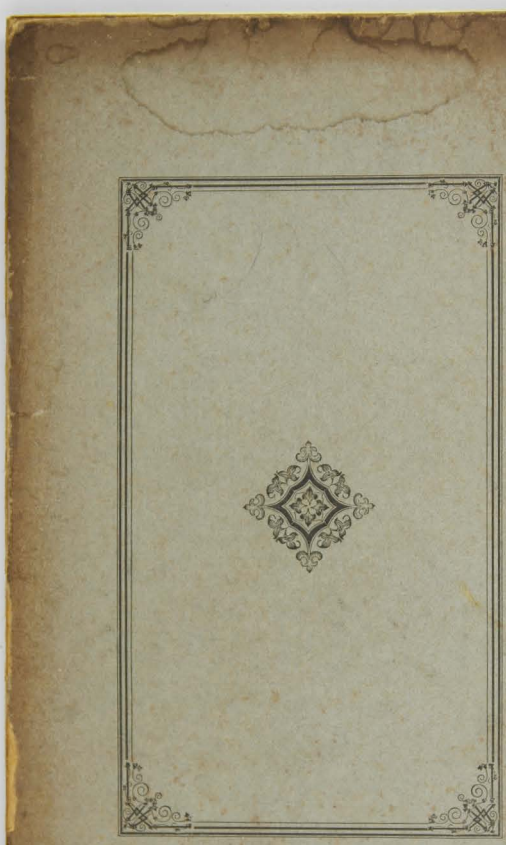

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