

APPENDIX E.

MEXICO.

(1) ADDRESS OF SEÑOR DR. DON EDUARDO LICÉAGA ON THE SUBJECTS TO BE DISCUSSED BY THE INTERNATIONAL SANITARY CONVENTION.

GENTLEMEN: Before commencing the discussion of each of the matters to which the programme before us refers, I believe that we should make the following formal declaration:

None of the questions which were decided by the International American Conference held in Mexico, and which terminated its sessions in January of the present year, should be submitted to the present conference. If this resolution, which has already been approved by the seventeen Republics represented at the said conference, and which has been indorsed by delegates duly authorized by their respective Governments, should not be adopted, we would take a backward step and would thereby weaken the bases which we shall use as the foundation of our subsequent resolutions.

We should be governed by the *res judicata* doctrine if we would prevent our respective Governments from being accused of inconsistency because they accepted a resolution at the International American Conference which they now seem inclined to nullify at this conference, the sole object of which, in my opinion, is to give a concrete form to the plans outlined in the resolutions passed on January 29 of the present year.

Now, therefore, our commission respectfully requests that the above declaration be adopted.

The reason why I have requested this preliminary declaration is because the first question to be discussed at this conference, in accordance with article 7 of the programme, reads as follows:

(a) A national notice of the appearance of an epidemic disease.

The fourth resolution adopted by the conference in the part which refers to this matter reads:

Further, that each and all of their respective health organizations shall be instructed to notify promptly the diplomatic or consular representatives of the Republics represented in this conference, stationed within their respective territories, of the existence or progress, within their several respective territories, of any of the following diseases: Cholera, yellow fever, bubonic plague, smallpox, and of any other serious pestilential outbreak. And that it shall be the duty of the sanitary authorities in each port, prior to the sailing of a vessel, to note on the vessel's bill of health the transmissible diseases which may exist in such port at that time.

As we have just seen, the principle is accepted, and by the final part of the said resolution the usual practice of noting on the bills of health the contagious diseases which exist in the port at the time of the sailing of the vessel is confirmed. On the other hand, the obligatory declaration of the contagious diseases existing in any locality, which

declaration must be made by the physicians before the proper sanitary officer, to the end that he may take steps to avoid the development of said diseases or the propagation thereof, a declaration, we should add, which in all countries is considered as an improvement in public hygiene.

Since all nations regard this as an improvement, we should endeavor to have it so considered by the international sanitary police, because we think that what is regarded as a duty of the individual toward the authorities of his own country, can not fail to be the duty of nations toward each other.

Therefore, our commission respectfully requests that it be emphatically stated that the convention adopt the obligatory declaration of the aforesaid diseases among nations in the terms set forth by the conference in Article IV already referred to.

(b) Principle on quarantine concerning certain diseases.

In this manner the discussion of quarantine matters is announced in the programme.

In this meeting we should consider the question from two points of view, viz, (1) from a strictly scientific point of view, and (2) in accordance with the agreements already made at the conference held in Mexico.

As to the first point, it should be stated that an agreement has already been made among all hygienists, both as to the essential part of the question and as to the terms in which the same shall be set forth.

The object of quarantine is to protect the country from the contagious diseases which may be carried to her ports by the vessels coming from other countries, where at the time of sailing some contagious disease existed.

This right of national protection, like the right of individual protection, is based, doubtless, on the principle both of individual and national preservation, and if the steps taken for the protection of a country should only be governed by said principle, they would result in the closing of the ports and in the interruption of all communication with the infected places, as has been the case before. The commercial interests of a nation which should take these steps would be seriously affected, and it is from this consideration that the said restriction is derived.

If these restrictive measures, however severe they may seem, should be sufficiently effective to interrupt the communication among persons who reside at the port or city which is desired to be protected, as well as those who reside or are stopping at the city which may be infected, they would of course avoid said restrictions; but experience has shown that no prohibitory measure is sufficient to prevent individual or collective interest from evading the vigilance of the authorities whose duty it is to prevent the breaking of the intercommunication. Therefore, if the interest of the nation which proposes said measures constitutes a necessary limitation to said restrictive measures, and if, on the other hand, such measures are inefficient, it is evident that they should not be adopted.

In the course of time, science has allowed the doctrine thus to be established.

To protect the interests of public health, without injuring, or injuring the least possible, the interests of commerce and free communication among men.

Thus is established the principle as required by the question under discussion. Let us now see if the scientific knowledge we now possess allows us to propose a final solution of this question.

I think that said knowledge permits us to give a decisive answer, at least with regard to certain diseases. If the cause of all diseases and the manner in which they were transmitted from a diseased person to a healthy one were unknown, we could readily understand that all the restrictions should increase and that precautions should be multiplied on all sides, in order to prevent the arrival of an enemy whose means of an attack were unknown; but it is not so at present. We know, in a positive way, how the cholera is propagated, how typhoid fever is spread, how the plague is communicated, and there is an infallible way of knowing the transmission of yellow fever, and we likewise know the way malaria is transmitted.

From the moment one is in possession of this knowledge, the way of protection ceases to be an empiric one, as it has been heretofore. There is no longer any reason to close any port; there will be no more forty days' quarantine imposed, neither thirty, twenty, nor fifteen days' quarantine, because there is no scientific reason to authorize or support such rigor. Such long delays must and should not exist, because they are contrary to the teaching of science, because they are contrary to the interests of the nation that should impose them, and because they unnecessarily hinder the free traffic of men and, therefore, they should not exist.

But instead of entering into a statement of details, let us come to the concrete study of a certain disease, as required by the question under discussion. As an example, let us take into consideration only that disease which interests all of us, that is to say, in which the United States and Mexico, as well as the West Indies, Central America, Chile, and Brazil are equally interested. I refer to yellow fever. Let us, then, study the concrete question in the light of the principle which we have already established and in the light of modern science.

Said principle requires us "to protect the interests of public health without injuring, or injuring the least possible, the interests of commerce and the free communication of men."

Let us now see what science teaches us. Science tells us that there is a species of mosquito called "*Stegomyia fasciata*" which bites yellow-fever patients, and that after twelve days, at the least, the mosquito itself becomes infected; that the mosquito may remain infected from twelve days (which is the minimum period) to three months (which is the maximum period); that if the infected mosquito bites a man who was healthy until that moment, and who was not immune, it will produce yellow fever in a period varying from three to five days. All these data have been obtained by experiments, simplifying the phenomenon in order to master it better and to remove therefrom all that could render it obscure or doubtful. From these experiments the following conclusion has been drawn:

The period of incubation of yellow fever lasts from three to five days.

Here we have the only period in which said disease may remain unknown, and here we also have the only period which should be counted in carrying out the observation of a person of whom it is feared that he may have the incubation of yellow fever. Five days! Just think of it! Only five days of observation from the moment a per-

son is exposed to the contagion to the moment in which the vigilance exercised on him should cease!

How should this time be counted? This question may be considered as answered in advance. As a matter of fact, a person can only be infected in a port where yellow fever exists, the last day that he was in such a port, because had he been infected before, the disease would manifest itself while said person would still be on board, and on arriving at the port would already be ill, and in such a case there would be no possible doubt of his illness, inasmuch as, on making the official call, the physician would find a sick person. Hence the time should be counted from the day of the sailing of the vessel from the last port to the date of the arrival at the next one. If there should be any such case, the quarantine of the passengers who are not immune should commence that day, and that of the passengers who might have been contaminated by the sick person should continue for five days; but only (and this should be distinctly borne in mind) in case it should be proved that there existed on board the *Stegomyia fasciata* mosquito, which is the only one that up to the present time may be considered as a transmitter of the contagion, since neither the ingestion of the infected mosquito (as has been shown by the experiments made in Vera Cruz last summer) nor the time he remained near a sick person, or the fact of being confined during whole days in the same room with said sick person, or the fact of taking his meals there, or the use of the garments stained by the diarrhea, nor even the direct inoculation of the yellow-fever patient's blood produces the disease. Therefore, if there is not the *Stegomyia fasciata* mosquito on board, the immune persons should not be isolated or watched as suspicious passengers.

The study we have just made proves that the transmission of yellow fever is made from the ill man to the healthy man by the medium of a special kind of mosquito which the yellow-fever patient must have infected at least twelve days before.

Hence arise the two conditions essential to the contagion, namely, *a yellow-fever patient and a special mosquito which transmits the disease*. Therefore, in the absence of one of these two factors, the phenomenon called transmission can not be effected.

Here we have the light which is to guide us in the application of this principle.

Now, what course shall we follow when a vessel arrives from a port where yellow fever exists in the epidemic or even in the endemic form?

Send the physician of the board of health on board said vessel. This official examines the passengers and the crew and inquires whether any of them is ill. In case there should be any doubt, he proceeds to investigate or determine, by the use of his thermometer, whether the suspected person has fever. Should there be any person with fever, he should immediately isolate him and send him to the lazaretto or pesthouse or to any isolated place available at such port.

If there should be no sick persons on board, he should investigate who are the passengers who are not immune, and should isolate them in order to issue them their passports. This document places the bearer under the vigilance of the authority of the place where he goes to establish his residence. Such document must state that the passenger is not immune; that so many days have elapsed since he sailed from the suspected port; that he should be watched until a certain day; that

if within such time he should not be taken sick, he should be declared free, and that should he be taken sick, he should be immediately isolated and the proper sanitary officer be notified of the fact.

Therefore, we are now sure that the passenger who arrived ill is entirely isolated and that the suspected person is placed under vigilance. Now, what shall we do with the vessel that brought a sick or suspected person, or which arrived having neither a sick nor suspected person on board, but which only cleared from an infected port?

According to the doctrine at present accepted it is necessary, as we have already stated, that there be a yellow-fever patient in order that he may infect a mosquito of a special kind; or, in other words, that there be a mosquito of that kind infected at least twelve days before to be able to infect those persons who are not immune—that is to say, in order that said mosquito may be considered dangerous.

Therefore, if the vessel in question has no sick or suspected person on board, there disappears, so far as this vessel is concerned, one of the factors of the contagion, namely, the yellow-fever patient. But there may remain the other factor, viz, the mosquito infected with that disease.

What shall we do, then, with this vessel, which we can not regard as infected, so far as this particular case is concerned, unless it be owing to the presence there of the "*Stegomyia fasciata*" mosquito?

Therefore, it is no longer necessary to think of destroying but one single thing, namely, the mosquito. All the other factors may be considered as harmless, and, consequently, it is unnecessary to take them into consideration, since only the mosquito is the dangerous factor or the one that might become dangerous. Therefore, let us proceed to destroy it. How? This also has been determined by experience and by the experiments made.

The best insecticide for the *Stegomyia fasciata* is tobacco smoke; the second best insecticide is the pyrethrin, and the third best is sulphur, when in the state of sulphurous acid. The question is to make these tobacco, pyrethrin, or sulphurous acid charged vapors reach the places in the vessel where it is known or suspected that the said mosquitoes exist, such as the hull, the berths, the corners, the ceilings of the apartments, and other places where it is known that mosquitoes are generally to be found, for instance, on the window panes, even during the daytime, because, as is well known, they are always seeking the light, and they should be destroyed wherever found by the means already indicated. The said vapors kill a great many of them, but some of them are stunned only, and hence the necessity of sweeping them from the floor with brooms and burning them afterwards. But while in the vessel the mosquitoes may have laid their eggs in some part thereof, and therefore it is necessary to search for said eggs or the larva that may have been produced. Upon this subject science once more enlightens us.

Entomologists have discovered that the *Stegomyia fasciata* mosquitoes lay their eggs in clean rain and potable water; that the larva are produced therein by millions; that said larva in order to live must come to the surface every minute to breathe the atmospheric air, and that if a thin layer of petroleum is spread on the surface of said water, the larva can no longer take the oxygen from the air and, consequently, die of asphyxia. We can then destroy the larva by the following means:

The deposits of potable water are emptied, then they are washed,

then they are refilled with water free from larva, and are kept covered in order that any mosquitoes which have escaped destruction may not lay their eggs therein.

In order to prevent the laying of the eggs in the deposits that can not be covered, or in the pools that can not be gotten rid of at once, they should be covered with a thin coat of petroleum.

As has just been shown, to disinfect a vessel that may be thought to be infected on account of having had on board a yellow-fever patient or infected mosquitoes, it will be sufficient to have the patients (should there be any) to leave the vessel, destroy the existing mosquitoes by means of fumigation, wash the potable-water deposits in order to eliminate therefrom the larva, and destroy them afterwards.

How long would these operations last, supposing them to be carefully and properly carried out? To make the inspection of the passengers and crew, and then to disinfect the vessel in the way we have just indicated, can not require more than from twenty-four to thirty-six hours.

As a conclusion of what has been hereinbefore stated, we can present this resolution, in accordance with the second one of those accepted by the Second Pan-American Conference, on the 29th of January, 1901:

Resolved, That with reference to yellow fever, the detention of vessels at the ports of arrival shall not exceed—

- (a) Twelve hours for the visit of inspection, counting from the time of arrival; and
- (b) Of a period which shall not exceed twenty-four hours for disinfection, after the inspection of the passengers and crew.

From a practical point of view, at the present time the question of yellow fever is the paramount question; and the measures that may be applied to destroy the same will doubtless be those of the greatest interest to commerce, navigation, and the free transit of men. But since eventually it may become necessary to take some measures against the cholera, the bubonic plague, or smallpox, it will be desirable to study them, however slightly, in the light of the principles which we have before enunciated, and of the data which science furnishes us at the present moment.

As the principle does not change, whatever the disease may be, with regard to the three diseases we have just mentioned, and since we have already set forth the method, as we understand it, we shall now only take into consideration the scientific aspect of the question.

The question of cholera, in that part which most interests us, may be reduced to the following conclusions:

That cholera is propagated by the action exerted on the organism by a special germ discovered by Koch, and which is called comabacillus; that this germ lives in the digestive apparatus, and therein finds means of propagation when there exist diseases which affect the digestive juices, but which is harmless when the digestive conduits are healthy; that it can be preserved in potable waters; that it comes out of the organism together with the excrements of the stomach and the intestines; that it can preserve its activity in water where they discharge their excrements, and also in the garments which are stained by them; that the resources which the science of bacteriology can utilize render it possible to discover them and to make thereby the diagnosis of the disease; and finally, that physical agents and certain chemical agents, when applied in a certain manner, destroy them.

From the above data it will be possible to determine the rules to be followed for the treatment of the vessels, and these rules, which have

been sanctioned by experience, were utilized by the sanitary convention held at Venice, and were improved and newly approved in the convention which met at Dresden in 1893, and, besides, these were the very rules which we used as the basis of our marine sanitary regulations, which have been in force since 1894, and which also have been the cause of the improvements we have in view, in the sanitary code which we have now in force in our country.

According to this plan against the cholera, the prophylactic measures, as well as those against yellow fever and the plague, consist: (1) In the sanitary medical inspection; (2) in placing the suspicious passengers under quarantine and isolating them, should they become ill; (3) in the isolation of the patients until they have completely recovered in the lazarettos or isolated places that may be available in the locality; (4) in the disinfection of the ships, baggage, and merchandise that may require it, and (5) in the destruction of the animals which transmit the contagion. Consequently (and following strictly the spirit of the resolutions approved by the second Pan-American conference, held in Mexico, concerning the international sanitary police, approved on the 29th of January of the current year), two kinds of detention are established, namely, *that of inspection and vigilance and that of disinfection.*

How shall we put in practice these rules as regards cholera? Simply by bearing in mind the scientific knowledge to which we have already referred, namely:

On the arrival of the infected vessel—that is to say, the vessel carrying sick persons on board—the medical inspector discovers the fact and proceeds at once to absolutely isolate the patients, until they have entirely recovered.

Are there any suspicious patients; that is to say, persons suffering from diarrhea? If so, they should be placed under vigilance while the bacteriological examination of the excrements, the water, etc., is made. Should this examination give positive results, the patient should be isolated the same as in the former case, or else to give him his passport in which, besides the name of the passenger and a general description of him, it should be stated the number of days he has been on the voyage from the infected port, or the number of days which have elapsed since the last case of said disease on board, and, finally, the date on which the vigilance shall cease.

If there should be any sick person on board, or there has been none during the voyage, and, at the time the board of health officer calls, none of the passengers are found to be even slightly ill of the stomach or intestines, then the inspection as well as the observation will cease, and the vessel will then be taken into consideration.

In accordance with the scientific knowledge, to which we have already referred, the cholera germ may be destroyed by the action of steam, under pressure, and this treatment may also be applied to soiled garments. It can also be destroyed by the action of sulphurous acid by means of a solution of corrosive sublimate in the proportion of 1,000. Therefore, fumigation should be employed or the aspersion with the solution of corrosive sublimate, and the latter will be made by means of a special apparatus in the berths, on the beds, floors, carpets, water-closets, or, in other words, in all places that may have received the excrements. The disinfection in articles of a delicate nature or that may be affected by other substances may be made by means of the aldehyde formula. All the deposits should be emptied

and washed with disinfecting substances which are known not to be poisonous to human beings, and shall be substituted by pure water. If these operations are properly carried out, the vessel may be regarded as thoroughly disinfected, and can not be submitted to any detention or restriction whatever.

From the above we come to the conclusion that, concerning cholera, the prophylactic measures shall consist: (1) In the sanitary medical inspection in order to obtain the knowledge that there are no cholera patients on board the vessel; that there are no persons suspected of suffering from cholera because some passengers have been found suffering from vomiting or diarrhea, in which case it will be necessary to make a bacteriological examination of the excrements; (2) in placing the suspected passengers under vigilance and in isolating them in case they should be taken sick. If from the bacteriological examination it should be found that there is no coma-bacillus in the excrements, then the passengers may be immediately declared free, provided they state where they intend to reside, and a passport will be furnished them in which shall be stated the following data: The name and general description of the passenger, whence he comes, the date on which he sailed from the infected port or the date of the last cholera case that took place on board, and the date on which he will cease to be under the vigilance of the proper authority; and (3) the isolation of the patients until they entirely recover in the lazarettos or isolated places available at the locality. It will be readily understood that, of course, in this case the following shall be included: Any sick person found on board at the time of the arrival of the vessel; those persons suspected because there have been found some cholera bacillus in their excrements, and also these suspected persons in those cases in which, while being under vigilance, the disease manifests itself.

Before I introduce any resolution I should mention other data which the United States Marine-Hospital Service uses as a basis for quarantine measures.

The ordinary duration of the cholera incubation is from three to five days, although some cases have been mentioned which occurred during the epidemic at Hamburg in which the duration of the incubation was twenty-four hours. The time necessary to make the bacteriological examination to discover the existence of the cholera germ is twenty-four hours, although there are times in which a much longer period is required. Taking into consideration what has been above stated, and also taking as a basis the second conclusion arrived at by the Second Pan-American Conference on International Sanitary Police, the Mexican commission respectfully proposes:

Resolved, That so far as Asiatic cholera is concerned, the detention of the vessels at the ports of arrival should not exceed—

(a) Twelve hours for the visit of inspection and observation, counting from the hour of the arrival of the vessel.

(b) And a maximum period of twenty-four hours for the disinfection after the medical inspection of the passengers and crew has been completed. After this the vessel shall be declared free.

As regards the passengers, as we have already stated, those that are ill should be isolated, always outside of the vessel, until the bacteriological examination of those who require it is finished. Once the examination is completed, if it should be found that there is cholera bacillus, the suspected passengers should be isolated just as if they were attacked by cholera. Should the bacteriological examination give a negative result, the passenger should remain placed under vigi-

lance, and then the passport already referred to is furnished him, leaving him in absolute liberty at the expiration of the fifth day of observation, when no disease has manifested itself.

The same remarks might be made concerning the bubonic plague, but as this statement has already become rather long, contrary to my wishes, and since, aside from the remarks made concerning yellow fever and cholera, there would be nothing to be added but the natural history of the germ which produces it and the data which are important and interesting from a practical point of view, I will only refer to said data, which are the following:

(1) The duration of the incubation of the bubonic plague is from three to five days, and very seldom exceeds seven days. The bacteriological examination in order to discover the germ lasts from three days to one week.

(2) Rats are the ordinary medium of the transmission of the bubonic plague. This latter circumstance has compelled us to include in our plan of improving the sanitary Mexican code the fifth provision, already mentioned, which reads as follows:

* * * 5th. The destructions of the animals which produce the contagion.

On the above assumption a resolution similar to the previous ones relating to the plague might be prepared, but inasmuch as all the resolutions are similar, because all of them tend to the accomplishment of this capital idea, namely, to take the passengers or the suspected passengers out of the vessels; to isolate them and to place the latter under observation until it is determined whether they carry with them or not yellow fever, cholera or the plague, and then to disinfect the vessel in order to declare it free afterwards.

The convention might accept the following sole conclusion to decide the question relating to quarantine:

Resolved, That in matters relating to yellow fever, cholera, or the bubonic plague, the detention of vessels shall not exceed—

(a) Twelve hours for the visit of inspection of passengers and crew, counting from the time of the arrival of the vessel. Should the vessel arrive after sunset, the twelve hours shall be counted from the time the sun rises on the following day, and

(b) The detention for the purposes of disinfection shall not exceed twenty-four hours after the termination of the visit of inspection.

The detention of the passengers after the visit of inspection of the vessel is over, and when they are already out of the vessel, will be as follows: For sick persons it will last until the disease has entirely disappeared, and for those persons suspected of being attacked by cholera or the plague it will last until the termination of the bacteriological examination, whenever the latter is deemed essential.

Next will follow the quarantine or vigilance until the expiration of the fifth day for those suspected of suffering from yellow fever or from cholera, and until the end of the seventh day for those sick persons who are suspected of being afflicted with the bubonic plague.

When there is a case of the latter disease, in the period of detention for the purpose of disinfection shall be included the period necessary to carry out the destruction of the rats.

The Mexican commission respectfully requests the convention to kindly grant their approval to the resolution which has just been read, inasmuch as it is supported by the resolutions already accepted by the Second Pan-American Conference, and also because they are based on what science and experience have taught us regarding these matters.

WASHINGTON, *December 3, 1902.*

(2) REPORT OF THE MEXICAN DELEGATION.

The delegation appointed by the Mexican Republic to represent it at the International Sanitary Convention, which is to meet at the city of Washington for the first time, has the honor to present the following document in conformity with the programme which was forwarded by the Government of the United States to that of Mexico:

Following the suggestions of said programme, an endeavor has been made to reduce all the data given to what is strictly necessary to make known the federal sanitary administration, which is the only one that can be of any interest to this convention, since the laws of the States comprised in the Mexican Republic can only affect the territory of the States wherein they were adopted, while the sanitary code, the regulations passed to carry it into effect, and the orders issued by the appropriate department derived therefrom, constitute the body of laws which regulate its relations with other countries in sanitary matters.

It is true that the States of Vera Cruz and Yucatan have recently adopted laws which tend to eradicate yellow fever from their respective territories, but their regulations can only be enforced against the inhabitants within such States, and can only serve as an aid to the regulations enacted by the General Government inspired by them, and which tend to carry out identical purposes.

As far as the boards of health are concerned, we may say that they exist in nearly all the States, but they deal only with matters pertaining to the interior administration of each of said States, even though they may have ports along the coast of the Gulf of Mexico or of the Pacific Ocean.

The supreme board of health is the only authority that has to deal with international sanitary police, and that is the reason why we merely describe the organization of that body.

(A) SYNOPSIS OF THE QUARANTINE AND SANITARY LAWS OF THE MEXICAN REPUBLIC, AND OF THE ORGANIZATION OF THE SUPREME BOARD OF HEALTH. SANITARY CODE OF THE MEXICAN REPUBLIC.

PART FIRST.—*International sanitary service.*

The States which constitute the Mexican Republic are free and independent, but in all matters that refer to the protection of the country against the invasion of epidemics they are to be considered as one State only, and in those cases the Federal Executive power represents them all.

The secretary of the interior is the supreme head of sanitary administration.

The other authorities in sanitary matters are, passing from superior to inferior, the following:

I. The supreme board of health.

II. The delegates of the supreme board of health at the ports and frontier towns.

III. The health officers especially appointed for any place in the Republic.

The maritime sanitary regulations determine the manner in which vessels should be received and cleared at Mexican ports. Bills of health issued in foreign countries are divided into clean and foul. A

bill of health is foul if at the port from which the vessel sailed there were cases of bubonic plague, Asiatic cholera, yellow fever, or any other serious disease when the Executive should declare it to be of an alarming character. In the amendments to our sanitary code we propose to define at once what are the diseases that the Executive may consider of an alarming character, which are smallpox, typhoid fever, diphtheria, scarlet fever, and typhus fever, or any other contagious disease. A bill of health is considered clean in cases where the conditions existing in a foul bill of health do not appear and are contrary to them.

The prescriptions regarding quarantine at Mexican ports are the following:

If from the data that the delegate may obtain it should appear that the vessel is to be considered of a suspicious character because it may have had some case of yellow fever on board when it left a port or during the voyage, but which has not had a case in the last seven days of such voyage, the following prescriptions must be observed:

A. There shall be a medical inspection in order to ascertain the sanitary conditions of the passengers and crew.

B. Dirty clothing and articles used and in the possession of the crew and passengers, which may be considered as having been subject to contagion, shall be disinfected, and the same may be done with reference to the merchandise which they may be apt to land.

C. Passengers who may enter the port shall be under the vigilance of local authorities for a period of five days, and in order that this may be done, the delegate shall give them notice of the arrival of such passengers, and the latter are bound to appear in person before the authorities, or they may be allowed to go at once to places at 1,000 meters or more above the level of the sea. Persons who should prove that they have had yellow fever, shall be exempt from complying with this prescription.

D. The members of the crew shall not land except in cases of urgent necessity of the service.

E. When the foregoing regulations shall be complied with, the keel shall be disinfected, the water for drinking purposes shall be renewed, and the vessel be opened and free to be visited by anyone.

In our proposed amendments these regulations will be worded as follows:

The prophylactic regulations in force at Mexican ports for the purpose of preventing the importation of epidemic and contagious diseases shall consist, first, of sanitary medical inspection; second, of the vigilance of suspected passengers and their isolation in case they should become ill; third, of the isolation of the sick until their complete recovery at the lazarettos or isolated places of the locality; fourth, of the disinfection of the vessels, baggage, and merchandise that may require the same; and fifth, of the destruction of animals which may propagate contagion. Consequently, there shall be two classes of detention—that of inspection and observation, and that of disinfection.

In order to carry into effect the vigilance of suspected passengers, the delegates at the ports shall notify, by telegraph, the authorities of the places to which they shall sail, their names, and any other data which they may consider necessary. It shall be the duty of such suspected passengers to appear in person before the local authority during the period of time that the maritime sanitary regulations may determine with regard to each disease.

The Executive of the Union declares when a foreign port is to be considered infected or suspected.

With regard to health regulations, the ports of the Republic are divided into four classes:

First class. Those which have a delegate of the supreme board of health (who represents the Federal sanitary authority) and wherein there may be a lazaretto and an apparatus for disinfection. To this class Vera Cruz, on the Gulf of Mexico, and Acapulco, on the Pacific

Ocean, belong. The ports of Tampico, Coatzacoalcos, and Salina Cruz, will soon belong to this group.

Second class. Those which have the delegate above mentioned and are provided with disinfecting apparatus. The ports of Tampico (at present) and Progreso, on the Gulf of Mexico, and Mazatlan, on the Pacific Ocean, belong to this class.

Third class. Those which have a delegate of the board, and, there being no disinfecting apparatus, this operation is carried on by other means.

Fourth class. Those that have no delegate nor disinfecting apparatus, and are only devoted to coastwise trade, and can only receive vessels which are entirely exempt from contagion.

As far as their sanitary conditions are concerned, vessels are divided into three classes.

(1) *Infected*.—Vessels which arrive at a port having on board persons suffering from any epidemic contagious disease, or from any of those heretofore mentioned. With reference to cholera or yellow fever, vessels which during the last seven days of their voyage have had persons suffering from these diseases, shall likewise be considered as suspected. As far as bubonic plague is concerned, this period may be extended up to ten days. (These figures should be reduced in conformity with the new data that science has furnished during these last few years.)

(2) *Suspected*.—Vessels which may have on board cases of the diseases above mentioned, but which may not have had a new case within the last seven days of their voyage; those which may have left an infected port and have made a voyage of less than ten days; and those which carry merchandise whose packages or bales might be liable to transmit yellow fever, because they proceed from ports wherein said disease prevailed when they sailed. (The figures mentioned have been modified in our proposed amended code and in our maritime sanitary regulations, which have also been proposed, and the same may be said with regard to bales and packages wherein it was supposed that the germ of yellow fever might be carried.)

(3) *Exempt*.—Vessels which, although having left infected ports, have not had, nor have, on board during their voyage, and upon their arrival, any cases of any of the above-mentioned diseases.

Our maritime sanitary regulations give in detail the special treatment to which vessels arriving at our ports shall be subjected, whether with reference to cholera, yellow fever, or bubonic plague, and whether the vessel shall have on board disinfecting apparatus wherein the articles used by the persons afflicted with the disease may have been disinfected, and whether it has a physician who may have been present during these operations and be responsible for their right execution.

Our regulations also treat of the proceedings with regard to vessels arriving at our ports with persons afflicted with smallpox, measles, scarlet fever, exanthematic typhus, and typhoid fever.

The regulations for the disinfection of merchandise and articles which may carry contagion are analogous to those established by the Dresden convention. Said regulations establish the rules which have been adopted in order to permit the departure of vessels from our ports.

As far as the protection of our northern frontier is concerned, four

sanitary stations have been established at Laredo, Ciudad Porfirio Diaz, Ciudad Juarez, and Nogales. These stations are provided with disinfecting apparatus and are under the supervision of physicians who are agents of the supreme board of health.

The regulations regarding railway cars, passengers, and merchandise, are still subject to the provisions of the circular issued by the department. This circular was prepared some ten years ago and still speaks of sanitary cordons and contains some expressions which are not used at the present time. In the amendments which we have proposed to our sanitary code the following provisions are contained:

The prophylactic measures to be enforced at the frontiers in order to prevent the importation of epidemic and contagious diseases shall consist of, first, the total prohibition to enter Mexican territory to persons afflicted with any of said diseases, and to certain merchandise which shall be stated in detail in the new regulations; second, the medical inspection of the passengers; third, the vigilance to be carried on with regard to suspected persons; fourth, the isolation of the latter if they should become sick, and, fifth, the disinfection of the merchandise which might carry contagion and of the railroad passenger and freight cars. The vigilance to be carried on with regard to suspected persons shall be effected in the same manner as is done with regard to those who arrive in the Republic through any of our ports.

FEDERAL SANITARY SERVICE IN THE INTERIOR OF THE REPUBLIC.

The declaration to be made as to contagious diseases by persons who may practice medicine is obligatory throughout the Republic, according to our code now in force.

Whenever a contagious disease shall be likely to become epidemic in any of the States of the Republic, the Executive shall issue, besides the regulations that may have been adopted by the infected State, others that may tend to bring about the isolation of those suffering from the disease and the disinfection of the articles that may have received any contagion from them.

The proposed amendments to the code state that the animals that might be converted into agents liable to transmit the disease shall be destroyed. Furthermore, it empowers the Executive to establish sanitary stations at or near railroad stations, in order that therein there might be carried on the inspection of passengers, baggage, and merchandise proceeding from any infected place, or wherein bubonic plague, Asiatic cholera, or yellow fever, or any other contagious disease considered of an alarming character by the Executive shall exist in an epidemic or endemic form.

In the regulations mentioned the case when railroad traffic may be suspended is stated, but such suspension shall merely last for the time which may be absolutely necessary to carry on the operations above mentioned.

Our code at present in force prohibits the transportation of corpses of persons who may have died of contagious diseases beyond the places wherein their death may have occurred.

SANITARY ADMINISTRATION IN THE CAPITAL OF THE REPUBLIC, AND IN THE FEDERAL DISTRICT.

Inasmuch as the comments which we might make on these regulations would be of no interest to this meeting, in order to give a slight idea thereof we will now refer to what is stated about this matter in the document entitled, Organization of the Supreme Sanitary Court, which is inclosed as Appendix No. 5.

(B) DETAILED STATEMENT OF THE QUARANTINE STATIONS ESTABLISHED IN THE REPUBLIC AND THEIR REGULATIONS.

We may divide the sanitary stations of the Republic into two groups, namely, maritime and land stations, and the former we might divide into two other groups, viz, both the stations that have places suitable to make the isolation of the patients and those that have no such places. Vera Cruz and Tampico belong to the first group on the Gulf, and Acapulco on the Pacific.

To the southeast of the port of Vera Cruz and a short distance from the coast there is a small island of very limited extension, called "Sacrificios," where has been located the lazaretto destined to receive the patients suffering from contagious diseases arriving on board the vessels. As we have never had the plague, and as we have had no cholera epidemic at Vera Cruz since the year 1853, the lazaret practically has only been used to receive the smallpox patients, and on this account it is closed the greater part of the year and is only used whenever it is necessary. The capacity of said lazaret may be increased if circumstances should require it, by barracks of the German type and portable pieces which can be set together in a very short time.

The lazaretto is provided with the necessary supply of cots, bedding in general, and table service, all of which is indispensable for said institution, and is also provided with the necessary force at the proper time from the employees of the civil and medical delegates of the board of health.

As soon as such patients entirely recover, the lazaretto is closed. Inclosed will be found a photograph which represents one portion of the lazaretto, and also the by-laws of the institution.

In the city of Vera Cruz proper, and near the old fiscal wharf, is the sanitary station of the port, together with its offices, and the disinfecting stove of the Géneste and Hersher type. This is a frame building. A first-class sanitary station is being rapidly constructed in order to substitute the provisional one to which we have just referred, and which is better illustrated in the accompanying plans, by which the firm of Pearson & Son, of London, is constructing said building.

There was in Tampico, as in the other ports, a disinfecting stove located on the right bank of the Panuco River, and just opposite the town of the port, but as the importance of said port has increased after the construction of the breakwaters which carry the water from the river a long distance into the sea, the vessels of the largest draft can anchor just opposite the city of Tampico. This circumstance, on the one hand, and the fact that the roads which lead from Tampico to Monterey by the Gulf Railroad and to the very heart of the Republic by the Central Railroad, on the other hand, and also because of the

additional fact that there was an instance in 1899 of yellow fever being propagated along said road to the city of Monterey, it was thought advisable to remove the disinfecting stove from the place formerly occupied by it, and to carry it to another place where it could render the service of disinfection of sea and land articles. In the place selected the new sanitary station has been built, which is composed of a department for the examination of the passengers, bathrooms, suitable place for the isolation of the patients, and another place for the disinfecting stove. The latter is provided with the proper divisions for the infected articles, there being also one for those which have already been disinfected, the staff being under the control of the delegate from the board.

There is already a lazaretto at the port of Coatzacoalcos, which is destined to receive yellow-fever patients, because said disease is not endemic in that town, and they are making the greatest efforts to prevent the disease from becoming endemic there, and also to prevent the patients coming from Vera Cruz to carry the yellow fever to Salina Cruz and propagate it thence to the other ports of the Pacific. A disinfecting stove of the last Dehaitre type has already been ordered from abroad, which is to be placed at Coatzacoalcos, and it is also proposed to establish in the same town a sanitary station similar to that of Vera Cruz.

At present the port of Progreso has only one building in which the disinfecting stove now operating could be placed.

Nothing so far has been completed at Salina Cruz, but the port is being constructed and the town built. A stove like that ordered for Coatzacoalcos has already been ordered from abroad, and the Mexican Government intends to establish there a sanitary station similar to that which is being constructed at Vera Cruz.

On the Pacific we have a lazaretto in Acapulco, situated on the island of Roqueta. This institution is at present in the same condition as the one established in Vera Cruz, but as it has not yet been possible to build a sanitary station in the port proper, the disinfecting stove is placed in the lazaretto. It is proposed later on to remove it to the said port.

There is a building at the port of Mazatlan, situated on a small island, where the disinfecting stove is located, which is rendering the same service that other similar stoves are rendering in other ports.

As we have already stated, in four other cities situated on our frontier adjoining the United States—namely, Laredo, Ciudad Porfirio Diaz, Ciudad Juarez, and Nogales—there are sanitary stations under the charge of a sanitary inspector, which are provided with disinfecting stoves. In a previous paragraph we pointed out the new rules to which our proposed code would submit the passengers, the baggage, and the merchandise arriving over the frontier, but always on the same liberal basis set forth at the Dresden conference.

(C) LIST OF THE DISEASES WHICH PREVAIL AND HAVE PREVAILED IN THE COUNTRY, AND ESPECIALLY WITH REFERENCE TO YELLOW FEVER, MALARIA, THE PLAGUE, CHOLERA, SMALLPOX, TYPHUS, TYPHOID FEVER, AND TUBERCULOSIS.

There is no doubt that a list of the diseases which prevail and have prevailed in Mexico can be of no interest to the convention, unless the convention could use it to protect from said diseases other nations

which have commercial relations with said Republic. Now, of the aforesaid diseases, we say that the plague has never visited Mexico, and we may add that the cholera made its last appearance as an epidemic in 1854.

In 1883 an epidemic which invaded the State of Chiapas and a portion of the State of Oaxaca, had its origin in some excavations made in an old cemetery where the bodies of cholera patients of the year 1854 had been buried, and said epidemic was limited, thanks to the energetic and active campaign which General Diaz, the present Chief Executive of the Republic, made against it. Consequently, neither the plague nor cholera exist in the whole extent of the Mexican territory, nor is there at present any fear of the appearance of said diseases.

Yellow fever is endemic at the port of Vera Cruz and in the districts located on the north of the peninsula of Yucatan, and from those two centers said disease generally spreads to other parts of the Mexican Gulf littoral, and sometimes to Salina Cruz, and to other small ports situated in the southernmost part of our Pacific littoral. We should, however, mention the fact that in 1880 an epidemic of the aforesaid disease, brought to Central America, spread along our Pacific coast and caused great mortality. But it can be said that yellow fever prevails in an endemic form in the two aforesaid centers of the Gulf, and sometimes in the epidemic form. Such is not the case on the Pacific, where the disease appeared in the latter form nineteen years ago, and in the sporadic form in some small ports which constitute the littoral or coast of the Pacific in the States of Chiapas and Oaxaca.

From time immemorial it was known that the yellow fever only spread into the interior of the Mexican Republic to a height of 1,000 meters above the level of the sea, namely, to Las Animas, a town belonging to the Province of Cordoba, State of Vera Cruz, the height of which is 1,005 meters above the level of the sea, when in 1899 yellow fever made its first appearance in Orizaba at a height of 1,200 meters, and for the second time during the same year. Further on we shall refer to these epidemics. Finally, it can be said that yellow fever is endemic in two places of our Gulf littoral, and that it is not so on the Pacific coast; that it has never gone higher than 1,200 meters above the level of the sea, and that it has never appeared in the great central plateau of the Anahuac, which is situated at a height of 2,000 meters above the level of the sea. From what has been stated we can practically perceive that it is not necessary for this convention to know the data relating to said disease, except in the ports of the coast, and those are the data which the delegation will make known to this meeting.

In said papers will also be found the statistics of the mortality caused by smallpox, malaria, typhus, typhoid fever, and tuberculosis, during the last ten years in all our ports. We also present a statistical summary relating to smallpox, typhus, and tuberculosis in the capital of the Republic, because all nations are interested in these diseases. But we desire to make the following statement: Some sanitary authorities have thought—and they have gone so far as to impose a quarantine on people coming from the capital of the Republic—it has been thought, we repeat, that typhus can be transported to the towns on the coast which constitute the Mexican Gulf, to the West Indies, and even to the cities of the United States situated near our frontiers.

In the opinion of the delegation this hypothesis is destroyed by observation and experience. Typhus fever has been detected in our littoral of both oceans. We are not aware that it has been discovered in the United States, except in former times, in which the hygienic or sanitary conditions of said country were not satisfactory, and, according to our recollection, the epidemic, which was imported from Ireland, only invaded some Eastern cities. It has never appeared in Cuba. Now, therefore, practically typhus can have no interest for the republics of the Western Hemisphere from the point of view of its transmission, outside of the central plateau of the Anahuac.

(D) THE SPECIAL DANGER TO WHICH THE COUNTRY IS EXPOSED BY REASON OF ITS IMMEDIATE PROXIMITY TO ANOTHER REPUBLIC.

If by what has been said is meant the danger to which the prevailing diseases in Mexico expose our neighbors of the United States on the north side, or our southern neighbors, the Republic of Guatemala, and because of our commercial relations with Cuba and the Central and South American Republics, we must declare that we are dangerous because of yellow fever and sometimes on account of smallpox.

If by the above statement is meant the dangers to which our proximity to said country exposes us, then we have to declare that we consider them dangerous because they can transmit to us the same diseases when they exist in the places from which the passengers come.

(E) SANITARY WORK WHICH HAS BEEN UNDERTAKEN, OR MERELY PROPOSED.

In the first place we should mention the great work entitled "Drainage of the Valley of Mexico," which was commenced by the colonial Government in the early part of the seventeenth century, was interrupted many times, and was commenced again in accordance with different plans at different times of said century in the eighteenth century. It was again discontinued while the colony endeavored to obtain its separation from the mother country; then it was started anew in the middle of the last century, and continued and carried on to completion by the administration under the direction of the present Chief Executive of the Republic, General Diaz, and finally completed in 1900. This work, which at the time it was planned, was only intended to free the Valley of Mexico from the great floods which endangered the capital of New Spain, as Mexico was then called, was initiated by the medical congresses and scientific societies in 1876, to the end that it might serve as a basis for the subsequent operations for the sanitation of the capital and of the districts, and with this aim in view, the National Government took charge of it until its successful completion in the last year of the last century.

As it would be impossible for the delegation to give even a slight idea of the measures undertaken in order to carry out this work, which Baron Humboldt, in 1804, called "the most gigantic hydraulic work that man had undertaken up to that time," the delegation, we repeat, will only call attention to the report published by the Government.

In spite of its magnitude as an hydraulic work, the drainage of the valley of Mexico could not contribute directly to the sanitation of the capital except by allowing it to throw its waste into a channel which

emptied into a tunnel which would carry it outside of the valley to places where, instead of injuring public health, it would serve to fertilize the lands through which it would pass before emptying into the rivers which carry it to the sea.

But the principal object has been accomplished, since the origin of the channel is now situated at a distance of $5\frac{1}{2}$ meters from the lowest of the collectors which constitute the present sewerage system of the City of Mexico.

The execution of said sewerage system, after being carefully studied and completed by the construction company which made a contract to that effect, is another of the great sanitation works undertaken by the Mexican Executive in behalf of public health.

Neither can we analyze said work nor make any comments on it, and we therefore limit ourselves to calling attention to the work that makes a study of the same, and which we present.

The port of Vera Cruz, which is the most important one of those we have on the Gulf, did not afford any shelter to the vessels that arrived therein, and the National Government undertook the works which have transformed the same into a protected port, and said works have permitted the sanitary works of the city to be undertaken, thus enabling the latter to discharge its waste without infecting the bay.

Said works have made great progress, as well as those for the introduction of potable water which are being made by the constructing firm of Pearson & Son, of London, and which are clearly illustrated in the drawings that the delegation presents.

The proposed plan for the sanitation of the ports of Manzanillo and Salina Cruz, on the Pacific, and that of Coatzacoalcos, on the Gulf, are in process of execution. The delegation also presents the plans of said works.

The work of sanitation of the port of Tampico is merely planned, but it is hoped that it will be carried out soon.

The delegation regards as a matter of utmost interest to the convention, everything that is in any way related to yellow fever, and with this object in view, it takes the liberty to include a report which will be presented afterwards to the American Association of Public Health, and which comprises a statement of the number of yellow-fever cases which have been treated in the Mexican Republic from October 31, 1901, to September 30, 1902, and also two short reports concerning the epidemic of said disease which prevailed in Orizaba during the last few months.

The delegation presents said reports as Appendixes Nos. 1, 2, 3, and 4. By said report, which has been made as short as possible in order that it might be read by this convention, and by the documents we accompany as appendixes, the delegation believes that it has answered all the questions proposed to the Mexican Government by the Director of the International Bureau of the American Republics.

Washington, December 2, 1902.

DR. EDUARDO LICÉAGA.
DR. JOSÉ RAMÍREZ.

NOTE.—The books, official documents, photographs, and plans of the sanitary stations and works that have been completed or are under construction in the ports of Vera Cruz, Tampico, Coatzacoalcos, Salina Cruz, and Manzanillo, and which are referred to in the report of the Mexican delegation, were filed in the offices of the international sanitary department in Washington.

[Inclosure No. 1.]

REPORT ON THE NUMBER OF CASES OF YELLOW FEVER OBSERVED IN THE REPUBLIC OF MEXICO, FROM OCTOBER 31, 1901, TO SEPTEMBER 30, 1902.

[Presented at the meeting of the American Public Health Association at New Orleans, La., December 8, 1902, by Dr. E. Liceaga.]

I shall therefore continue, as I have done in former years, to report this time to the American Association of Public Health concerning the yellow fever cases treated in different places of the Mexican Territory from October 1 of last year to September 30 of the present year.

In the State of Vera Cruz there have appeared 877 cases during the period referred to, distributed as follows: Seven hundred and twenty-one at the port of Vera Cruz, 92 at the port of Coatzacoalcos, 13 in the city of Cordoba, 1 at the port of Tampico, 3 at the port of Alvarado, 18 in the city of Orizaba, 1 at Acayucan, 1 in the station called Juanita A. Perez (Cosamaloapam), and 27 at Jalapa.

The said 27 deaths did not occur in the city of Jalapa, as said city has been free from the disease up to the present time. All these deaths refer to patients who contracted the disease at Vera Cruz.

In the State of Yucatan only 3 cases were recorded, which occurred at the port of Progreso. In the State of Campeche only 1 case occurred at the port of Laguna del Carmen. In the State of Tabasco occurred 8 cases in the city of San Juan Bautista, and 1 at the port of frontera, and in the State of Tamaulipas 3 cases were recorded, which occurred at the port of Tampico.

The States just mentioned belong to the coast of the Gulf of Mexico. On the coast of the Pacific three cases of yellow fever were recorded in three of the States bordering on said coast, which cases were distributed as follows:

State of Oaxaca: Fourteen cases at the port of Salina Cruz, 8 cases in Tehautepec, 1 case at San Gerónimo, 1 case at Guichicori, and 1 case at Tapana.

State of Chiapas: One case at the port of Tonala.

State of Colima: One case at the port of Manzanillo.

The total number of cases recorded on the Gulf of Mexico were 893, and the total number of those recorded on the Pacific coast was 27. Grand total, 920.

As will be seen from what has just been stated, yellow fever has appeared in nine towns of the State of Vera Cruz, in two towns of the State of Tabasco, in one town in the State of Tamaulipas, in one town of the State of Yucatan, in another town in the State of Campeche, in five towns in the State of Oaxaca, in one town in the State of Chiapas, and in one town in the State of Colima.

The figures relating to the cases noted in the above towns, show that the only place in which it might be said that there has been a real epidemic is the port of Vera Cruz, in which the distribution of cases and deaths during the year, counting from the month of October, 1901, to September of 1902, is as follows:

	Number of cases.	Deaths.
1901.		
October.....	68	17
November.....	95	29
December.....	41	25
1902.		
January.....	14	2
February.....	7	6
March.....	18	10
April.....	34	18
May.....	110	46
June.....	98	42
July.....	58	36
August.....	103	35
September.....	75	29
Total.....	721	α 274

α That is to say, 40 per cent.

A concise table clearly shows the number of deaths from yellow fever which occurred on the two coasts of the Mexican Republic during the period from October 21, 1901, to September 30, 1902.

To the above data I desire to add the following: The epidemic at Vera Cruz has been diminishing rapidly. As soon as the supreme board of health accepted the theory that the *Stegomyia fasciata* is the transmitter of yellow fever, and with the proper permission of the local authorities of the places invaded by the disease, it has put in practice the regulations contained in a circular that has been sent to all the authorities of the Republic, calling attention to said theory and advising the sanitary measures which should be put into practice in order to isolate the patient and for the destruction of the mosquito. With this object in view, the government of the State of Vera Cruz amended its sanitary code in order to carry out said measures, and immediately organized some brigades under the direction of Dr. N. del Rio, delegate from the board, and said brigades were directed to exterminate the larvæ of the *Stegomyia fasciata*. These brigades have been constantly operating ever since, and if the results have not been entirely satisfactory it is owing to the fact which I shall presently explain. Indeed, during the present year the work of sanitation of the city of Vera Cruz has been going on, and a new sewerage system has been built, and the laying of the main pipe which shall distribute the potable water has been commenced. This work, which has been done with more or less irregularity from a hygienic point of view, has resulted during the rainy season, which continues through the months of July, August, September, and October, a time in which the temperature reaches its highest degree, in the formation of large pools where water accumulated and became stagnant and where mosquitoes of all kinds were produced. Therefore, although all the deposits of potable water in the houses were inspected and examined, and in spite of the fact that a considerable quantity of petroleum was emptied and sprinkled on the pools formed in the streets, as these latter were indefinitely multiplied on account of the rains, and of the sanitary work of the port, the work of said brigades to destroy the mosquito has been as successful as could possibly be expected.

Subsequently, the rainy season having ceased, and as the drainage work progressed, the extermination of the *Stegomyia fasciata* has been more successful. When the last member of the American commission which went to study the yellow fever at the port of Vera Cruz left said port, it had become more difficult to find the larvæ of said mosquito, and the epidemic was gradually diminishing, until only a few cases were recorded during the last week of the month of November.

Owing to the importance of the matter I will report in advance the fact of a yellow-fever epidemic which appeared and prevailed during seventy days in the city of Orizaba, in the State of Vera Cruz. This extraordinary phenomenon in our history of the National Medical Geography repeated itself, for, as stated in this association, until the year of 1899 yellow fever had not spread at a greater height than 1,000 meters above the level of the sea. In view of the new theory of the *Stegomyia fasciata* concerning the transmission of yellow fever, we can now easily explain this epidemic as well as the previous one. In fact, inasmuch as experience has shown that once the yellow fever has been developed at Vera Cruz, at the level of the sea, said disease might appear at Orizaba, 1,200 meters above the level of the sea, and since no doubt was entertained as to the possibility of the yellow-fever producing agent being able to live at such a height, even though it was supposed that it could not be reproduced there, because until the year of 1899 it had never been noticed that the disease had been propagated when it manifested itself in a person residing at that altitude.

To bring this report to an end I would add that the measures relating to the isolation of the patients of yellow fever have been strictly carried out at Orizaba and that a campaign for the extermination of the *Stegomyia fasciata* was organized as far as circumstances would allow it. The results obtained have been remarkable, inasmuch as this second epidemic, which broke out with more alarming symptoms than that which appeared three years ago, has lasted a shorter period and has now ceased entirely.

I have only to add, since other persons more competent than myself will report concerning this matter, that the commission of American and Mexican physicians who studied yellow fever this year at Vera Cruz, confirms the experiments made by Reed, Carroll and Agramonte at Habana, who have obtained a positive and exceedingly remarkable result by inoculating an immune person by means of the *Stegomyia fasciata* which had been infected by a yellow-fever patient.

As regards the short epidemic of yellow fever which prevailed at Tampico as a consequence of the three cases before mentioned, our delegate to said port explains the same (Appendix No. 4) in the same manner as explained by Dr. del Rio, without having any knowledge of the hypothesis of said doctor, and to which I have just

referred. From what has been set forth in the latter part of this report, we may arrive at the following conclusions:

1. It has been confirmed that the only medium of transmission of yellow fever heretofore known is the bite of the *Stegomyia fasciata* when previously infected.

2. That the only means to prevent the propagation of said disease are: (a) The isolation of the patients in such a manner that it will be impossible for the mosquito of the kind specified to bite them; (b) the disinfection for the purpose of destroying said mosquitoes, and (c) the destruction of the larvæ of said insects by the means recommended in the aforesaid regulations.

3. That it is essential to study the origin of the new epidemics which may appear in any locality, in the light of the new theory of transmission of yellow fever by the *Stegomyia fasciata*.

MEXICO, November 20, 1902.

[Inclosure No. 2.]

TAMPICO, November 15, 1902.

Reserving the right of submitting to you a detailed report as soon as the sanitary conditions of this port shall allow it, I beg to inform you, in answer to your message of this date, that, after accepting the Finlay doctrine, I find two hypotheses in order to explain the origin of the present epidemic. First, the steamer *Piamonte* arrived in this port from that of Vera Cruz on the 20th of July without anything having occurred on board and without any yellow-fever patients. After the fumigation of the holds and the steerage passengers' cabins, the vessel was declared free and came alongside the piers of Doña Cecilia. Three days after her arrival a sailor was taken ill who, having been treated as a malarial patient by the steamer's physician until the day on which he was transferred to the lazaretto, had remained the first four days of his illness unisolated and unprotected from mosquitoes, which abound in the said piers. The mosquitoes infected by this patient were no doubt those which bit P. Diaz (the case of September 15), a transient workman, or which bit other unknown laborers, and which caused the development of the disease. Second, some infected mosquitoes which arrived on board some steamer and escaped the disinfection which is usually made, but which, however, with the means at present at our disposal for the combustion of the sulphur, may not always be total, bit some of the laborers who do the loading and unloading of the steamer, and this produced the first case or cases of the present epidemic. Against the first hypothesis, which in my opinion is the one that has the best foundation, it might be said that too long a time elapsed from the date on which the sailor was taken ill until the first case was noted, an objection which is not important, bearing in mind the fact that at New Orleans, where yellow fever is not endemic and where epidemics have always been imported, circumstances have been observed which we now explain by our knowledge of the time during which the mosquito can keep the infection; that is to say, that all the epidemics before manifesting themselves had a period of incubation of longer or shorter duration, and which in 1858 was six months as the maximum period and in 1878 from one month to one month and a half, as a minimum period.

A. MATIENZO.

(a) This fact enables us to state that the *Stegomyia fasciata* did not exist in Orizaba before 1899. If it had existed it would have been infected by the numerous yellow-fever patients who, having come from Vera Cruz, carried the disease with them, especially since the thirty years which have elapsed since the Vera Cruz Railroad, which passes by Orizaba, has been constructed. Now, therefore, if during all that time the disease was not propagated among the immune persons of Orizaba, it can be affirmed that there did not exist the only medium of transmission of yellow fever which we now know, namely, the mosquito, and as ratification of these hypotheses we might add that at present the *Stegomyia fasciata* is very abundant at Orizaba.

(b) Supported by this fact, two hypotheses can be presented in order to explain the epidemic which Orizaba suffered in 1899, and that which she has just suffered, which hypotheses have been already presented by Dr. N. del Rio, as Appendix No. 2.

1. The patients who, having caught the yellow fever in Vera Cruz, infected the *Stegomyia fasciata*, which latter spread the disease.

2. On the berths of the passengers on the trains which travel between Vera Cruz and Orizaba, and on the merchandise carried by said trains, traveled some infected mosquitoes, which transmitted the disease to persons who were not immune and who had to be at the station in communication with the passenger coaches of the railroad or with the freight cars.

[Inclosure No. 3]

REPORT.

In compliance with the order sent by telegraph by the president of the supreme board of health, I proceeded to Orizaba for the purpose of studying a disease that had appeared there, and in order to determine the character thereof. Immediately after my arrival I went to see the political chief, who informed me that there had occurred 12 cases, 10 of which had been fatal; and there still remained a woman at the hospital, and another convalescent patient at his house who was in the eighth day of his illness.

Accompanied by Dr. Labardin, a member of the municipal board of health, I went to the hospital, where I saw the woman mentioned by the political chief, who appeared to be about 40 years of age. At that time she had been sick four days, and her illness was an acute case of yellow fever. Then I endeavored to determine whether she had contracted the disease at Orizaba or whether she had been in some place where the disease was prevailing, with the result that she had not been out of that town. This patient occupied a room at the hospital, where she was isolated from the rest of the institution, without any wire gauze at the doors and windows, and her bed did not have any canopy. The special department for the patients of this disease was then in process of construction. The day after my arrival I went with Dr. Ernesto Arzamendi to visit two patients who were being treated by him in the central part of the city, a fact which aroused his suspicion, because all the cases recorded had appeared in one single district, namely, that of the Vera Cruz station, which was far away from the center of the city. These two patients belonged to one family, namely, the husband and his wife, the former being at that time in his sixth day of illness and seriously ill, because he could no longer pass any water and uremia had already set in. The illness of the woman was not so serious, and she was in her fourth day of illness; that is to say, when the fever commences to gradually diminish.

Afterwards I went with Dr. Duplan to visit a girl who was being attended to by Dr. Moya, and who at that time was in her third day of declared yellow fever. As this was the most recent case that had appeared there, and in order to better determine the nature of the disease, although, clinically speaking, I did not entertain any doubt of it being a case of yellow fever, I took some blood from this girl and kept it in a suitable holder, and I surrounded it with sufficient vaseline and took all necessary precautions in order to send it to Vera Cruz, so that the American and Mexican commission might make the proper microscopic examination thereof. I took said blood at 2 o'clock in the afternoon, and six hours later it was examined by Drs. Matienzo, Parker, Rosseneau, and Beyers, who ratified the complete absence of the "daveran *Hermatozoario*," and therefore the malaria nature of the disease was excluded, and proved thereby the established clinical diagnosis. Aided by this data, I endeavored to investigate myself how the disease had commenced, which had assumed the nature of a small epidemic, limited to a small area, almost a block of houses, near the Vera Cruz Railroad station. Of course, I thought I would find a good basis for my investigations, bearing in mind the fact that yellow fever prevails epidemically at Vera Cruz, and that some cases had been recorded at Coatzacoalcos, from which latter place several patients had arrived at Cordoba by the line leading from the Pacific to Vera Cruz, and it was probable that in case they should arrive at said city they might reach as far as Orizaba. Therefore there are two dangerous places for Orizaba at the present time, namely, Vera Cruz and Coatzacoalcos, the more so because the communication by railroad is short and very frequent. The first case known was that of an unknown man who entered the hospital in a dying condition, where he actually died a few moments after arrival. After the autopsy of the body was made, the symptoms of the disease which had caused the death of the patient being very suspicious, all the characteristic traces and features of yellow fever were found, but it was not known where the patient had caught the disease nor the place where he came from, for, as I have already stated, nobody knew him. Perhaps this case is the origin of the other cases which followed, but the medium of transmission from that first case to the other cases has not so far been found.

It having been proved beyond any doubt whatever, both by the experiments made at Habana and by the last experiments made by the United States and Mexican Commission at Vera Cruz, in order to study yellow fever, that the *Stegomyia fasciata* is the medium of the transmission of yellow fever, as announced many years ago by the learned Dr. Finlay, of Cuba, it was necessary to investigate whether in Orizaba existed mosquitoes of said kind, or if the immunity that until recently was thought to have existed there as regards yellow fever was owing to the fact that said insects can not live there or reproduce themselves at the height at which said city is located. For that purpose I visited the houses where there had been some

cases of the disease, accompanied by Dr. Labardini first, and afterwards accompanied by the sanitary agents appointed by the chief of police. In all said houses I found larvæ of the *Stegomyia fasciata* and two mosquitoes of this kind entirely developed. These two mosquitoes furnished me the explanation of the two cases which were recorded in the central part of the city, quite distinct from the original focus, namely, the married couple to whom I have already referred and who were attended by Dr. Arzamendi, and concerning whom I secured the following data: The husband was a coachman who had charge of carrying to the hospital in his carriage a sick woman who lived in the infected district and whom he had to carry in his arms because her condition was so serious that she could not walk. The room which said patient had occupied was disinfected by sprinkling bichloride of mercury, and in said room it was that I found the specimen of the *Stegomyia fasciata* entirely developed, it being very probable that the coachman was bitten there by one of the infected mosquitoes, thus transmitting the disease to his wife, and I would further add that in the room in which the couple dwelt, Dr. Arzamendi and myself saw several mosquitoes on the wall, although we could not catch them in order to determine the kind to which they belonged.

Therefore, we have now two explanations equally acceptable, namely, either the first case came from Vera Cruz, Córdoba, or Coatzacoalcos, and from said case were infected the mosquitoes found at Orizaba, thereby propagating the epidemic, or the mosquitoes already infected at Vera Cruz were carried by rail to Orizaba, where the first patient contracted the disease from mosquitoes which arrived in the manner already described. The last theory is most acceptable, and it is to be wondered at that the disease did not appear more frequently, owing to the facility of communication. But in the last epidemic, as in the present one, the disease commenced and remained almost confined to the district where the Vera Cruz railroad station is situated. At that time the origin of the disease was traced to the wastes from the Montezuma brewery, which is situated on the opposite sidewalk of said station, and as said brewery has a great deal of communication with the port, and has closed, special cars in which beer and ice for the consumption of Vera Cruz is conveyed, it is therefore quite possible that while said cars remained at the port some mosquitoes already infected were confined therein, and in opening the car in Orizaba, in order to unload it, the mosquitoes might get out and station themselves in the neighborhood, or bite some of the passengers that are continually to be found in that direction, either those from the railroad or from the brewery.

This can account for the fact that it was once said that the cause of the propagation of the disease was the waste from the brewery, not because of said waste itself, but because in the water thereof were stationed and reproduced mosquitoes which were the conductors of the disease.

It seems to me that this latter circumstance deserves to be taken into consideration by the board, since it is a real danger to which all the towns situated on the line of the railroads which touch Vera Cruz, and are in the neighborhood of Orizaba, are exposed. I think that said danger could be easily avoided by simply requiring that every closed car leaving Vera Cruz be disinfected before starting therefrom. In order to carry out this operation, the only object of which, as will readily be understood, is to kill the mosquitoes that may be found to exist within the car, there should be installed at each station a deposit for burning sulphur, which deposit shall be provided with an exhaustion pipe, in order that the vapors, which by means of another pipe might be carried to the interior of the car which it is desired to disinfect, may be drawn off through an opening made in the place thought to be most convenient, and said opening should be closed, by means of a plug, just after the vehicle is filled with sulphurous vapors.

The Pullman cars shall be subjected to similar operation, employing for that purpose the pyrethrum vapors, in order not to injure the decorations of the car.

In my opinion, the other passenger cars do not need to be disinfected, because of the fact that they are open and the air currents pass freely through them, and hence it would be difficult for the mosquitoes to shelter themselves therein.

I believe that the medium that I have just pointed out would not only give practical results, but would be an economic one, and would not cause any delays to the trains; and for this reason I have the honor to submit it to the learned board in order that, should it meet its approbation, it be adopted in the form and at the time which may be deemed most convenient.

Since, as I have already stated, the disease is limited to a small area, I think it would be easy to exterminate it in a short time if the measures recommended in the pamphlet entitled "Instructions," published by said board, are carried out with the efficiency and rigor necessary, thereby organizing brigades for the destruction of the mosquitoes, their eggs and larvæ by means of petroleum, as well as by isolating the patients, so as to render it difficult or impossible for the insects to be infected by

them, and thus serve as a vehicle for the propagation of yellow fever. In this case, the disinfection by means of bichloride should be substituted with the sulphurous vapors. The above suggestions I thought proper to make to the political authorities of Orizaba, and I have no doubt that they will adopt them, since both the welfare and the progress of said city require it.

With the submission of this report I consider as terminated the honorable commission with which the president of the board kindly intrusted me.

Vera Cruz, September 10, 1902.

N. DEL RIO, *Delegate.*

[Inclosure No. 4.]

REPORT.

To the Supreme Board of Health:

I take pleasure in informing the board of my return from Orizaba yesterday, and after having made a careful examination of the district that had been infected with yellow fever, I found only one patient at the convent of San José de García and three patients in the district of Angostura, in a state of advanced convalescence after having been ill seven days. The district of Pichucalco is now entirely free from the disease, and in the male ward of the hospital I found only one case, which was dismissed yesterday, and said ward was consequently closed. In the women's hospital there remained three patients in a state of convalescence, already entirely out of danger.

As only yesterday notice was received at Orizaba of the appointment of Dr. E. Duplán as a special delegate of the board, I suggested to the jefe político the necessity of commencing at once the daily calls at the houses in the districts already infected with the disease, in order that if, unfortunately, a new case should appear, it may be immediately isolated, so that the epidemic should not again spread, now that we have succeeded in overcoming it in the said districts.

I beg to call the attention of the board to the fact that this epidemic commenced with greater violence than the former one, and in spite of that fact, it has lasted a much shorter time, since the first epidemic commenced in June and continued until the latter part of January, while this one only lasted some seventy days, and besides, the fact of there having been 648 cases in that period, constitutes a proof of the virulence and intensity of the same, there having occurred 260 deaths; that is to say, something more than twice the number of cases that occurred during the seven months of the other epidemic. In spite of this virulence the epidemic was controlled in one-third of the time that was required in the previous one, and it should be borne in mind that the measures dictated or advised by the board were put in practice when the disease had already made great headway both as regards the number of cases that had occurred and because of the fact that the disease had already gone beyond the limits where it first developed, and for this reason it became more difficult to carry out these measures. The lack of knowledge as to the nature of the first cases noted, as well as the lack of medical assistance necessary, in many cases at the beginning caused that delay in applying with rigor the wise instructions of the board, the efficiency of which may be proved by the results which have been obtained in a comparatively short time, notwithstanding the difficulties which it has been necessary to overcome in practice in order to obtain the necessary notice and information concerning the patients at the beginning of their illness, to keep them in absolute isolation with regard to the bites of mosquitoes, which, during those first days, find the best conditions to be infected and afterwards transmit the disease.

I remain, sir, with the highest consideration, your obedient servant,

N. DEL RIO, *Special Delegate.*

VERA CRUZ, November 14, 1892.

[Inclosure No. 5.]

ORGANIZATION OF THE SUPREME BOARD OF HEALTH.

In accordance with the provisions of the Sanitary Code of the United States of Mexico, which was declared in force in the month of August, 1891, and in accordance with the subsequent provisions of the decree issued by the Executive of the Union on the 15th of November, 1894, the staff of the public health service is at present organized as follows:

For the sanitary service of the Federal District there is a supreme board of health,

which is composed of 11 members, of whom 5 are civil physicians, the director of the military hospital of instruction, the professor of hygiene in the national school of medicine, a veterinary surgeon, a pharmacist, a lawyer, and an engineer.

Under the immediate orders of the board there are 8 medical ward inspectors, 4 outside medical inspectors for the districts of Tacubaya, Guadalupe Hidalgo, Tlalpan, and Xochimilco, all of which form the Federal District; 4 analytical chemists attached to the inspection of foods and drinks; an assistant for the bacteriological laboratory; a curator of vaccine; 2 auxiliary physicians for said department; 4 vaccine agents for the 8 police stations of the city, and a chief of the disinfection service.

The sanitary service of the Territories consists of a medical inspector in Tepic, and another in Lower California, who is at the same time sanitary delegate in the port of La Paz. Besides having charge of the sanitary administration of the Federal District and Territories, the supreme board of health also has charge of sanitary matters within the Federal jurisdiction. Said board fulfills these important functions through the following delegations:

In the Gulf of Mexico: In Matamoras, Tampico, Tuxpan, Vera Cruz, Coatzacoalcos, Frontera, Laguna del Carmen, Campeche, and Progreso.

On the Pacific coast: In San Benito, Salina Cruz, Acapulco, Manzanillo, San Blas, Mazatlán, Guaymas, Santa Rosalia, Todos Santos, Tonalá, and Puerto Angel.

The sanitary service on the frontier is looked after by 3 veterinary inspectors, who are distributed in Ciudad Juarez, Ciudad Porfirio Diaz, and Laredo.

The many labors that have to be undertaken by the supreme board of health in accordance with the sanitary code are fulfilled by the aid of 23 committees, which are formed out of the members composing that body. These committees are:

1. Administration and regulation of the sanitary staff.
2. Matters of federal jurisdiction.
3. Dwelling houses and schools, subdivided into two—first and second, dwelling houses.
4. Food and drinks.
5. Churches, theatres, and other places of meeting.
6. Factories and industries.
7. Wholesale and retail drug stores.
8. Practice of medicine.
9. Inhumations and exhumations.
10. Epidemiology.
11. Epizootics.
12. Dairies, slaughterhouses, meats imported from outside the city, and other police matters referring to animals.
13. Prisons, hospitals, and asylums.
14. Markets.
15. Garbage heaps.
16. Military hygiene.
17. Vaccination.
18. Sanitary inspection.
19. Statistics.
20. Bacteriology.
21. Public works.
22. Judicial questions.
23. Publications.

A short statement will be sufficient to give an idea of the forms under which the principal committees of those above mentioned work, and from this sketch it will be easy to infer the works of the others, according to the branches under their control.

The committee on federal questions, which looks after everything connected with maritime health, examines the numerous documents which have to be forwarded from the delegates of the board in the different parts of the Republic, and which documents minutely detail all the information referring to the visits which they have to pay to incoming vessels, everything relating to their bills of health, the decisions which are rendered when this document is not satisfactory, the form of disinfection to which the vessel, passengers, and merchandise are subjected whenever the sanitary laws require it, and everything concerning the quarantine, whether it be rigorous or simply for observation.

With these documents, and with those that are issued by the delegates after visiting the outgoing vessels, and which refer to their sanitary condition as well as to that of the passengers, crews, and an examination of the merchandise carried on board, the committee prepares a general report, which is presented to the department of the interior.

This committee studies and decides all matters connected with maritime health, and its resolutions are always of the greatest importance, because they show the

watchfulness with which the public is protected against the introduction of epidemic or infectious diseases into the Republic, and therefore, it has charge of international sanitation.

The two committees on dwelling houses take into consideration the information obtained from the reports made by the sanitary ward inspectors as to the causes of ill health which they have discovered in their house to house visits. In accordance with the sanitary laws, they decide on the works and improvements which are to be undertaken by the proprietors in order to put their buildings in good hygienic conditions, ordering, after the termination of the period which is granted in every case, that a new inspection of the houses be made, so as to determine the fines that are to be imposed, should the proprietor fail to faithfully comply with the orders that have been given. In the latter case, and after the lapse of the new term granted the proprietor for the execution of the work that has been ordered, a further inspection is made, and, in view of the report presented by the sanitary inspector, the statement is made, either that the works so ordered have been executed wholly or in part or that they have not yet been commenced.

If owing to the absolute noncompliance of the orders given by the committee a new fine is imposed, which in this case would be for a larger amount, and if after the lapse of the new term granted, and in view of the fact that the penalties imposed do not in any way relieve the proprietor of his duty to improve the hygienic conditions of his buildings, he should still be a delinquent, the inspections are repeated with their respective reports, until the committee obtains the exact fulfillment of the orders given, and by this method of procedure a great improvement has been obtained in a considerable number of houses in Mexico city, whose sanitary conditions are much better than they used to be. An exactly similar method is followed with regard to the complaints that are received concerning the bad hygienic conditions of certain dwellings, complaints which are sent to the supreme board of health by the tenants of the houses that are in bad condition, and which are noted down in a book kept by the secretary for that special purpose. The committee on dwellings at once issues the proper orders with respect to every complaint that is brought before them, and the decisions rendered are communicated to the sanitary inspector every day.

The committees on factories and industries take turns in visiting the establishments that are about to be opened, on receipt of the petitions which the proprietors address to the district government, and of which the latter notifies the board. Once the visit is made, and in view of the detailed report which is rendered in every case in which it is stated whether the legal requisites have been fulfilled, giving an opinion as to the importance of those which have been omitted, the board then decides whether it will grant or refuse the petitions presented by the owners.

The same inspection is carried out whenever any complaint is received as to the existing establishments, whenever the committee consider it necessary or when the board should so order it, because it may be considered desirable for the public health.

The committee on drug stores makes regular and frequent visits of inspection to all wholesale and retail drug stores that are found in the city and in the principal towns of the district, exercising the greatest vigilance and the greatest severity in order to correct and punish, as may be necessary, the violations that may be discovered against the special regulations in force.

Thanks to the activity and perseverance with which these inspections have been carried out, it is now an established rule that every such establishment shall always have a responsible pharmacist employed; that the preparation of prescriptions is carefully attended to; that they are all provided with the substances, apparatuses, and utensils which are required by the regulations, and that the watchfulness and inspection on the part of the pharmacist is constant and efficient.

The committee on inhumations, exhumations, and removal of bodies, takes care that in the existing cemeteries all the demands of hygiene are properly complied with. It visits and reports on all cases which are referred to it by the board, concerning the opening of new cemeteries, as well as on anything relating to premature or judicial exhumations.

The committee on epidemiology receives the notice which all physicians are obliged to give whenever they attend any persons who are afflicted with infecto-contagious diseases, and it at once advises the sanitary inspecting physician who has charge of that part of the city, so that he may visit the patient and, above all things, to make sure that he is properly isolated, or otherwise advise his removal to the hospital, which removal is at once ordered by the committee.

The sanitary inspector sees to it during his visit that all the necessary precautions are taken to avoid contagion and the propagation of the disease; he gives instructions as to the proper methods of disinfecting the clothing and the dejecta of the patients; he takes notes of the sex, age, time that the patient has been ill, and the probable cause of the disease. At the same time he makes a careful inspection of all the

rooms in the house, looks at the condition of the drains, the closets, and all the conduits which are used to drain the building. He satisfies himself that there are no rubbish heaps, mud, or any other substance that could be injurious to the health of the dwellers; that the water pipes are clean, free from any danger of filtration, and do not communicate with the drains, and, lastly, he takes notes of all the causes of insalubrity which exist in that street, specially reporting whether the water-supply pipes pass through it, and whether there is a proper sewer. On all these points he presents a detailed report at once, which is referred to one of the two committees on dwelling houses, so that in view of this document it may decide on the works which are to be executed in order to improve the sanitary conditions of the houses that have been inspected.

To the committee on veterinary matters pertains the inspection of slaughterhouses, dairies, and hog yards; the watchfulness over butcher shops and everything else that has reference to epizootics, with the object of avoiding their appearance and development.

The committee on judicial matters looks after all questions which, on account of their special character, are immediately connected with jurisprudence, and it also acts as an assessor to the other committees, whenever any doubt arises as to the strict application of the law.

One of the most important divisions of the board is that which has charge of the inspection of food and drinks, which is under the immediate control of the member of the board who has charge of the first committee on food. The inspection of these substances is either made directly by the analytical chemists who visit the establishments with all the requisites demanded by the laws in force, and who in every case prepare a report in which they set down all the incidents of the visit and the results obtained through the analysis of the inspected articles, or else by collections of samples which are taken by the agents of the inspecting department on a special order issued by the analytical chemists. These orders specify the class of the sample which is to be taken, as well as the establishment that is to be visited. Of the substances that are collected, one part is well wrapped up and sealed and is left in possession of the owner or manager of the establishment, while the other is taken to the chemical laboratory and there properly analyzed. On the minute which is made out in due form at the time of collecting the samples, the chemist who has made the analysis notes the result, and on that same document the committee fixes the penalty which is to be imposed whenever the article is found to be altered or adulterated.

The analyses which are made in the chemical laboratory are of such substances as milk, coffee, tea, bread, wine, beer, oil, sweets, and generally everything that is susceptible of adulteration or decomposition, as at times happens with cold meats, canned food, fish, etc. The chemical laboratory of the board is set up in the same building which it occupies, and is properly provided with the utensils, reagents, and apparatus necessary for the important and delicate works to which it is devoted.

The application of preventive vaccine is one of those branches to which the board has given great attention, and great zeal has been displayed in the distribution of this preservative every day in the central office, which is situated in one of the departments of the building occupied by the board. The assistants to the curator vaccinate in the parish churches of the city, the sanitary inspectors in the police stations of their respective wards, and in the towns outside of the Federal district the vaccination is attended to by the inspectors of those towns.

The important disinfection service is under the direct charge of a member of the committee on epidemiology, and the staff consists of a chief, an engineer, a man who looks after the disinfected clothing, a coachman with his assistant, and four employees who work in the disinfection of the houses.

This disinfection is made in the dwellings where there has occurred any case of typhus, typhoid, smallpox, scarlet fever, or diphtheria. After collecting the clothing of the patients, in order to carry them off at once to the stove, the disinfection of the dwelling rooms is effected by means of the irrigation apparatus, for which purpose a solution of bichloride of mercury is employed at 1 to 1,000.

The disinfection of the furniture is also carried out with this solution or, better still, with a solution of carbolic acid at 5 per cent. In some cases bread crumbs are employed for disinfecting pictures and fine paintings. On some occasions a solution of lime is employed for the closets, and creoline is used for destroying bad odors.

The disinfection department is situated in the Plazuela de San Pablo, in the immediate vicinity of the Juarez Hospital. Among the apparatus with which that department is furnished are:

One Geneste and Hersecher fixed stove with one 8-horsepower steam boiler.

One movable stove with one 6-horsepower steam boiler.

Three Geneste and Hersecher pulverizers for dwellings.

Four Italian pulverizers by Bordoni Ufireduzzi.

Two Japy pulverizers.

Four pulverizers according to a Mexican system, and 6 hand pulverizers.

The antihydrophobia inoculations are made every day by a member of the board who has special charge of this service. The preservation of the medula and the preparation of the liquid for injection is carried out in the bacteriological laboratory, which is also established in the same building with the board. Amongst the many works which are executed in this laboratory we may specially mention the analysis of water, the examination of diphtheritic products, and the preparation of everything required by the Pasteur antirabic treatment.

The board publishes a monthly bulletin, which is the organ of the corporation, and care is taken to publish all the official data relating to the labors of the laboratories, the committee of the board, the sanitary medical inspectors, the reports of vaccine administered, of the mortality, and tables showing the disinfections that have been made, and the antirabic inoculations that have been practiced, together with reading matter on the most essential precepts of hygiene, for the purpose of spreading knowledge on the subject.

With this object in view, these articles are short, clear, terse, and avoid all scientific terms, so as to bring them within the reach of every intelligence. They are edited in turn by the scientific staff of the board, and the publication of the bulletin is under charge of a special committee, the chief clerk of the office of the secretary being the manager.

The staff of the secretary's office, according to the present appropriations, consists of a general secretary, a chief clerk, 3 subordinate chiefs, 1 of whom attends to one of the three sections into which the office is divided, for the better attendance to business; 1 corresponding clerk, who is also in charge of the archives; a treasurer; 6 copyists; 3 messengers, 2 additional messengers for the chemical laboratory, 1 for the bacteriological laboratory; and 1 janitor.

Each section looks after a well-defined branch of the business and gives a timely attention to all questions brought before it. The third section has exclusive charge of everything that is connected with statistics, and this important branch of the business is being continually improved. In order to take full advantage of the work of this section, it is under the charge of a medical man. The general secretary is also a medical man, so that he will be able to attend to technical matters with a thorough understanding of his business.

The supreme board of health and its offices, occupies a large part of that ample building which was recently dedicated to the administration of the revenues of the Federal district. This building is situated at a very short distance from the main square of the city and in a northerly direction, in the Plaza de Juarez, which was formerly known under the name of Plazuela de Santo Domingo.

The board is divided into three principal departments: In the first is a room dedicated to the work of the committees; another is set apart for the president; while an ample chamber, which is decorated according to the rules of hygiene, is used for holding the sessions of the board.

The second department contains the necessary offices and has five rooms, in which are established the three sections, the general office of the secretary, and the archives of the corporation. All these departments are provided with the necessary furniture and utensils for attending to the business that comes before them.

In the third department, and separated from the others by a corridor, are the chemical and bacteriological laboratories. The former is an ample and well-situated room, and the latter consists of several rooms, in which the stoves and other utensils are conveniently distributed, each room being adapted to the character of the work or investigation to be done therein. There is also a proper place for the cages of rabbits which have been inoculated with antirabic serum, as well as for other animals or birds which are kept therein for the purpose of making scientific experiments.

In one of the halls a series of closets and a urinal have been established, both of which meet every requisite stipulated in the sewer regulations, and which can be consulted by the owners of buildings so as to get an object lesson as to the proper way to set them up in their own buildings.

On the lower floor of the same building, and with a door to the Calle de la Encarnación, are two large rooms where the application of Jenner vaccine and the antirabic serum of Pasteur are made.

The government of the Republic, which thoroughly realizes the importance that modern civilization and science accord to public hygiene, gives a full support to the supreme board of health, and the President of the Republic, with the able and efficient assistance of the secretary of the interior, takes a special and patriotic interest in endowing this important corporation with all the resources and all the powers that are essential to the proper carrying out of the measures of hygiene, which are required by the health and welfare of all the towns in the Mexican nation.