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BIENNIAL REPORT
OF THE
State Board of Health
OF CALIFORNIA
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1902 - 1904

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EIGHTEENTH BIENNIAL REPORT

**STATE BOARD OF HEALTH
DIVISION OF EPIDEMIOLOGY
OF THE**

STATE BOARD OF HEALTH

OF

CALIFORNIA,

FOR THE

FISCAL YEARS FROM JULY 1, 1902, TO JUNE 30, 1904.



SACRAMENTO :

W. W. SHANNON, - - - SUPERINTENDENT STATE PRINTING.

1904.

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STATE BOARD OF HEALTH.

MARTIN REGENSBURGER, M.D., <i>President</i> ,	-	San Francisco
N. K. FOSTER, M.D., <i>Secretary</i> ,	- - - -	Sacramento
F. K. AINSWORTH, M.D.,	- - - - -	San Francisco
W. A. BRIGGS, M.D.,	- - - - -	Sacramento
A. C. HART, M.D.,	- - - - -	Sacramento
O. STANSBURY, M.D.,	- - - - -	Chico
W. LE MOYNE WILLS, M.D.,	- - - - -	Los Angeles

OFFICE OF CALIFORNIA STATE BOARD OF HEALTH,
SACRAMENTO, September 14, 1904.

To His Excellency GEORGE C. PARDEE,
Governor of California,

DEAR SIR: I have the honor to transmit to you herewith the
Eighteenth Biennial Report of the State Board of Health of California
for the fifty-fourth and fifty-fifth fiscal years.

Yours respectfully,

N. K. FOSTER,
Secretary, State Board of Health.

REPORT OF STATE BOARD OF HEALTH.

On April 1, 1903, Dr. W. A. Briggs of Sacramento, Dr. Matthew Gardner of San Francisco, Dr. N. K. Foster of Oakland, Dr. A. C. Hart of Sacramento, Dr. Martin Regensburger of San Francisco, Dr. O. Stansbury of Chico, and Dr. W. Le Moyne Wills of Los Angeles, who had recently been appointed members of the State Board of Health, met at Sacramento with the retiring Board. After the routine business had been completed, the new Board organized by electing Dr. Matthew Gardner of San Francisco, President, and Dr. N. K. Foster of Oakland, Secretary.

IN MEMORIAM.

Eighteen days after the organization of the Board, death entered its ranks and took from it the President, Dr. Matthew Gardner of San Francisco. His strong personality, sterling integrity and perseverance, as well as his great professional ability and wide experience, made him a most valuable member of the Board. He had served for a few months upon the former Board and represented the State most ably at the Plague Conference held in Washington, D. C., January 19, 1903. At that Conference, when the feeling against California was keen, his earnestness of purpose, straightforward manner, and evident integrity saved a great calamity to California—a quarantine by the Eastern States.

At the meeting of the Board May 11th, Dr. M. Regensburger announced the death of Dr. Gardner, and offered the following resolution :

WHEREAS, This Board being bereft of its honored President, Dr. Matthew Gardner; therefore, be it

Resolved by the State Board of Health, That in the death of Dr. Gardner our State has sustained an irreparable loss, the medical profession deprived of an exemplary representative, as also his patients of a good friend and his widow a noble husband.

Resolved, That the members of this Board extend their heartfelt sympathy to Mrs. Gardner and his family, and that a copy of these resolutions be transmitted to them and that the same be entered upon the minutes of this Board.

Owing to the death of Dr. Gardner a meeting of the Board was called for May 11th, at which Drs. Briggs, Hart, Regensburger, and Foster responded. Dr. Martin Regensburger was elected President.

On May 25th, Dr. F. K. Ainsworth of San Francisco was appointed and qualified to fill the vacancy caused by the death of Dr. Gardner.

When the members of the present Board took their positions there was no office room for them, the former Secretary having had desk room with the General Superintendent of State Hospitals. This office being crowded, the present Board was allowed to occupy temporarily the Lieutenant-Governor's room. There was absolutely no furniture in possession of the Board and enough had to be borrowed with which to begin business.

We have acquired, through the kindness of the Secretary of State and from our own appropriation, one bookcase, one letter file with card index, one report file with card index, one mimeograph, and one typewriter. Permanent office accommodations and proper furniture should be provided for the department. Much valuable information in the shape of reports and communications is being constantly received, which should be preserved and arranged so as to be of use. This can not be done without room and suitable furniture, and it is greatly to be hoped that the Legislature will find means to provide them.

POWERS AND DUTIES OF THE BOARD.

The State law relating to the duties of the State Board of Health is as follows:

The State Board of Health must place themselves in communication with the local boards of health, hospitals, asylums, and public institutions throughout the State, and take cognizance of the interests of health and life among the citizens generally. They must make sanitary investigations and inquiries respecting the causes of disease, especially of epidemics, the source of mortality, and the effects of localities, employments, conditions, and circumstances on the public health, and gather such information in respect to these matters as they may deem proper for diffusion among the people. They may devise some scheme whereby medical and vital statistics of sanitary value can be obtained, and act as an advisory board to the State in all hygienic and medical matters, especially such as relate to the location, construction, sewerage, and administration of prisons, hospitals, asylums, and other public institutions. They must, at each biennial session of the Legislature, make a report, with such suggestions as to legislative action as they deem proper.

This Act gives the Board a broad field of investigation and work, with but little power to make its work effective. We can communicate with local health boards, but it is optional with them to answer or not. We can "take cognizance of the interests of health and life among the citizens generally," but when it comes to enforcing proper measures to protect their life and health we are practically powerless to act. We can make sanitary investigations as to causes of disease and epidemics, but having found those causes we have no means of eradicating them. We can gather information for diffusion among the people, but have not the means to print and mail it, and can only reach the people through the good nature of the public press. We can devise schemes to gather vital statistics, but our schemes have not the power of law. We can act as an advisory board to State institutions, and here we have

received nothing but courtesy and feel that we may have been of some service to the State. Lastly, we can make our report to the Legislature and offer such suggestions as we think proper. Such suggestions will be found throughout this report.

The limitation of the powers and means of the Board deprives the State of much information that should be distributed in the form of circulars instructing the people in regard to the many things pertaining to health. We could also do much to prevent and suppress disease. There is nothing of which the people are so careless as their health, except it is, perhaps, the health of others. They will go along heedlessly neglecting all sanitary precautions and oftentimes considering it a violation of their private rights if they are in any way taken to task. They will use water polluted with washings of barnyards and houses, and think nothing of it. They will allow children sick with contagious diseases to associate with the well. They will tolerate schoolhouses with poor light and worse ventilation. They will disregard all sanitary rules as applied to themselves or others. If an effort be made by the health authorities to suppress an epidemic of some contagious disease, they are often up in arms over the matter, deploring the cost and trouble. But let the glanders break out among horses, or the Texas fever attack cattle, and the whole community is alive to the danger, for a direct pecuniary loss stares them in the face. This is not because they care nothing for themselves or others, but from a careless indifference, often engendered by an idea that sickness is a direct visitation of Divine Power—something that must come, no matter what they do.

Of the 28,610 deaths reported in California during the past two years, 5,798 were from preventable diseases, or one in every six. It will perhaps be impossible to entirely eradicate all such diseases, but of those dying in the State at least ten per cent could have been saved had proper precautions and sanitary rules been observed.

X Typhoid fever, a disease which is largely carried by means of water and milk, is a good example of a preventable disease. There have been reported in California during the last two years 244 deaths from this disease. This does not represent the actual death-rate, for from the mountain districts, where we have had the greatest loss of life, we get few reports. Every case of typhoid fever comes from another case, and more frequently than otherwise from a case situated on a higher level, so that the water polluted by the discharges flows to those below and, being used, generates the disease. From one case high up in a watershed the disease has been traced, marching slowly but surely down through towns and communities using the water, until thousands of cases and many deaths have occurred. This is but an example of how one disease is communicated; but if the people could be made to know these things and feel that upon them and their care depends in a great measure

the health of the State, a forward step would have been taken. They should be thoroughly instructed as to the danger of using polluted water and the means of disinfection so as to avoid polluting the water that others may possibly use. They should know that troubles from indigestion often arise from milk that has not been kept clean and sanitary. They should be instructed in the dangers of bad air, insects, bad drainage, expectorating where it can affect others, and many other subjects pertaining to sanitation.

The State Board of Health has given its earnest attention to the investigation of the causes of disease, especially those preventable ones which are carrying off such large numbers of our inhabitants. These will be mentioned under their respective heads. In our investigations of epidemics we have often been able to give advice and aid which have been appreciated and productive of good. Occasionally we have met severe and bitter opposition when trying to remove the evident cause of trouble, and have keenly felt our want of power to enforce a much needed reform. We would recommend that the Board be given power to abate nuisances and prevent the pollution of streams where there is unmistakable evidence of poisoning. The ordinary process of law is too slow. While waiting for the wheels to start the mischief is done.

PLAGUE.

This Board was met at the threshold of its work with as serious a problem as has ever been presented to any State Board of Health. Since March, 1900, plague had been recognized in San Francisco by eminent physicians and bacteriologists. The correctness of their diagnosis had, however, been stoutly denied. During the preceding three months, upward of 250,000 deaths had occurred from the disease throughout the world, scattered widely among the different nations. A feeling of intense anxiety was felt in the East, increased no doubt by the exaggerated reports of the extent of the disease in California on one side, and the persistent denial of its existence on the other. A feeling was rife that either we did not recognize the gravity of the situation, or were willfully hiding it, either of which was fatal to confidence.

On January 19, 1903, a Plague Conference was held in Washington, D. C., called by Dr. Wyman, Surgeon-General of the United States Public Health and Marine-Hospital Service, at the request of the Boards of Health of twenty-one Eastern States. At that Conference an exceedingly strong sentiment was shown to quarantine this State, and a resolution was introduced which would have virtually accomplished that purpose. After a lengthy discussion it was left as unfinished business until the next Conference, which was to be held in a few months. This was to give the sanitary authorities of California an

opportunity to demonstrate their willingness and ability to cope satisfactorily with the situation, and by effective work offer a guarantee of good faith and protection to the country against the spread of the dreaded disease. To this work the Board at once directed its energies. Prior to the organization of the present Board, the old Board on February 9th had entered into an agreement, as follows:

A Preliminary Plan for the Eradication of Plague in Chinatown, as agreed upon by Dr. Gardner, personal representative of the Governor, Dr. A. P. O'Brien for City Board of Health, and Drs. Glennan and Blue for the United States Public Health and Marine-Hospital Service.

First—Dr. Matthew Gardner, representing the State, will pay three medical inspectors, two sanitary inspectors, and two Chinese interpreters.

Second—The City Board of Health will begin immediately the extermination of rats by means of traps and poison, employing three sewermen for the purpose. Fifty additional traps will be supplied for this work. The city agrees also to disinfect immediately all infested places, and will cause the renovation of such habitations in a manner satisfactory to the health authorities.

Third—The city further agrees to have the streets of the Chinese district thoroughly swept at least three times a week, and the same flushed with water once a week. A per capita price will be paid for rats found in Chinatown. An extra effort will be made for the removal of garbage and the sanitation of back areas, etc.

Fourth—The United States Public Health and Marine-Hospital Service will exercise immediate supervision over this work in conjunction with State and city authorities, and will furnish for the prosecution of the work a bacteriologist and laboratory, three medical officers (more as needed), and two Chinese interpreters.

Finally, it is agreed that all cases of plague shall be reported to the proper authorities. That all inspectors shall report daily at 641 Merchant street, U. S. Plague Laboratory, for instructions; that inspectors shall be required to make daily reports of their observations and the number of sick and dead seen by them. Their whole time shall be devoted to such duties. That the Chinese make every concession toward a thorough inspection of all the sick and dead in Chinatown.

The above work to be continued for at least one year from date of adoption of the plan.

The City Board of Health agrees to recommend to the Board of Public Works and to the Board of Supervisors that Dupont street be paved with bitumen from California street to Broadway.

The City Board of Health to immediately memorialize the Board of Supervisors to provide sufficient funds for the purpose of carrying out the obligations assumed by it herein.

On May 23, 1903, this agreement was indorsed by Dr. Martin Regensburger, President, and Dr. N. K. Foster, Secretary of the State Board of Health, and the work has ever since been conducted practically under its terms. The Board adopted a policy of hard work and publicity. We believed that only hard, persistent, long-continued work, along definite lines which were well thought out, could eradicate the disease, and that the world, being vitally interested in the situation, had a right to know what we were doing. We were severely criticised in some quarters for not officially discussing the "plague situation in San Francisco" from the first and declaring our policy and what we would do. We preferred to work out results.

On June 3, 1903, the second Conference was held at Washington. At the Conference in January a resolution was adopted asking the Surgeon-General to inform the different State Boards of Health two weeks in advance of this meeting how well the California authorities were handling the situation, so they would be ready to deal intelligently with it at this meeting. California was represented by Drs. F. K. Ainsworth and N. K. Foster of the State Board, and as soon as the routine work was done these gentlemen were called upon to report for California. In the April and May reports of the State Board the plague situation had been honestly reported and each State Board furnished with a copy. This and their intimate knowledge of what we were doing had somewhat relieved the situation. A frank statement of what was being done and what we proposed to do was made to the Conference. A request was made for suggestions as to methods, with a promise to carry them out. By the authority of Governor Pardee, an invitation was extended to the Conference to send, at our expense, a committee of three to investigate and satisfy themselves and help us. The Conference, however, expressed its satisfaction and declared it unnecessary, and adopted unanimously the following resolution:

WHEREAS, The Conference of the State Boards of Health of the United States with the Public Health and Marine-Hospital Service, having confidence in the earnest efforts and ability of the Governor and State Board of Health of the State of California, acting in harmony with the Bureau of Public Health and Marine-Hospital Service, to thoroughly eradicate bubonic plague heretofore existing in the city of San Francisco, do resolve that in the judgment of this Conference, so long as the present effective work is continued, there is no need for quarantine restrictions on travel or traffic to or from the State.

On June 3, 1904, the Conference again met at Washington, and California was represented as the year before by Drs. F. K. Ainsworth and N. K. Foster. This was in no sense a plague conference, as that disease had become of only general interest. Confidence was fully restored, and no anxiety was felt about the ability and willingness of California to handle her sanitary affairs. The following resolution was unanimously adopted:

Resolved, That this Conference expresses its confidence in the present methods in force in California in dealing with plague, and that it extends its congratulations to the National, State, and municipal sanitary authorities for their harmonious action in the control of this disease.

It is the belief of this Board that where possible sanitary work should be done by the municipality. The gravity of the situation in San Francisco, however, and the fact that the whole State was vitally interested in the result, made it necessary that the State Board take an active hand. At the same time the great mass of the work has fallen on the authorities of San Francisco, and they have done it nobly. The work done by the different boards is so interwoven that it is impossible to segregate it, giving each due credit. To facilitate and systematize the

work the infected area was divided into districts, each under a State inspector, who is a thoroughly educated physician. He is furnished with a book, in which is entered the number of each house, the number of each room, and the name and occupation of the occupant, as near as can be ascertained. This gives him a more or less perfect directory of the inhabitants. At each visit he notes the sanitary condition and the whereabouts of the occupant. All sick are thoroughly examined when found, and hospitals and drug stores are closely supervised. Upon the city authorities devolves the work of condemning unsanitary places and tearing them out, and this work has been done in a thorough and systematic manner, causing as little hardship as possible, but ever keeping in view the one great end—of making Chinatown sanitary. The areas behind buildings had been filled with wooden buildings which shut out entirely light and air. Many people lived in basements which were foul to the extreme. To succeed in eradicating a disease which is essentially one of filth, this must be changed. After condemning these places as unsanitary, a wrecking crew takes charge and tears out all wooden structures and floors, which are burned in the street. The earth, if foul, is removed for a few inches, and the place is turned over to the sanitary inspector, who is one of the State employés. With carbolic acid and chlorid of lime, furnished by the city, he thoroughly disinfects the place, after which improvements are allowed along the following lines laid down by the sanitary authorities: (1) In the areas a one-story structure may be built with a glass roof and a concrete floor; (2) In the basements there must be a concrete floor over the whole extent and the walls made solid, so as to exclude rats.

The sanitary authorities, recognizing the intimate relation between rats and plague, and fearing that all their work would be made useless unless the rodents be denied admission to buildings, are striving to make the buildings rat-proof. They are also trapping them and using the Danysz virus, which is destructive to rats and mice, but harmless to domestic animals and man.

Ever since the organization of the present Board, representatives of it have each month met with the United States Public Health and Marine-Hospital officials, and representatives from the City Board of Health, Board of Supervisors, and Mercantile Associations, to discuss plans and lay out work. It was felt that by organizing and making this a permanent association much more good could be accomplished. As a result of this conviction, the Public Health Commission of California was organized. The membership consists of the Governor of the State and Mayor of San Francisco as ex-officio members, the resident officers of the United States Public Health and Marine-Hospital Service, members of the State Board of Health and City Board of Health, representatives of the different mercantile associations, and health officers of other cities.

Meetings are held monthly, or oftener if needed, at the United States Public Health and Marine-Hospital Service laboratory at 641 Merchant street, San Francisco. Sanitary questions of interest are discussed and recommendations made. These meetings aid in maintaining an enthusiasm in the work and in keeping all branches concerned in touch with each other.

The nature of the work being done to make Chinatown sanitary is such that it is impossible to give in figures much idea of its extent, but the following will be of interest:

Work Done in Chinatown during the Year ending June 30, 1904.

Basements and cellars torn out.....	155
Basements and cellars concreted	139
Rear areas torn out.....	173
Rear areas rebuilt	113
Buildings totally destroyed.....	7
Buildings refitted with new plumbing.....	71
New toilets erected.....	72
One half frontage on one block entirely rebuilt.	

Work Done in Chinatown by State Employés from March 11, 1903, to August 1, 1904.

Number of buildings inspected and reinspected.....	15,296
Number of rooms inspected and reinspected.....	104,709
Number of persons inspected.....	124,212
Number of sick inspected.....	1,122
Number of dead examined.....	537
Number of necropsies.....	187
Number of places supervised for disinfection	58,563

The disinfectors have used in their work hundreds of barrels of carbolic acid and drums of chlorid of lime, and it is safe to say that Chinatown has never been so free from odors other than these.

The deaths for the year ending June 30th were 371, of which 17 were from violence, 132 from pulmonary tuberculosis, and 11 from other forms of tuberculosis. The population of Chinatown is about 15,000. Many of the deaths should not, however, be charged to this population, as the Chinese come from all over the Pacific Coast to San Francisco when sick, and in some cases from the Eastern States. //There have been in all 119 cases of plague, with 113 deaths. Nearly all the cases have been within the limits of ten blocks. These are, by years, as follows:

	Cases.	Deaths.	Recoveries.
1900.....	22	22	0
1901.....	30	25	5
1902.....	41	41	0
1903.....	17	17	0
1904.....	9	8	1
Totals.....	119	113	6

Three of these cases have come from outside, all from the country. The first, September 11, 1903, occurred in Pacheco. It was in an

old factory building, which was rat-infested, and by recommendation of the State Board of Health was burned by the Board of Supervisors, and no more cases occurred from it. The second case was a railroad man who had lately been in San Francisco getting laborers and might have contracted it there. The third, a woman, near Concord, who had not been away from home for several weeks. Rats had been found dead at the barn, and it is quite probable that they carried the infection. As these cases occurred near where grain ships had anchored before loading and as these ships often come from foreign ports, it is more than probable that infected rats had landed from them. At the request of the State Board of Health, the United States Public Health and Marine-Hospital Service sulfured these ships and destroyed the rats aboard. The county authorities, at the suggestion of this Board, took up the matter of destroying the rats, and no case has occurred since February, 1904, six months after taking up the work.

It is a pleasure to this Board, as well as justice, to record the great aid extended to California by the United States Public Health and Marine-Hospital Service, and its corps of officers. To Surgeon-General Wyman, for his steadfast faith in California, his uniform kindness and courtesy, and for his detailing of eminent and efficient officers to aid us; to Passed Assistant Surgeons Glennan and Blue, who have at different times had charge of the work, to which they have brought untiring zeal and ability; and to Drs. Currie, Lloyd, and Trotter, who have ably seconded their efforts, California will ever owe a debt of gratitude. The maintaining of a laboratory, with eminent bacteriologists to make examinations, has been a source of great help to this Board, as well as giving confidence in the East. The quarantine station on Angel Island, under the able management of Passed Assistant Surgeon Cummings, is a source of protection to the State. No freight or passengers are allowed to pass in until he is satisfied that they are not in any way affected with disease. If coming from an infected port and not having been disinfected, he thoroughly disinfects them before landing. The expense of this station to the United States Government is about \$50,000 per year for maintenance. The plant itself is very expensive and is constantly being improved.

Recognizing the danger of the disease being carried to other parts of the State by the moving of inhabitants from the infected portions of San Francisco, the State Board of Health adopted the following resolution at a meeting held January 5, 1904:

Realizing the danger of constant communication between the Chinese of San Francisco and those in the interior of the State, and in order to thoroughly stamp out bubonic plague in California, be it

Resolved, That the Secretary of the State Board of Health communicate with the various Boards of Health throughout the State, requesting them to hold post mortems on all inhabitants dying in Chinese districts, and in the event of death being due to

obscure or suspicious cause, that sections be made and forwarded to the United States Marine-Hospital Service at San Francisco for a report. In the event that death be found to be due to bubonic plague, the Secretary is authorized to communicate with the local Boards of Supervisors, warning them of their imminent danger and urging them to take drastic measures to eradicate the disease from their midst.

This was sent in the following circular letter to all counties of the State where Chinese quarters existed:

To the Board of Health of ———,

DEAR SIRS: You will notice that the inclosed resolution requires a post mortem upon *all* inhabitants dying in Chinese districts. No distinction can be made as to race.

The occasional occurrence of cases of plague outside of San Francisco makes it highly desirable and necessary that extraordinary care be taken in all communities where Chinatowns exist.

If a case should be found that is suspicious, take a small section of the affected gland or spleen, preferably the affected gland, wrap it carefully in a little cotton, place it in a small tin box thoroughly soldered, and send at once by express to the United States Marine-Hospital Service laboratory, 641 Merchant street, San Francisco, Cal.

I hope that all Health Officers will faithfully and conscientiously attend to this matter, for it is of vital importance to the health and reputation of our State. In San Francisco, we have in a great measure subdued the trouble, but occasional occurrences of cases on the outside make it necessary to take this step.

I would also recommend that the same care be exercised upon any suspicious case occurring in your jurisdiction, even if outside the Chinese quarters.

Yours very truly,

N. K. FOSTER, Secretary.

The Board has systematically examined the Chinese quarters of the different towns, and has paid particular attention to camps located along the rivers, where the men work on ranches and are outside the sanitary supervision which they receive in the cities. In this work we sometimes meet with opposition, the violators of sanitary laws thinking they are responsible to no one. The camps are growing in extent, and from them comes a large share of the vegetables consumed. We would earnestly recommend that the members of the State Board of Health, or their authorized inspector, be vested with police power in sanitary matters and allowed to wear some suitable badge of authority.

In order that every case might be thoroughly investigated and none pass which might possibly be plague, and also to prove every case so reported, the Governor ordered the establishment of a State bacteriological laboratory. All suspected cases of plague now have three separate and distinct examinations—one by the United States Public Health and Marine-Hospital Service, one by the State, and one by the city. This precludes any possibility of mistake, and perfect assurance can be felt that every case reported is genuine and that none escape.

TUBERCULOSIS.

The subject of tuberculosis is one of ever increasing interest and concern to the people and taxpayers of California. Already three and one half times as many die of consumption in the State as from the united

causes of smallpox, diphtheria, scarlet fever, typhoid fever, and whooping-cough. One out of every six and a half deaths is caused by this disease. The time of far greatest prevalence in the age of its victims is between 20 and 50, or the productive period of life. The young and the old, although not exempt, are far less liable to the disease.

The pure air and mild climate of California, making it not only possible but pleasant to live out of doors the year round, are inducing thousands of consumptives from the States with more rigorous climates to seek our shores, hoping thus to be cured. These we can not deny admission, but they increase our death-rate and are a direct menace, as they are so many more sources of infection; besides, many of them, being without means, sooner or later become public charges. These facts make it more than a sanitary or humanitarian question. It has got to be faced as a financial and social one, and comes eminently in the domain of the statesman.

The old idea that consumption is hereditary has passed away under the light of bacteriological investigation, and instead we know that it is an infectious disease, and that each case is contracted from some other case. Further, we know now that instead of being incurable, as was formerly supposed, it is perfectly so if taken early and the patient properly cared for. The problem is, then, twofold: to prevent and to cure. If all would act together and intelligently the disease might be stamped out of existence, but this is at present not to be expected.

In many parts of the country sanatoria are being established which give glowing reports of success. It is yet too early to judge fully of their success in this State as compared with what can be done outside them. It is simply impossible to build sanatoria for all our consumptives, hence we should make our whole State as nearly as possible a sanitary one. Stringent laws, both State and municipal, should be passed prohibiting those practices which favor the spread of the disease. The schoolrooms should be frequently disinfected. No teacher should be employed who is afflicted with the disease, and the pupils should be regularly examined. Particular attention should be given to ventilating the schoolroom, and overcrowding and foul air avoided. There can be no doubt that many cases of consumption start from the schoolroom, and these can and should be avoided. Theaters, churches, halls, and all places of public amusement should also be thoroughly and frequently disinfected, and all public conveyances be kept thoroughly clean. A more earnest effort should be made to prevent the too common habit of expectorating in public places. This is no doubt a great cause of the spread of consumption, and could be stopped if local police authorities were more vigorous in enforcing the law. Important as are all these things, consumption can not be stamped out or very materially lessened until the people find out that their home

life has more to do with it than their public life. All the above things should be done, because it is right and will in a measure educate the people; but if they persist in living and sleeping in overheated rooms, often without the possibility of a change of air, the clean school and theater will not save them. The fact that proper breathing of only pure air will do more to prevent consumption than all else should persistently and systematically be forced upon the people. The State Board of Health should be provided with means to furnish literature for general distribution, and possibly to lecture in the smaller places. In cities where there are active health boards this is done already to a certain extent, but the country districts, not being so well organized or equipped, need the help of the State.

The eradication of consumption is more a matter of education than anything else. The people must know the dangers in order to avoid them. They need to know that the consumptive is a danger and a menace to others only as he makes himself so, by scattering the germs of his disease broadcast through expectoration; that the discharges from consumptive lungs and throats should always be destroyed; that pure air properly breathed is at all times necessary, and that the disease can be cured if taken early.

TYPHOID FEVER.

There have been several epidemics of typhoid fever. That there have not been more is a matter of good luck; that they were not more extensive is the result of good, earnest, and skilled work by the health authorities who had to deal with them. This Board has visited the scene of several epidemics of typhoid fever in different parts of the State to satisfy itself that everything possible was being done by the local boards to prevent its spread, and also to study the causes. In every case the local authorities had quickly grasped the situation and had suppressed in its early stages what might have been a more serious outbreak.

At Palo Alto, where for a time the disease was severe, it was quite readily traced to a milk supply contaminated by the water used for dairy purposes, which had become polluted by waste from houses where fever cases existed. After the removal of the dairy to a locality where a clean supply of water could be obtained the fever soon subsided, only a few secondary cases occurring.

The most severe epidemic was at McCloud, a lumber camp in Siskiyou County. The town has three thousand inhabitants, is well built, is supplied with an unusually pure water, and has a good sewer system. This sewer system emptied into a creek on which, a few miles below, was situated the dairy supply of the town. The physician and superintendent of the lumber company at once began an investigation, and had

the milk and water examined. The drinking water came from high up in the mountains and was pure and wholesome, but the milk gave direct evidence of pollution. This must have come to the milk from the water in the creek, which was freely used for dairy purposes. Recognizing this as the cause, the dairy was moved to a creek remote from the possibility of pollution, and the disease was checked. The State Board advised that a system of sewage destruction be installed, as the town of McCloud was endangering the lives of people below by allowing its sewage to pass into the stream. This the lumber company, which owns the mills and village and controls the situation, did, showing a willingness to do anything this Board suggested. The readiness of this private corporation to conform to the law and protect the lives of citizens below is in marked contrast to the attitude of some of our municipal and private corporations, which, without hesitation, pollute the public streams.

At Le Moine, another lumber camp, was a somewhat severe epidemic. There being no milk supply at the camp, that source of dissemination was excluded. The water supply was twofold: from a spring, and from a creek high up in the mountains, with no apparent source of pollution, as there were no habitations or camps above. A mile or more above, in the gulch in which is situated the spring, is a logging camp. No stream runs down, the small amount of water at the camp settling into the ground. Thinking that this might be the source of infection, the inhabitants were instructed not to use the water from the spring. The probability of this being true seemed small, but it was thought best to take no chances. We could find no certain cause of the epidemic, but reasoning by exclusion, we came to the conclusion that the disease was carried by the flies which swarmed in the camp. There was a constant change in help—men coming, working a few days or weeks, and passing on. It is probable that some one who had recovered from typhoid, or who was suffering from a walking type, came to the camp, and the disease germs were carried from his dejecta to the food by flies. A thorough cleaning of the camp and protection from this source of danger soon conquered the epidemic. The present season has developed but one case in the camp.

LEPROSY.

On April 10, 1904, Dr. C. C. Sherman, Health Officer at Colton, reported a case of leprosy and asked for instructions. The laws expressly state that "the Board of Supervisors are vested with power and are required to make all necessary provisions for the separation, detention, and care of lepers, or persons affected with leprosy." This was communicated to the health officer, but this Board took the matter up with the

Commissioner of Immigration, for the purpose of having the patient deported, which we are pleased to report was accomplished after several months' time.

The question of the care of lepers is one of considerable interest to the State, as we frequently have immigrants who have the disease. For each county which might have a case, to support a lazaretto would entail a needless expense, as all cases in the State could be cared for at one institution, the county from which the patient comes bearing the expense of his care. We would suggest that a committee be appointed to investigate and report on this subject.

SMALLPOX.

Like most of the other States, we have had a large number of cases of smallpox, which fortunately have not been attended with great mortality. The incompleteness of statistics makes it impossible to give figures accurate enough to be of value. The principal interest attached to the present epidemic is its mildness and the propensity of many to make a wrong diagnosis, calling it Cuban, Manila, or Adobe Itch, Impetigo Contagiosa, or Chickenpox. Its mildness may be from either one of two causes: first, the human family is becoming immune by means of persistent vaccination; or second, that the present epidemic is for some unknown reason light. In either case, the need of continued vaccination is demonstrated. That vaccination will prevent smallpox is too well proven to need discussion. If the present mild epidemic is due to vaccination having caused immunity, vaccination should be continued or this immunity will lessen and the old death-rate, reaching in some epidemics as high as fifty per cent, will return. If, on the other hand, it is caused by a mild poison in the present epidemic, we are liable at any time to be afflicted with a severe form of the disease, which will cause the same mortality as in the past. That the disease should be called by some other name is no doubt often a mistake, but it is equally certain that it has been so called for fear of injury to the locality. This is a mistaken idea, for with the present methods of controlling epidemics, and especially the ease with which one can be protected from smallpox by vaccination, there should be no unnecessary alarm; nor is a locality as likely to be avoided if the disease is acknowledged and properly cared for, as it would be if the opposite course of denial were followed.

VACCINATION.

The question of vaccination is one that always brings out a small but earnest opposition. That vaccination will protect against smallpox is established beyond dispute. The disease has been almost entirely eradicated from those countries where compulsory vaccination and revaccination are practiced, notably Germany. In those cases where

protection is not entire, owing to incomplete vaccination or exhaustion by time, the disease is rendered much less severe.

The following vaccination creed is from the Commissioner of Health of Chicago, and is adopted by others who have had extended experience:

First—That true vaccination, repeated until it no longer “takes,” *always* prevents smallpox. *Nothing else does.*

Second—That true vaccination—that is, vaccination properly done on a *clean* arm, with *pure* lymph, and kept perfectly *clean* and *unbroken* afterwards—never did and *never will* make a serious sore.

Third—That such a vaccination leaves a characteristic scar, unlike that from any other cause, which is recognizable during life, and is the *only* evidence of a successful vaccination.

Fourth—That a slight disturbance of the general system at the time that the vaccination is at its height, is an indication that the entire system has been affected by the introduction of the virus, and is, therefore, to be welcomed as an indication of protection rather than dreaded.

Fifth—That no untoward results ever follow such vaccination, but that on the other hand, thousands of lives are annually sacrificed through the neglect to vaccinate—a neglect begotten of *lack of knowledge.*

This Board believes that vaccination will prevent smallpox, and that it should be practiced and enforced among all classes of people, as it is in some countries where they have succeeded in completely stamping out the disease. The present law is too inadequate, but by its strict enforcement much good can be done. The Board sent a circular letter to all county superintendents of schools, calling attention to the law and urging its enforcement, and it is being done in most of the larger places and in many of the smaller, with the result that there are at present but few cases of smallpox in the State, and these mostly confined to remote places where vaccination is not practiced.

This Board has been called upon to make many investigations in different parts of the State and to decide controversies as to the nature of the disease. In all cases where assistance has been asked it has been promptly rendered either by a member of the Board or by an expert sent at our expense. The reports of these visits have been made and are on file in this office. Being quite voluminous we think it unnecessary to publish them. In every case a decision was rendered and all parties seemed to concur.

WATER POLLUTION.

There is probably no subject with which this Board has to deal that is of so much importance to the public health, and at the same time so little heeded, as is the pollution of the water supply.

Until within the last few years a clear, cool, sparkling supply of water was considered all that could be desired. It appealed to the esthetic sense as well as to the taste, and no suspicion that danger might lurk within it ever entered the mind. With the advance of knowledge made by the microscope in bacteriological science, it was

soon found that the clear sparkling water which had been thought so pure might be laden with deadly germs of typhoid, cholera, or other water-borne diseases; that serious outbreaks of these diseases, causing the death of many of their victims, and costing much in money and more in suffering and loss of time, could be directly traced to this same water supply. The source of this pollution is easily traced to the influence of the drainage of human habitations. The streams were convenient in which to throw all manner of matter that was needless or a nuisance about the place. Closets were built directly over the water or within easy reach thereof. The waste of sawmills and other manufacturing establishments was allowed to flow into the channels of streams, and corrals were built upon their banks. People became accustomed to such use of the streams, and many have come to regard them as made especially for their use, caring or thinking little of the danger they were entailing upon others. As the towns grew and the single closets gave way to the sewer, the polluting matter increased in greater ratio. We had been taught to place our faith in the purifying influence of the earth and that water would purify itself in running a short distance. This is true only in a limited measure, and appearance and taste as guides to pure and wholesome water must be relegated to sparsely inhabited regions. Scientific tests must be applied as the only safety, and all public water supplies should be examined frequently by a competent expert employed by the State. By doing this many epidemics could be stopped early and many lives saved.

The question of preventing the streams from being polluted is one of great difficulty, but one which will have to be met before long. In early times, when inhabitants were few and cities small, there was not the same amount of danger as now, when cities and villages are on every stream. Now the quantity of sewage is such that some streams are contaminated sufficiently to destroy all fish except the scavenger species (which live on decaying matter), and to make the waters unfit for domestic use. In other streams the water may have the appearance of purity and contain little organic matter, but lurking in it are deadly germs, derived from some case of sickness farther up the stream and which, if conditions are favorable, will start an epidemic below. In many States all sources of public water supply and systems for the disposal of sewage are put under the charge of the State health office, and the time is near at hand when some such step will be necessary here, in order to protect the people from the ever-increasing danger of typhoid or other water-borne diseases.

CHEMICAL AND BACTERIOLOGICAL LABORATORY.

There is a law for the appointment of a State Analyst, who shall be a professor in the State University. No provision, however, has been made for help in the department to do this work. The duties of the

professor of chemistry in the University at Berkeley are too great for him to personally attend to the work of State Analyst, and having no funds with which to procure help, it could not be done to any satisfactory degree. A few analyses have been made, but no extensive work could be undertaken. The much needed work of investigating drinking waters, adulterated foods, drugs, oils, etc., had to be entirely neglected. There are being sold many adulterated products which are clearly detrimental to health, and about which the people should be informed. This Board has received numerous letters asking that analyses be made and seeking information in regard to the department. The information we furnished, and the analyses as far as possible.

The streams and lakes of the State have been extensively polluted and many cases of typhoid and other water-borne diseases have resulted. The State has a large extent of mountainous country remote from modern chemical and bacteriological laboratories and without well-organized health authorities. These districts have many villages and mining camps which take their water from the clear streams and too often allow their sewage to return. Should typhoid break out in any of these remote places they have no means of knowing to a certainty its cause, and as a result many lives are lost. The State Board should be able to make the necessary examinations and investigations for them, but this we can not do, on account of lack of funds. It is a matter that should appeal strongly to the members of the Legislature, as many of their constituents yearly suffer from these causes. We would earnestly recommend that an appropriation be made whereby a chemical and bacteriological laboratory can be equipped, and an efficient man employed, under the charge of the State Board of Health. The State has a certain amount of bacteriological apparatus, used in the investigation of plague cases in San Francisco, which could be transferred to such a laboratory, thereby lessening the expense somewhat. Such a laboratory would be of untold benefit to the whole State. Samples of blood from suspected typhoid cases, discharges from sore throats, sputa from consumptives, or other pathological products could be examined at any time at the request of a health officer. Foods and drugs could be examined for adulterations. The public water supplies should be under sanitary control and frequent examinations made. It is doubtful if the State could derive as much good in any other way, for a like expenditure of money.

SANITARY CONFERENCE.

On September 8, 1903, this Board held a meeting in San Francisco, to which it invited all the health and sanitary officers of the State and all others interested in sanitary matters. There was a good attendance, and an organization was formed, which was designated as the State, County, and Municipal Sanitary Conference of California. A second meeting

was held at Paso Robles, on April 18, 1904, which was much more largely attended.

The objects of the conference are to discuss questions relating to public health, to exchange ideas in regard thereto, and to establish throughout the State a concord of action so that there can be some uniformity in the work; in other words, to bring organization out of chaos. At both meetings excellent papers were read and discussed, and there was awakened a general interest which is already bearing fruit.

It is probably not necessary to call to your attention the need of thorough organization in order to win in any contest. The objects of the different health boards are to improve the general health and sanitary conditions of the State, to fight disease in any form, but especially in epidemics, and to investigate and find the causes of disease and destroy them. The work is solely for the health of the people—to save and extend their lives. To do this, organization is needed as much as it is to protect against the possibility of a national foe. We have an excellent militia, and provision is made for its annual encampment, and while the members thereof are seldom called upon for active service we feel the safer and gladly give our support. Disease is constantly confronting us, and each year thousands die that might have lived had an active, well-instructed health board been in existence in every county, city, and village in the State, and all working in harmony. From the State down through county, city, and village, the health authorities should be in touch with one another. Should epidemics break out, every health officer should know it. Every case of contagious disease should be reported, and uniformity of action should exist from one end of the State to the other. Semi-annually all health officers should be obliged to attend the conference, the county or municipality paying the necessary expenses. It would be an encampment of the health officers, which could only result in increased efficiency of the department, and we recommend a law making such attendance obligatory.

VITAL STATISTICS.

The collection of vital statistics is imposed by law upon the State Board of Health, and outside the direct safeguarding of the public health there is no more important duty. Such statistics are not only valuable from which to draw conclusions as to the relation of certain causes to the health of the community, but often they are necessary in the proper settlement of estates. No human remains should find a resting place in California without a complete record being on file in the office of the State Board of Health, and in this office an index of all deaths should be kept so that any one could find the full particulars of any case. Such an index this Board has kept so far as deaths are reported for the past year. The laws, however, in relation to

the collection of these statistics are faulty, and good results under them are impossible. The figures presented are reliable for the population reported, but it embraces only about one half of the State, we having no record whatever of the other half. This Board has adopted the United States standard certificate of death, and has tried to introduce it throughout the State. This certificate is used in most States that are advanced in the collection of vital statistics, and as uniformity is greatly to be desired, should be generally adopted. We would recommend a complete revision of the existing laws, so that the present clumsy, round-about way of making reports could be done away with and all certificates of death sent at once to the office of the State Board of Health.

Every birth should also be recorded. The State should know the name, age, and nationality of all its children. At the present time it is impossible to prove by record the age of many of our native sons and daughters—a condition which is certainly not complimentary to us as a State and may be of serious consequence to them.

We have made no attempt at an elaborate tabulation of vital statistics, their incompleteness precluding our doing so. We present, however, the following table, which shows the number of deaths for the past five years arranged under their respective causes, and also the percentage of deaths caused by each disease mentioned. These for the inhabitants reported are correct, but to try and tabulate by counties or towns would be eminently unjust. Some have sent in faithfully each month an accurate report. Others have reported for a few months, while many have failed to make any report at all. A tabulation would give the faithful few a much larger death-rate than others, and many would not appear. Statistics to be of value must be complete and accurate, otherwise it is better not to publish them. It is greatly to be hoped that the Legislature will, at its coming session, pass laws making it possible for this Board to collect these much needed and valuable statistics.

VITAL STATISTICS.
Number of Deaths during Past Five Fiscal Years, Number Attributed to Different Causes, and Yearly Percentage of Deaths.

Years.	Population.....	Total Deaths.....	Consumption.....	Pneumonia.....	Bronchitis.....	Congestion of Lungs	Cholera Infantum..	Diseases of Digestive System.....	Diphtheria and Croup.....	Scarlet Fever.....	Measles.....	Smallpox.....	Whooping-cough....	Typhoid Fever.....	Remittent and Intermittent Fevers, Typho-Mala'ri Fev'r	Cerebo-Spinal Fever	Cancer.....	Heart Disease.....	Alcoholism.....	Unclassified.....	Death-rate.....
July 1899 to July 1900..	704,431	11,613	1,941	751	223	74	56	602	169	30	23	9	43	226	30	124	319	972	142	5,879	16.48
July 1900 to July 1901..	546,435	9,474	1,489	845	181	43	49	366	130	23	31	4	53	136	18	130	329	919	111	4,617	17.33
July 1901 to July 1902..	680,041	12,060	1,724	1,103	193	41	68	528	278	27	24	3	20	156	19	92	467	1,183	110	6,024	17.71
July 1902 to July 1903..	755,648	13,437	1,953	1,152	125	33	108	663	345	56	30	5	46	191	23	111	536	1,441	149	6,480	17.78
July 1903 to July 1904..	969,328	15,173	2,345	1,239	198	47	91	941	217	24	54	3	132	244	30	143	666	1,802	163	6,894	15.53

<i>Percentage of Total Deaths Attributed to Each of the Mentioned Causes.</i>																					
July 1899 to July 1900..	704,431	11,613	16.7	6.4	1.9	0.6	0.4	5.1	1.4	0.2	0.2	0.08	0.3	2.9	0.2	1.0	2.7	8.2	1.2	50.6	---
July 1900 to July 1901..	546,435	9,474	15.8	8.9	1.9	0.4	0.5	3.8	1.3	0.2	0.3	0.04	0.5	1.4	0.1	1.3	3.4	9.7	1.1	48.9	---
July 1901 to July 1902..	680,041	12,060	14.2	8.1	1.6	0.3	0.5	4.3	2.3	0.2	0.1	0.02	0.1	1.2	0.1	0.7	3.8	9.8	0.9	41.6	---
July 1902 to July 1903..	755,648	13,437	14.6	8.5	0.8	0.2	0.7	4.3	2.2	0.3	0.1	0.03	0.3	1.3	0.1	0.8	3.9	10.7	1.1	48.2	---
July 1903 to July 1904..	969,328	15,173	15.4	8.1	1.3	0.3	0.5	6.2	1.4	0.1	0.3	0.01	0.8	1.6	0.1	0.9	4.3	11.8	1.7	45.0	---

SANITARY INSPECTION OF STATE BUILDINGS AND INSTITUTIONS.

State University at Berkeley.—Located upon a hillside where perfect drainage and pure air are easily obtained, it is by nature endowed with more of the elements of perfect sanitation than are most of our State institutions. These natural conditions have been duly appreciated, and in all recent improvements nothing has been done but what would improve their value. The water supply for the buildings is from the city mains, while that for irrigation is from a private reservoir. The sewer system is connected with that of the city, and while in some respects imperfect, the great fall makes it effective. There is great need for a students' hospital at the University. Students come from all parts of the State and many of them are obliged to occupy rooms in company with others. In case of sickness, for want of any better place to go they have still to occupy the same quarters, much to the detriment of the sick and to the danger and discomfort of the well. To avoid this the State should make an appropriation for a hospital, to be located on the University grounds and placed in charge of the University authorities, where students could be treated for a small fee.

State Capitol Building.—This building should be the pride of the State in every respect. A noble structure, situated in the finest State capitol park in the United States, its sanitary condition should be the best possible. Far from this, for it is difficult to imagine a more unsanitary condition. It would be impossible to find a public building of any kind in the State which would so quickly bring the blush of shame to the cheek of a loyal Californian. The toilets, old and antiquated, are foul to the extreme—not for want of care on the part of the officials in charge, but on account of the construction being such as to make cleanliness impossible—with the result that the halls are often filled with foul and impure air and some of the offices are unfitted for use. Ample appropriations should be made to put this building in perfect sanitary condition, both for the honor of the State and for the health of its occupants.

Stockton State Hospital.—This is the oldest of the State hospitals, and in its management is surpassed by none. The sanitary conditions are excellent. Being on low ground the drainage is poor, and oftentimes the basements are wet, but thorough ventilation has prevented serious trouble. It is connected with the city sewer, which, however, is too high to drain the basements. The water is pumped from deep wells and is of good quality. Important improvements have been instituted during the past year. A new and very excellent ice plant with cold-storage rooms has been installed, which will prove an expenditure for economy as well as for health. Marked improvement has been made in the female department by putting in dormer windows so as to admit more air and allow

a view from the upper wards. The dairy is in fine shape, the milking-stalls and feeding-troughs being of concrete and kept clean.

Southern California State Hospital.—This hospital is situated on high ground at Patton, San Bernardino County, and overlooks the whole valley. The water supply is threefold—from the Bear Valley North Fork Company's ditch, from a tunnel into the hill, and from a well. The quality is good and the quantity generally sufficient. The sewage is emptied into a double settling-tank and then used for irrigation purposes. There should be installed a septic tank, after which the sewage could be used without danger or offense. The general sanitary conditions are excellent, although the wards are too crowded for safety. The dairy is not what that of a State institution should be. The herd is in good condition, but the buildings and yard are not sanitary and should be improved. The dairies of the State institutions should in every respect be models for the rest of the State. None but the best cows should be kept, and barns, milking-sheds, and appliances should be perfectly sanitary.

Mendocino State Hospital.—The general condition of this institution is good. During the past year the Board of Managers has instituted a sewage-destruction plant. The original plan was, at the suggestion of this Board, modified somewhat in the matter of details. The result is that the sewage, which for years has been a nuisance and a great source of annoyance to the neighborhood, is now entirely destroyed and the waste water, which is perfectly clear, is used for irrigation purposes. The water supply of the hospital is not all that could be wished. Coming from a small stream, which in summer is very low, it has to be confined in a reservoir, and at times gets quite offensive. More commodious reservoirs should be provided, for there is danger that in some dry year the supply will give out and trouble result. The hospital has an excellent herd of cows, but the dairy buildings are not up to date, nor can the milk be kept perfectly sanitary with the present arrangements, and we would recommend an appropriation sufficient for their improvement.

Home for Feeble-Minded Children.—This institution, situated at the foot of the high Sonoma hills, is well located for health and beauty, and we have, so far as location is concerned, a right to expect the healthy condition which exists. The management has done much within the past two years to improve the general sanitary conditions. In the past the sewage has been emptied into the creek, and while it does not materially affect the health conditions at the Home, it pollutes a stream, which should not be done by any one, much less the State. At the present time a septic tank is being built and will be ready for the sewage as soon as the sewer can be completed. This will relieve the stream of contamination and cure a source of danger to all below. The water

supply is good and pure. The plumbing and heating have been in extremely bad condition, but extensive improvements the present year have done much to remove all danger to health from that source. The greatest need of the Home is more room. The play and exercise room for the boys is in the basement, below the level of the ground, and is unfit for such use. Fortunately it does not have to be used during the dry season, as then they are out of doors. Many of the dormitories are too crowded for best results to health and development. The milk supply is not sufficient, nor are the cow stables and surroundings what they should be. The superintendent is anxious to improve the dairy, but the vast amount of other necessary work has thus far prevented the carrying out of plans. The improvements should, however, be provided for, as good, pure milk is particularly necessary for these State charges.

Napa State Hospital.—This is one of the largest hospitals in the State and next to the oldest. There is nothing in its location to regret. Being high, the drainage is perfect, the sewage emptying into tide water. The water supply is from reservoirs on a small creek and from a well. The water from the latter is used for drinking purposes and is of fairly good quality, but is somewhat limited in quantity. As a pure and plentiful water supply is necessary for perfect health, this Board would recommend a further supply. The plumbing of this hospital was old and extremely bad and there was danger of disease resulting from it. The Board of Managers and the State Commission in Lunacy are replumbing the whole institution in a thoroughly up-to-date manner, and we have no hesitation in saying that no State hospital in the country will have a more satisfactory system. The general sanitary condition is good. The dairy is in good shape, the floor of the milking-barn being washed daily, and the milk promptly cooled.

Agnews State Hospital.—This hospital is situated a few miles from San José, in the beautiful Santa Clara Valley. It has an abundant supply of pure water from wells about 700 feet deep. The sewage is carried to tide water in one of the sloughs. This, so far as the health of the institution is concerned, is all right, but is all wrong in principle. The State should destroy the sewage at all its institutions, thereby setting an example for the municipalities. Like those of the other State institutions, the buildings are kept clean and sanitary. The need of new plumbing has been provided for and will soon be installed. The dairy herd is in excellent condition and the buildings clean. The cottage plan of building, which has been adopted at Agnews, is certainly to be commended from a sanitary point of view. With the great aggregation of patients necessary where buildings are large it is impossible that the sanitary conditions can be as perfect as where the wards are smaller and numbers fewer. We heartily recommend this system to all the hospitals.

State Normal School at Chico.—The plumbing is in good condition with the exception of the wooden seats of the water-closets, which are stationary. These should be replaced with the wooden slats on movable hinged seats. In one place we found that where formerly there had been a closet they had dismantled the bowls and in so doing had neglected to seal up the pipe. This was ordered sealed by Dr. C. C. Van Liew, President of the school. The sewage from the building empties into two large cesspools within about 250 feet of the main building. The waste pipe leading to them is thoroughly trapped. We could get no odor either in the building or in the vents of the cesspools. We were told that the cesspools were great places for the propagation of mosquitoes, and we found abundant evidence that such was the case. Oil will be tried in these pools and its effect watched. The buildings should be connected with the city sewer system, but as the school is out of the city limits there is difficulty in doing this at the present time. The water supply is from the city water works and the water is considered good (an analysis of the same is herewith attached). It is obtained from wells some 30 to 35 feet deep and pumped into tanks. The school building is remarkably well built and reflects great credit on those who had the matter in hand, and clearly shows that there was no jobbery in this building. The basement floor, where the heating plant is situated (hot-air system being used), has never been cemented, and we think it would be of great benefit in the way of cleanliness and in keeping out the dampness and the mold that goes with dampness, if this be done. On the whole, the building is in a very satisfactory condition from a sanitary standpoint.

BERKELEY, CAL., July 19, 1904.

General analyses of two well waters; samples sent by F. C. Lusk, Chico, Cal., as representing town supply.

	Well No. 1.	Well No. 2.
	Grains per Gallon.	Grains per Gallon.
Potassium sulfate.....very small }	1.52	1.40
Sodium sulfate (glauber salt), etc.....}	1.69	.33
Sodium chlorid (common salt).....}	.87	.31
Sodium carbonate (sal soda).....}		
Calcium and magnesium carbonates, etc.....chiefly }	12.82	4.66
Calcium sulfate (gypsum).....considerable }		
Silica.....large }	2.92	1.45
Organic matter.....no "char" }		
Chemically combined water.....}		
Totals.....	19.82	8.15

GEORGE E. COLBY.

Of these two waters No. 2 is exceptionally pure and adapted to every use, both domestic and agricultural.

The same is true of No. 1, although its contents of solids is somewhat high, rendering it hard; but the mineral ingredients do not indicate any contamination.

E. W. HILGARD.

BERKELEY, CAL., July 19, 1904.

Sanitary analysis of water from well No. 1; sample sent by F. C. Lusk, of Chico, California.

Date.	Mark of Sample.	Grains per Gallon.		Parts per Million.				
		Total Residue.	Chlorin.	Free Ammonia.	Albuminoid Ammonia.	Oxygen Consumed by Moist Combustion.	Nitrates (N ₂ O ₆).	Nitrites.
1904. July 19.....	No. 1.	19.82	1.04	.028	.062	.40	1.54	None.

GEORGE E. COLBY.

This water is in every respect far within the limits of tolerance, and although it is possible that its greater mineral content may originate from some artificial source, as it stands no possible objection can lie against it.

E. W. HILGARD.

State Normal School at San Francisco.—This is one State institution of which from a sanitary standpoint nothing good can be said. The buildings are old and out of date, with some rooms below the level of the street. The ventilation is poor and the light inadequate and badly arranged. The heating facilities are imperfect. Under the existing conditions scholars can not get the best results for the time spent, and unless a new location can be secured and modern buildings erected we would advise that the school be closed.

State Normal School at San José.—Like many of our school buildings, in the construction of this, little regard was shown to light or ventilation of the classrooms. In some of the rooms a rearrangement of the seats might be possible, so that the light would be less strong in the eyes and more on the books of the pupils. The evil will probably have to be endured, but in the future the State should consider more carefully these important points. The water is from a deep well and is good. The sewage runs into the city system. The plumbing is old, but has been well cared for and is in fair condition. Some old-fashioned closets which are not in use should be taken out and the pipes sealed. The wooden, lead-lined sinks should be replaced by porcelain ones. The greatest need of the school is in the basement. The floor is but little above the ground, and underneath it there is an excellent breeding-place and runway for rats, which they are not backward in using. This floor should be removed and one of concrete put in. Rats are a direct menace to health, and no building should be allowed to have a wooden floor near the ground.

State Normal School at San Diego.—This is the most recent of our normal schools, and from a sanitary standpoint the best. The rooms are constructed with regard to light, which makes study less difficult for the pupils. The ventilation is good. The closets are clean, and

being ventilated downward there is an entire absence of odor. The sewage empties into a pit, but being tightly covered gives no offense, and probably acts as a septic tank, destroying all the organic matter.

State Normal School at Los Angeles.—The general sanitary condition is good, having city water and sewerage connections. The heating, however, is not satisfactory, being done mostly by means of stoves, which are expensive and do not properly heat the rooms. A thoroughly up-to-date central heating plant should be installed, from which all the buildings could be heated.

Industrial Home of Mechanical Trades for the Adult Blind.—The Home for the Adult Blind is an institution which seems to have been least blessed with the goods of this world. The buildings are old and the plumbing is very old. The workshops for the males are situated on two floors of an old barn. The sanitary condition is very poor, and the danger from fire is great. The general management of the institution is a very efficient one and should be encouraged in every way.

Institution for the Deaf and the Blind.—This institution, situated at Berkeley, is a model in every way. It is simply above criticism. The dormitories, lavatories, kitchen, laundry, and dairies are about as near perfection as can be gotten. Praise is certainly due to the efficient management.

Folsom State Prison.—The general sanitary condition of this institution is good. The buildings are kept clean, inside and out. The water supply from the American River is pumped into a reservoir and allowed to settle, running from it to other and smaller reservoirs nearer the buildings. These are kept clean, and we see no reason to criticise adversely the system. The sewage is collected in a pit on the river bank, and is then pumped into a reservoir on the hill, from which it is drawn for irrigation purposes. There is a certain amount of leakage from the pit into the river, which should be stopped, so as to entirely prevent pollution of its waters. The reservoir into which it is pumped is not what a State institution should have. Its location near the water reservoir, although on a lower level, is unfortunate. Instead of a reservoir there should be a scientifically constructed septic tank, in which the organic matter of the sewage could be destroyed. The water could be saved and used for irrigation, the same as at present, and the certain amount of existing danger of poisoning from its use be removed. The dairy, although not by any means perfect, is fairly good, and there is an effort on the part of those in authority to make it as sanitary as possible. A new and up-to-date milking-shed with a cooling-room should be built.

San Quentin State Prison.—The San Quentin Prison was found to be in very bad sanitary condition. The accommodations are too small for the number of prisoners sent there. Cells 25 by 22 feet, and about 9

feet high are occupied by thirty-six inmates, contrary to all cubic-air laws. The prison is overcrowded everywhere, and it is only a question of time before some epidemic will break out there. The hospital is in the same condition—dirty and antiquated. No provision is made for the segregation of tuberculous patients, because of lack of room. The plumbing is primitive and rotten from age, having been put in thirty or forty years ago. The culinary department is situated virtually underground. The ventilation is poor and the walls are unclean. Meats become foul rapidly, for the reason that there are no refrigerators. The milk supply is brought from outside dairies and is generally poor. The bathing facilities for the prisoners are inadequate, and they are not even allowed a towel for drying purposes. We recommend enlargement of the premises, and a general sanitary overhauling of the various departments. San Quentin Prison is the poorest equipped State institution that we have visited. Warden Tompkins is handicapped in every way in making improvements by reason of lack of funds.

Preston School of Industry.—This institution is situated on high ground overlooking the town of Ione, and has an ideal location from a sanitary point of view. The buildings are clean and well kept, and the health of the boys is excellent. The water supply is twofold—that for drinking purposes is from a spring, and is excellent; that for general use is unlimited in quantity, but coming from a mining country is filled with earthy matter. A settling reservoir is being built, which it is hoped will remove this trouble. The disposal of the sewage is positively bad. It is carried into the ditch which conducts away the waste water, and flows through the ranch and is used when needed for irrigation. The boys in their work frequent the banks of this ditch and are liable to become poisoned. A septic tank should be put in. This could be constructed largely by the inmates. Situated in the foothills, where the temperature for a few months is quite high, an ample ice supply is needed, both for comfort and for economy. There are often fruit, meat, and vegetables that could be kept for another day if a proper ice supply existed, which without it are lost. This saving during the summer would be considerable. We recommend an appropriation for a septic tank and an ice plant.

Veterans' Home at Yountville.—The sanitary condition of this institution is excellent. Situated on high ground, with good drainage and pure water, the natural conditions are nearly perfect, and the management has ever kept a close watch on the artificial. The new hospital in its arrangements and management is perfect. The consumptives are segregated and every care used to prevent the well from being contaminated. The dairy buildings are in good condition, inside and out, all refuse being cleared away each day. The disposition of the sewage

is not all that could be desired, but does not affect the health conditions of the institution.

Whittier State School.—The greatest need the school has is a complete change in the plumbing of the boys' three large dormitories, which are located in the second and third stories of the main buildings. Each dormitory contains fifty boys, and there has been a continual overflow in the upper closets, which have flooded the two floors and caused repeated damage to the ceilings in the superintendent's quarters and even in the lower bathroom adjoining the parlor. These closets, which are all one over the other on the inside of the south front, should be taken out of the building and put on the inside of the hollow square immediately across the wing and entirely outside the building. Fortunately there is room over the porch for these closets to be put entirely outside the building and even more convenient to the dormitories than they are at the present time. We recommend, from a sanitary standpoint, the expenditure necessary, which is estimated to be about \$5,000. There is a very defective ventilation of these dormitories, which can be remedied by large central ventilators connecting with the outside air. At the present time ventilation is by means of windows on two sides, which is not sufficient in weather demanding a partial closing of the windows. An economical expenditure would be for an ice machine, which would permit the keeping of meats and other provisions in much better condition, and these could then be purchased in larger quantities at lower prices; therefore, we would recommend that a good ice plant be added to this institution. There was no ice on the day of this inspection and their meat was in bad condition. The trade school and buildings, and the school as a whole, are in excellent condition. The basement, where the baking and cooking are done, needs some repairs, but if the meat question was satisfactorily settled by the adding of a cooling-room and ice plant, a great deal of the annoyance of that department would be remedied. The expenditures that we recommend would cost somewhere between \$8,000 and \$10,000, which in the end would be a sufficient economy to justify it.

Respectfully submitted.

DR. MARTIN REGENSBURGER, President,
DR. F. K. AINSWORTH,
DR. W. A. BRIGGS,
DR. W. LE MOYNE WILLS,
DR. A. C. HART,
DR. O. STANSBURY,
DR. N. K. FOSTER, Secretary,

State Board of Health.

FINANCIAL STATEMENT.

FUND FOR TRAVELING AND CONTINGENT EXPENSES.

Statement showing Condition of Appropriations for Traveling and Contingent Expenses of State Board of Health for Fifty-fourth and Fifty-fifth Fiscal Years.

FIFTY-FOURTH FISCAL YEAR.		FIFTY-FIFTH FISCAL YEAR.			
By amount appropriated.....		\$1,500 00	By amount appropriated		\$1,500 00
By balance, etc.....		6 90			
		<u>\$1,506 90</u>	To warrants drawn in favor of State Board of Health, as follows:		
To warrants drawn in favor of State Board of Health, as follows:			No. Date—1903.		Amount.
No. Date—1902.	Amount.				
295—July 19.....	\$189 90		612—July 18.....		\$51 60
1284—Aug. 18.....	18 00		1108—Aug. 1.....		95 80
1809—Aug. 23.....	70 45		1691—Aug. 24.....		10 70
2350—Sept. 27.....	22 00		2332—Sept. 3.....		6 50
3687—Nov. 1.....	65 70		3414—Oct. 3.....		61 55
3889—Nov. 6.....	35 80		3708—Oct. 21.....		29 75
4001—Nov. 13.....	31 70		3769—Oct. 27.....		7 35
4566—Nov. 29.....	80 50		4449—Nov. 4.....		29 29
4810—Dec. 2.....	17 21		4708—Nov. 12.....		7 50
			4951—Nov. 28.....		7 69
			5702—Dec. 8.....		65 40
			5881—Dec. 18.....		11 50
			6044—Dec. 29.....		7 50
			6545—Dec. 31.....		9 50
				1904.	
6886—Jan. 15.....	52 15		6743—Jan. 12.....		21 70
8467—Jan. 27.....	27 10		7043—Jan. 20.....		15 00
8468—Jan. 27.....	46 25		7448—Feb. 1.....		74 40
11852—Feb. 19.....	50 80		7942—Feb. 9.....		6 06
14392—Mar. 7.....	7 50		8073—Feb. 16.....		5 00
15380—Mar. 18.....	31 54		8763—Mar. 4.....		6 25
16103—April 2.....	145 95		8985—Mar. 15.....		9 25
16316—April 10.....	33 25		9661—April 1.....		10 04
17471—May 21.....	57 29		9776—April 7.....		12 00
17537—May 26.....	27 75		9868—April 12.....		19 00
2—July 1*.....	483 73		9934—April 18.....		8 66
235—July 1*.....	12 43		10000—April 25.....		25 05
			10686—May 3.....		31 40
			10802—May 6.....		27 85
			10851—May 10.....		9 50
			10968—May 18.....		10 50
			10973—May 18.....		157 25
			11008—May 24.....		34 05
			11031—May 26.....		5 75
			11874—June 14.....		88 75
			12082—June 25.....		9 75
			To balance.....		511 16
					<u>\$1,500 00</u>

*Contracted in fifty-fourth fiscal year and paid in fifty-fifth fiscal year from funds of the fifty-fourth fiscal year.

CONTAGIOUS DISEASE FUND.

Statement showing Condition of Appropriations for Prevention of Contagious Diseases.

APPROPRIATION OF FEB. 19, 1901.		APPROPRIATION OF MAR. 20, 1903.	
By amount appropriated	<u>\$100,000 00</u>	By amount appropriated	<u>\$100,000 00</u>
Amount on hand July 1, 1902....	\$73,142 48	To warrants drawn up to July	
Amount returned to Treasurer		1, 1904, as follows:	
on account of error.....	68 10	No. Date—1903.	Amount.
	<u>\$73,210 58</u>	16763—April 30.....	\$1,207 93
To warrants drawn, as follows:		17826—May 29.....	1,566 07
No. Date—1902.	Amount.	3—July 1.....	1,120 00
354—July 21.....	\$769 50	456—July 10.....	5 00
1136—Aug. 8.....	639 80	613—July 18.....	90 00
2078—Sept. 8.....	598 15	1561—Aug. 11.....	1,278 85
2872—Oct. 2.....	677 63	1692—Aug. 24.....	22 40
3900—Nov. 7.....	1,193 45	1806—Aug. 27.....	35 90
4565—Nov. 29.....	129 45	2331—Sept. 3.....	1,155 80
4967—Dec. 6.....	1,135 00	2701—Sept. 22.....	27 50
5171—Dec. 22.....	177 70	3104—Sept. 30.....	1,155 00
1903.		3811—Oct. 31.....	1,165 00
5692—Jan. 2.....	1,266 85	4667—Nov. 11.....	38 50
11296—Feb. 21.....	349 00	2846—Nov. 20.....	19 70
14393—Mar. 7.....	1,015 62	5581—Dec. 4.....	1,193 50
15381—Mar. 18.....	242 30	6045—Dec. 29.....	1,165 00
15501—Mar. 25.....	450 00	1904.	
15502—Mar. 25.....	962 35	6744—Jan. 12.....	82 50
Act repealed March 25, 1903.		7597—Feb. 2.....	1,239 84
To balance returned to Treas-		8139—Feb. 20.....	17 50
urer	63,603 78	8525—Feb. 29.....	1,225 50
	<u>\$73,210 58</u>	8864—Mar. 8.....	6 65
		9008—Mar. 15.....	15 30
		9044—Mar. 22.....	40 00
		9660—April 1.....	1,044 50
		9664—April 18.....	341 70
		10418—April 30.....	1,015 00
		10692—May 12.....	42 70
		11336—May 31.....	1,015 00
		11948—June 21.....	82 95
		12119—June 30.....	1,020 00
		To balance.....	81,534 71
			<u>\$100,000 00</u>

73,142.08
 63,603.78

 9,538.30

PRINTING FUND.

Statement showing Amount of Printing done for State Board of Health during the Fifty-fourth Fiscal Year.

By appropriation for fifty-fourth fiscal year.....	\$700 00
By balance from fifty-third fiscal year.....	138 50
Total	\$838 50
1902—Aug. 9— 150 monthly circulars.....	\$11 50
Sept. 4— 150 monthly circulars.....	11 00
Nov. 13— 150 monthly circulars.....	11 00
Nov. 15— 150 monthly circulars.....	11 00
Nov. 19—1,000 registers of marriages.....	20 75
Nov. 19—1,000 registers of births.....	20 75
Nov. 19—1,000 registers of deaths.....	20 00
Dec. 1— 150 monthly circulars.....	14 00
Dec. 30— 150 monthly circulars.....	12 00
1903—Jan. 31—2,000 biennial reports.....	500 00
Mar. 11— 150 monthly circulars.....	11 50
Mar. 12— 150 monthly circulars.....	11 00
Mar. 27— 150 monthly circulars.....	10 00
Apr. 9— 100 circular letters to boards of health.....	3 50
Apr. 10—1,000 envelopes, No. 6.....	4 25
Apr. 10— 500 letter heads.....	3 50
Apr. 12—2,000 memo. heads.....	6 25
Apr. 12—3,000 letter heads, in pads of 500.....	15 50
Apr. 12—1,750 envelopes, No. 6, in lots of 250.....	10 50
Apr. 12— 300 circular letters to boards of health.....	3 25
May 1— 300 monthly circulars.....	15 50
May 2— 500 manila envelopes.....	5 00
May 21— 250 monthly circulars.....	16 50
June 1—5,000 envelopes, No. 6.....	15 00
June 27—2,500 envelopes, No. 6.....	8 00
June 30— 300 monthly circulars.....	15 00
June 30—4,000 letter heads, typewriter.....	13 00
June 30—2,000 memo. heads, typewriter.....	6 00
June 30—1,000 reports of deaths.....	7 25
June 30—2,000 manila envelopes.....	20 00
	\$832 50
Balance returned to Treasurer.....	6 00
	\$838 50

Statement showing Amount of Printing done for State Board of Health during Fifty-fifth Fiscal Year.

By appropriation for fifty-fifth fiscal year.....	\$750 00
1903—July 22— 250 monthly circulars.....	\$12 00
Aug. 5— 1,000 blank sheets.....	1 00
Aug. 20— 200 monthly circulars.....	13 50
Sept. 22— 200 monthly circulars.....	18 25
Oct. 15—10,000 marriage report blanks.....	26 25
Oct. 16—15,000 records of births.....	37 00
Oct. 22— 250 monthly circulars.....	18 50
Oct. 27— 1,500 reports of deaths.....	21 50
Oct. 27— 1,500 reports of births.....	21 50
Oct. 27— 1,500 reports of marriages.....	21 50
Oct. 29—20,000 certificates of deaths.....	52 75
Nov. 7— 1,000 letter heads, typewriter.....	6 00
Nov. 23— 250 monthly reports.....	20 75
Dec. 18— 250 monthly reports.....	18 00
1904—Jan. 25— 250 monthly reports.....	16 50
Feb. 15— 1,500 blanks—vital statistics.....	17 50
Feb. 17— 300 monthly reports.....	15 75
Mar. 19— 300 monthly reports.....	16 00
April 12— 150 programs of sanitary conference.....	6 00
April 20— 300 monthly reports.....	17 25
May 17— 300 monthly reports.....	17 75
May 26— 250 envelopes, No. 6.....	2 00
June 22— 300 monthly reports.....	15 50
	\$412 75
Balance.....	337 25
	\$750 00

CHAPTER I

The first part of the history of the United States of America is the story of the early years of the nation. It begins with the discovery of the continent by Christopher Columbus in 1492. The early years of the nation were marked by the struggle for independence from Great Britain. The American Revolution was fought between 1775 and 1783. The United States Declaration of Independence was signed on July 4, 1776. The Constitution of the United States was signed on September 17, 1787. The early years of the nation were also marked by the westward expansion of the United States. The Louisiana Purchase of 1803 doubled the size of the United States. The Mexican War of 1846-1848 resulted in the acquisition of California and New Mexico. The Civil War of 1861-1865 was fought between the Union and the Confederacy. The Civil War resulted in the abolition of slavery and the preservation of the Union. The Reconstruction period followed the Civil War. The Reconstruction period was marked by the struggle for civil rights for African Americans. The Reconstruction period ended in 1877. The Reconstruction period was followed by the Gilded Age. The Gilded Age was marked by the rapid industrialization of the United States. The Gilded Age was also marked by the rise of the trusts and the corruption of the political system. The Gilded Age ended in 1898. The Gilded Age was followed by the Progressive Era. The Progressive Era was marked by the reform of the political system and the regulation of the economy. The Progressive Era ended in 1918. The Progressive Era was followed by the World War I period. The World War I period was marked by the United States' entry into World War I in 1917. The World War I period ended in 1918. The World War I period was followed by the Roaring Twenties. The Roaring Twenties was marked by the economic boom of the 1920s. The Roaring Twenties ended in 1929. The Roaring Twenties was followed by the Great Depression. The Great Depression was marked by the economic crisis of the 1930s. The Great Depression ended in 1945. The Great Depression was followed by the World War II period. The World War II period was marked by the United States' entry into World War II in 1941. The World War II period ended in 1945. The World War II period was followed by the Cold War period. The Cold War period was marked by the rivalry between the United States and the Soviet Union. The Cold War period ended in 1991. The Cold War period was followed by the post-Cold War period. The post-Cold War period is marked by the end of the Cold War and the beginning of a new era of global cooperation.

CHAPTER I

The first part of the history of the United States of America is the history of the colonies.

The colonies were first settled by the English in 1607.

The first settlement was at Jamestown in Virginia.

The second settlement was at Plymouth in Massachusetts.

The third settlement was at Philadelphia in Pennsylvania.

The fourth settlement was at New York in New York.

The fifth settlement was at Charleston in South Carolina.

The sixth settlement was at St. Louis in Missouri.

The seventh settlement was at San Francisco in California.

The eighth settlement was at Los Angeles in California.

The ninth settlement was at San Diego in California.

The tenth settlement was at San Jose in California.

The eleventh settlement was at San Francisco in California.

The twelfth settlement was at San Francisco in California.

The thirteenth settlement was at San Francisco in California.

The fourteenth settlement was at San Francisco in California.

The fifteenth settlement was at San Francisco in California.

The sixteenth settlement was at San Francisco in California.

The seventeenth settlement was at San Francisco in California.

The eighteenth settlement was at San Francisco in California.

The nineteenth settlement was at San Francisco in California.

The twentieth settlement was at San Francisco in California.

The twenty-first settlement was at San Francisco in California.

The twenty-second settlement was at San Francisco in California.

The twenty-third settlement was at San Francisco in California.

The twenty-fourth settlement was at San Francisco in California.

The twenty-fifth settlement was at San Francisco in California.

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