

# **Annual report of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States : 1903**

## **Contributors**

United States. Public Health and Marine Hospital Service

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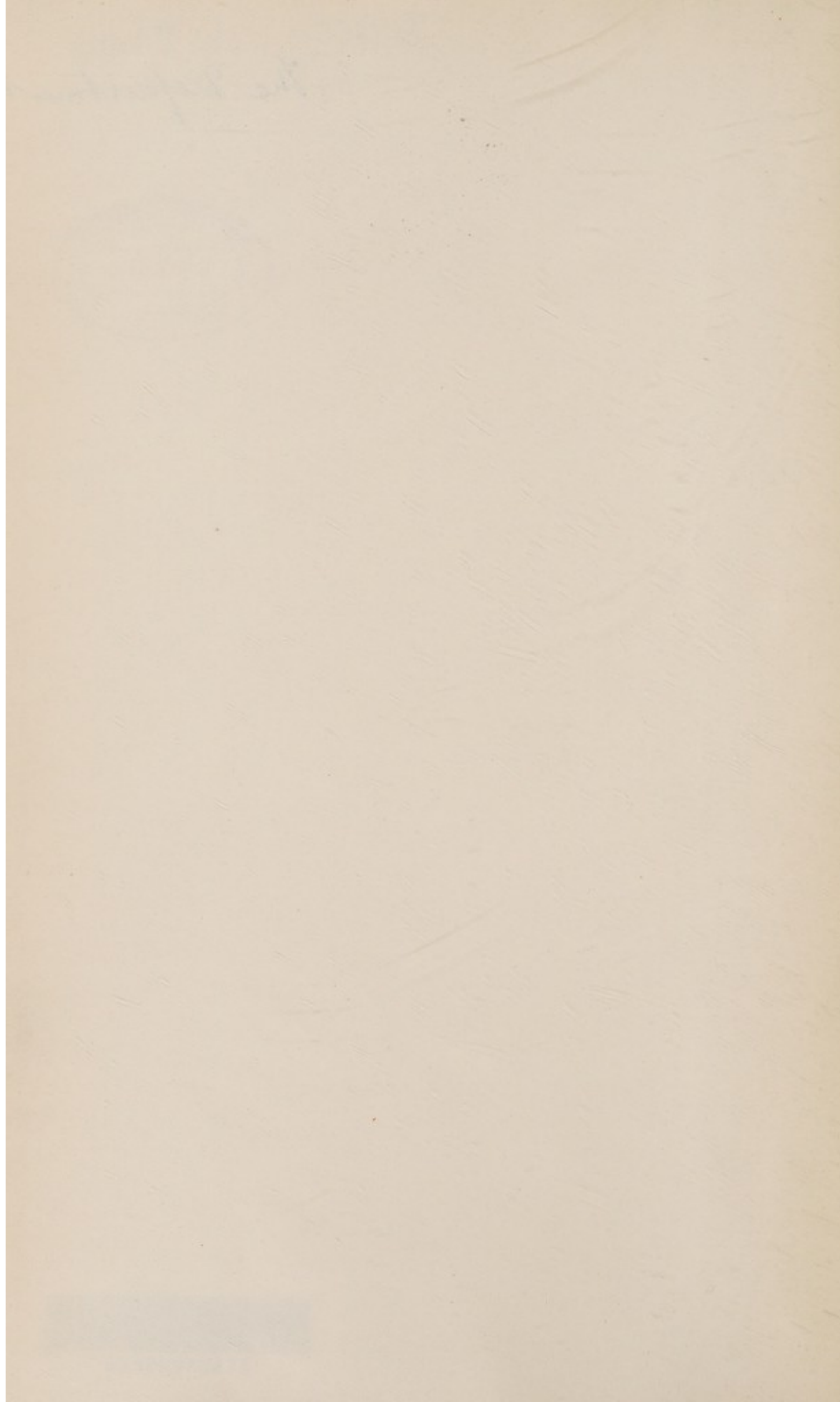




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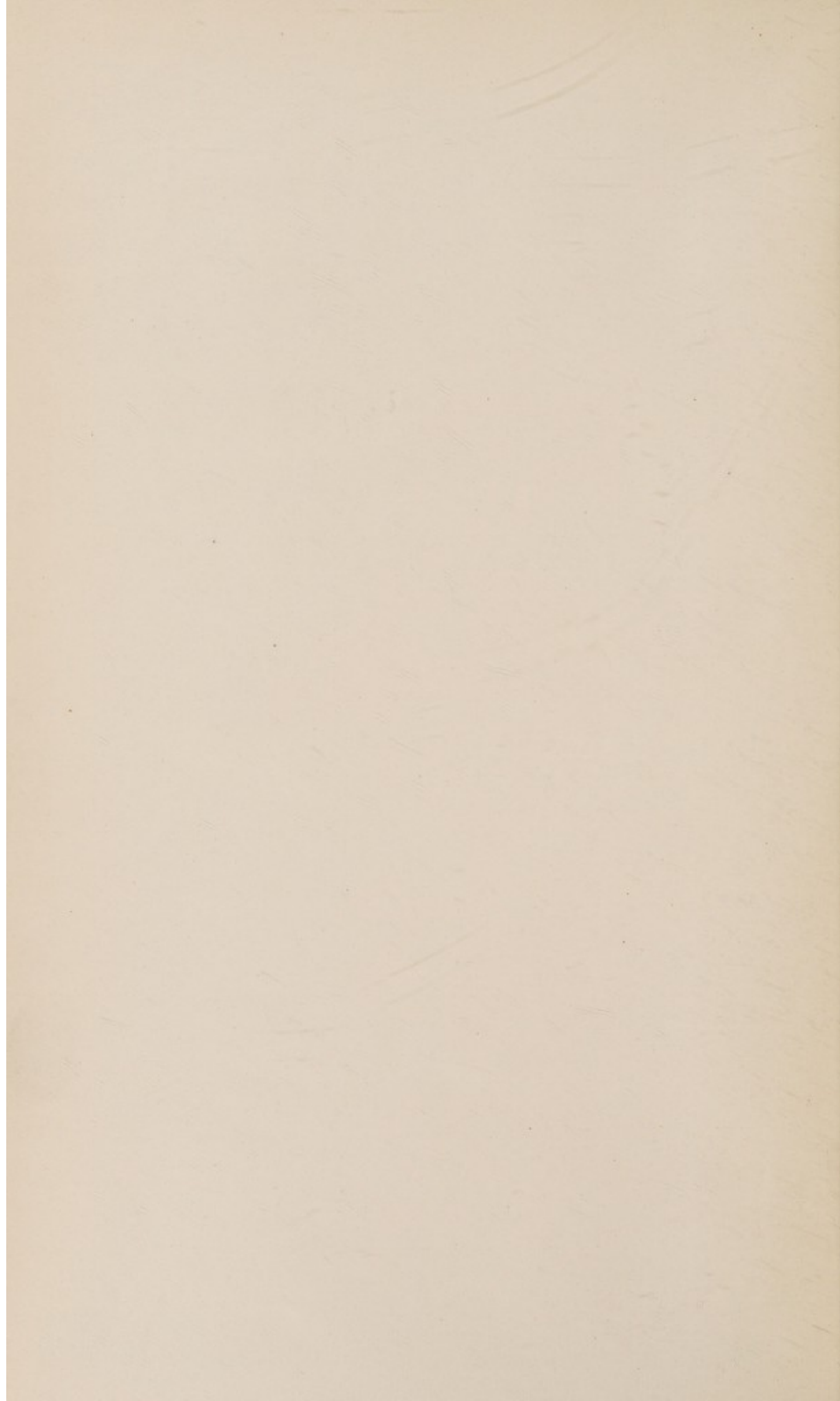


SURGEON GENERAL

PUBLISHED BY THE SURGEON GENERAL  
OFFICE OF THE ARMY MEDICAL DEPARTMENT

WASHINGTON

1914



# ANNUAL REPORT

OF THE



# SURGEON-GENERAL

OF THE

PUBLIC HEALTH AND MARINE-HOSPITAL  
SERVICE OF THE UNITED STATES.

FOR THE

FISCAL YEAR 1903.



WASHINGTON:  
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1904.



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TREASURY DEPARTMENT,

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*Public Health and Marine-Hospital Service.*







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OPERATIONS  
OF THE  
UNITED STATES PUBLIC HEALTH AND  
MARINE-HOSPITAL SERVICE.  
1903.

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AND  
THE NATIONAL DEBT

1861



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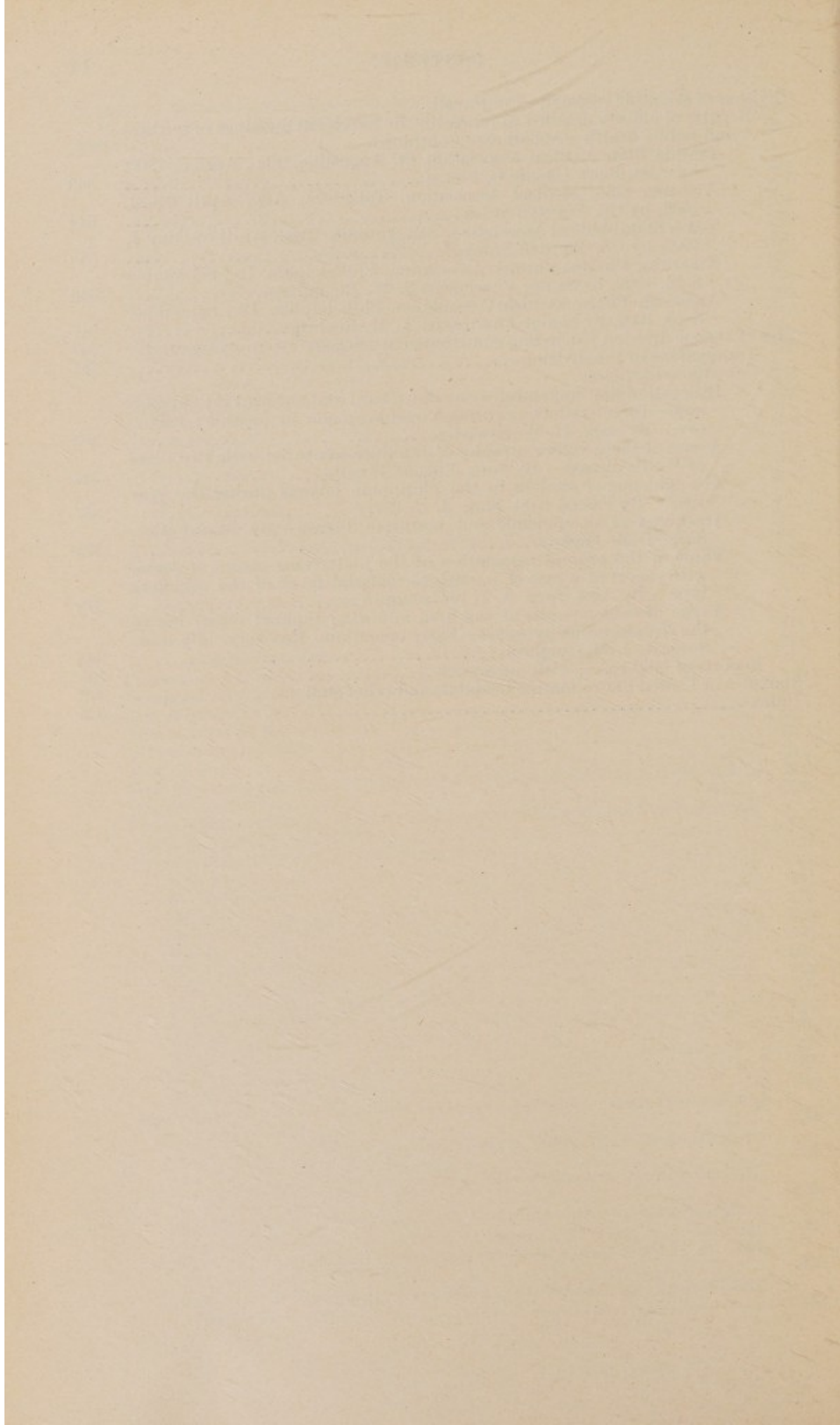
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## LETTER OF TRANSMITTAL.

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TREASURY DEPARTMENT,  
*Washington, December 23, 1903.*

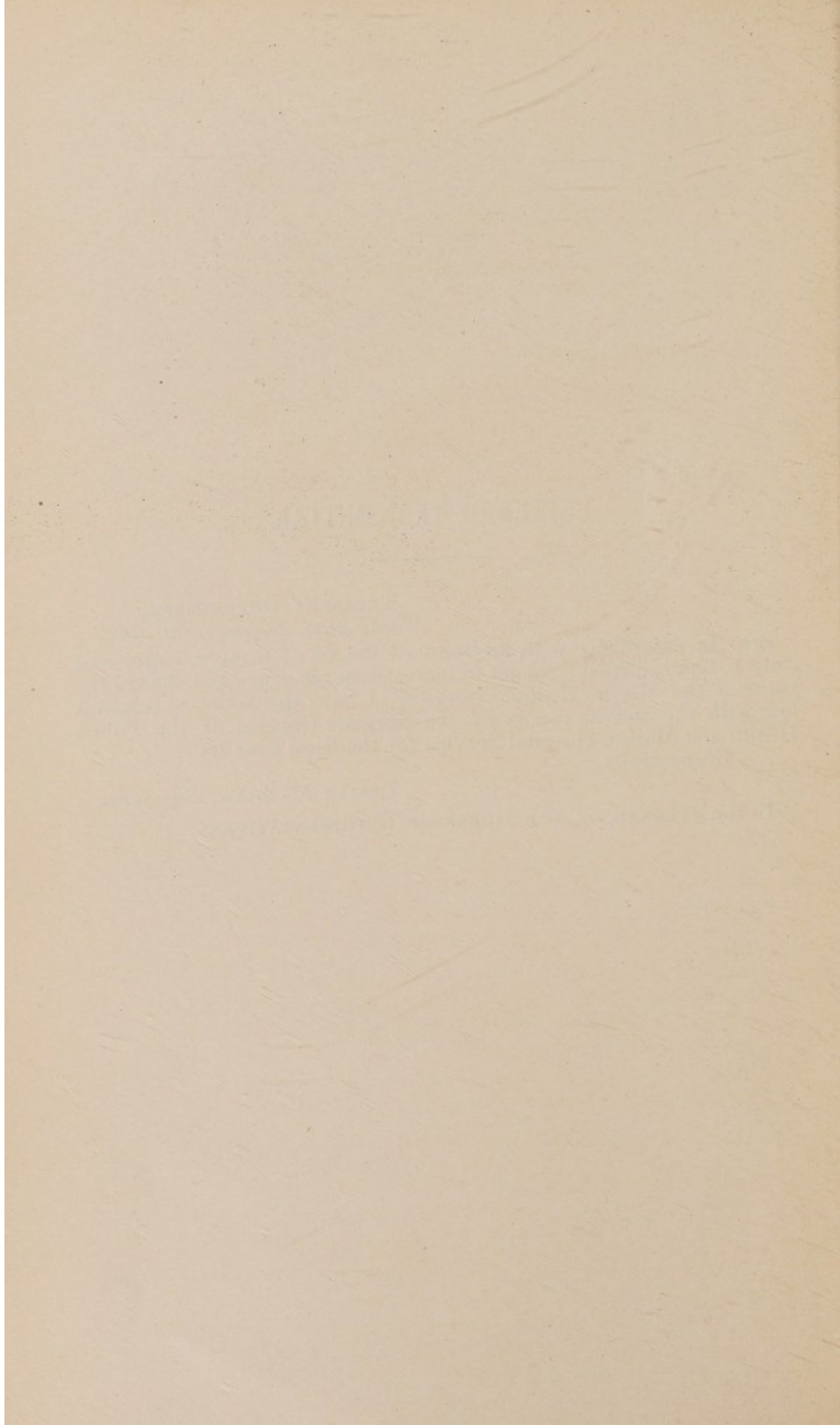
SIR: In accordance with section 9 of the act of Congress approved July 1, 1902, entitled "An act to increase the efficiency and change the name of the Marine-Hospital Service," I have the honor to transmit herewith the annual report of the Surgeon-General of the Public Health and Marine-Hospital Service for the fiscal year 1903.

Respectfully,

LESLIE M. SHAW, *Secretary.*

To the SPEAKER OF THE HOUSE OF REPRESENTATIVES.





ANNUAL REPORT  
OF THE  
SURGEON-GENERAL PUBLIC HEALTH AND  
MARINE-HOSPITAL SERVICE.

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REPORT TO THE SECRETARY.

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TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND  
MARINE-HOSPITAL SERVICE,  
*Washington, D. C., December 11, 1903.*

Hon. LESLIE M. SHAW,  
*Secretary of the Treasury.*

SIR: I have the honor to submit, for transmission to Congress, in compliance with the act of July 1, 1902, the following report of transactions of the Public Health and Marine-Hospital Service of the United States for the fiscal year ended June 30, 1903, the same being the thirty-second annual report of the Service, in the one hundred and fifth year of its existence, and the second annual report under its new name.

I beg leave to invite attention to the fact that this report differs from previous annual reports in that no transactions are included beyond the end of the fiscal year. Heretofore it has been customary to include later transactions, particularly those relating to quarantine and epidemic work, but it is proposed to hereafter confine the annual report to the fiscal year. It will be noted also that much of the matter heretofore published in the annual report is now published in the several bulletins of the Service, making the annual report smaller in volume.

The operations of the Service have been conducted under the act of Congress to "increase the efficiency and change the name of the Marine-Hospital Service," approved July 1, 1902, and new regulations in accordance therewith promulgated November 29, 1902.

SANITARY CONVENTION OF AMERICAN REPUBLICS.

In accordance with resolutions passed by the Second International Conference of the Pan-American States, held in the City of Mexico, October, 1901, to January, 1902, the first general international sanitary convention of the American Republics was held at Washington, D. C., December 2-5, 1902. Eight Central and South American Republics, Mexico, and the United States were represented in the convention, which passed resolutions relating to sanitary and quarantine



measures and effected the formation of an International Sanitary Bureau to aid and be aided by the several republics and to be permanently located in Washington. The transactions of this convention have been published in full as Senate document No. 169, Fifty-seventh Congress, second session. A summarized account will be found in the report of the Division of Scientific Research.

#### PLAGUE CONFERENCE.

Under section 7, act of July 1, 1902, 22 States and Territories having joined in a request, representatives of the boards of health of said States and Territories were convened in Washington January 19, 1903, to consider the plague situation in California. Resolutions were passed which have materially aided the Service in the prosecution of its work in Chinatown, San Francisco. The transactions of this conference have been published in full in the Public Health Reports of January 23 and February 6, 1903, and a summary of the same will be found in the report of the Division of Domestic Quarantine.

#### ANNUAL CONFERENCE WITH STATE AND TERRITORIAL HEALTH AUTHORITIES.

The first annual conference of State and Territorial health authorities with the Public Health and Marine-Hospital Service, under section 7, act of July 1, 1902, was held in Washington June 3, 1903. Twenty-two States and Territories were represented. The delegates, in turn, gave synopses of the laws under which their respective boards operate, and a resolution was adopted favoring the formation of committees on special diseases and special sanitary subjects for the consideration of such questions relating to the same as might be referred to them by the Surgeon-General. The transactions will be published in full in the near future. An interesting account of this conference will be found in the report of the Division of Scientific Research.

The two conferences above mentioned have developed a spirit of harmony and cooperation between the State and National governments in matters of public health, which is of great present value and in the future there will doubtless be demonstrated in still greater degree the benefits of this provision of the law.

#### THE NATIONAL QUARANTINE SERVICE.

Maritime quarantine has been conducted at 37 national quarantine disinfection and inspection stations in the United States proper, 5,922 vessels being inspected before entry and 352 vessels disinfected.

In October, 1902, by request of the State health authorities of Maine, inspectors were stationed, and are still maintained, on the northern border of that State to prevent the introduction of smallpox from the province of New Brunswick.

The inspection service on the Mexican border has been continued against the introduction of smallpox, yellow fever, and later the plague, which last disease made its appearance in Ensenada, Lower California, and Mazatlan, upon the west coast of Mexico. At the close of the fiscal year special attention is directed to the Texas-Mexican border against



the entrance of yellow fever, now prevailing at some ports in Mexico, inspectors being on duty at El Paso, Eagle Pass, and Laredo, in aid of the Texas State quarantines at the same ports of entry.

National quarantine has been conducted through officers of the service in all the principal ports of Porto Rico, Hawaii, and the Philippines. In Porto Rico and Hawaii the expenses are paid out of the annual Congressional appropriation for quarantine maintenance. In the Philippines the quarantine expenses are paid from the funds of the islands under Executive Order of January 3, 1900. The recrudescence of the cholera epidemic in the Philippines has necessitated the maintenance of a stringent outgoing quarantine upon all vessels from Manila to the uninfected ports in the islands as well as to ports in the United States and its other insular possessions. A quarantine of five days is imposed on army transports before allowing them to sail for the United States. In addition to the chief quarantine officer in the Philippines and his assistants stationed at Manila, assistant surgeons have been on duty at Iloilo and Cebu. During the latter part of the fiscal year an assistant surgeon was stationed at Jolo. An examination by an officer of the Service showed that the Pasig River is contaminated with cholera.

The last Congress appropriated \$80,000 for improvements to the station on Quarantine Island, in Honolulu Harbor, and measures are under way for effecting the required improvements.

Service officers are stationed in the United States consulates of five ports in Cuba: Habana, Matanzas, Nuevitas, Santiago, and Cienfuegos. These officers exercise supervision over all outgoing vessels bound for the United States or its insular possessions. The disinfecting barge *Sanator*, owned by the Service, has been continued at anchor in Habana Harbor and used for any required disinfection of vessels bound for the United States.

Service officers are stationed at seven fruit ports in Central and South America to inspect fruit vessels departing for our southern ports and to enforce special regulations under which said vessels may avoid quarantine detention at the port of arrival and consequent ruin of their cargoes.

On account of the prevalence of plague in China and Japan medical officers have been detailed for duty in the offices of the United States consuls at Yokohama, Nagasaki, and Kobe, Japan, and Hongkong and Shanghai in China.

On account of yellow fever in Mexico officers have also been detailed for duty in the consular offices at Vera Cruz, Progreso, and Tampico.

New regulations for maritime quarantine and for the Mexican and Canadian borders have been prepared, and were promulgated by the Secretary of the Treasury April 1, 1903, in which practical recognition is given to recent advances made in the study of the origin and propagation of epidemic disease.

#### SMALLPOX.

Reports published weekly in the Public Health Reports show the continued prevalence of this disease in a mild form in nearly every State of the Union. During the fiscal year 1903 in 44 States there were reported 42,590 cases with 1,642 deaths, a mortality of 3.86 per cent. The distribution of literature on the prevention and suppression of smallpox has been continued.



## PLAGUE.

Cases of this disease have continued to appear in the Chinese district of San Francisco, 38 cases being reported during the fiscal year. The aid afforded the municipal authorities has been continued, and this joint work has no doubt served to confine the disease to its original limits. Owing to the fact that the efforts of the health officials of San Francisco had been carried on under unusual difficulty and that an increase in cases was reported in the latter part of the summer of 1902, with the approval of the Department a Service officer was specially detailed to the State of California to ascertain conditions, particularly in the Chinese settlements outside of San Francisco. Sanitary inspections during November and December by this officer, in conjunction with a representative of the governor, developed the fact that no centers of infection existed in these outside districts. In December last the Surgeon-General visited the State to confer with the State and local health officers. A cordial understanding was reached and the way prepared for future cooperative action more decisive in character. After the inauguration of the new State officials last January the special representative of the governor, the sanitary officials of San Francisco, and the Service's representative effected a gratifying cooperative plan of campaign for the destruction of plague infection in the Chinese district. The work has been and is being prosecuted satisfactorily, and is expected to be continued for a considerable time before complete surpression is attained.

## YELLOW FEVER.

Fortunately no cases of this still dreaded disease have been reported in the United States during the fiscal year, although it is now prevailing in some of the ports of our southern neighbors. Cuba has continued to be free from this disease.

The work of the Yellow Fever Institute, mentioned in the last two annual reports, has been continued, and five bulletins, Nos. 9 to 13, have been issued. Bulletin No. 13 is of special importance and is a study of the etiology of yellow fever, the report of a working party of medical officers stationed at Vera Cruz, Mexico, from May to October, 1902, and whose labors were afterwards continued in the United States until March, 1903. At the present time a second working party is continuing the investigation at Vera Cruz to repeat and confirm (or otherwise) the findings of the first party and make such additional experiments as may be prompted in the course of their investigations.

## MARINE HOSPITALS AND RELIEF.

The relief statistics for the year are as follows:

Total number of patients.....	58,573
Number of patients treated in hospital.....	13,567
Number of patients treated in dispensary .....	45,006
Total number of days' relief in hospital.....	383,389
Excess in number of patients over previous year .....	2,263
Excess in number of days' relief over previous year .....	26,620

The Service controls and operates 23 hospitals, 22 of these being owned by the Government. The hospital building at Dutch Harbor, Alaska, is leased, but the lease will not be renewed for the ensuing



year, as the amount of relief work at Dutch Harbor does not warrant the further maintenance of a relief station at that port. In addition to the marine hospitals there are 121 relief stations where seamen receive hospital and dispensary treatment. A relief station was established during the year at Nome, Alaska, where two buildings on the old military reservation have been assigned for the use of the Service.

#### NEW HOSPITALS.

*New York, N. Y.*—The purchase of the Seaman's Retreat, Staten Island, New York, heretofore leased and operated as a marine hospital, was consummated during the year. The price paid was \$250,000, appropriated by Congress for this purpose.

*Pittsburg, Pa.*—The commission appointed by Department order of October 15, 1902, after examining all property offered, recommended that a part of the United States arsenal reservation be obtained if practicable for a hospital site. Act of Congress approved March 3, 1903 (sundry civil act), authorized the transfer to the Department of five acres of this reservation at the discretion of the Secretary of War.

*Buffalo, N. Y.*—A commission appointed by Department order of February 17, 1903, after examination of the property offered, recommended purchase of a site, approximately five acres in extent, situated on Main street about two and one-half miles from the city hall.

*Savannah, Ga.*—Building plans for this hospital are now being prepared by the Supervising Architect. The hospital will be erected on land owned by the Government.

#### SANATORIUM FOR CONSUMPTIVES, FORT STANTON, N. MEX.

Two hundred and seventy-four patients have been treated during the year, an excess of 62 over the previous year. There were 12 discharged, recovered; 54 discharged, improved; 10 discharged, not improved; 150 remained under treatment at the close of the year. Extensive repairs have been made during the year, special attention having been given to increase of ward space and to the fitting out of commodious and well-equipped kitchen and dining-room. I have to renew my recommendation of last year relative to the good results which would surely follow the reception and treatment at this sanatorium of patients from the several States, to be charged a per diem rate based upon cost of maintenance.

#### PURVEYING DEPOT, NEW YORK.

During the year 726 requisitions were filled and supplies furnished to the marine hospitals, quarantine stations in the United States, and its dependencies, to the Immigration Service, and to vessels of the Revenue-Cutter Service, and the Coast and Geodetic Survey.

#### AID TO OTHER SERVICES.

Aid was given to other services as follows: To the Revenue-Cutter Service, in physical examination of 884 applicants for enlistment, of whom 121 were rejected; to the Steamboat Inspection Service, by the examination of 1,525 pilots as to visual capacity, of whom 80 were rejected; to the Life-Saving Service, by physical examination of 1,226



surfmén, 51 of whom were rejected; to the Coast and Geodetic Survey, by physical examination of 63 applicants, with 12 rejections; to the Light-House Service, by physical examination of 3 applicants for enlistment; to the Customs Service, by physical examination of 115 employees and 5 rejections. Twenty-one employees of other services were also examined physically, as were also 426 American merchant seamen, of whom 44 were rejected.

#### MEDICAL INSPECTION OF IMMIGRANTS.

During the fiscal year 857,046 immigrants were inspected by the officers of the Service as to their physical fitness for admission, as prescribed by the immigration laws. One officer has been stationed at Naples, Italy, and another at Quebec, Canada, in the interest of the medical inspection service. Examinations are conducted at 32 ports in the United States, and on account of the large number of immigrants entering at New York, Boston, Baltimore, Philadelphia, New Orleans, and San Francisco medical officers have been assigned to duty at these ports exclusively for the examination of arriving aliens. Under the law the expense of these inspections is met by the immigration fund. The relation of the Bureau and of the medical officers engaged in this work to the Immigration Service is defined in the regulations of the Public Health and Marine-Hospital Service, approved by the Secretary of the Treasury and the President, and during the year a book of instructions for the guidance of medical officers in the inspection of immigrants has been prepared with great care in the Bureau and issued with the approval of the Department.

#### PERSONNEL.

##### COMMISSIONED CORPS.

At the close of the fiscal year the commissioned corps of the Service consisted of 109 officers, as follows: The Surgeon-General, 6 assistant surgeons-general, 24 surgeons, 27 passed assistant surgeons, and 51 assistant surgeons. Eight candidates passed a successful examination for admission to the corps and were commissioned assistant surgeons.

##### ACTING ASSISTANT SURGEONS.

At the close of the fiscal year there were 179 acting assistant surgeons, including 7 appointed for duty at fruit ports of Central and South America whose services will be terminated at the close of the quarantine season.

##### PHARMACISTS.

At the close of the fiscal year there were 46 pharmacists, as follows: Pharmacists of the first class, 16; of the second class, 23; of the third class, 7.

##### ATTENDANTS.

At the beginning of the fiscal year there were 630 hospital attendants at the marine hospitals, quarantine stations, and on epidemic duty. The number at the close of the fiscal year was 577.



## BOARDS.

During the fiscal year 40 boards of medical officers were convened for the physical examination of officers of and applicants for entrance into the Revenue-Cutter Service. A board was convened June 15, 1903, for the examination of candidates for appointment as assistant surgeons in the Service. Twenty-four applicants presented themselves and the board was still in session at the close of the fiscal year.

## EXPENDITURES.

## SERVICE FUND.

The balance of the appropriation for the maintenance of the Public Health and Marine-Hospital Service at the beginning of the fiscal year was \$635,831.51; the receipts from all sources, tonnage tax, repayments, care of foreign seamen, and reimbursements from the Immigration Service, etc., were \$947,240.98. The expenditures for the same period were \$1,096,434.49, leaving a balance on hand at the end of the fiscal year of \$486,638. These expenditures included improvements and repairs to marine hospitals, heating apparatus, furniture, and fuel, light, and water, these items being no longer included by Congress in annual appropriations.

## EPIDEMIC FUND.

The amount available of the appropriation for preventing the spread of epidemic disease at the beginning of the fiscal year was \$654,090.10; the expenditure was \$165,038.11, leaving a balance July 1, 1903, of \$489,051.99.

## QUARANTINE FUND.

The amount of the appropriation was \$325,000. There were repayments for the care of foreign seamen, etc., of \$2,621.83. The expenditures were \$322,712.02, leaving a balance at the close of the fiscal year of \$4,909.81.

## HYGIENIC LABORATORY.

During the fiscal year the scope of the laboratory has been increased with the additional features contemplated by the act of July 1, 1902. The Division of Zoology has been organized and the organization of the Division of Pharmacology is in progress. The Division of Chemistry will be organized at a later date.

The laboratory building, for which \$35,000 was appropriated in the sundry civil act of March 1, 1901, has recently been completed and will be furnished and equipped during the present fiscal year. Attention is invited to the fact that this building was provided for prior to the reorganization of the laboratory above mentioned, and was originally intended for the Division of Pathology and Bacteriology alone. More space will be required for the new divisions, and I have therefore to recommend that an appropriation for one additional building be made.

The work of the laboratory has been along lines pertaining to the public health, examination of water supplies, a study of the action of various disinfectants and germicidal agents, the investigation of diseases and conditions of sanitary and economic importance.



## INSPECTION OF VACCINE VIRUS, SERUMS, TOXINS, ETC.

Under the regulations prepared in accordance with act of Congress approved July 1, 1902, arrangements have been completed to inspect all establishments manufacturing vaccine virus, serums, toxins, and analogous products, preliminary to the issue of licenses for the sale of, barter, or traffic in such products.

## PUBLICATIONS OF THE SERVICE.

The following are the regular publications of the Service, namely, annual report, weekly public health reports, precis on various topics connected with the public health, laboratory bulletins, bulletins of the yellow-fever institute.

Attention is invited to the necessity of legislation authorizing a larger issue of these publications than is now permitted by law.

Following are the reports prepared by the assistant surgeons-general in charge of the several divisions of the Bureau, which give in detail all the transactions of the Service during the fiscal year.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*

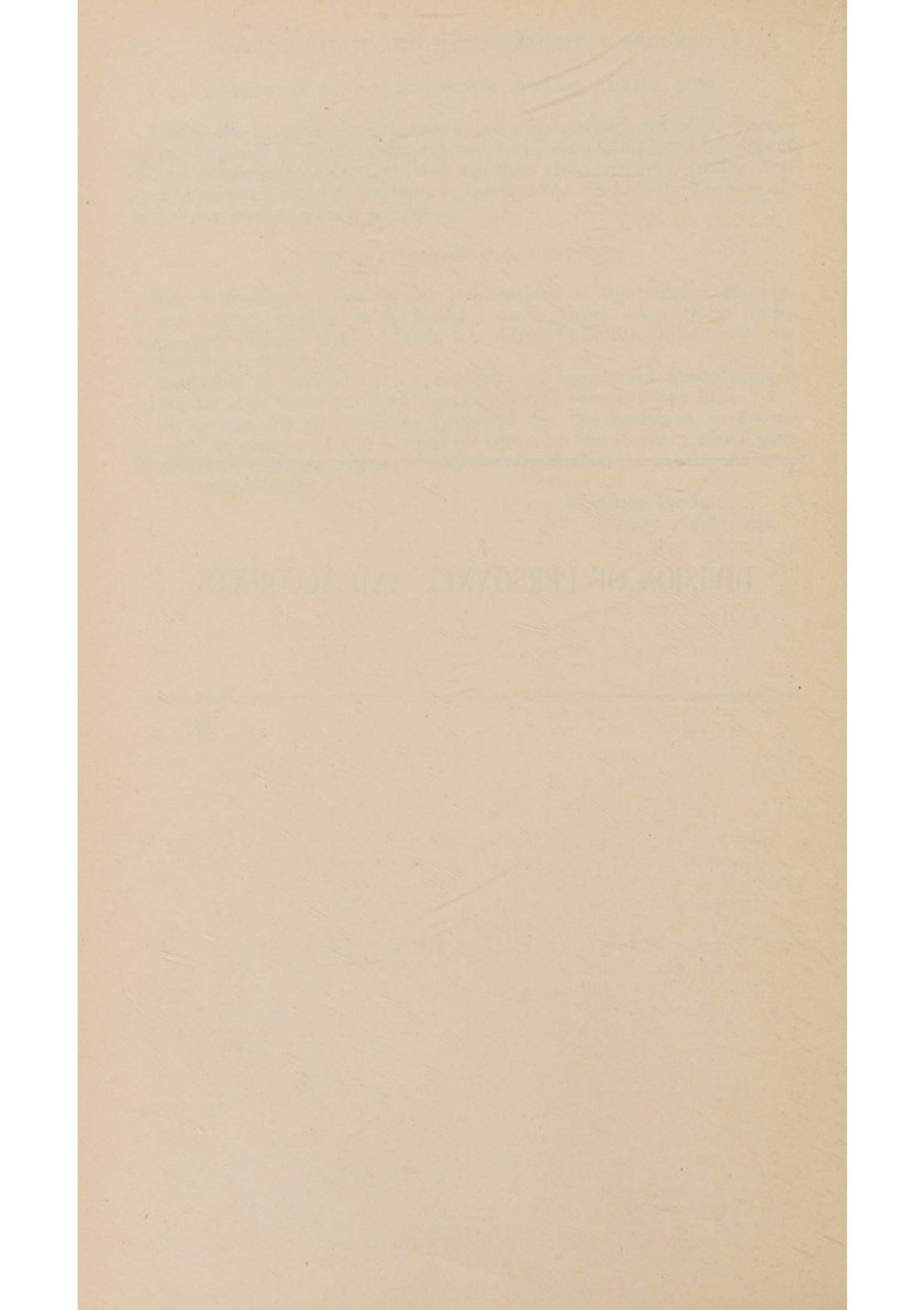
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DIVISION OF PERSONNEL AND ACCOUNTS.

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## REPORT OF THE DIVISION OF PERSONNEL AND ACCOUNTS.

By GEORGE PURVIANCE,

*Assistant Surgeon-General, U. S. Public Health and Marine-Hospital Service, in charge.*

SIR: I have the honor to transmit herewith the following report of the division of personnel and accounts for the fiscal year ended June 30, 1903:

### PERSONNEL.

#### COMMISSIONED OFFICERS.

At the beginning of the fiscal year, July 1, 1902, the commissioned corps, including the Surgeon-General, consisted of 105 officers, as follows:

Surgeon-General .....	1
Surgeons .....	29
Passed assistant surgeons .....	27
Assistant surgeons .....	48

During the year one surgeon died, one surgeon resigned, and two passed assistant surgeons were promoted to fill the vacancies thus created; two passed assistant surgeons resigned and five assistant surgeons were promoted to the grade of passed assistant surgeon.

As a result of the examination held by a board of commissioned officers convened to meet in Washington, D. C., June 16, 1902, eight candidates passed a successful examination and were commissioned assistant surgeons in this service.

In accordance with the provisions of act of Congress approved July 1, 1902, entitled "An act to increase the efficiency and change the name of the United States Marine-Hospital Service," the commissioned officers detailed for duty in the Bureau in charge of Bureau divisions (under paragraph 12 of the regulations) were given the rank of assistant surgeons-general while so serving, as follows:

Division of personnel and accounts, Asst. Surg. Gen. George Purviance in charge; domestic quarantine division, Asst. Surg. Gen. A. H. Glennan in charge; division of marine hospitals and relief, Asst. Surg. Gen. L. L. Williams in charge; division of foreign and insular quarantine, Asst. Surg. Gen. W. J. Pettus in charge; division of sanitary reports and statistics, Asst. Surg. Gen. G. T. Vaughan in charge; division of scientific research, Asst. Surg. Gen. H. D. Geddings in charge.

The corps at the close of the fiscal year June 30, 1903, consisted of 109 officers, as follows:

Surgeon-General .....	1
Assistant surgeons-general .....	6
Surgeons .....	24
Passed assistant surgeons .....	27
Assistant surgeons .....	51



## ADVISORY BOARD FOR HYGIENIC LABORATORY.

An advisory board for the Hygienic Laboratory was also provided for in the act above referred to, to consist of three experts to be detailed from the Army, the Navy, and the Bureau of Animal Industry, Department of Agriculture; the director of the Hygienic Laboratory, Public Health and Marine-Hospital Service, and five other members who were to be appointed by the Surgeon-General with the approval of the Secretary of the Treasury. In accordance therewith, on June 26, 1903, the Surgeon-General of the Army detailed Maj. Walter D. McCaw, of the U. S. Army, on November 28, 1902, the Surgeon-General of the Navy detailed Surg. George F. Urie, of the U. S. Navy, and on November 24, 1902, the Secretary of Agriculture detailed Dr. D. E. Salmon.

Under approval of the Secretary of the Treasury, dated October 23, 1902, the Surgeon-General, on February 19, 1903, appointed the following persons: Prof. Frank F. Westbrook, of the University of Minnesota, for a period of one year from July 1, 1902; Prof. William T. Sedgwick, of the Massachusetts Institute of Technology, for a period of two years from July 1, 1902; Prof. Victor C. Vaughan, of the University of Michigan, for a period of three years from July 1, 1902; Prof. Simon Flexner, of the University of Pennsylvania, for a period of four years from July 1, 1902; Prof. William H. Welch, of the Johns Hopkins University, for a period of five years from July 1, 1902.

## CHIEF OF DIVISION OF ZOOLOGY.

In accordance with the provisions of the same act, Dr. Ch. Wardell Stiles was, by Department letter of August 16, 1902, transferred from the Department of Agriculture to the position of chief of the division of zoology in the Hygienic Laboratory.

## NONCOMMISSIONED OFFICERS.

*Sanitary inspectors.*—Two sanitary inspectors served during the entire fiscal year, namely, J. Y. Porter, at Key West, Fla., and R. I. Bowie, at Nagasaki, Japan.

*Acting assistant surgeons.*—At the beginning of the fiscal year there were 181 acting assistant surgeons; 39 were appointed, 38 were separated from the Service by limitation of appointment, and 3 died, leaving on duty at the close of the fiscal year 179 such officers.

For further information in regard to the appointment and assignment of certain acting assistant surgeons, reference is made to that portion of this report which refers to acting assistant surgeons under foreign detail and acting assistant surgeons for domestic duty in connection with the prevention of the spread of epidemic diseases.

*Medical inspectors.*—One medical inspector, E. F. Smith, served during the entire year at Honolulu, Hawaii, and one, J. McDonald, was appointed for duty at San Francisco quarantine station.

*Internes.*—At the beginning of the fiscal year there were 10 internes on duty at the various marine-hospital stations; 11 were appointed and 11 separated from the Service by reason of resignation, leaving at the close of the fiscal year 10 internes on duty.

*Pharmacists.*—At the beginning of the fiscal year there were on duty 1 senior pharmacist and chemist, 1 senior pharmacist and assistant



chemist, 1 junior pharmacist, chemist and special disbursing agent, 25 senior pharmacists, and 17 junior pharmacists, aggregating 45 pharmacists.

In accordance with the provisions of the regulations of the Service, approved November 21, 1902, the above titles were abolished and the title of pharmacists of the first, second, and third class created. The number of pharmacists of the first class was limited to 16, and all pharmacists who have served a period of three years and passed a satisfactory examination are entitled to promotion to the second class.

Two pharmacists were reinstated during the year and 1 resigned, leaving the number at the close of the year 46, divided as follows:

Pharmacists of the first class .....	16
Pharmacists of the second class.....	23
Pharmacists of the third class .....	7

*Pilots and marine engineers.*—Under the provisions of paragraph 63 of the regulations of this Service, approved November 21, 1902, pilots and marine engineers were given the title of noncommissioned officers, and on June 30, 1903, there were 11 pilots and 21 marine engineers on duty.

#### HOSPITAL ATTENDANTS.

At the beginning of the fiscal year there were 630 hospital attendants employed in the various marine hospitals, quarantine stations, and on epidemic duty. Six hundred and nineteen were appointed and 672 were separated from the service, leaving at the close of the year 577, as shown by the following table:

Branch of Service in which employed.	In Service July 1, 1902.	Appointed during year.	Separated from Service.	In Service June 30, 1903.
Marine-Hospital Service.....	371	365	394	342
Quarantine .....	220	211	232	199
Epidemic .....	39	43	46	36
Total.....	630	619	672	577
Philippine Islands .....	64	28	23	69

The quarantine table includes 34 attendants employed in the Territory of Hawaii and 26 in the island of Porto Rico.

The epidemic table includes 1 attendant at Matanzas and 13 employed on the disinfecting steamer *Sanator* at Habana.

#### SPECIAL DETAILS OF COMMISSIONED OFFICERS.

##### FOR DOMESTIC DUTY.

*October 4, 1902.*—Surg. A. H. Glennan was relieved from duty at Habana, Cuba, and from special temporary duty in the Bureau, and assigned to duty on the Pacific coast in charge of the plague laboratory, San Francisco, Cal.

*June 10, 1903.*—Surg. A. H. Glennan was relieved from duty in San Francisco, Cal., and detailed as assistant surgeon-general, in charge of the domestic quarantine division in the Bureau.

*July 17, 1902.*—Surg. W. J. Pettus was relieved from duty at Cleveland, Ohio, and detailed as assistant surgeon-general, in charge of insular and foreign quarantine division in the Bureau.



*May 11, 1903.*—Asst. Surg.-Gen. H. D. Geddings, upon a request from the State board of health of West Virginia, was directed to visit the town of Elkins, W. Va., and make an examination of the water supply of that town, and determine by analysis made in the Hygienic Laboratory, from samples taken, if the condition of the water is responsible for the outbreak of typhoid fever at that place.

*May 26, 1903.*—Passed Asst. Surg. Rupert Blue was directed to assume command of plague laboratory, San Francisco, Cal., relieving Surg. A. H. Glennan.

*October 21, 1902.*—Asst. Surg. J. F. Anderson was detailed as assistant director of the Hygienic Laboratory.

*April 23, 1903.*—Asst. Surg. J. F. Anderson was directed to proceed to Great Falls, Mont., and vicinity, for the purpose of making a thorough investigation as to the recrudescence of an epidemic of so-called "spotted fever," and to make recommendation as to measures to be taken looking to the eradication of the disease.

*March 17, 1903.*—Asst. Surg. W. A. Korn was assigned to duty at Philadelphia, Pa., for exclusive duty in connection with examination of immigrants.

*June 18, 1903.*—Asst. Surg. C. E. D. Lord was assigned to duty at San Francisco, Cal., for exclusive duty in connection with examination of immigrants.

*July 19, 1902.*—Asst. Surg. A. J. McLaughlin was directed to proceed to Ocean City, Chincoteague, and Watchapreague, Md., for the purpose of making physical examination of keepers and surfmen of the Life-Saving Service.

*March 17, 1903.*—Asst. Surg. M. W. Glover was assigned to duty at Baltimore, Md., for exclusive duty in connection with examination of immigrants.

*September 11, 1902.*—Asst. Surg. B. J. Lloyd was relieved from duty at Nome, Alaska, on close of navigation (he having been assigned to special temporary duty at that port by Bureau order of May 3, 1902) and directed to return to San Francisco quarantine, Angel Island, Cal., and report to medical officer in command for duty and assignment to quarters.

*December 23, 1902.*—Asst. Surg. B. J. Lloyd was assigned to duty at the plague laboratory, San Francisco, Cal.

*July 17, 1902.*—Asst. Surg. Edward Francis was directed to proceed to Point Pleasant, N. J., for the purpose of making physical examination of keepers and surfmen of the Life-Saving Service.

*July 17, 1902.*—Asst. Surg. B. S. Warren was directed to proceed to Atlantic City, N. J., for the purpose of making physical examination of keepers and surfmen of the Life-Saving Service.

*March 17, 1903.*—Asst. Surg. A. M. Stimson was assigned to duty at New Orleans, La., for exclusive duty in connection with examination of immigrants.

#### FOR FOREIGN DUTY.

*June 25, 1903.*—Passed Asst. Surg. E. K. Sprague was detailed for duty in the office of the United States consul-general at Calcutta, India.

*August 23, 1902.*—Passed Asst. Surg. M. J. Rosenau was directed to proceed to Vera Cruz, Progreso, Jalapa, Coatzacoalcas, Orizaba, and Tampico, Mexico, for duty in connection with working party No. 1 of Yellow Fever Institute.

*September 15, 1902.*—Asst. Surg. John McMullen was relieved from



duty in the United States consulate-general, London, England, and directed to proceed to Hongkong, China, for duty in the office of the United States consul-general, and relieve Asst. Surg. J. W. Kerr.

*April 27, 1903.*—Asst. Surg. H. B. Parker was directed to proceed to Vera Cruz, Mexico, as chairman of working party No. 2 of Yellow Fever Institute.

*May 26, 1903.*—Asst. Surg. L. L. Lumsden was assigned to temporary duty at San Juan, Porto Rico, during absence of Asst. Surg. W. W. King, chief quarantine officer, who was granted two months' leave of absence from June 2, 1903.

*July 17, 1902.*—Asst. Surg. V. G. Heiser was directed to proceed to Manila, P. I., and report to Passed Asst. Surg. J. C. Perry for temporary duty and instructions for a period of one month, familiarizing himself with the duties of the station, after which he was to relieve Passed Assistant Surgeon Perry and assume duties of chief quarantine officer of said islands.

*July 17, 1902.*—Asst. Surg. W. C. Billings was directed to proceed to Quebec, Canada, for duty in office of United States Commissioner of Immigration at that port. Upon closing of the port at Quebec he was, on December 21, 1902, directed to accompany the Commissioner of Immigration to St. John, New Brunswick, for duty, and on April 16, 1903, he was directed to accompany the Commissioner of Immigration to Quebec for duty in connection with the examination of aliens entering the United States.

*September 20, 1902.*—Asst. Surg. J. W. Kerr was relieved from duty at Hongkong, China, by Passed Asst. Surg. John McMullen and directed to return to the United States.

*October 22, 1902.*—Asst. Surg. W. W. King was directed to proceed to San Juan, P. R., relieving Passed Asst. Surg. H. S. Mathewson and assuming the duties of chief quarantine officer.

*September 15, 1902.*—Asst. Surg. Carroll Fox was relieved from duty in the office of the United States consul at Liverpool, England, and directed to proceed to Manila, P. I., and report to the chief quarantine officer for assignment to duty.

*October 22, 1902.*—Asst. Surg. Joseph Goldberger was relieved from duty in the office of the United States consul at Tampico, Mexico, and directed to proceed to Ponce, P. R., for duty.

*April 27, 1903.*—Asst. Surg. Edward Francis was directed to proceed to Jalapa, Mexico, and report to Passed Asst. Surg. H. B. Parker for special temporary duty as a member of working party No. 2, of Yellow Fever Institute.

*July 19, 1902.*—Asst. Surg. G. W. McCoy was relieved from duty at San Francisco, Cal., and directed to proceed to Manila, P. I., and report to the chief quarantine officer for duty.

DOMESTIC AND FOREIGN DUTY IN CONNECTION WITH THE OUTBREAK OF BUBONIC  
PLAGUE IN MEXICO.

*March 2, 1903.*—Passed Asst. Surg. G. M. Guiteras was directed to proceed to Eagle Pass and other points in Texas and Mexico for special duty in connection with measures to prevent the spread of reported cases of plague in Mexico.

*February 28, 1903.*—Passed Asst. Surg. C. P. Wertenbaker was directed to proceed to El Paso, Tex., and confer with the acting assistant surgeon at that place with reference to protection from bubonic plague, particularly if Francis wires Torreon infected.



*December 12, 1902.*—Passed Asst. Surg. S. B. Grubbs was directed to proceed to Ensenada, Mexico, for the purpose of making an investigation relative to the presence of bubonic plague in that vicinity, and to take such action as may be necessary to prevent the spread to the United States by land or sea.

*December 30, 1902.*—Passed Asst. Surg. S. B. Grubbs was directed to proceed to Mazatlan, Mexico, and confer with Mexican officials and make all possible effort toward definite determination of character of existing disease.

*January 8, 1903.*—Passed Asst. Surg. S. B. Grubbs was directed to proceed to Guaymas and advise Bureau fully as to condition relative to bubonic plague, and to make such recommendation as to measures to be adopted as may be necessary.

*February 28, 1903.*—Passed Asst. Surg. L. L. Lumsden was directed to proceed to Los Angeles, Cal., Phoenix, Ariz., and other points in the southwestern portion of the United States and make investigation relative to reported cases of bubonic plague, and make such recommendation to the Bureau as the facts warrant, nominating and placing on duty temporary acting assistant surgeons at such places as in his judgment required the services of such officers.

*February 13, 1903.*—Asst. Surg. Edward Francis was directed to proceed to Durango and other points in Mexico and make investigation relative to reported cases of bubonic plague, keeping Bureau advised as to situation.

#### INVESTIGATION OF REPORTED PREVALENCE OF SMALLPOX.

*March 3, 1903.*—Surg. H. R. Carter was directed to proceed to Morgantown, W. Va., and make investigation as to whether diagnosis of smallpox among students at university was correct.

*April 5, 1903.*—Surg. W. P. McIntosh was directed to proceed to Lumpkin, Ga., for the purpose of making diagnosis of suspected case of smallpox.

#### SPECIAL DETAILS OF NONCOMMISSIONED OFFICERS.

##### ACTING ASSISTANT SURGEONS APPOINTED FOR DUTY IN CONNECTION WITH PREVENTING THE SPREAD OF EPIDEMIC DISEASES.

By Department letter of May 6, 1903, the following-named physicians were appointed acting assistant surgeons for duty along the Gulf coast for the purpose of keeping the Bureau thoroughly advised as to the health of individuals in these localities, and for the further purpose of examining into health of all deck hands and employees on vessels and schooners touching at their respective ports: R. J. Turner, Bay St. Louis; J. J. Harry, Handsboro; O. L. Bailey, Ocean Springs; W. T. Bolton, Biloxi; W. R. Kell, Scranton; J. J. Washington, Pass Christian; A. R. Robertson, Long Beach; C. A. Sheely, Gulfport; E. M. Fahnestock, DeLisle.

Dr. J. M. Boothby was appointed acting assistant surgeon, effective January 16, 1903, for duty at Lowelton, Me., in connection with outbreak of smallpox, which was reported to have assumed epidemic form. His services were discontinued May 31, 1903.

Dr. Estes Nichols was appointed acting assistant surgeon, effective April 16, 1903, Sandy Bay Plantation, Me., in connection with outbreak of smallpox.



Dr. A. L. Gustetter was appointed acting assistant surgeon for duty at Nogales, Ariz., in connection with other acting assistant surgeons, for prevention of spread of plague.

The following-named physicians were appointed acting assistant surgeons for similar duty at the ports set opposite their names: D. T. Wright, Douglas, Ariz.; E. F. Burton, Tucson, Ariz.; D. W. Brandon, Naco, Ariz.

#### ACTING ASSISTANT SURGEONS UNDER FOREIGN DETAILS.

On October 20, 1902, the following acting assistant surgeons were relieved from duty in the office of the United States consuls in Central and South American fruit ports, viz: S. H. Backus, Puerto Cortez, Honduras; W. H. Carson, Port Limon, Costa Rica; D. W. Goodman, Bluefields, Nicaragua; Paul Osterhout, Bocas del Toro, Colombia; R. H. Peters, Belize, British Honduras; W. B. Robertson, Ceiba, Honduras.

The services of Acting Asst. Surgs. G. E. Beyer and O. L. Pothier, who were appointed for duty at Vera Cruz, Mexico, effective May 6, 1902, under the direction of Asst. Surg. H. B. Parker, in connection with working party No. 1 of the Yellow Fever Institute, were discontinued without prejudice, to take effect October 31 and August 15, 1902, respectively. Prof. G. E. Beyer was appointed acting assistant surgeon again, to date from May 8, 1903, for duty at Vera Cruz, Mexico, and directed to report to P. A. Surg. H. B. Parker for duty in connection with working party No. 2 of the Yellow Fever Institute during the summer of 1903.

Acting assistant surgeons were appointed for foreign duty as follows: S. A. Ransom, Shanghai, China, effective July 15, 1902; R. I. Bowie, Nagasaki, Japan, effective July 29, 1902; S. H. Hodgson, Vera Cruz, Mexico, effective May 1, 1903; J. F. Harrison, Progreso, Mexico, effective April 16, 1903.

Drs. E. B. Alexander and C. H. Power were appointed acting assistant surgeons for duty at Ensenada, Mexico, effective January 7 and 16, 1903, their services being discontinued April 30 and January 24, 1903, respectively.

Dr. Luther Mason was appointed acting assistant surgeon for duty at Glasier Lake Camp, New Brunswick, effective March 2, 1903, in connection with the outbreak and prevalence of smallpox reported in that locality.

The following-named physicians were appointed March 13, 1903, for duty at the fruit ports of Central and South America, as follows: Paul Osterhout, Bocas del Toro, Colombia; W. H. Carson, Belize, British Honduras; D. W. Goodman, Bluefields, Nicaragua; W. B. Robertson, Ceiba, Honduras; R. H. Peters, Livingston, Guatemala; Fleetwood Gruver, Port Limon, Costa Rica; C. S. Carson, Puerto Cortez, Honduras.

Acting Asst. Surg. John Frick was, by Department letter of April 24, 1903, transferred from Habana, Cuba, to Tampico, Mexico, for duty in the office of the United States consul at that port.

#### DETAILS OF OFFICERS TO REPRESENT THE SERVICE AT MEETINGS OF MEDICAL AND PUBLIC HEALTH ASSOCIATIONS.

[Reports of these officers appear under Division of Scientific Research.]

Asst. Surg. Gen. G. T. Vaughan: Meeting of Medical Society of Virginia at Newport News, Va., September 23-26, 1902; meeting of



the Association of Military Surgeons at Boston, Mass., May 20-21, 1903.

Asst. Surg. Gen. H. D. Geddings: Meeting of Association of State and Provincial Health Officers at New Haven, Conn., October 28-29, 1902; meeting of Ohio health officers at Columbus, Ohio, June 29-31, 1903; meeting of school of health officers of Indiana at Indianapolis, Ind., June 24-26, 1903; meeting of South Carolina Sanitary Association at Columbia, S. C., May 28-29, 1903.

Surg. H. R. Carter: Meeting of American Public Health Association at New Orleans, La., December 8-13, 1902.

Passed Asst. Surg. C. P. Wertenbaker: Meeting of American Public Health Association at New Orleans, La., December 8-13, 1902.

Passed Asst. Surg. M. J. Rosenau: Meeting of International Sanitary Conference at Washington, D. C., October 15, 1902; meeting of special committee on diphtheria antitoxins at Philadelphia, Pa., March 7, 1903.

Passed Asst. Surg. J. M. Eager: Meeting of International Conference on Tuberculosis at Berlin, Germany, October 22-26, 1903.

Passed Asst. Surg. S. B. Grubbs: Meeting of American Public Health Association at New Orleans, La., December 8-13, 1902.

Asst. Surg. C. C. Pierce: Meeting of American Public Health Association at New Orleans, La., December, 8-13, 1902; meeting of Florida Medical Association at St. Augustine, Fla., April 8-10, 1903.

Pharmacist A. M. Roehrig: Meeting of American Pharmaceutical Association at Philadelphia, Pa., September 2, 1902.

Pharmacist S. W. Richardson: Meeting of American Pharmaceutical Association at Philadelphia, Pa., September 2, 1902.

Dr. Ch. Wardell Stiles: Meeting of State Medical Association at Talladega, Ala., April 21-24, 1903; meeting of State Medical Association at San Antonio, Tex., April 28-May 1, 1903; meeting of American Medical Association at New Orleans, La., May 5-8, 1903; meeting of North Carolina Medical Society at Hot Springs, N. C., June 2, 1903.

#### BOARDS CONVENED.

For physical examination of Surg. John Vansant, as a result of which examination he was placed on waiting orders from August 20, 1902. (August 19, 1902.)

Two boards were convened, September 29, 1902, and January 5, 1903, for examination of Passed Asst. Surgs. J. B. Stoner and G. M. Guiteras, respectively, to determine their fitness for promotion to the grade of surgeon. Both officers passed a satisfactory examination and were accordingly promoted, as previously stated in this report.

Five boards were convened, November 18, 1902; January 12, 1903; February 16, 1903; June 15 and June 18, 1903, for the examination of assistant surgeons to determine their fitness for promotion to the grade of passed assistant surgeon, as follows: At Washington, D. C., November 18, 1902, V. G. Heiser; Washington, D. C., January 12, 1903, H. B. Parker, R. H. Von Ezdorf, and John F. Anderson; at San Francisco, Cal., February 16, 1903, M. H. Foster and L. L. Lumsden; June 18, M. K. Gwyn and W. C. Hobdy; June 15, 1903, at Washington, D. C., for examination of candidates for admission as assistant surgeon, 22 applicants appeared before the board, and 9 were successful in attaining the required average; during the month of July, 6 of the successful candidates were commissioned as assistant surgeons.



Thirteen boards were convened at different stations for the physical examination of pharmacists of the second class to determine their fitness for promotion to the grade of pharmacist of the first class; with the exception of one all applicants passed a satisfactory examination and were promoted to be pharmacists of the first class.

Six boards were convened for examination of pharmacists of the third class to determine their fitness for promotion to the grade of pharmacist of the second class. All applicants, having passed satisfactory examination, were promoted to be pharmacists of the second class.

Forty boards were convened at different times and at various stations throughout the United States for the physical examination of officers of the Revenue-Cutter Service and application for entrance thereto.

One board convened to meet at Washington, D. C., July 11, 1902, for the physical examination of applicants for positions in the Coast and Geodetic Survey.

June 25, 1903, board convened to meet at Bureau for consideration of sketch plans and memoranda relative to hospital building to be erected at Ellis Island, N. Y.

February 9, 1903, board convened to meet at Washington, D. C., to consider an outline plan for marine-hospital building to be erected at Savannah, Ga.

August 7, 1902, board convened to meet at Washington, D. C., for the purpose of preparing regulations relative to securing uniformity of action as to the duties of medical officers in connection with the examination of aliens of the Immigration Service.

August 20, 1902, board convened to meet at Washington, D. C., to investigate conduct of Passed Asst. Surg. A. R. Thomas while en route from London, England, to Manila, P. I., and by approval of the findings of the board he was reduced 11 files in rank and placed at the foot of passed assistant surgeons and placed on three-quarters pay for six months from September 3, 1902.

August 26, 1902, board convened to meet at New York to investigate conduct of Surg. T. B. Perry while on duty at immigration depot.

August 27, 1902, board convened to meet at Washington, D. C., to revise the regulations governing the Service.

November 10, 1902, board convened to meet at Washington, D. C., for consideration of act of Congress approved July 1, 1902, entitled "An act to regulate the sale of viruses, serums, toxins, and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes."

December 4, 1902, board convened to meet at Washington, D. C., to revise uniform regulations of the Service.

February 25, 1903, board convened to meet at San Francisco, Cal., to investigate conduct of Passed Asst. Surg. A. R. Thomas, from December 15 to 30, 1902.

March 16, 1903, board convened to meet at Honolulu, H. I., to make investigation relative to conduct of Asst. Surg. F. J. Thornbury.

June 10, 1903, board convened to meet at Washington, D. C., to review testimony taken before board in Honolulu, convened February 25, and make recommendation in case of Asst. Surg. F. J. Thornbury, and by approval of the findings of the board, he was, by Department letter of June 16, 1903, dismissed from the Service to take effect from date of the receipt by him of said letter. This letter was per-



sonally delivered to Asst. Surg. Thornbury on July 1, 1903, by Passed Asst. Surg. L. E. Cofer, the medical officer in command at Honolulu.

June 18, 1903, board convened to meet in Washington, D. C., to ascertain whether any irregularities in regard to preparing for publication and presentation the findings of working party No. 1, organized by Department letter of March 6, 1902, had occurred.

## ACCOUNTS.

### VOUCHERS PASSED FOR PAYMENT AND SETTLEMENT.

The records of the Bureau show that 18,824 vouchers were passed during the year. Of this number 16,978 were sent to the disbursing clerk for payment, 570 were transmitted to the Auditor for the Treasury Department for examination and settlement, and 1,276 were examined and referred to the Auditor, they having previously been paid by special disbursing agents of the Service.

### FINANCIAL STATEMENT.—RECEIPTS AND EXPENDITURES, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE, FOR THE FISCAL YEAR ENDED JUNE 30, 1903.

The balance of the Marine-Hospital fund available at the commencement of the fiscal year was \$635,831.51, and the receipts from all sources \$947,240.98. The expenditures were \$1,096,434.49.

#### *Summary, Marine-Hospital fund.*

Balance, July 1, 1902 .....	\$635, 831. 51
Receipts, tonnage tax .....	907, 316. 44
Repayment, care foreign seamen, medical and hospital supplies, etc ..	39, 924. 54
Total .....	1, 583, 072. 49

#### *Expenditures.*

Maintenance of stations.....	\$755, 553. 44
Salaries, Surgeon-General's Office .....	39, 040. 00
Fuel, lights, and water .....	61, 191. 25
Repairs to public buildings .....	101, 204. 75
Furniture and repairs .....	3, 820. 44
Heating apparatus .....	4, 569. 28
Purveying depot .....	131, 055. 33
Total .....	1, 096, 434. 49
Balance July 1, 1903.....	486, 638. 00

#### *Statement of Appropriations, Quarantine Service, 1903.*

Amount of appropriation .....	\$325, 000. 00
Repayment, care foreign seamen, etc .....	2, 621. 83
Total available .....	327, 621. 83
Expenditures July 1, 1902, to June 30, 1903.....	319, 469. 42
Balance July 1, 1903.....	8, 152. 41



Name of station.	Maintenance of stations, salaries, subsistence supplies and miscellaneous.	Medical and hospital supplies.	Total.
Reedy Island, Del.....	\$23,279.66	\$2,939.28	\$26,218.94
Delaware Breakwater, Del.....	5,493.74	713.03	6,206.77
Cape Charles, Va.....	16,180.65	682.91	16,863.56
Cape Fear, N. C.....	6,942.65	308.24	7,250.89
South Atlantic.....	11,370.85	414.74	11,785.59
Brunswick, Ga.....	5,885.61	892.75	6,778.36
Gulf, Miss.....	22,174.80	1,135.01	23,309.81
Key West, Fla.....	5,690.66	63.22	5,753.88
Tampa Bay, Fla.....	7,834.29	234.33	8,068.62
San Diego, Cal.....	7,388.90	694.45	8,083.35
San Francisco, Cal.....	43,462.97	685.68	44,148.65
Port Townsend, Wash.....	17,454.12	691.43	18,145.55
Columbia River, Oreg.....	12,961.19	257.97	13,219.16
Savannah, Ga.....	17,882.61	1,361.99	19,244.60
Cumberland Sound, Fla.....	4,697.19	.....	4,697.19
St. Johns River.....	1,940.20	.....	1,940.20
Biscayne Bay.....	2,024.79	101.47	2,126.26
Boca Grande.....	3,523.50	179.38	3,702.88
Cedar Keys, Fla.....	635.78	.....	635.78
St. Georges Sound.....	3,378.77	236.66	3,615.43
Pensacola, Fla.....	10,670.62	2,037.04	12,707.66
Territory of Hawaii.....	40,808.53	1,098.76	41,907.29
Porto Rico.....	29,708.55	1,222.80	30,931.35
Miscellaneous.....	1,900.09	227.56	2,127.65
Total.....	303,290.72	16,178.70	319,469.42

*Preventing the spread of epidemic diseases.*

Balance July 1, 1902.....	\$654,090.10
Expenditures July 1, 1902, to June 30, 1903, viz:	
Foreign medical service, salaries and miscellaneous, viz, China, England, France, Germany, Japan, and Central America.....	\$39,918.63
Habana, Cuba (including outlying districts), salaries, subsistence supplies, and miscellaneous.....	35,359.54
Sanitary inspection in the United States, salaries, traveling expenses, and miscellaneous.....	45,809.59
Yellow fever, maintenance of detention camps, precaution against outbreak of yellow fever, salaries, medical and hospital supplies, disinfectants, etc.....	13,710.59
Vera Cruz, Mexico: Salaries, supplies, laboratory expenses, etc., special investigation of yellow fever.....	7,623.28
Nome and Sitka, Alaska: Medical supplies, vaccine, salaries, etc., account smallpox inspection.....	12,511.37
Texas border inspection, account smallpox: Salaries and miscellaneous.....	10,025.11
Philippine Islands, traveling expenses.....	80.00
	<u>165,038.11</u>
Balance July 1, 1903.....	489,051.99

*Appropriations for quarantine stations.*

Chesapeake Bay Quarantine Station, act March 3, 1893:	
Balance July 1, 1902.....	\$6,935.00
Balance July 1, 1903.....	6,935.00
Gulf Quarantine Station, act March 3, 1899:	
Balance July 1, 1902.....	824.56
Balance July 1, 1903.....	824.56
South Atlantic Quarantine Station, act June 4, 1897:	
Balance July 1, 1902.....	453.02
Balance July 1, 1903.....	453.02
Reedy Island Quarantine Station, act March 3, 1901:	
Balance July 1, 1902.....	1,307.95
Expended July 1, 1902, to July 1, 1903.....	440.00
Balance July 1, 1903.....	<u>867.95</u>



Port Townsend Quarantine Station, act March 3, 1901:	
Balance July 1, 1902.....	\$39,800.00
Expenditures previously authorized but not used.....	176.30
Total available.....	39,976.30
Balance July 1, 1903.....	39,976.30
South Atlantic Quarantine, act June 28, 1902:	
Amount of appropriation.....	3,500.00
Expenditures July 1, 1902, to June 30, 1903.....	170.40
Balance July 1, 1903.....	3,329.60
Fernandina, Fla., act June 28, 1902:	
Amount of appropriation.....	5,000.00
Expenditures July 1, 1902, to June 30, 1903.....	5,000.00
Mayport, Fla., act June 28, 1902:	
Amount of appropriation.....	2,350.00
Expenditures July 1, 1902, to June 30, 1903.....	850.00
Balance July 1, 1903.....	1,500.00
Miami, Fla., act June 28, 1902:	
Amount of appropriation.....	23,600.00
Expenditures July 1, 1902, to June 30, 1903.....	16,852.24
Balance July 1, 1903.....	6,747.76
Boca Grande, Florida, act June 28, 1902:	
Amount of appropriation.....	3,500.00
Expenditures July 1, 1902, to June 30, 1903.....	3,000.00
Balance July 1, 1903.....	500.00
Pensacola, Fla., act June 28, 1902:	
Amount of appropriation.....	30,000.00
Expenditures July 1, 1902, to June 30, 1903.....	25,469.39
Balance July 1, 1903.....	4,530.61
San Diego, Cal., act June 28, 1902:	
Amount of appropriation.....	7,500.00
Expenditures July 1, 1902, to June 30, 1903.....	7,481.45
Balance July 1, 1903.....	18.55

*Appropriations transferred to Supervising Architect.*

Pittsburg, Pa., act March 31, 1902.....	\$60,000.00
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## ADMINISTRATIVE DETAILS—CIRCULAR LETTERS.

### CIRCULAR LETTER RELATIVE TO APPOINTMENT OF HOSPITAL ATTENDANTS.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
Washington, November 19, 1902.

*To commissioned officers, acting assistant surgeons, and others concerned:*

It is observed that at some of the stations in this Service appointments are recommended for the position of hospital attendants without regard to the standing of the person on the eligible list.



In order that the requirements of the civil-service law, rules, and regulations may at all times be strictly observed, officers of the Service are directed to state in the letter of nomination (if the party nominated has previously qualified), or in the letter recommending a probationary appointment, that the selection of the party in question was made from the highest three eligibles on the list who possess the requisite qualifications for the particular duties to be required of the appointee. If there are eligibles on the list whose standing is higher than the party nominated who have declined the position or whose addresses are not known at the time of recommending the eligible with a lower average, this fact should be reported either in the letter of nomination or in the letter recommending a probationary appointment.

In this connection attention is called to the fact that when the transcript of register of eligibles forwarded to the Bureau prior to the nomination of an attendant does not contain the name of the party nominated, the appointment can not be made for a period to exceed thirty days. Before the temporary appointment has expired the party should be required to qualify and a letter forwarded to the Department, through the Bureau, recommending the probationary appointment for a period of six months from date of expiration of the temporary appointment. If the temporary appointee fails to attain an average of 70 per cent, this fact should be reported in ample time for the Bureau to receive the letter prior to the expiration of the temporary appointment, and the services of the attendant should be promptly dispensed with at the expiration of the thirty-day appointment.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*

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CIRCULAR LETTER RELATIVE TO PERSONAL-RECORD INDEX CARDS.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, March 27, 1903.*

SIR: I have to inclose herewith a personal-record index card, together with the accompanying circular of instructions, issued by the Assistant Secretary of the Treasury under date of March 25, 1903.

You are directed to fill out the card in typewriting, in accordance with instructions, and transmit the same to the Bureau at as early a date as possible.

Respectfully,

WALTER WYMAN, *Surgeon-General.*

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CIRCULAR LETTER RELATIVE TO PERSONAL-RECORD INDEX CARDS.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, March 27, 1903.*

SIR: There is transmitted to you herewith a sufficient number of personal-record index cards and circular letters signed by the Assistant Secretary of the Treasury, under date of March 25, 1903, to supply the medical officers and pharmacists at your station.

You are hereby directed to have one of these cards filled out in typewriting by yourself and each of the said medical officers and pharmacists, and transmit the same, with as little delay as possible, to the Bureau.

Respectfully, yours,

WALTER WYMAN,  
*Surgeon-General.*

In addition to the foregoing circular letters, two Department circulars were issued during the year, as follows:

Department circular No. 22, dated February 27, 1903, entitled "Information for candidates for appointment as pharmacist in the Public Health and Marine-Hospital Service of the United States."

Department circular No. 24, dated March 4, 1903, entitled "Information for persons desirous of entering the medical corps of the Public Health and Marine-Hospital Service."

The above circulars were rendered necessary by reason of the issue of new service regulations, based on the act of Congress of July 1, 1902, "To increase the efficiency and change the name of the Marine-Hospital Service."

Respectfully,

GEORGE PURVIANCE,  
*Assistant Surgeon-General.*

SURGEON-GENERAL PUBLIC HEALTH  
AND MARINE-HOSPITAL SERVICE.



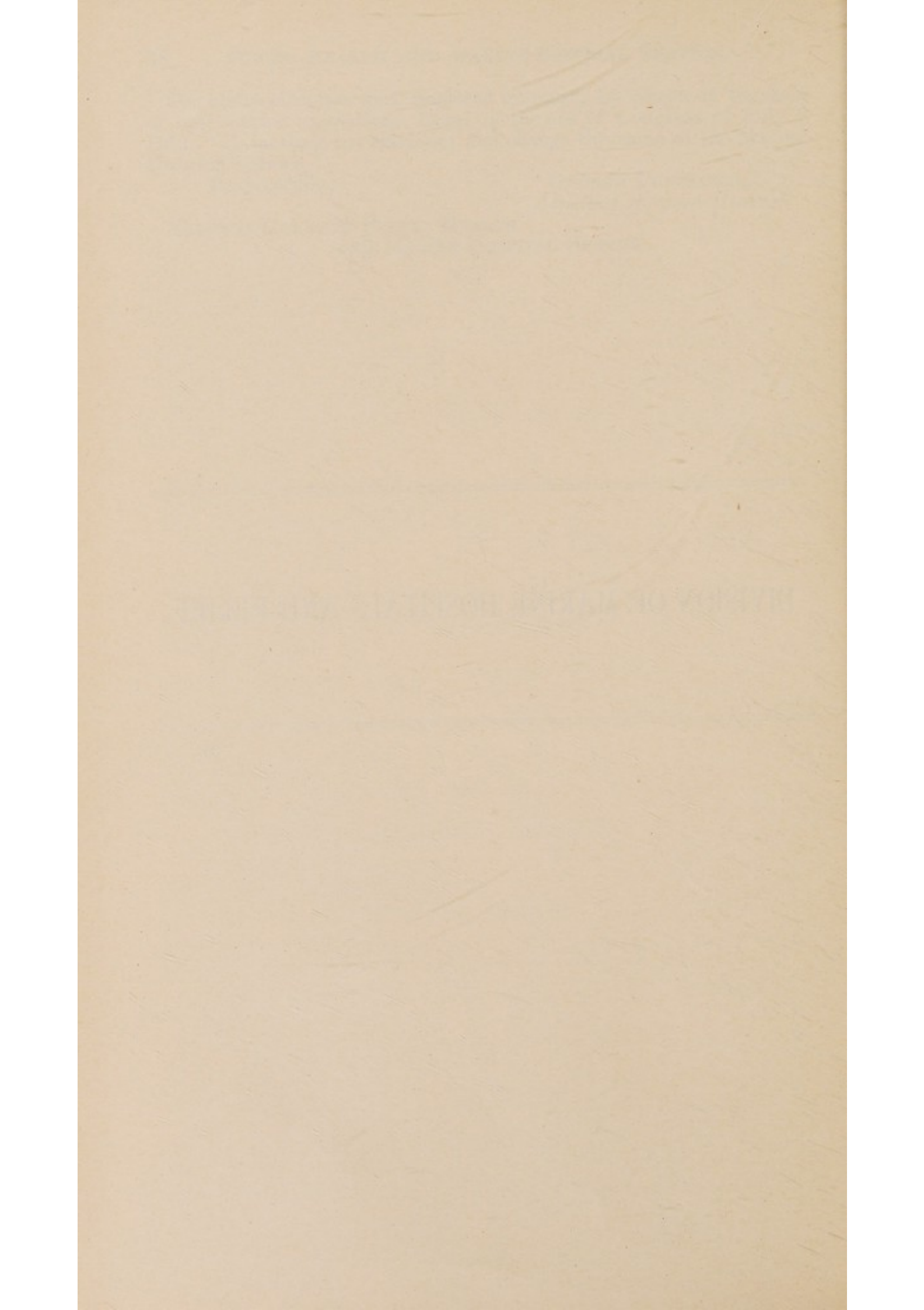
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DIVISION OF MARINE HOSPITALS AND RELIEF.

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## REPORT OF DIVISION OF MARINE HOSPITALS AND RELIEF.

By L. L. WILLIAMS,

*Assistant Surgeon-General, Public Health and Marine-Hospital Service, in Charge.*

SIR: I have the honor to submit the following report of the operations of the division of marine hospitals and relief for the fiscal year ended June 30, 1903:

### RELIEF OF SEAMEN.

During the year 58,573 seamen were treated at the various relief stations of the Service. Of these 13,567 were treated in hospital and 45,006 were treated as out-patients. Three hundred and eighty-three thousand three hundred and eighty-nine days' relief in hospital were furnished.

Excess in number of patients over previous year .....	2, 263
Excess in number of days' relief over previous year .....	26, 620

### RELIEF STATIONS.

During the year the Service controlled and operated 23 hospitals. The Government owns 22 of these hospitals. The hospital building at Dutch Harbor, Alaska, was leased until the close of the fiscal year ending June 30, 1903. As the amount of relief work at Dutch Harbor does not warrant the further maintenance of a hospital at that port the lease will not be renewed. The hospital equipment, etc., is being removed to Nome, Alaska, where two buildings on the reservation formerly occupied by the Army, but now controlled by the Treasury Department, have been assigned for the use of the Service by Department order of June 4, 1903. As a measure of economy the maintenance of a marine hospital at Delaware Breakwater, Del., was discontinued at the close of the fiscal year. A station of the second class will continue the relief work at that port.

In addition to the marine hospitals there are 121 relief stations where seamen receive hospital and dispensary treatment. A relief station has been established during the year at Nome, Alaska.

### INSPECTION OF STATIONS.

The following relief stations were inspected during the year, and appropriate action on the inspection reports taken by the Bureau: Portland and Bangor, Me.; Portsmouth, N. H.; Boston, Gloucester, and New Bedford, Mass.; New Haven and New London, Conn.; Newport and Providence, R. I.; New York, N. Y.; Philadelphia, Pa.; Chicago and Cairo, Ill.; Cleveland and Cincinnati, Ohio; Evansville, Ind.; Louisville, Ky.; St. Louis, Mo.; Memphis, Tenn.; Port Townsend, Seattle, Tacoma, and Hoquiam, Wash.; Portland, Astoria, and Marshfield, Oreg.; Los Angeles, Eureka, and San Diego, Cal.



## MONTHLY STATEMENT OF EXPENDITURES.

The monthly statement of expenditures (Form 1956) received from all the relief stations of the Service during the year were duly examined and filed for reference.

## AID TO OTHER BRANCHES OF THE GOVERNMENT.

*Revenue-Cutter Service.*—Eight hundred and eighty-four applicants for enlistment were examined, of whom 121 were rejected.

*Steamboat-Inspection Service.*—One thousand five hundred and twenty-five pilots were examined as to visual capacity, and 80 were rejected. One inspector of hulls physically examined and rejected.

*Life-Saving Service.*—One thousand two hundred and twenty-six surfmen were examined and 51 rejected.

*Coast and Geodetic Survey.*—Sixty-three applicants for enlistment were examined and 12 rejected.

*Light-House Service.*—Three applicants for enlistment were examined and none rejected.

*Civil Service Commission.*—Three applicants physically examined and passed.

*Post-Office Department.*—Eighteen employees examined and 1 rejected.

*United States customs service.*—One hundred and fifteen employees examined and 5 rejected.

## PHYSICAL EXAMINATIONS OF MERCHANT SEAMEN.

Physical examinations were made of 426 American merchant seamen, of whom 44 were rejected, and of 69 foreign seamen, of whom 6 were rejected.

## PHYSICAL EXAMINATIONS OF OFFICERS OF THE REVENUE-CUTTER SERVICE.

The following orders have been issued during the year:

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,  
Washington, July 26, 1902.

The following physical standard for appointments to the Revenue-Cutter Service, to the grade of cadet and second assistant engineer (original appointments) is hereby promulgated:

Candidates will be examined physically by a board composed of medical officers of the Public Health and Marine-Hospital Service. Any one of the following conditions will be sufficient to cause the rejection of a candidate: Feeble constitution, inherited or acquired; retarded development; impaired general health; decided cachexia, diathesis, or predisposition.

Any disease, deformity, or result of injury that would impair efficiency, such as weak or disordered intellect; cutaneous or communicable disease; unnatural curvature of spine, torticollis, or other deformity; inefficiency of either of the extremities or large articulations from any cause; epilepsy or other convulsions within five years; impaired vision, disease of the organs of vision, imperfect color sense; visual acuteness must be normal in both eyes; impaired hearing or disease of the ear; chronic nasal catarrh, ozæna, polypi, or great enlargement of the tonsils; impediment of speech to such an extent as to impair efficiency in the performance of duty; disease of heart or lungs or decided indications of liability to cardiac or pulmonary affections; hernia, complete or incomplete, or undescended testis; varicocele, sarcocele, hydrocele, stricture, fistula, hemorrhoids, or varicose veins of lower limbs; disease of the



genito-urinary organs; chronic ulcers, ingrowing nails, large bunions or other deformity of the feet; loss of many teeth, or teeth generally unsound.

Attention will also be paid to the stature of the candidate, and no one manifestly under size for his age will be appointed. In case of doubt about the physical condition of the candidate, any marked deviation from the usual standard of height or weight will add materially to the consideration for rejection. Five feet three inches will be the minimum height for the candidate.

O. L. SPAULDING,  
*Acting Secretary.*

Imperfect color sense will not necessarily reject a candidate for the position of second assistant engineer.

[Circular letter.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
Washington, April 21, 1903.

To Commissioned Medical Officers,  
*Public Health and Marine-Hospital Service:*

The accompanying blank form is hereby adopted as the form of medical certificate to be used by medical officers serving on boards for the physical examination of officers of and candidates for appointment in the Revenue-Cutter Service.

This form, after being filled out and signed by the members of the board, will be forwarded to the Surgeon-General in duplicate, except in the case of an officer appearing before a retiring board, when one copy should be submitted to the board and the duplicate transmitted to the Surgeon-General for the files of the Bureau.

It is contemplated that, from the files of the Bureau, there will be furnished all previous certificates bearing upon the medical or surgical history of any officer of the Revenue-Cutter Service who may be before a board for examination.

When boards are convened outside of the Bureau, the necessary information will be supplied to the chairman of the board, and when boards are convened by telegraph, a synopsis of the findings of previous medical examining boards will be furnished in the telegraphic order convening the board, if practicable.

When an officer is found to be physically incapacitated for service, the medical certificate should contain a statement under the head of "Remarks" as to the cause which, in the judgment of the medical examiners, has produced his disability, and whether such disability was acquired in the line of duty. The final lines above signatures are left for insertion of statements in reply to special inquiries embodied in the letters of the Secretary of the Treasury requesting the convening of the board.

Respectfully,

WALTER WYMAN, *Surgeon-General.*

Approved:

R. B. ARMSTRONG, *Assistant Secretary.*

[Inclosure.]

*Medical certificate.*

Physical examination of ..... for ..... (appointment, promotion, sick leave, retirement, fitness for duty <sup>a</sup>). (Designate cause for examination.)

Applicant's statement of previous illness or injury: .....

.....

.....

(To be signed by the officer or candidate undergoing examination.)

General appearance, .....; age, .....; weight, .....; height, .....; vision (including color sense), .....; hearing, .....; chest, .....; mobility, .....; expiration, ..... inches; inspiration, ..... inches; lungs, .....

<sup>a</sup>By "fitness for duty" in the Revenue-Cutter Service is meant physical and mental ability to serve on any station or any vessel of the Service, including prolonged cruises at sea.



heart, .....; abdominal organs, .....  
 .....; urine, specific gravity, .....; reac-  
 tion, .....; albumen, .....; sugar, .....; casts, ..... (if microscopical exami-  
 nation deemed necessary).

Extremities, .....; mouth, .....; throat and nose, .....

Remarks: (Cause of disability, whether in line of duty, etc.) .....

We certify that we have carefully examined the above-named ..... and  
 find that he is ..... of sound mind and is ..... physically qualified for duty in the  
 U. S. Revenue-Cutter Service, as defined in footnote .....

Respectfully submitted.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

#### RELATION OF MEDICAL OFFICERS TO LOCAL COURTS.—OPINION OF ACTING SOLICITOR.

DEPARTMENT OF JUSTICE,  
 OFFICE OF THE SOLICITOR OF THE TREASURY,  
 Washington D. C., March 7, 1903.

SIR: By reference of Assistant Secretary Armstrong I am in receipt of a letter addressed to the Surgeon-General of the Public Health and Marine-Hospital Service by Charles E. Banks, surgeon in charge of the marine hospital at Chicago, Ill., stating that he has been served with a subpoena duces tecum, issued by the superior court of Cook County, commanding him to appear, with "all books, papers, documents, and history sheets and records pertaining to the treatment of said William Larsen while a patient in the United States marine hospital." It is stated that the individual named is a plaintiff in a damage suit, and that the process was issued at the request of the defendant, a corporation.

Section 2 of the act of the legislature of Illinois, approved January 11, 1867, ceding jurisdiction over the site where the marine hospital has been erected, provides that "All civil and criminal process issued under the authority of this State or by any of its officers in pursuance of law may be executed on said real estate as if such jurisdiction had not been ceded."

My opinion is requested as to whether the surgeon should obey said summons.

It does not appear, nor is it suggested, that compliance with the said process would be contrary to public policy, and unless the production of the books, papers, etc., called for would be prejudicial to the interests of the Government I can see no objection to compliance with the summons.

A somewhat similar question was raised in *re Hirsch* (74 Fed. Rep., p. 928). In that case it was held that an internal-revenue collector was not justified in refusing to produce, in obedience to a subpoena duces tecum issued by a state court the application or return made by a person who desired to pay the tax imposed by the statutes of the United States upon persons engaged in the retail liquor business, either by the nature of such documents or by alleged instructions from the Commissioner of Internal Revenue. On appeal the ruling of the circuit court judge was affirmed by the circuit court of appeals (87 Fed. Rep., p. 1005).

The letter submitted is herewith returned.

Very respectfully,

F. A. REEVE,  
 Acting Solicitor.

The SECRETARY OF THE TREASURY.



## SANATORIUM FOR CONSUMPTIVE SEAMEN, FORT STANTON, N. MEX.

*(Report of medical officer in command.)*

UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
Fort Stanton, N. Mex., September 1, 1903.

SIR: In accordance with Bureau order of July 2, 1903, I have the honor to submit the following report of transactions of this sanatorium during the fiscal year ended June 30, 1903:

*Statistics.*

Patients under treatment July 1, 1902.....	105
Patients admitted during the year.....	169
Patients under treatment June 30, 1903.....	150
Patients discharged during the year.....	124
Ages of patients admitted during the year:	
Under 25 years.....	19
From 25 to 34 years.....	67
From 35 to 44 years.....	47
From 45 to 54 years.....	29
Over 55 years.....	7
	— 169
Heredity in patients admitted during the year:	
History of tuberculosis in parents.....	34
No history of tuberculosis in parents.....	135
	— 169
Stage of disease (first stage meaning where no consolidation nor excavation can be discovered):	
First stage.....	22
Second and third stages.....	147
	— 169
Area of involvement as shown by physical examination:	
Right lung only.....	8
Left lung only.....	7
Both lungs.....	154
	— 169
General condition at arrival (good, meaning well nourished and without grave complications; bad, meaning rather poorly nourished or with complications not necessarily fatal; very bad, meaning much emaciated or with grave complications, such as organic heart disease, chronic nephritis, or advanced laryngeal involvement):	
Good.....	49
Bad.....	60
Very bad.....	60
	— 169
Tubercle bacilli:	
Were not present in the sputum of.....	28
Were present in the sputum of.....	141
	— 169
Other organs were involved with tuberculosis as follows:	
Larynx.....	16
Intestines.....	3
Testicles.....	2
Vertebrae.....	2
Ribs.....	1
Lymph glands.....	4
Inferior maxilla.....	1
Rectum (fistula in ano).....	4
Complications occurred as follows:	
Syphilis.....	19
Hemorrhoids.....	8
Hernia.....	7
Varicose veins of leg.....	6
Valvular disease of heart.....	6
Varicocele.....	3



## Complications occurred as follows—Continued.

Paraplegia (cerebral hemorrhage) .....	1
Epilepsy .....	2
Fissure in ano .....	1
Nephritis .....	1
Trachoma .....	2
Chronic pleurisy with effusion .....	1
Record of patients who had pulmonary hemorrhage:	
Before arrival only .....	51
After arrival only .....	3
Both before and after arrival .....	5
	— 59

## Duration of residence of discharged patients:

Over 2 years .....	6
Between 1 and 2 years .....	23
Between 6 and 12 months .....	35
Between 3 and 6 months .....	31
Under 3 months .....	29
	— 124

## Condition of the 124 patients at time of discharge:

Apparently cured .....	12
Improved .....	54
Not improved .....	10
Died .....	48
	— 124

During the year we have had under treatment, in addition to the above, consumptive officers and employees as follows:

Those here July 1, 1902 .....	11
Admitted during the year .....	8
	— 19
Still under treatment June 30, 1903 .....	12
Left during the year .....	7
	— 19

## Condition of those leaving at time of discharge:

Apparently cured .....	2
Improved .....	3
Not improved .....	<sup>a</sup> 2

Several of those still here are cured.

The large number of cases leaving before there has been time to complete their cure lowers very considerably the percentage of cured cases discharged, and has caused me to think very much of the possibility of securing greater control over the patients in this regard. In sending a patient to this sanitarium the Service invests a considerable sum of money, and it would seem but fair that there should be some obligation on the part of the patient to remain for a sufficient length of time to be cured or to demonstrate the fact of his incurability; but under existing conditions there is no such control, although there seems to be a moral obligation on the part of the patient to remain long enough to justify the expense of sending him here.

The case charted on the inclosed statistical sheet illustrates most excellently this phase of the situation. It will be noted that this man, although only here two months, had made a gain of 15 pounds in weight and was, when he left, somewhat above his normal weight. The chart also shows that both lungs had cleared up remarkably for so short a period of treatment. This patient went to El Paso, but had scarcely been there a week when he wrote me that he was having hemorrhages and was otherwise doing badly, and asked permission to return. Fortunately for him I was able to take him back at once before very serious retrogression had taken place, and having learned his lesson he will doubtless remain until completely cured. Unfortunately for our statistics, it continues to be true that the most promising of our cases are the ones who leave prematurely; very few of the hopeless or less promising cases leave. It is doubtful whether, without special Congressional enactment, we could make a binding agreement with patients prior to their transfer here which would enable me to control their movements. It is therefore suggested that Congress be asked to pass a law which will enable us to enlist these patients for, say, a period of one year, or make other written agreement with them, with appropriate penalty for breach of contract on the part of the patient, granting authority to the

<sup>a</sup> Here but a short time.



commanding officer to arrest or otherwise restrain those desiring to leave without his consent prior to the termination of their enlistment or contract.

The treatment pursued has been as heretofore hygienic, dietetic, and symptomatic. All patients, whose condition warrants it, have taken daily breathing exercises during the year. This, I think, is of undoubted value, and has resulted in an average increase of 2 cm. in chest mobility.

A large proportion of our patients require treatment on account of nose and throat troubles. I have therefore established a nose and throat clinic, the average daily attendance being 12, and an additional number take self-treatment in the form of sprays under medical advice.

#### REPAIRS TO BUILDINGS, ETC.

A special report of repairs and alterations has been made, but it is believed that the accompanying photographs will be of interest here as illustrating the value of the improvements made.

#### WATER SUPPLY.

The water supply, being derived chiefly from the Rio Bonito, is very uncertain. It will be remembered that a reservoir was constructed by my predecessor and supplied by a ditch 3 miles long, leading from the Bonito to the reservoir. This ditch has insufficient fall, and is only kept in repair by the expenditure of considerable labor. A separate report regarding the water supply has been submitted and, in addition to the recommendation contained in that report, it is intended, with the labor of hospital attendants, to greatly enlarge the present reservoir and perhaps excavate an additional one, in the hope that we may be able during the time when water is plentiful in the river to store sufficient water to carry us over periods of drought. This work is now in progress. Pumping water from the old army well is not only expensive and, with the present gasoline engine, uncertain, but the wells do not supply more than one-third the requisite amount of water.

#### MILK SUPPLY.

The present source of milk supply is inadequate, the number of patients having increased much more rapidly than our ability to produce milk; but this difficulty is gradually adjusting itself, as we are making material additions to the herd of milk cattle by natural increase. Many of the cows purchased were of inferior quality as milk producers, which has added to the average cost per gallon of the milk produced, since a poor cow eats as much as a good one. It is believed, however, by selecting the best cows of our own raising and discarding the poor ones, we will soon have a sufficient number to supply all the milk we need at a moderate cost. The following is a statement showing the present condition of the Jersey herd. It has occurred to me that we might increase our milk supply and, at the same time, add to the meat supply and furnish occupation to some of our patients by acquiring a small herd of native goats, place one or two in charge of such patients as would be willing to undertake their care, and permitting patients to drink the milk of the goats in their immediate care. This matter will be brought more particularly to your attention in a separate communication.

Nineteen thousand one hundred and twenty gallons of milk have been produced and used during the year.

The number of Jersey cows and bulls purchased was 44. We now have—

Cows .....	56
Bulls .....	3
Yearling heifers .....	10
Yearling steers .....	4
Calves:	
Heifers .....	26
Steers .....	26
Total .....	124

#### RANGE OR BEEF CATTLE.

The increase of our herd of range cattle has been very satisfactory, as shown by the subjoined table, and during the present calendar year has furnished our supply of beef for about two and a half months. It is believed that within two years, without further purchase, except perhaps a few bulls, we will be able to produce our entire supply of beef.



The original purchase of Herefords, or beef cattle, was 206, of which 140 were cows. The present condition of the herd is as follows:

Cows.....	149
Steers.....	40
Heifers.....	49
Calves of this year:	
Heifers.....	63
Steers.....	43
Calves, unclassified.....	14
Bulls purchased.....	6
Bulls raised at station.....	3
Steers killed for beef.....	31
Total.....	398

## HORSES.

We raised last year six colts, and this year seven. The station will be able in future to raise all the horses needed as saddle and work horses.

## FARM AND GARDEN.

The present year has been a most unsatisfactory one for agricultural products. Two late freezes and a subsequent hailstorm of great severity almost ruined our garden three times, necessitating replanting, and in consequence all garden products have been very late. It is impossible at this time to give a complete statement of the farm and garden products of the year.

We have about 63 acres in alfalfa, which yielded at the first cutting 91 tons of hay. The second crop was harvested during July, 34 tons were baled, and the greater portion of it is still stacked in the field. The yield of the second crop will probably not fall much short of 100 tons. The third harvest will begin within a few days, and will probably weigh in 60 tons. In addition to this we have harvested 16 tons of oat hay, and have about 20 acres of corn which promises to yield fairly well. About 20 acres each of corn and oats were almost a total loss for lack of rain. That portion of the crop which succeeded had partial irrigation.

Respectfully,

P. M. CARRINGTON,  
*Surgeon in Command.*

SURGEON-GENERAL, PUBLIC-HEALTH AND MARINE-HOSPITAL SERVICE.

*Statistical history sheet—Tuberculosis.*

## U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE SANATORIUM,

*Fort Stanton, N. Mex.*

Name, E. C.; rating, fireman; nativity, California; age, 23; date of examination, June 2, 1903. Family history (tubercular): M., no; F., yes; B., no; S., no; W., single; child. Personal history: Disease favoring tuberculosis, dissipation; consumptive roommate, about one year ago; normal weight, 138; weight now, 127; well or badly nourished, only fairly well; condition of teeth, fairly good; respirations per minute, 22; pulse, 106.

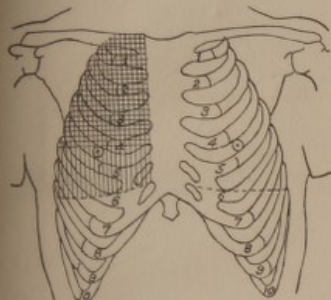
Symptoms.	Early—before entrance to sanatorium.	During stay at sanatorium.	At the time of discharge, July 31, 1903.
Cough (how long).....	Present trouble, March, 1903; has had slight cough since November.		No cough.
Sputum (how long).....	Yes; since March, 1903		Very scant.
Tubercle bacilli (how long)...	Yes.....	Present, June 2.....	
Mixed infection (character, and how long).	Yes.....		
Fever (how long).....	None, to his knowledge; resided in hospital.		None.
Night sweats (how long).....	Yes; since March, 1903....	Present, first two nights after arrival.	None since June 4.
Dyspnoea (how long).....	Slight.....		Very slight.
Pleurodynia (how long).....			
Pleurisy (how long).....	Pleuritic pain, in March, 1903.	None since arrival..	None.
Hemorrhages (number).....	No.....		
Tuberculin test (result).....	No.....		



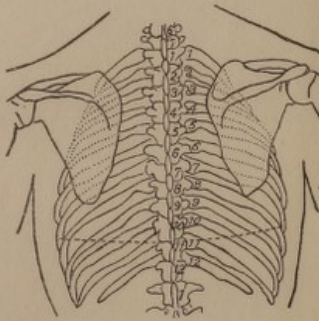
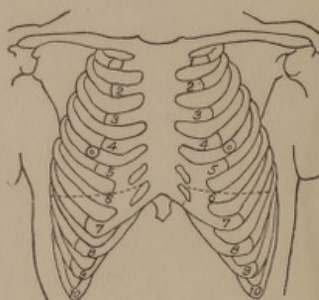
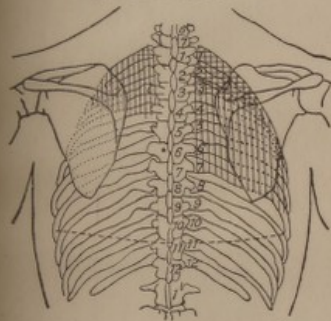
PHYSICAL EXAMINATION (E. C.).

Chest measurement: At rest, 33½ inches; expansion, 2½ inches. Percussion: Right lung shows relative dullness in upper half, hyporesonance of left apex; right lung shows rales from apex. Auscultation, to base in front, and in upper two-thirds behind. Left lung shows rales in upper one-third posteriorly.

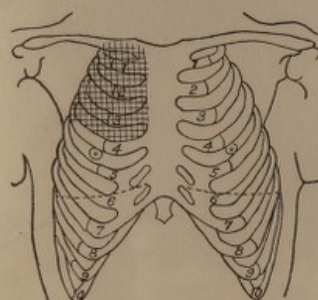
June 2<sup>nd</sup> 1903.



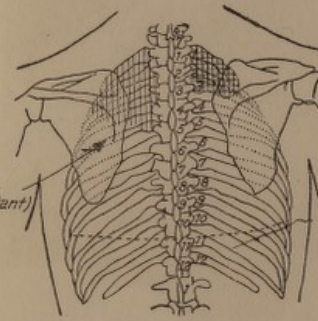
June 2<sup>nd</sup> 1903.



July 31<sup>st</sup> 1903.



Over right lung, from apex to third rib, the percussion note is comparatively dull, the breathing is harsh and slightly bronchial, with prolonged expiratory murmur. There is an occasional moist rale and an inconstant feeble dry rale over same area. This same condition exists in apex posteriorly.



Fine moist rales (crepitant)

REMARKS: First stage—typical rales, bronchial involvement, etc., to be marked



Second stage—consolidation, tubular breathing, etc., to be marked



Third stage—cavity, amphoric breathing, etc., to be marked



Patient states that he was in U. S. transport *Samo* (renamed *Dix*) in 1901, from May to September. That in bunk at head of one occupied by patient was man named McClinchy, who coughed and expectorated between bulkhead and bunk. He had all the signs of consumption, was thin and dyspnoeic. McClinchy was in ship for four months. The middle of the floor was scrubbed daily, but was not cleaned beneath bunks nor beneath bulkhead and bunk during four-month stay of patient. The forecabin was about 10 by 25 feet, with three tiers of bunks on each side, having aisle of about 4 feet. Twenty-four men ate and slept in this room. There were three or four portholes and a door opening into a passageway. Light was hardly enough to read by.





*Statistical history sheet—Tuberculosis—Continued.*

Symptoms.	Early—before entrance to sanatorium.	During stay at sanatorium.	At the time of discharge, July 31, 1903.
COMPLICATIONS.			
Gastro-intestinal (diagnosis) <i>a</i> .	No.....		
Genito-urinary (diagnosis) <i>b</i> ...	Gonorrhœa, stricture, chancre, in 1900.		
Blood diseases (diagnosis) <i>c</i> ...	No.....	Hemoglobin, 50 per cent, June 2, 1903.	Hemoglobin, 70 per cent.
Bone diseases (diagnosis) .....	No.....		
Nervous diseases (diagnosis) ..	No.....		
Heart diseases (diagnosis).....	No.....		
Nose and throat diseases (diagnosis).	No.....		Slight, naso-pharyngeal catarrh.
Glandular diseases (diagnosis) <i>d</i> .	Enlargement of cervical..		Enlargement of right cervical lymphatic glands.

*a* Diarrhœa, indigestion, etc.*c* Anemia, malaria, etc.*b* Syphilis, Bright's disease, etc.*d* Orchitis and hepatic conditions can be put under this head.

Stage of phthisis, second; result of treatment, much improved; length of stay, two months; weight, 142½ pounds; gained 15½ pounds in weight.

NOTE.—It is my opinion that softening and excavation has begun, which would make this a third instead of second, but there are no positive signs of a cavity.

## DISINFECTION OF WARDS AT FORT STANTON SANATORIUM.

U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Fort Stanton, N. Mex., May 6, 1903.*

SIR: I have the honor to transmit herewith report of experiments conducted by Past Asst. Surg. E. K. Sprague, which shows that the building, No. 14, known as the hospital, and occupied by our worst cases of tuberculosis, is absolutely uninfected with tuberculosis. These experiments, of course, do not prove that the buildings do not become temporarily infected, but they at least prove that they were not infected at the time of the experiment, and that the method of disinfection practiced, namely, monthly sponging with bichloride of mercury, is effective.

Other experiments relating to the effectiveness of formaldehyde gas, as generated from wood alcohol by means of the Kuhn lamps, are in progress and the results obtained will be reported within a few days.

Respectfully,

P. M. CARRINGTON,  
*Surgeon in Command.*

SURGEON-GENERAL, PUBLIC HEALTH  
AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Fort Stanton, N. Mex., May 5, 1903.*

SIR: I have the honor to make the following report of investigations into the sanitary conditions of the wards of the building now used as a hospital for our most serious cases of pulmonary tuberculosis. It is in these wards that are finally placed practically all of our fatal cases, the sputa of each one of which are known by repeated microscopical examinations to contain myriads of tubercle bacilli. They were selected as the ones most liable to infection among some 50 rooms occupied by patients at this sanitarium.

February 12, 1903, dust was collected from each of the seven wards on sterile cotton swabs from the walls, from the floor before the daily cleansing, from obscure corners, and from every point considered most liable to furnish tubercle germs. The swabs were then returned to their sterile glass receptacles and at once saturated with sterile distilled water. After a thorough shaking the tubes were allowed to stand for a few hours and later guinea pigs were inoculated intra-abdominally with about 5 c. c. of the sediment obtained from the swabs. One of the pigs sickened and died February 25, 1903, from a demonstrated pus infection; the others remaining in good health were killed May 1, 1903, after a lapse of more than twelve weeks, and a careful



macroscopical and microscopical examination failed to reveal any indication of the presence of tubercle bacilli.

Respectfully,

E. G. SPRAGUE,  
*Passed Assistant Surgeon.*

Surg. P. M. CARRINGTON,  
*Public Health and Marine-Hospital Service,  
Fort Stanton, N. Mex.*

#### PURVEYING DEPOT AT NEW YORK.

(*Report of medical purveyor.*)

U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL PURVEYOR,  
378 Washington street, New York, N. Y., July 28, 1903.

SIR: I have the honor to submit herewith report of the operations of this station for the fiscal year ended June 30, 1903.

The personnel of the station as to number is the same as stated in the previous annual report. Two resignations have taken place within the year. The work of purchasing and issuing of supplies has been carried on as on previous lines, but the system of accounting for same has been materially changed. The system in force when I assumed command of the depot was the card system, which has been replaced by books specially printed for the purpose of keeping a concise yet more condensed record of all transactions pertaining to the issue of and receipt of supplies.

In addition to the regular stations of the Service to which supplies have been furnished through this depot, I may mention that of the Immigration Service, Coast and Geodetic Survey, Revenue-Cutter Service, Storekeeper, Treasury Department, as well as the Quarantine and Epidemic services, which are under the immediate supervision of the Bureau, for which requisitions to the number of 726 have been filled.

The financial statement follows:

Total cost of orders placed during the year, inclusive of fuel and packing material (\$935.87), which are not accounted for under the head of operating expenses of the depot .....	\$105,472.00
Dry goods, etc .....	\$19,057.17
Medical supplies .....	16,788.20
Hospital stores .....	14,310.17
Surgical dressings, instruments, appliances, and hospital furniture .....	11,329.07
Station equipment .....	11,006.80
Microscopic, bacteriological, and optical apparatus .....	5,271.32
Disinfecting apparatus and disinfectants .....	4,441.15
Kitchen and household utensils .....	4,159.65
Beds and bedding .....	3,185.02
Medical books and journals .....	3,055.55
Carpets .....	2,104.19
Wines and liquors .....	1,663.58
Pharmaceutical implements, etc .....	1,527.29
Rubber goods .....	1,255.56
Paints and brushes .....	974.32
Vials .....	864.58
Toilet and wrapping paper .....	810.50
Flags .....	801.82
Photographic and X-ray apparatus .....	595.49
Packing material .....	535.87
Refrigerators .....	480.55
Fuel .....	400.00
Chemical glassware, etc .....	231.89
Lumber .....	231.15
Equipment purveying depot .....	219.76
Rubber stamps and seal presses .....	171.35
	<hr/>
Operating expenses .....	8,653.31
Street sprinkling .....	35.00
Repairs .....	38.25
	<hr/>
Gross expenditures .....	114,198.56



CR.

By amounts included in above, specially authorized by the Department, payments being made from the several appropriations other than that of Public Health and Marine-Hospital Service.....	\$3, 796. 43
	<hr/> 110, 402. 13

CR.

By amounts due for reimbursement for supplies issued during the year to other services:	
Quarantine Service .....	\$16, 224. 89
Immigration Service.....	11, 341. 41
Epidemic Service.....	3, 865. 73
Appropriation enforcement Chinese-exclusion act.....	2, 181. 87
Coast and Geodetic Survey.....	731. 18
Barge <i>Cleanser</i> .....	178. 25
Storekeeper, Treasury Department.....	81. 03
Revenue-Cutter Service.....	79. 09
	<hr/> 34, 683. 45

Net expenditures chargeable to Public Health and Marine-Hospital Service .....	75, 718. 68
Salaries.....	16, 530. 98
Commutation .....	600. 00

Total net expense .....	92, 849. 66
Requisitions filled .....	726
Number of packages .....	10, 549
Weight .....	pounds.. 772, 174

In addition to work performed by this depot not enumerated in the above statement may be mentioned services rendered to the Immigration Service as purchasing agent, for which that service made payment from its fund for the supplies furnished. Previous to October 21, 1902, such service was rendered without charge to the service affected. Department approval of the date mentioned provided authority for a charge of 10 per cent of the aggregate cost of such supplies as should be purchased under such circumstances to defray the expenses of this depot attendant on such work, namely, labor, cartage, packing material, etc.

By a comparison with the previous annual statement it will be observed that the cost of orders for the fiscal year just ended is in excess, whereas the total net expense is nearly \$4,000 less.

Respectfully,

HENRY W. SAWTELLE,  
*Surgeon and Medical Purveyor.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## ADVISORY BOARD OF PURVEYING DEPOT.

A board to be known as the advisory board of the purveying depot was constituted by Bureau order of October 22, 1902.

This board consists of the medical officer in command of the marine hospital, port of New York, the medical purveyor and the medical officer in charge of the medical inspection of immigrants at Ellis Island, N. Y., who are ex officio members of the board. The senior member is chairman and the junior member recorder of the board. The medical purveyor is executive officer of the board, conducts the necessary correspondence with the Bureau, has custody of all correspondence, samples, etc., and presents the same to the board for consideration. The board meets regularly once in three months at the purveying depot, on the first Monday in July, October, January, and April, or oftener upon the call of the chairman. The board examines the schedules of the supply table (except schedules 1, 2, 3, 4, and 5), and makes recommendation for removal therefrom of such articles as appear to be unnecessary or undesirable. It also considers such communications relative to new remedies, new books, new instruments or



other supplies or appliances as may be forwarded to it from the Bureau, and recommends to the Bureau such of these articles as, in the judgment of the board, are necessary for the use of the Service.

#### NEW HOSPITALS.

*New York, N. Y.*—The Seamen's Retreat, which has been leased and operated as a marine hospital since 1883, was purchased during the year for \$250,000, Congress having appropriated that amount for the purpose. The property consists of approximately 10 acres of land in Stapleton, Staten Island, fronting on Bay street and commanding a view of New York Harbor. The buildings are described elsewhere. The purchase of this property had been recommended in the annual reports of the Service for the past twenty years.

*Buffalo, N. Y.*—Acting under Department order of February 17, 1903, a commission consisting of Asst. Surg. Gen. L. L. Williams, of this Service, and Mr. Francis B. Wheaton, of the office of the Supervising Architect, Treasury Department, visited Buffalo and made an inspection of the various properties offered as sites for the marine hospital to be erected under act of Congress, March 24, 1902. After careful consideration of the 47 proposals received and inspection of all available sites, the commission recommended the purchase of the property offered by Mr. H. H. McPherson at a cost of \$22,000. This property is situated in the highest part of the city. It contains about 3 acres fronting on Main street, and located between two existing hospitals. Sewer, water, and gas pipes are contiguous, and the street-car service is of the best. The site is about  $3\frac{1}{2}$  miles from the city hall. It is understood that negotiations are in progress for the purchase of this land through the office of the Supervising Architect.

*Pittsburg, Pa.*—Department order of October 15, 1902, appointed a commission composed of Mr. M. H. Garland, collector of customs at Pittsburg; Asst. Surg. Gen. L. L. Williams, of this Service; and Mr. Francis B. Wheaton, Supervising Architect's office, to examine the various sites offered for a marine hospital at Pittsburg, authorized by act of Congress, March 31, 1902. The 44 proposals received were duly considered and all available sites examined. The commission also examined, through the courtesy of the officer in command, the land now belonging to the United States and formerly used as an arsenal. The commission unanimously recommended that a portion of the arsenal reservation, approximately 5 acres in extent, be secured as a site for the hospital, provided a transfer of the property from the War Department to the Treasury Department could be arranged.

Act of Congress approved March 3, 1903, sundry civil bill, provides as follows:

United States marine hospital, Pittsburg, Pa.: That the Secretary of War be, and he is hereby, authorized in his discretion, upon the application of the Secretary of the Treasury, to transfer to the custody and control of the Treasury Department as a marine-hospital site so much of the United States arsenal grounds in the city of Pittsburg, Pa., as may be required for that purpose, not exceeding 5 acres in extent, fronting on Pennsylvania avenue, Thirty-ninth and Fortieth streets.

It is understood that negotiations for the transfer of this land to the Treasury Department are in progress.

*Savannah, Ga.*—Act of Congress, March 21, 1902, having authorized purchase of a site and erection of buildings at a cost of \$150,000, or the erection of hospital buildings at a cost of \$125,000 on a site



owned by the Government, it has been deemed expedient to adopt the latter alternative and build upon the site formerly purchased as a site for a post-office at Savannah. This site is a strip of land 90 feet by 245 feet, fronting on Abercorn and York streets. Before all the projected buildings can be erected it will be necessary to obtain the authority of the Congress for the purchase of an adjoining strip of land, 60 by 90 feet, fronting on York and Drayton streets.

A board of medical officers was convened by Bureau order of February 17, 1903, to consider and prepare an outline plan for the proposed hospital. A plan of a block hospital of 40 beds was prepared and submitted to the Bureau and subsequently forwarded to the Supervising Architect of the Treasury Department for consideration. The essential features of this plan are embodied in the building plans now being prepared in the Supervising Architect's office.

*San Juan, Porto Rico.*—An Executive order dated June 30, 1903, reserves the following-described land for a hospital site:

\* \* \* \* \*

For the use of the Marine-Hospital Service, a parcel of land at San Juan lying next west of the north-and-south line of the eastern boundary line of the military reservation west of the first line of defenses, near San Antonio bridge, running 300 feet front east and west along the so-called military road and extending toward the north to the old stone ditch defense.

\* \* \* \* \*

#### REPORT ON OIL-BURNING PLANT AT MARINE HOSPITAL, SAN FRANCISCO, CAL.

OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Port of San Francisco, Cal., July 1, 1903.*

SIR: As directed in Bureau letter, April 9, 1903, I have the honor to make the following report on the operation of the oil-burning plant as follows, viz, from the time that the plant was set in operation, about March 1, 1903, to June 30, 1903, the boilers have been in service on an average of about fourteen hours daily. During this time two burners were usually kept in operation, as it has been my experience that two burners under medium draft will consume very little, if any more oil than one burner under forced draft, and the steam pressure is more easily maintained.

The amount of oil consumed during this period, March 1 to June 30, 1903, was 634  $\frac{51}{100}$  barrels, costing \$501.94, as compared to 164  $\frac{124}{100}$  tons of coal used during the same period last year, costing \$1,020.34, causing a net saving of over 50 per cent. About 3.9 barrels, costing \$3.04, is equal to one ton of coal at \$6.20.

There has been no expense connected with the plant for repairs, adjustments, cleaning, etc., as all of this work was done by the engineer and fireman.

The working of the plant has been very satisfactory, and besides the great saving in cost of fuel consumed is also very much cleaner, doing away with the smoke nuisance, and saving much labor in keeping the outsides of the various buildings in good appearance.

Respectfully,

W. G. STIMPSON,  
*Passed Assistant Surgeon.*

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### REPAIRS AND IMPROVEMENTS MADE TO BUILDINGS AND GROUNDS, INCLUDING WORK UNDER CONTRACT, AND REPAIRS TO HEATING APPARATUS OF MARINE HOSPITALS.

*Marine Hospital at Baltimore, Md. (erected 1887).*—Surg. H. R. Carter, in command, reports the following repairs and improvements:

The gallery floor to westward was repaired at a cost of \$27.25; repairs to roadways of reservation, \$76.50; pointing mortar joints of stone retaining wall, \$298.40; repair of roof gutters, \$67; construction of two storerooms under west ward, \$901; new



wood fences on three sides of reservation, \$252; painting exterior of surgeon's quarters, \$155; laying tile drains around buildings, \$135.71, and miscellaneous minor repairs.

A contract has been awarded for an addition to the executive building for space for an operating room for \$3,232, and the work is to be completed in October, 1903.

Minor repairs were made to the heating apparatus, at a cost of \$53.

*Hospital at Boston, Mass. (erected 1860).*—Surg. R. M. Woodward, in command, reports the following repairs and improvements:

The plumbing system of hospital was renovated, new piping and fixtures supplied, and toilet rooms repaired and painted, at a cost of \$8,813.75.

A complete system of electric light wiring and fixtures was installed in all the buildings, at a cost of \$1,973.50; the electric elevator repaired, at a cost of \$366.60; new iron gate placed at High street entrance, \$250; 50 lockers for patients' clothing constructed in outbuilding, at a cost of \$239.85; flagstaff repaired and painted, \$135.25; artificial stone floors laid in portions of basement of hospital building and in rooms in outbuilding, \$390, and miscellaneous repairs, lumber, and painting material, \$1,256.27.

Repairs were made to heating apparatus, including new smokestack for boilers, at a cost of \$2,569.

*Hospital at Cairo, Ill. (erected 1885).*—Surg. G. M. Guiteras, in command, reports the following repairs and improvements:

General painting of exterior of buildings, repairs to porches, steps, down spouts, and gutters, and miscellaneous repairs and improvements, at a cost of \$1,973.74.

Repairs to heating apparatus were made at a cost of \$11.93 for material.

*Hospital at Chicago Ill. (erected 1873).*—Surg. Charles E. Banks, in command, reports the following repairs and improvements:

Solaria were constructed in north and south balconies, at a cost of \$300; repairs in surgical operating room, removal of benches, etc., \$187.50; 9 new doors and repairs, \$225; 3 kitchen sinks supplied for surgeon's, passed assistant surgeon's, and pharmacist's quarters, \$260; crushed stone laid on driveways, \$222.50; cleaning interior painting of hospital, \$100; repair of stone steps, front entrance, \$325; bath tub for attendants in laundry building, \$39.30; repair and painting of flagpole, \$60; and miscellaneous repairs and repair material, \$650.

Repairs to heating apparatus, \$90.

*Hospital at Cincinnati, Ohio (erected 1884).*—Acting Asst. Surg. J. W. Stevenson reports the following repairs and improvements:

Inclosing area way and repairs to floors, \$555.40; installation of an electric-bell-and-call system, \$168; and miscellaneous repairs to buildings, plumbing, laundry machinery and ranges, at a cost of \$242.58. Door and window screens were supplied at a cost of \$403.

Repairs to heating apparatus, \$125.90.

*Hospital at Cleveland, Ohio (erected 1852).*—Passed Asst. Surg. Joseph B. Greene, in command, reports the following repairs and improvements:

Grading, soiling, and seeding reservation, at a cost of \$4,477.50; new water heater installed, \$537; inclosure from first story rear porch, \$676; and miscellaneous repairs and painting, at a cost of \$1,248.68. Two new boilers were placed in new boiler house, at a cost of \$6,649.60. Special appropriation.

Repairs to heating apparatus were made at a cost of \$62.08.

*Hospital at Detroit, Mich. (erected 1857).*—Surg. H. W. Austin, in command, reports the following repairs and improvements:

Cement concrete walk on Wight street, \$200; repairs to hospital building under contract, \$3,046.90; and minor repairs to buildings, plumbing, and ranges, \$542.46.

Repairs to heating apparatus, \$959.71.

*Hospital at Delaware Breakwater, Del. (established 1894).*—Passed Asst. Surg. C. H. Lavinder, in command, reports the following repairs:

Material for repair of coal bin and walks and general repair, \$135.70.



*Hospital at Evansville, Ind. (erected 1891).*—Passed Asst. Surg. B. W. Brown, in command, reports the following repairs and improvements:

General painting of buildings, \$837.41; tile floor and wainscot in operating room, \$370; second story to porch of executive building, \$149; repairs to plumbing, \$251; new wagon scale installed for \$241; and miscellaneous repairs to buildings, \$665.17.

Repairs to heating apparatus, including repairs to boiler walls, rebuilding chimney tops, and repair of boiler stack, \$629.62.

*Marine-Hospital Sanatorium, Fort Stanton, N. Mex. (established 1900).*—Surg. P. M. Carrington, in command, reports the following:

The general repairs and improvements to buildings Nos. 4, 6, 10, and 11, wards and dining room for patients, begun during the fiscal year 1902, were completed under contract for \$34,475.

Contracts have been entered into for the repair and improvement of buildings Nos. 1, 2, 3, 9, and 13, and the corrals, for \$33,830, and for the installation of an electric-lighting system and fire-alarm system for \$8,440.

Miscellaneous repairs and improvements have been made to buildings, and the plumbing system, including new shingles on roof of building No. 5 and the hay barn and installing fire hydrants, \$5,191.33.

Door and window screens supplied for wards and dining-room buildings, \$436.91.

Repairs to heating apparatus, \$372.97.

*Hospital at Key West, Fla. (erected 1840).*—Surg. R. D. Murray, in command, reports the following repairs and improvements:

New concrete water-supply cistern built at north end of hospital building, at a cost of \$849; 101 new piles placed under wharf, boathouse, insolation ward, etc., \$275; and general repairs and painting, at a cost of \$169.30.

*Hospital at Louisville, Ky. (erected 1852).*—Passed Asst. Surg. G. B. Young, in command, reports the following repairs and improvements:

General repairs to hospital building and stable, under contract, \$2,830; painting walls and ceilings in hospital building, cost of material, \$330.83; new gas fixtures, \$223; change of system of water supply pipes in basement, \$220; door and window screens, \$170, and miscellaneous repairs, \$602.65.

*Hospital at Memphis, Tenn. (erected 1885).*—Surg. G. M. Magruder, in command, reports the following repairs and improvements:

The roofs of ward buildings and stable were reshingled, at a cost of \$1,089.99; door and window screens were supplied for wards and executive building, at a cost of \$160.88; trees, 34 in number, were planted, cost \$11.90, and miscellaneous repairs, cost \$145.80. New tubes were supplied for laundry boiler, at a cost of \$67.50.

*Hospital at Mobile, Ala. (erected 1843).*—Surg. J. H. White, in command, reports the following repairs and improvements:

Miscellaneous repairs to buildings and improvements were made, at a cost of \$873.76; new wagon scales installed, at a cost of \$150.

*Hospital at New Orleans, La. (erected 1885).*—Passed Asst. Surg. C. P. Wertenbaker, in command, reports the following repairs and improvements:

Roofs and gutters of buildings were repaired and new tin roofs to porches and galleries and hanging gutters and down spouts placed, at a cost of \$2,700; door and window screens supplied for wards (2) and operating-room building, at a cost of \$409; new range for hospital kitchen, \$373; three kitchen ranges for quarters, \$147; telephone system installed, at a cost of \$120, and miscellaneous repairs to engines, pumps, electric-light plant were made, at a cost of \$912.74.

Repairs to heating apparatus and repair material for same, \$260.41.



*Hospital at New York, N. Y. (erected 185-).*—Surg. P. H. Bailhache in command.

This station was occupied under lease until April 15, 1903, when check for \$250,000, in payment for site and buildings, was delivered to the lessors. Act of Congress approved June 6, 1902, appropriated \$250,000 for purchase of site and buildings. The site comprises 9.755 acres, fronting 488 feet on Bay street, Stapleton, Staten Island, N. Y.

The hospital building is 300 feet long, has basement and three stories, and an average width, including porches, of 50 feet; is built of stone with brick and wood entablature, heated by eight furnaces, numerous fireplaces, and steam radiators. Surgeon's house is a stone structure 28 by 41 feet—subbasement, basement, two stories, and attic. Laundry building is a two-story frame structure 41 by 26 feet. The morgue is a one-story frame building 15 by 25 feet, and the building called white house is a three-story dilapidated brick structure built (according to statement of residents) about one hundred years ago.

The small house at entrance is a one-story brick, 11 feet square.

During the year 1902-3 miscellaneous repairs were made to buildings and heating apparatus, at a cost of \$1,722.15.

Repairs, i. e., new floor, etc., were made in out-patient office, in second story of building adjoining the barge office in New York City, at a cost of \$214.

*Marine-Hospital office and out-patient building at Philadelphia, Pa. (erected 1877).*—Extension, 1901—Surg. Fairfax Irwin, in command, reports that repairs were made to the radiators in building, at a cost of \$38.25.

*Hospital at Portland, Me. (erected 1859).*—Surg. W. P. McIntosh, in command, reports the following repairs and improvements:

Repairs to electric-light plant, including auxiliary dynamo, \$496; new system of hot-water supply, including tank and fittings, \$365; new pipe sewer, \$1,449; repairs to roadways, \$781; concrete walks around hospital, \$246, and miscellaneous repairs to buildings and plumbing, at a cost of \$796.92.

Repairs to heating apparatus, \$77.07.

*Hospital at Port Townsend, Wash. (erected 1895).*—Passed Asst. Surg. M. H. Foster, in command, reports the following repairs and improvements:

Wood and iron fences repainted, at a cost of \$290; new vestibule door at main entrance, \$83.85; repairs to plumbing and miscellaneous repairs, \$265.70; new hospital kitchen range installed, cost \$295.

*Hospital at San Francisco, Cal. (erected 1875).*—Passed Asst. Surg. W. G. Stimpson, in command, reports the following repairs and improvements:

New pumping engine for water supply, \$250. A 10-inch diameter pipe well was driven 42 feet deep near the lake for additional water supply to station, at a cost of \$175; tile floor and lavatory for operating room, \$450, and miscellaneous repairs to buildings and plumbing, \$1,478.48.

Fuel oil-burning plant installed for boilers of heating apparatus, at a cost of \$600, and piping fittings, valves, etc., supplied for repairs, at a cost of \$624.05.

*Hospital at St. Louis, Mo. (erected 1885).*—Surg. James M. Gasaway, in command, reports the following repairs and improvements:

Miscellaneous repairs in executive building, under contract, \$1,525; new flag-staff, 82 feet, \$578; painting material, lumber, and tools for miscellaneous repairs to buildings were purchased and minor repairs made, at a cost of \$1,414.24; new door and window screens, \$131.30.



Iron fence on Marine avenue, and post and wire fence on other sides of reservation, under contract, for \$3,981.

Repairs to heating apparatus, including smoke-consuming device for two boilers, \$164.69.

*Hospital at Vineyard Haven, Mass. (erected 1895).*—Surg. D. A. Carmichael, in command, reports the following repairs and improvements:

Miscellaneous repairs to buildings and plumbing, \$402.14. Repairs to heating apparatus, \$11.

*Hospital at Wilmington, N. C. (erected 1859).*—Surg. John Godfrey, in command, reports the following repairs and improvements:

New board fence built on three sides of portion of reservation to be retained; lumber for plank sidewalk on Eighth street, at a cost of \$1,021.04 for material; laying water main with fire plug on reservation, cost \$337. A bath tub, water-closet, and lavatory were placed in basement of executive building, at a cost of \$200 for the fixtures, piping, and connections; window and door screens were supplied for the wards, at a cost of \$193.66; post and plank bulkhead built on Eighth street, at a cost of \$128; an artificial stone walk laid in front of executive, at a cost of \$62.50; and miscellaneous repairs to buildings, tools, and material, \$672.88.

Respectfully submitted.

L. L. WILLIAMS,  
*Assistant Surgeon-General.*

SURGEON-GENERAL PUBLIC HEALTH  
AND MARINE-HOSPITAL SERVICE.

[NOTE.—The statistical tables which form a part of the report of the division of marine hospitals and relief will be found at the end of this volume.]





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DIVISION OF SANITARY REPORTS AND  
STATISTICS.

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GEOLOGY



## DIVISION OF SANITARY REPORTS AND STATISTICS.

By G. T. VAUGHAN,

*Assistant Surgeon-General, Public Health and Marine-Hospital Service, in charge.*

SIR: I have the honor to submit the following report of the operations of the Division of Sanitary Reports and Statistics for the fiscal year ended June 30, 1903:

### CHOLERA.

This disease has probably been more widespread during the year ended June 30, 1903, than at any other period during the world's history, having been reported in twelve countries, all in the Eastern Hemisphere (omitting isolated cases resulting from transportation by ships), as follows:

#### ARABIA.

In September, 1902, 9 cases and 9 deaths from cholera were reported as having occurred at Hodeidah.

#### BORNEO.

From May 23 to June 5, 1902, there were reported at Bandjermassin 78 cases of cholera, with 72 deaths.

#### BRAZIL.

During the week ended January 23, 1903, 1 death from cholera was reported at Rio de Janeiro.

#### CEYLON.

One fatal case of cholera was reported from Ceylon during the week ended August 9, 1902.

#### CHINA.

The reports from China give imperfect statistics, but enough to show wide dissemination of the disease with many deaths, far exceeding in number the deaths from this disease in India during the same period. During the year it is roughly estimated that in round numbers 55,000 deaths occurred—an estimate short of the actual number. The places most seriously affected were Amoy, Hongkong, Kweilam, Macao, Nankin, Niuchwang, Pinglo, Port Arthur, Shanghai, Shouyanghsien, and Tientsin.

According to Commercial Agent R. T. Greener, cholera was announced July 4, 1902, as present at Tientsin, Inkou, Tiehliu, and along the Liao River, having been brought to Tientsin by an English vessel. The disease spread northward along the Chinese Eastern Railroad and into Manchuria, affecting many places, but seems to have expended its force within the space of two months and a half, as no cases were reported after September 14, 1902. During this period there were reported 696 deaths—undoubtedly a very conservative



estimate, as reports from other sources give nearly twice this number of deaths.

## DUTCH INDIA.

From May 26, 1902, to December 13, 1902, 1,191 deaths from cholera were reported from the following places: Batavia, Pasoervean, Pekalongan, Probolinggo, Samarang, and Soerabaya.

## EGYPT.

July 21, 1902, Consul-General John G. Long at Cairo reported the outbreak of cholera July 15 at Moucha, near Assiout, in Assiout Province. The disease was next reported at Cairo, and later at Alexandria, Damietta, El Ariche, Ismailia, Port Said, Suez, and in the provinces of Assouan, Behera, Beni Souef, Charkieh, Dakahlieh, Guirguez, Guizeh, Keneh, Menoufieh, Minieh, and Sudan. From July 15, 1902, to January 20, 1903, 31,012 deaths were reported as having been caused by cholera throughout all Egypt.

## GREAT BRITAIN—MALTA.

January 15, 1903, the steamship *Royal* arrived at Valletta, Malta, from Alexandria, with 5 cases of cholera on board. These were landed on the island of Comino and 2 more cases from the same ship were soon added, making 7 cases in all. Of this number 1 died.

## INDIA.

It is no longer correct to say as in my report of 1900, "As usual, the great majority of cases of cholera have been reported from the cities of India," for at least four countries, China, Philippine Islands, Egypt, and Japan, report more deaths from this disease than India.

From May 27, 1902, to May 16, 1903, there have been reported 2,355 deaths in the following places: Bombay, Calcutta, Karachi, and Madras.

## JAPAN.

From June 1, 1902, to October 29, 1902, a space of about five months, there were reported 4,742 deaths from 19 places in Japan. Besides, cholera was reported present at 11 other places, but the number of deaths was not given. From November 1, 1902, to June 26, 1903, only 8 deaths were reported from Japan. The above statistics include the island of Formosa.

## KOREA.

During August and September, 1902, and for some time previous, cholera was reported in Korea at the following places: Chenampo, Seoul, Syen Chun, Wang Hai, and Woonan. At Seoul in September it was estimated that from 50 to 250 deaths occurred daily.

## PHILIPPINE ISLANDS.

Since the introduction of cholera into Manila, probably through the medium of vegetables from Canton in March, 1902, this disease has spread over the greater part of the archipelago.

From July 9, 1902, to November 1, 1902, most of the cases occurred, there having been reported for this period of four months 95,531 cases, with 63,500 deaths, throughout the islands, including Manila, Cebu, and the provinces. From November 2, 1902, to May 2, 1903, there were reported only 5,351 cases, with 3,271 deaths.



## STRAITS SETTLEMENTS.

From April 26, 1902, to May 2, 1903, there were reported from Singapore 895 deaths from cholera.

## TURKEY.

October 18, 1902, Consul Merrill at Jerusalem reported the occurrence of cholera at Gaza and Lydda—probably having spread from the coast town El Ariche. From October 18 to November 18, 1902, an incomplete report gave 1,108 deaths, distributed as follows: Endor, Gaza, Jaffa and vicinity, Lydda, Shefamier, and Tiberias.

It was reported present at Dalaiky, Haifa, Lubeih, and Nazareth, but the number of cases or deaths was not given.

In January the disease reached Damascus, and from January 1 to March 11, 1903, there were reported in this city 314 deaths.

Below is a table of cholera in two sections, (1) from June 28 to December 26, 1902, and (2) from December 27, 1902, to June 26, 1903:

*Cholera, as reported to the Surgeon-General Public Health and Marine-Hospital Service.*

JUNE 28 TO DECEMBER 26, 1902.

[Reports received from United States consuls through the Department of State and from other sources.]

Place.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Hodeidah .....	Sept. 10-Sept. 12	9	9	
Borneo:				
Bandjermassin .....	May 23-June 5	78	72	
Ceylon .....	Aug 3-Aug. 9	1	1	
China:				
Amoy .....	May 31-Aug. 16	710		Estimated.
Canton .....	May 9			Abating.
Chenglohsien .....	Sept. 6			Epidemic.
Chinkiang .....	June 24			Present.
Choanchow .....	June 5			Do.
Fatshan .....	May 9-July 6			Epidemic.
Foochow .....	Sept. 6			Do.
Hangchow .....	June 24-Sept. 6			Present.
Hongkong .....	To Oct. 25	483	423	
Hsinchou .....	Sept. 6			Epidemic.
Kiangyin .....	do			Do.
Kweilam .....	To June 12		10,000	
Macao .....	To May 31			Do.
Nanking .....	To Sept 6		40,000	
Niuchwang .....	June 6-Sept. 22	1,170	1,018	
Peking .....	June 7		1	Imported.
Pinglo .....	To June 12		3,000	
Port Arthur .....	Sept. 14	592	285	
Shanghai .....	May 1-Sept. 1		493	One case on ss. County of Roxbury bound for United States.
Shihlich .....	Sept. 6			Epidemic.
Sheoyang .....	do			Do.
Shouyanghsien .....	do			3,000 cases a day
Soochow .....	do			Imported.
Taiyuanfu .....	do			Epidemic.
Tangku .....	June 6			Do.
Tientsin .....	June 7-Sept. 6	914	569	
Wusieh .....	June 24			Present.
Hunan Province .....	Sept. 6			Reported.
Shansi Province .....	do			Do.
Dutch India:				
Batavia .....	June 8-Oct. 25		607	
Samarang .....	May 28-June 24	43	38	
Pekalongan .....	May 26-June 24	256	219	
Soerabaya .....	June 1-June 28	165	117	
Pasoervean .....	June 2-June 29	150	74	
Probolingo .....	June 9-June 29	36	33	
Egypt:				
Alexandria .....	Aug. 5-Nov. 24		1,072	
Cairo .....	July 22-Nov. 24		1,424	
Demietta .....	Aug. 26-Nov. 24		609	
El Ariche .....	Sept. 16-Nov. 24		43	



*Cholera as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Egypt—Continued.				
Ismailia .....	Aug. 26-Nov. 24	.....	29	
Port Said .....	Sept. 1-Nov. 24	.....	29	
Suez .....	Sept. 8-Nov. 24	.....	108	
Assiout Province .....	Aug. 2-Nov. 24	.....	3,722	
Assouan Province .....	Oct. 28-Nov. 24	.....	2	
Behera Province .....	Aug. 12-Nov. 24	.....	2,261	
Beni Souef Province .....	Aug. 11-Nov. 24	.....	350	
Charkieh Province .....	Aug. 19-Nov. 24	.....	1,367	
Dakahlieh Province .....	Aug. 26-Nov. 24	.....	2,233	
Fayoum Province .....	do	.....	848	
Galloubieh Province .....	Aug. 4-Nov. 24	.....	1,731	
Gharbieh Province .....	Aug. 13-Nov. 24	.....	5,519	
Guirgneh Province .....	Aug. 26-Nov. 24	.....	2,563	
Guizeh Province .....	July 25-Nov. 24	.....	1,812	
Kenah Province .....	Sept. 1-Nov. 24	.....	1,134	
Menoufieh Province .....	Aug. 9-Nov. 24	.....	2,744	
Minieh Province .....	Aug. 19-Nov. 24	.....	1,152	
Sudan Province .....	Oct. 20-Nov. 24	.....	7	
India:				
Bombay .....	May 27-Nov. 4	.....	46	
Calcutta .....	May 24-Nov. 15	.....	605	
Karachi .....	May 25-Aug. 24	438	355	
Madras .....	July 5-Oct. 3	.....	9	
Japan:				
Osaka and Hiogo .....	Sept. 6-Sept. 27	.....	65	
Yokohama .....	To Oct. 29	6	4	
Ehime Ken .....	June 1-Aug. 13	84	82	
Formosa .....	July 3-Oct. 29	655	485	
.....	Jan. 1-July 3	1,987	1,516	
Fukuoka Ken .....	June 1-Sept. 22	1,042	646	
Hiogo Ken (Kobe included) ..	June 1-Oct. 18	294	60	
Hiroshima Ken .....	June 1-Sept. 22	706	.....	
Kagashima Ken .....	do	8	1	
Kanagawa Ken .....	June 1-Oct. 16	2,350	.....	
Kochi Ken .....	June 1-Aug. 31	3	2	
Kumamoto Ken .....	do	82	48	
Kyoto Ken .....	do	58	36	
Myazaki Ken .....	do	16	1	
Nagasaki Ken .....	June 1-Oct. 20	328	207	
Nara Ken .....	June 1-Sept. 10	2	.....	
Oita Ken .....	do	143	39	
Okayama Ken .....	June 1-Sept. 22	2,140	1,455	
Okinawa Ken .....	do	8	3	
Osaka Fu .....	June 1-Sept. 6	293	74	
Shiga Ken .....	June 1-Aug. 31	1	.....	
Shimane Ken .....	do	7	.....	
Shizuoka Ken .....	July 5	1	.....	
Tokyo Fu .....	do	6	4	
Tokushima Ken .....	do	1	.....	
Tottori Ken .....	do	9	.....	
Wakayama Ken .....	do	3	.....	
Yamaguchi Ken .....	do	171	1	
Korea:				
Chenampo .....	To Aug. 21	92	55	
Seoul .....	Sept. 27	.....	.....	Epidemic. From 50 to 250 deaths daily.
Syen Chun .....	To Aug. 17	20	11	
Wang Hai .....	Aug. 17	.....	50	
Woonan .....	Aug. 9	.....	.....	Present.
Philippine Islands:				
Cebu .....	July 9-Oct. 14	1,271	713	
Manila .....	Oct. 18-Nov. 1	4,173	3,141	
Provinces .....	do	90,087	59,646	
Russia:				
Amur District—				
Blagoweschtschensk .....	July 16-Sept. 14	156	98	
Chabarowsk .....	July 28-Sept. 14	147	8	
Charbin .....	June 14-June 20	112	44	
Dalnij .....	Aug. 25-Sept. 14	143	.....	
Girin .....	July 14-July 20	.....	175	
Inkou .....	July 6-July 17	128	106	
Mukden .....	July 12-July 15	87	73	
Manchuria .....	To July 19	54	24	
Nikolajewsk .....	Aug. 25-Sept. 14	25	.....	
Nikolsk .....	do	12	.....	
Odessa .....	Aug. 24-Sept. 10	18	6	
Olowjannaja .....	To Aug. 8	8	5	
Vladivostock .....	Aug. 14-Sept. 14	141	.....	
Zizikar .....	July 11-July 13	.....	157	



*Cholera as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Straits Settlements:				
Singapore .....	Apr. 26-Nov. 1 .....	1 .....	746	
Turkey:				
Dalaiky .....	Nov. 8. ....	.....	.....	Reported.
Endor .....	To Nov. 2. ....	4 .....	2	
Gaza .....	Oct. 25-Nov. 1 .....	1 .....	449	
Haifa .....	Nov. 8. ....	.....	.....	Reported.
Jaffa and vicinity .....	Oct. 25-Nov. 18 .....	.....	150	
Lubeih .....	Nov. 8. ....	.....	.....	Reported.
Lydda .....	do .....	.....	75	
Nazareth .....	Oct. — .....	.....	.....	Reported.
Shefamir .....	To Oct. 30. ....	12 .....	12	
Tiberias .....	To Nov. 18. ....	.....	420	

DECEMBER 27, 1902, TO JUNE 26, 1903.

Brazil:				
Rio de Janeiro .....	Jan. 17-Jan. 23 .....	.....	1	
China:				
Canton .....	To May 2 .....	2 .....	2	
Hongkong .....	Apr. 26-May 2 .....	2 .....	2	
Dutch India:				
Java, Batavia .....	Oct. 26-Dec. 13 .....	155 .....	103	
Egypt:				
Alexandria .....	Nov. 25-Jan. 20 .....	.....	96	
Damietta .....	do .....	.....	10	
Behera Province .....	do .....	.....	5	
Gharbleh Province .....	Dec. 2-Jan. 5 .....	.....	2	
Guirgneh Province .....	Dec. 25-Jan. 5 .....	.....	29	
Keneh Province .....	Nov. 25-Jan. 5 .....	.....	7	
Great Britain:				
Malta quarantine island .....	To Jan. 17 .....	7 .....	1	On ss. Royal, from Alexandria.
India:				
Bombay .....	Nov. 19-May 12 .....	.....	10	
Calcutta .....	Nov. 16-May 16 .....	.....	1,329	
Madras .....	Apr. 25-May 1 .....	.....	1	
Japan:				
Hogo .....	Nov. 9-Nov. 23 .....	3 .....	2	
Karatsu .....	Jan. 13-Jan. 16 .....	.....	6	
Philippine Islands:				
Manila .....	Nov. 2-May 2 .....	429 .....	324	
Provinces .....	do .....	4,922 .....	2,947	
Straits Settlements:				
Singapore .....	Nov. 1-May 2 .....	.....	149	
Turkey:				
Damascus .....	Jan. 1-Mar. 11 .....	.....	314	

## YELLOW FEVER.

## UNITED STATES.

During the year ended June 30, 1903, no case of yellow fever was reported in the United States with the exception of one case, June 3, at Mississippi River Quarantine Station, on the S. S. *Westhall*, from Tampico, Mexico.

## FOREIGN AND INSULAR.

During the same time no case was reported from Cuba as having originated there. There were seven cases reported, but all were imported from Mexican ports.

The largest number of deaths from yellow fever occurred in Brazil; second, in Mexico (chiefly in Vera Cruz); and, third, in Ecuador. Other countries reporting a number of cases are Colombia and Costa Rica.

See the table of yellow fever below, in two sections, (1) June 28 to December 26, 1902; and (2) December 27 to June 26, 1903.



*Yellow fever as reported to the Surgeon-General, Public Health and Marine Hospital Service.*

JUNE 28 TO DECEMBER 26, 1902.

[Reports received from United States consuls through the Department of State and from other sources.]

Place.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia .....	June 7-June 14	2	.....	Present.
Manaos .....	July 23	.....	.....	
Pernambuco .....	June 16-June 30	.....	1	
Rio de Janeiro .....	Sept. 21-Nov. 16	.....	10	
Colombia:				
Panama .....	July 1-Dec. 8	104	16	
Costa Rica:				
Port Limon .....	July 4-Dec. 6	27	14	
Cuba:				
Gibara .....	July 16	.....	1	
Habana .....	Aug. 5	.....	1	From ss. Vigilancia from Vera Cruz.
	Sept. 10	1	.....	From ss. Monterey from Vera Cruz.
	Sept. 16	1	.....	On ss. Havana from Mexican ports.
	Nov. 18	1	.....	From ss. Esperanza from Vera Cruz.
Dutch Guiana:				
Paramaribo .....	July 1-July 31	1	1	
Dutch West Indies:				
Buen Ayre .....	Nov. 15	.....	1	On Dutch schooner Trader.
Ecuador:				
Guayaquil .....	Aug. 10-Nov. 22	.....	19	
Mexico:				
Alvarado .....	July 7	.....	.....	Epidemic.
City of Mexico .....	June 1-Nov. 9	.....	6	
Coatzacoalcos .....	June 14-Nov. 8	74	21	
Cordoba .....	July 7	.....	.....	Present.
Jaltipan .....	July 19	.....	.....	Reported epidemic.
Merida .....	To Oct. 3	19	8	
Progreso .....	July 15-Oct. 24	13	10	
Tampico .....	To Dec. 7	.....	67	
Tuxpan .....	Oct. 14-Oct. 21	.....	1	
Vera Cruz .....	June 7-Dec. 13	431	174	
Porto Rico:				
San Juan .....	Oct. 29	1	1	One case on ss. Montgomery.
Venezuela:				
Valencia .....	Aug. 25	.....	.....	Reported.

DECEMBER 27, 1902, TO JUNE 26, 1903.

Brazil:				
Rio de Janeiro .....	Dec. 28-May 17	.....	748	
Colombia:				
Barranquilla .....	Mar. 9-Mar. 15	.....	2	
Cartagena .....	Jan. 20-Mar. 15	2	2	
Panama .....	Dec. 16-June 1	73	26	
Costa Rica:				
Limon .....	Nov. 1-June 11	50	21	
Cuba:				
Habana .....	Feb. 14-June 16	2	2	One death on ss. Esperanza, from Progreso; 1 death on ss. Niagara, from Tampico.
Ecuador:				
Guayaquil .....	Dec. 1-Apr. 18	.....	239	
Mexico:				
Coatzacoalcos .....	Dec. 7-June 6	5	2	One case imported.
Mexico .....	Apr. 28-May 3	.....	1	
Merida .....	May 30	.....	.....	Present.
Progreso .....	June 3	1	.....	
Tampico .....	Dec. 7-June 13	.....	72	Eleven new cases.
Tuxpan .....	Dec. 24-Dec. 30	.....	1	
Vera Cruz .....	Dec. 14-June 13	172	69	
Nicaragua:				
Bluefields .....	May 8	1	.....	On schr. Sunbeam, from Limon.
Venezuela:				
Caracas .....	Jan. 1-Feb. 28	.....	.....	Present.



## PLAGUE.

This disease is still widely prevalent.

## UNITED STATES.

Cases of plague, which has existed in San Francisco since March 6, 1900, continue to be reported at intervals.

Below two tables are given. No. 1 includes the calendar year 1902, with 41 cases and 41 deaths, and No. 2 the six months ended June 30, 1903, with 3 cases and 3 deaths.

*Plague in United States as reported to the Surgeon-General, Public Health and Marine-Hospital Service.*

JANUARY 1 TO DECEMBER 26, 1902.

Place.	Date.	Cases.	Deaths.	Remarks.
California:				
San Francisco .....	Feb. 22	1	1	From Berkeley.
	Apr. 20	1	1	From Davisville.
	May 19	1	1	
	May 25	1	1	
	May 29	1	1	
	July 13	1	1	
	July 18	1	1	
	July 19	1	1	
	July 20	1	1	
	Aug. 6	1	1	
	Aug. 17	1	1	
	Aug. 19	2	2	
	Aug. 20	1	1	
	Aug. 22	1	1	
	Aug. 23	1	1	
	Aug. 25	1	1	
	Aug. 30	1	1	
	Aug. 31	1	1	
	Sept. 2	1	1	
	Sept. 9	1	1	
	Sept. 11	1	1	
	Sept. 16	2	2	
	Sept. 20	1	1	
	Sept. 23	2	2	One case from Oakland.
	Sept. 26	2	2	
	Oct. 4	1	1	
	Oct. 5	2	2	
	Oct. 7	1	1	
	Oct. 11	1	1	
	Oct. 16	2	2	
	Oct. 28	1	1	
	Nov. 15	1	1	
	Nov. 18	1	1	
	Nov. 27	1	1	

DECEMBER 27, 1902, TO JUNE 26, 1903.

California:				
San Francisco .....	Dec. 11	1	1	
Do.....	Mar. 17	1	1	
Do.....	June 5	1	1	

## FOREIGN AND INSULAR.

JUNE 28, 1902, TO JUNE 26, 1903.

The following countries and places were reported affected: Africa—Cape Peninsula, Mossel Bay, Natal, and Port Elizabeth. Australia—Brisbane, Newcastle, Perth, Rockhamton, Sydney, and Townsville.



Brazil—Pernambuco, Port Victoria, and Rio de Janeiro. Chile—Iquique (in May, 1903). China—Amoy, Canton, Chiangchow, Choan-chow, Honam, Hongkong, Phautai, and Swatow. Egypt—Alexandria, Menoufieh, Minieh, Samalut, Tukh, and the provinces of Assiout, Dakahlieh, Galioubieh, Garbieh, and Keneh. France—At Dunkirk, June 11–13, there were 2 deaths on the steamship *City of Perth*, from Calcutta, and at Marseille, July 3, 1 case on steamship *Espagne*, from Buenos Ayres. Germany—Berlin, in June, 1903, there was 1 case contracted in laboratory work. Hawaiian Islands—Hilo and Honolulu. India—As usual, the great majority of cases and deaths occurred in this country, many times more than in all the rest of the world taken together. The disease was especially prevalent in Bombay Presidency and Sind, Bengal Presidency, the upper provinces of Agra and Oudh, the Punjab, and the central provinces. From April 26, 1902, to May 2, 1903, more than 643,000 deaths were reported. Japan—A few cases occurred at Yokohama, 1 at Tokyo, and 700 cases, with 555 deaths, on the Island of Formosa, during May, 1902. Madagascar—Majunga and Tamatave. Mauritius—From December 5, 1902, to May 21, 1903, 122 cases, with 89 deaths. Mexico—Cases occurred at Ensenada, Mazatlan, Oso, Siqueros, Villanoir, and Villa Union during the time from December 25, 1902, to May 19, 1903. Peru—In the spring of 1903, 10 cases, with 4 deaths, were reported at Callao. Philippine Islands—In June, 1902, there was 1 death, and from December 28, 1902, to April 4, 1903, 44 deaths at Manila. Russia—July 10, 1902, Consul Heenan cabled from Odessa the existence of plague in that city. The disease seems to have started about the middle of the preceding month (June), probably a recrudescence of the disease of 1901, as ever since that time the examination of rats at intervals had shown infection with plague. By November 8, 1902, there occurred 49 cases, with 17 deaths. Spain—One case occurred July 16, 1902, at Barcelona, on the steamship *Duca de Galliera*, from Buenos Ayres. Straits Settlements—Two deaths were reported from Singapore. Turkey—A few isolated cases were reported in this country at Constantinople, Pera, and Smyrna.

*Plague as reported to the Surgeon-General, Public Health and Marine-Hospital Service.*

JUNE 28 TO DECEMBER 26, 1902.

[Reports received from United States consuls through the Department of State, and from other sources.]

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Africa:</b>				
Cape Peninsula.....	To Aug. 9.....	745	362	
Port Elizabeth.....	do.....	135	66	
Mossel Bay.....	do.....	13	4	
All other places.....	do.....	14	6	
<b>Australia:</b>				
Brisbane.....	Feb. 1–July 31.....	74	26	
Newcastle.....	Aug. 24–Aug. 31.....	1	1	
Sydney.....	June 12.....	1		
Townsville.....	Aug. 21.....		1	
<b>Brazil:</b>				
Pernambuco.....	Apr. 15–Oct. 15.....		109	
Port Victoria.....	Oct. 2.....	30		
Rio de Janeiro.....	Aug. 15–Oct. 16.....		29	
<b>China:</b>				
Canton.....	May 10.....			Decreasing.
Chiangchow.....	June 5.....			Present.
Choan-chow.....	do.....			Do.
Honam.....	do.....			Epidemic.
Hongkong.....	May 10–Nov. 8.....		434	



*Plague as reported to the Surgeon-General, Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Egypt:				
Alexandria.....	Apr. 14-Nov. 15	164	81	
Assiout Province.....	June 18.....	1	.....	
Dakahlieh Province.....	Apr. 14-June 18	9	4	
Galioubieh Province.....	May 2-Aug. 6	39	21	
Garbieh Province.....	June 3.....	1	.....	
Keneh Province.....	May 11-June 25	56	38	
Menoufieh.....	May 7-June 25	29	15	
Minieh.....	Apr. 26-June 25	27	15	
France:				
Dunkirk.....	June 11-June 13	.....	.....	Two deaths on ss. City of Perth, from Calcutta, etc.
Marseille.....	July 3.....	.....	.....	One case on ss. Espagne, from Buenos Ayres.
Hawaiian Islands:				
Honolulu.....	July 28-Nov. 18	.....	14	
India:				
Bombay Presidency and Sind—				
Northern Division—				
Ahmedabad city and district.	Apr. 26-Nov. 8	205	160	Imported.
Bandra port.....	June 7-Nov. 8	48	38	
Bassein.....	do.....	11	11	
Bhiwandi.....	Aug. 9-Nov. 8	49	32	
Bombay city.....	Apr. 26-Nov. 8	.....	3,591	
Broach district.....	do.....	46	64	
Bulsar port.....	May 24-Nov. 8	82	65	
Kaira district.....	Apr. 26-Nov. 8	1,939	1,328	
Kalyan.....	Aug. 30-Nov. 8	68	59	
Mahim.....	June 7-Nov. 8	35	17	
Panch Mahals district.....	Apr. 26-Nov. 8	1,939	1,328	
Rewakantha state.....	do.....	455	272	
Surat district, port, and town.	do.....	2,075	1,453	
Thana district.....	do.....	555	454	
Utan.....	May 17-Nov. 8	10	9	
Central Division—				
Ahmednagar district.....	Apr. 26-Nov. 8	159	144	Twenty-seven cases imported.
Khandesh district.....	do.....	11,099	9,159	
Nasik district.....	do.....	5,723	4,655	
Poonah district and city.....	do.....	2,600	2,102	
Satara district.....	do.....	19,445	13,881	
Sholapur district and town.....	do.....	1,497	1,081	Three cases imported.
Southern Division—				
Belgaum district.....	do.....	11,989	8,858	
Dabhal.....	June 21-Nov. 8	40	42	
Dharwar district.....	Apr. 26-Nov. 8	17,225	10,373	
Hyderabad town and district.	do.....	202	154	
Kanara district.....	do.....	.....	714	
Karachi district, city, and port	do.....	653	467	
Kolaba district.....	do.....	129	109	
Ratnagiri district and port.....	do.....	.....	62	
Revdanda.....	May 24-Nov. 8	47	39	
Political charges—				
Aundh state.....	do.....	903	790	
Baroda state.....	do.....	1,654	1,266	
Billimora.....	June 21-Nov. 8	301	212	
Cutch state.....	Apr. 26-Nov. 8	219	179	
Janjira state and ports.....	May 24-Nov. 8	2	2	
Kodinar port.....	June 7-Nov. 8	3	1	
Kathiawar state.....	Apr. 26-Nov. 8	4,621	2,712	
Kolhapur and Southern Maharashtra country.	do.....	11,461	7,606	
Mandvi port.....	May 24-Nov. 8	.....	42	
Mangrol.....	July 26-Nov. 8	14	9	
Porbander port.....	May 24-Nov. 8	15	9	
Sachin state.....	Apr. 26-Nov. 8	350	180	
Savanur state.....	May 24-Nov. 8	498	353	
Veraval.....	do.....	.....	13	
Outside Bombay Presidency and Sind—				
Madras Presidency.....	Apr. 26-Nov. 8	5,727	4,611	Including 291 imported seizures and 240 imported deaths.
Bengal—				
Bhagalpur.....	do.....	317	274	
Burdwan division.....	do.....	140	127	
Calcutta.....	do.....	1,529	1,530	
Orissa.....	do.....	9	9	
Patna.....	do.....	2,321	1,759	
Northwest Province and Oudh—				
Allahabad.....	do.....	6,623	5,594	Including 12 imported cases and 8 imported deaths.



*Plague as reported to the Surgeon-General, Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO SEPTEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Bombay Presidency and Sind—Continued.				
Northwest Provinces and Oudh—Continued.				
Benares .....	Apr. 26-Nov. 8	8	776	Including 6 imported cases and 6 deaths.
Fyzabad .....	June 21-Nov. 8	8	12	
Gorakpur .....	May 24-Nov. 8	8	316	Three cases imported.
Lucknow .....	Sept. 13-Nov. 8	8	246	
Meerut .....	May 24-Nov. 8	8	21	16
Punjab—				
Delhi division .....	Apr. 26-Nov. 8	8	11,349	7,530
Jind .....	June 21-Nov. 8	8	22	5
Jullunder .....	Apr. 26-Nov. 8	8	9,841	6,565
Lahore .....	do		16,540	9,347
Maler Kotla .....	June 21-Nov. 8	8	42	29
Patiala state .....	July 5-Nov. 8	8		20
Burma—				
Rangoon .....	Oct. 4-Nov. 8	8		One case imported.
Rawalpindi division .....	Apr. 26-Nov. 8	8	10,784	
Mysore state—				
Bangalore city, district, and military station.	do		4,646	3,327
Chitaldrug district .....	do		213	147
Hassan district .....	do		597	399
Kadur district .....	do		1,684	1,244
Kolar district and gold fields.	do		821	611
Mysore city and district.	do		6,269	4,556
Shimoga district .....	do		1,851	1,167
Tumkur district .....	do			136
Hyderabad state .....	do		2,313	1,841
Berar state .....	do		2,057	1,475
Rajpunta state .....	June 7-Nov. 8	8	4	4
Beluchistan .....	July 5-Nov. 8	8	13	11
Kashmir—				
Jammu Province .....	Apr. 26-Nov. 8	8	490	373
Poonch district .....	Oct. 4-Nov. 8	8	38	31
Japan:				
Formosa .....	May 1-May 31	31	700	555
Yokohama .....	Oct. 5-Nov. 2	2	7	4
Madagascar:				
Majunga .....	May 26-June 22	22		41
Tamatave .....	July 1-July 22	22	18	14
Philippine Islands:				
Manila .....	June 8-June 21	21	1	1
Russia:				
Odessa .....	To Nov. 8		49	17
Spain:				
Barcelona .....	July 16			One case on ss. Duca di Galliera from Buenos Ayres.
Straits Settlements:				
Singapore .....	Oct. 25-Nov. 1	1		1
Turkey:				
Constantinople .....	Oct. 30		1	1
Pera .....	July 5			Declared.
Smyrna .....	Sept. 29-Oct. 5	5	1	
				Do.

DECEMBER 27, 1902, TO JUNE 26, 1903.

Africa:				
Cape of Good Hope (East London, Port Elizabeth, and King Williams Town included).	Mar. 29-May 2	36		
Natal (Durban and Pietermaritzburg included).	To Apr. 18	145	81	
Australia:				
Queensland, Brisbane .....	July 31-May 9	17	8	
Rockhampton .....	To May 9	2		
Townsville .....	do	3		
Western Australia, Perth .....	To Mar. 23	16	8	
Brazil:				
Rio de Janeiro .....	Dec. 28-May 17		20	
Chile, Iquique .....	May 27			Present.
China:				
Amoy .....	May 9			Plague present.
Canton .....	May 4			Plague sporadic.
Hongkong .....	Jan. 1-May 2	499	410	
Phauthai .....	To Mar. 21		100	
Swatow .....	To Apr. 3		100	



*Plague as reported to the Surgeon-General, Public Health and Marine-Hospital Service—*  
Continued.

DECEMBER 27, 1902, TO JUNE 25, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Egypt:				
Alexandria.....	May 16-May 22	5	3	
Minieh.....	do	2	.....	
Samalut.....	do	2	.....	
Tukh.....	do	2	.....	
Formosa.....	Jan. 1-Mar. 31	237	186	
Germany:				
Berlin.....	June 5.....	1	1	Contracted in laboratory work.
Hawaiian Islands:				
Hilo.....	To Mar. 17.....	3	2	
Honolulu.....	Dec. 31-May 10	.....	5	
India:				
Bombay Presidency and Sind—				
Northern division.....	Nov. 8-May 2	66,015	43,449	
Central division.....	do	79,706	67,324	
Southern division.....	do	59,772	44,584	
Sind.....	do	2,176	1,658	
Political charges.....	do	57,684	53,523	
Madras Presidency.....	do	13,065	8,685	
Bengal—				
Calcutta.....	Jan. 3-May 2	7,099	6,527	
Presidency.....	Feb. 21-May 2	497	451	
Burdwan.....	Dec. 27-May 2	432	339	
Bhagalpur.....	do	5,980	5,225	
Rajshahi.....	Mar. 7-May 2	.....	4	
Patna.....	Dec. 27-May 2	50,732	45,042	
Chota Nagpur.....	Dec. 6-May 2	3	3	
Orissa.....	Mar. 1-May 2	27	25	
Upper Province of Agra and Oudh—				
Allahabad.....	Nov. 8-May 2	27,964	26,023	
Benares.....	do	11,059	10,616	
Fyzabad.....	do	3,696	3,140	
Gorakpur.....	do	6,327	5,633	
Meerut.....	do	6,680	5,935	
Lucknow.....	do	8,679	7,827	
Agra.....	do	2,228	2,047	
Rohilkhand.....	Feb. 14-May 2	9	8	
Kumaon.....	Apr. 11-May 2	1	1	
Punjab—				
Jullunder.....	Nov. 8-May 2	71,933	38,553	
Lahore.....	do	83,523	56,525	
Rawalpindi.....	do	21,469	14,191	
Multan.....	Mar. 21-May 2	1,221	828	
Delhi.....	Nov. 8-May 2	25,513	17,349	
Burma—				
Moulmein.....	Mar. 7-May 2	2	1	
Rangoon.....	Apr. 25-May 2	.....	1	
Central provinces—				
Narbada.....	Nov. 8-May 2	5,156	3,539	
Nagpur.....	Dec. 13-May 2	9,355	7,045	
Jubbulpore.....	Dec. 27-May 2	6,285	5,470	
Mysore state.....	Nov. 8-May 2	19,905	13,419	
Hyderabad state.....	do	19,784	15,042	
Berar.....	do	11,196	9,605	
Rajputana.....	Nov. 15-May 2	1,060	920	
Central India.....	Nov. 8-May 2	3,463	3,237	
Kashmir.....	Nov. 15-May 2	308	220	
N. W. Frontier Province.....	Apr. 11-May 2	4	3	
Baluchistan.....	do	2	1	
Japan:				
Tokyo.....	To Jan. 14.....	1	1	
Yokohama.....	May 26.....	2	2	One case on the ss. Kagashima Maru.
Mauritius.....	Dec. 5-May 21	122	89	
Mexico:				
Ensenada.....	Dec. 25-Jan. 9	15	14	
Mazatlan.....	Dec. to May 19....	314	254	Case of May 19 occurred in the vicinity of Mazatlan; infection from Siqueros.
Oso.....	To Feb. 15.....	1	.....	
Siqueros.....	Mar. 23.....	3	2	
Villanior.....	May 4-May 6	4	.....	
Villa Union.....	Mar. 22.....	1	1	
Peru:				
Callao.....	To May 12.....	10	4	
Philippine Islands:				
Manila.....	Dec. 28-Apr. 4	.....	44	
Straits Settlements, Singapore.....	Mar. 29-Apr. 4	.....	1	



## SMALLPOX.

## UNITED STATES.

During the six months ended December 31, 1902, smallpox was reported from 44 States and Territories, with a total of 15,653 cases and 806 deaths.

During the six months ended June 30, 1903, smallpox was reported from 43 States and Territories, with a total of 26,937 cases and 842 deaths. Total for the year, 42,590 cases and 1,642 deaths—a mortality of 3.86 per cent.

Comparing these statistics with those of last year, we find reason, on account of the decrease in the number of cases and deaths, to believe that the disease has spent its force and will now continue to decrease until it practically disappears. If we compare the statistics year by year, beginning with 1898, as it was during the winter of 1898-99 that the disease began to assume great proportions, although it had been slowly increasing since 1897, we find a tremendous increase each year over its predecessor up to the year ended June 30, 1902, when the high-water mark was reached, with 55,857 cases and 1,852 deaths. During the five years from July 1, 1898, to June 30, 1903, there were reported 164,283 cases of smallpox, with 5,627 deaths—a mortality of 3.42 per cent.

Below is given a short table showing the cases and deaths, by years, during this period:

	Cases.	Deaths.
July 1, 1898-June 30, 1899 .....	12,277	709
July 1, 1899-June 30, 1900 .....	15,053	735
July 1, 1900-June 30, 1901 .....	38,506	689
July 1, 1901-June 30, 1902 .....	55,857	1,852
July 1, 1902-June 30, 1903 .....	42,590	1,642
Total.....	164,283	5,627

Below is given the table in two sections for the fiscal year ended June 30, 1903, showing the occurrence of the disease by States, counties, etc.:

*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service.*

JUNE 28 TO DECEMBER 26, 1902.

Place.	Date.	Cases.	Deaths.	Remarks.
Alabama:				
Mobile .....	Aug. 2 .....	1 .....	.....	
Total for State.....		1 .....	.....	
Alaska:				
Juneau .....	June 16.....	1 .....	.....	Imported from a mining camp.
Total for Territory .....		1 .....	.....	
Arizona:				
Nogales .....	Nov. 29 .....	6 .....	.....	
Total for Territory .....		6 .....	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>California:</b>				
Fresno.....	Nov. 1-Nov. 30	2	.....	
Los Angeles.....	June 7-Nov. 22	17	.....	
Oakland.....	Nov. 1-Nov. 30	1	.....	
Sacramento.....	June 14-Dec. 6	21	.....	
San Francisco.....	June 15-Dec. 7	116	.....	
Stockton.....	June 1-Nov. 13	18	.....	
Total for State.....		175	.....	
<b>Colorado:</b>				
Arapahoe County (Denver included).	June 1-Dec. 12	57	.....	Three cases contracted outside of Denver.
Boulder County.....	July 1-July 31	2	.....	
Custer County.....	Aug. 1-Aug. 31	1	.....	
El Paso County.....	June 1-Oct. 31	21	.....	
Fremont County.....	Oct. 1-Oct. 31	1	.....	
Gilpin County.....	June 1-June 30	2	.....	
Jefferson County.....	Oct. 1-Oct. 31	1	.....	
Kiowa County.....	do.....	1	.....	
La Plata County.....	July 31.....	10	.....	
Larimer County.....	June 1-Oct. 31	33	.....	
Las Animas County.....	June 1-June 30	1	.....	
Montrose County.....	June 1-Oct. 31	2	.....	
Otero County.....	Oct. 1-Oct. 31	1	.....	
Ouray County.....	June 1-Oct. 31	5	.....	
Park County.....	do.....	1	.....	
Prowers County.....	June 1-Aug. 31	23	.....	
Pueblo County.....	July 1-Oct. 31	6	.....	
Routt County.....	do.....	1	.....	
San Miguel County.....	do.....	2	.....	
Summit County.....	do.....	1	.....	
Teller County.....	June 1-July 31	3	.....	
Washington County.....	do.....	5	.....	
Weld County.....	June 1-Aug. 31	24	.....	
Total for State.....		204	.....	
<b>Connecticut:</b>				
Brooklyn.....	Aug. 1-Aug. 31	4	.....	
Davidson.....	do.....	2	.....	
Killingly.....	Nov. 1-Nov. 30	1	.....	
New Britain.....	July 1-Aug. 31	10	.....	
Norwich.....	Nov. 1-Nov. 30	3	.....	
Sprague.....	do.....	6	.....	
Stamford.....	July 1-July 31	1	.....	
Thompson.....	July 1-Nov. 30	33	.....	
Waterbury.....	do.....	2	.....	
Willimantic.....	Aug. 1-Aug. 31	1	.....	
Total for State.....		63	.....	
<b>Delaware:</b>				
Sussex County.....	Sept. 1-Sept. 26	7	.....	
Total for State.....		7	.....	
<b>District of Columbia:</b>				
Washington.....	July 27-Aug. 17	9	.....	
Total for District.....		9	.....	
<b>Florida:</b>				
Jacksonville.....	June 14-Dec. 13	12	.....	
Live Oak.....	July 11.....	1	.....	
Palmetto.....	do.....	1	.....	
Duval County (Mayport included).	Oct. 17-Nov. 8	1	.....	
Escambia County (Pensacola included).	Aug. 10-Dec. 6	14	.....	
Jefferson County (Lamont included).	Oct. 4-Nov. 8	12	.....	
St. Johns County (St. Augustine included).	Oct. 15-Oct. 22	1	.....	
Total for State.....		42	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Georgia:</b>				
Atlanta.....	Nov. 13-Dec. 10	16		
Augusta.....	June 1-June 30		1	
Total for State.....		16	1	
<b>Illinois:</b>				
Belleville.....	June 14-Dec. 13	17		
Cairo.....	June 29.....	1		
Chicago.....	June 14-Dec. 13	81	2	
Evanston.....	Oct. 1-Nov. 30	65		
Freeport.....	July 6-Dec. 13	29		
Joliet.....	July 2-July 15	15		
Peoria.....	July 1-July 31	14		
Total for State.....		222	2	
<b>Indiana:</b>				
Adams County.....	Sept. 1-Oct. 31	22		
Allen County.....	Oct. 1-Oct. 31	4		
Benton County.....	Sept. 1-Oct. 31	1		
Blackford County.....	do.....	1		
Boble County.....	Oct. 1-Oct. 31	3	1	
Boone County.....	Sept. 1-Oct. 31	5		
Brown County.....	do.....	2		
Carroll County.....	Oct. 1-Oct. 31	4		
Cass County.....	Sept. 1-Oct. 31	1		
Clark County.....	do.....	25		
Clay County (Knightstown included).	July 1-Oct. 31	2	12	
Clinton County.....	Sept. 1-Oct. 31	22	8	
Daviess County.....	do.....	17		
Dearborn County.....	do.....	5		
Decatur County.....	Oct. 1-Oct. 31	1		
Dekalb County.....	Sept. 1-Oct. 31	8		
Delaware County (Muncie included).	June 1-Nov. 30	12		
Dubois County.....	Sept. 1-Sept. 30	11		
Elkhart County.....	Sept. 1-Oct. 31	2	1	
Fountain County.....	do.....	3		
Franklin County.....	do.....	1		
Fulton County.....	do.....	15		
Gibson County.....	do.....	11		
Grant County.....	do.....	35		
Hancock County.....	Oct. 1-Oct. 31	2		
Howard County (Kokomo included).	Sept. 1-Nov. 22	26		
Jay County.....	Sept. 1-Oct. 31	30	1	
Jefferson County.....	Sept. 1-Nov. 22	2		
Knox County.....	do.....	31		
Kosciusko County (Warsaw included).	do.....	21	2	
Lagrange County.....	do.....	2		
Lake County (Hammond included).	Sept. 1-Nov. 30	39		
Laporte County.....	July 1-Oct. 31	3	1	
Lawrence County.....	Oct. 1-Oct. 31	16		
Marion County (Indianapolis included).	June 7-Dec. 13	127	4	
Martin County.....	June 7-Oct. 31	7	2	
Miami County.....	Sept. 1-Sept. 30	2		
Monroe County.....	do.....	5		
Noble County.....	Sept. 1-Oct. 31	5	1	
Noble County.....	Oct. 1-Oct. 31	3	1	
Orange County.....	Oct. 1-Oct. 31	3		
Randolph County.....	Sept. 1-Oct. 31	17		
St. Joseph County (South Bend and Mishawaka included).	Sept. 20-Oct. 31	41	7	
Spencer County.....	Sept. 1-Sept. 30	10		
Starke County.....	Sept. 1-Oct. 31	8		
Vanderburg County (Evansville included).	June 29-Dec. 6	4		
Vermillion County.....	Sept. 1-Sept. 30	18		
Vigo County (Terre Haute included).	June 14-Sept. 30	7		
Total for State.....		639	40	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Iowa:</b>				
Adams County .....	June 1-June 30	.....	.....	Present.
Allamakee County .....	June 1-July 31	.....	.....	Do.
Boone County .....	June 1-June 30	.....	.....	Do.
Buchanan County .....	Oct. 1-Oct. 31	.....	.....	Do.
Calhoun County .....	June 1-June 30	.....	.....	Do.
Carroll County .....	do	.....	.....	Do.
Chickasaw County .....	do	.....	.....	Do.
Clarke County .....	do	.....	.....	Do.
Clayton County .....	Oct. 1-Oct. 31	.....	.....	Do.
Davis County .....	June 1-June 30	.....	.....	Do.
Delaware County .....	Sept. 1-Sept. 30	.....	.....	Do.
Dubuque County .....	Oct. 1-Oct. 31	.....	.....	Do.
Emmet County .....	June 1-June 30	.....	.....	Do.
Fremont County .....	July 1-July 31	.....	.....	Do.
Hamilton County .....	June 1-June 30	.....	.....	Do.
Harrison County .....	June 1-July 31	.....	.....	Do.
Ida County .....	Aug. 1-Aug. 31	.....	.....	Do.
Johnson County .....	Oct. 1-Oct. 31	.....	.....	Do.
Kossuth County .....	June 1-July 31	.....	.....	Do.
Louisa County .....	do	12	.....	.....
Lucas County .....	Aug. 1-Aug. 31	.....	.....	Do.
Madison County .....	July 1-July 31	.....	.....	Do.
Mahaska County .....	June 1-June 30	.....	.....	Do.
Plymouth County .....	do	.....	.....	Do.
Pocahontas County .....	June 1-July 31	.....	.....	Do.
Polk County .....	June 1-June 30	.....	.....	Do.
Pottawattamie County .....	do	.....	.....	Do.
Sac County .....	do	.....	.....	Do.
Scott County (Davenport included).	Aug. 1-Oct. 31	31	.....	.....
Shelby County .....	July 1-July 31	.....	.....	Do.
Sioux County .....	Aug. 1-Aug. 31	.....	.....	Do.
Taylor County .....	July 1-July 31	.....	.....	Do.
Van Buren County .....	Oct. 1-Oct. 31	.....	.....	Do.
Wapello County (Ottumwa included).	June 1-Nov. 22	24	.....	.....
Warren County .....	Sept. 1-Sept. 30	.....	.....	Do.
Washington County .....	Oct. 1-Oct. 31	.....	.....	Do.
Webster County .....	June 1-June 30	.....	.....	Do.
Winnebago County .....	Oct. 1-Oct. 31	.....	.....	Do.
Winneshiek County .....	do	.....	.....	Do.
Woodbury County .....	June 1-June 30	.....	.....	Do.
Worth County .....	do	.....	.....	Do.
Total for State .....	.....	67	.....	.....
<b>Kansas:</b>				
Cherokee County .....	July 1-July 16	2	.....	.....
Cloud County .....	do	2	.....	.....
Ellis County .....	do	2	.....	.....
Genesee County .....	do	1	.....	.....
Kingman County .....	do	1	.....	.....
Madison County .....	do	1	.....	.....
Rooks County .....	do	1	.....	.....
Sedgewick County (Wichita included).	June 14-Nov. 29	24	.....	.....
Sumner County .....	July 1-July 16	56	1	.....
Total for State .....	.....	90	1	.....
<b>Kentucky:</b>				
Covington .....	June 14-Nov. 29	146	.....	.....
Lexington .....	June 21-Nov. 22	30	.....	.....
Total for State .....	.....	176	.....	.....
<b>Louisiana:</b>				
New Orleans .....	June 14-Nov. 29	3	.....	.....
Shreveport .....	Aug. 17-Sept. 20	4	.....	.....
Total for State .....	.....	7	.....	.....
<b>Maine:</b>				
Abbot .....	Sept. 19	1	.....	Imported from Boston.
Biddeford .....	Oct. 18-Dec. 13	35	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Maine—Continued.</b>				
Machias .....	June 26 .....	1	.....	Imported from a lumber camp a few miles from Machias.
Montague .....	Oct. 10 .....	1	.....	
Portland .....	Aug. 3-Dec. 13	4	.....	One seaman from schooner Charles Jeffrey.
Waterville.....	Nov. 4 .....	1	.....	
Winslow.....	Sept. 18 .....	2	.....	Imported from Canada.
Total for State.....		45	.....	
<b>Maryland:</b>				
Baltimore .....	July 27-Oct. 4	3	1	Stopped at quarantine.
Cumberland .....	June 1-Nov. 30	3	.....	
Total for State.....		6	1	
<b>Massachusetts:</b>				
Boston .....	June 21-Dec. 13	300	56	
Brockton .....	Aug. 10-Aug. 30	4	.....	
Cambridge .....	June 21-Nov. 29	58	24	
Chelsea.....	July 27-Dec. 13	5	.....	
Chicopee .....	Dec. 1-Dec. 6	1	.....	
Clinton.....	Nov. 16-Nov. 22	1	.....	
Everett.....	June 21-Dec. 6	23	4	
Fall River.....	July 27-Oct. 4	4	.....	
Fitchburg .....	Aug. 10-Sept. 6	2	.....	
Lawrence .....	Aug. 17-Dec. 13	6	1	
Lowell .....	June 21-Aug. 9	22	2	
Malden.....	June 14-Dec. 13	7	.....	
Manchester .....	Nov. 9-Nov. 15	2	.....	
Marlboro .....	Oct. 18-Nov. 29	10	.....	
Medford.....	July 13-Nov. 8	5	1	
Melrose .....	June 21-July 12	2	1	
New Bedford.....	July 30-Aug. 2	1	.....	
Newton .....	June 21-Dec. 13	10	1	
Quincy.....	Aug. 31-Nov. 29	2	.....	
Somerville .....	June 21-Aug. 30	33	2	
Taunton.....	June 21-Dec. 13	12	.....	
Weymouth.....	Nov. 9-Nov. 22	2	.....	
Worcester .....	June 13-Nov. 14	4	.....	
Total for State.....		516	92	
<b>Michigan:</b>				
Alpena County.....	June 14-Dec. 13	.....	.....	Present.
Antrim County.....	July 12-Aug. 9	.....	.....	Do.
Arenac County.....	June 14-Dec. 13	.....	.....	Do.
Baraga County.....	Sept. 6-Sept. 20	.....	.....	Do.
Bay County.....	July 14-Dec. 13	.....	.....	Do.
Benzie County.....	June 14-July 5	.....	.....	Do.
Berrien County.....	July 12-Dec. 13	.....	.....	Do.
Branch County.....	Nov. 29-Dec. 13	.....	.....	Do.
Calhoun County.....	June 14-Nov. 15	.....	.....	Do.
Cass County.....	June 14-Sept. 20	.....	.....	Do.
Charlevoix County.....	July 12-Dec. 13	.....	.....	Do.
Cheboygan County.....	June 14-Dec. 13	.....	.....	Do.
Clare County.....	Sept. 20-Oct. 11	.....	.....	Do.
Clinton County.....	Aug. 9-Oct. 4	.....	.....	Do.
Delta County.....	June 14-Oct. 11	.....	.....	Do.
Eaton County.....	June 14-Oct. 4	.....	.....	Do.
Emmet County.....	June 14-July 5	.....	.....	Do.
Genesee County.....	June 14-Oct. 4	.....	.....	Do.
Gladwin County.....	Aug. 2-Oct. 25	.....	.....	Do.
Gogebic County.....	Nov. 22-Dec. 13	.....	.....	Do.
Grand Traverse County.....	June 21-Nov. 1	.....	.....	Do.
Gratiot County.....	June 21-Dec. 6	.....	.....	Do.
Houghton County.....	June 14-Dec. 13	.....	.....	Do.
Huron County.....	June 21-Aug. 23	.....	.....	Do.
Ingham County.....	June 14-Nov. 1	.....	.....	Do.
Ionia County.....	June 14-Dec. 13	.....	.....	Do.
Iosco County.....	June 14-Sept. 13	.....	.....	Do.
Iron County.....	Aug. 2-Sept. 6	.....	.....	Do.
Isabella County.....	June 14-Nov. 22	.....	.....	Do.
Jackson County.....	June 14-Nov. 1	.....	.....	Do.
Kalamazoo County.....	June 14-July 5	.....	.....	Do.
Kalkaska County.....	do	.....	.....	Do.
Kent County (Grand Rapids included).	June 7-Dec. 13	55	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Michigan—Continued.</b>				
Lapeer County .....	June 14-July 5	.....	.....	Present.
Livingston County .....	Aug. 2-Aug. 30	.....	.....	Do.
Luce County .....	Sept. 13-Sept. 20	.....	.....	Do.
Mackinac County .....	June 14-July 5	.....	.....	Do.
Macomb County (Mount Clemens included) .....	Oct. 11-Dec. 13	.....	1	
Marquette County .....	Oct. 4-Oct. 25	.....	.....	Do.
Mason County (Ludington included) .....	June 7-Oct. 18	5	.....	
Mecosta County .....	June 14-Aug. 16	.....	.....	Do.
Menominee County .....	June 14-Dec. 13	.....	.....	Do.
Midland County .....	June 14-Nov. 22	.....	.....	Do.
Missaukee County .....	June 14-Aug. 16	.....	.....	Do.
Montcalm County .....	June 14-Sept. 13	.....	.....	Do.
Monroe County .....	Oct. 4-Dec. 6	.....	.....	Do.
Muskegon County .....	June 14-Oct. 25	.....	.....	Do.
Newaygo County .....	June 14-June 21	.....	.....	Do.
Oakland County .....	June 21-Dec. 13	.....	.....	Do.
Oceana County .....	Sept. 6-Sept. 13	.....	.....	Do.
Ogemaw County .....	Nov. 1-Dec. 6	.....	.....	Do.
Osceola County .....	Dec. 6-Dec. 13	.....	.....	Do.
Otsego County .....	July 19-Sept. 6	.....	.....	Do.
Ottawa County .....	June 14-Dec. 13	.....	.....	Do.
Presque Isle County .....	.....do.....	.....	.....	Do.
Roscommon County .....	July 26-Aug. 16	.....	.....	Do.
Saginaw County .....	June 14-Dec. 13	.....	.....	Do.
St. Clair County .....	July 12-Dec. 13	.....	.....	Do.
Sanilac County .....	June 14-Dec. 13	.....	.....	Do.
Schoolcraft County .....	June 14-July 5	.....	.....	Do.
Shiawassee County .....	Nov. 8-Dec. 13	.....	.....	Do.
Tuscola County .....	June 14-Dec. 6	.....	.....	Do.
Van Buren County .....	Nov. 29-Dec. 13	.....	.....	Do.
Washtenaw County .....	June 21-July 5	.....	.....	Do.
Wayne County (Detroit included) .....	June 21-Dec. 13	261	2	One case from ss. City of Cleveland; 1 case from ss. Mary E. Perew.
Wexford County .....	June 14-Oct. 18	.....	.....	Present.
Total for State .....		321	3	
<b>Minnesota:</b>				
Aitkin County .....	July 7-July 28	3	.....	
Becker County .....	June 9-Oct. 6	2	.....	
Beltrami County .....	July 7-Dec. 8	45	2	
Benton County .....	July 21-Dec. 8	39	.....	
Blue Earth County .....	June 9-Dec. 8	63	.....	
Brown County .....	July 7-July 28	3	.....	
Carlton County .....	June 23-Nov. 24	2	.....	
Carver County .....	June 9-Dec. 8	57	.....	
Cass County .....	Nov. 3-Dec. 1	2	.....	
Chippewa County .....	June 9-Dec. 1	36	.....	
Clay County .....	June 23-July 28	11	.....	
Cottonwood County .....	Sept. 1-Dec. 1	2	.....	
Crow Wing County .....	June 9-Dec. 8	22	.....	
Dakota County .....	Oct. 27-Dec. 8	8	.....	
Dodge County .....	Nov. 24-Dec. 1	11	.....	
Douglas County .....	July 7-Dec. 8	20	.....	
Faribault County .....	June 23-Aug. 4	11	.....	
Fillmore County .....	Sept. 1-Sept. 8	14	1	
Freeborn County .....	June 9-July 28	8	1	
Goodhue County .....	June 9-Nov. 24	14	.....	
Grant County .....	July 14-Dec. 8	14	.....	
Hennepin County .....	June 9-Dec. 8	96	1	
Houston County .....	Sept. 8-Dec. 1	6	.....	
Isanti County .....	Aug. 18-Aug. 25	26	.....	
Itaska County .....	June 16-Nov. 10	5	.....	
Jackson County .....	July 7-Nov. 3	5	.....	
Kanabec County .....	June 23-Oct. 27	45	.....	
Kandiyohi County .....	July 21-Dec. 1	19	.....	
Lac Qui Parle County .....	Nov. 3-Dec. 1	4	.....	
Lake County .....	June 9-July 28	1	.....	
Le Sueur County .....	June 16-Dec. 8	6	.....	
Lincoln County .....	June 9-Sept. 8	73	.....	
Lyon County .....	June 23-Dec. 8	8	.....	
McLeod County .....	June 23-Nov. 3	12	.....	
Marshall County .....	Aug. 11-Dec. 8	9	.....	
Martin County .....	June 30-July 28	3	.....	
Meeker County .....	June 16-Dec. 8	14	.....	
Mille Lacs County .....	June 9-Aug. 4	9	1	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Minnesota—Continued.</b>				
Morrison County	June 9-Aug.	4	5	
Mower County	June 9-Dec.	8	6	
Murray County	June 23-Dec.	8	20	
Nicollet County	June 9-July	28	11	
Nobles County	June 9-Dec.	1	76	
Olmsted County	June 9-July	28	9	
Otter Tail County	June 9-Dec.	8	62	
Pine County	June 16-Dec.	8	72	
Pipestone County	June 9-Nov.	3	4	
Polk County	June 23-Aug.	4	4	
Pope County	June 16-Nov.	24	14	
Ramsay County	June 9-Dec.	8	18	
Red Lake County	July 28-Aug.	4	7	
Redwood County	June 9-July	28	1	
Renville County	June 9-Dec.	8	25	
Rice County	June 30-Dec.	8	6	
Roseau County	July 14-Dec.	8	33	1
St. Louis County	June 16-Dec.	8	37	
Scott County	June 9-Nov.	10	4	
Sherburn County	Aug. 4-Aug.	11	1	
Sibley County	June 16-Dec.	1	24	
Stearns County	June 9-Dec.	8	97	
Steele County	June 16-Nov.	24	3	
Swift County	June 30-July	28	26	
Todd County	June 30-Sept.	8	9	
Traverse County	June 9-July	28	3	
Wabasha County	June 30-Dec.	8	16	
Wadena County	June 23-July	28	4	
Washington County	June 23-Dec.	8	85	
Watsonwan County	June 9-July	28	5	
Wilkin County	Aug. 11-Oct.	13	4	
Winona County	July 14-July	28	2	
Wright County	June 9-Nov.	24	136	
Yellow Medicine County	June 9-Dec.	8	30	
Total for State		1,587	7	
<b>Missouri:</b>				
Carthage	May 1-July	10	30	
St. Joseph	July 20-Sept.	13	92	
St. Louis	June 8-Dec.	14	282	3
Total for State		404	3	
<b>Montana:</b>				
Butte	June 7-Sept.	28	10	
Helena	June 1-Sept.	30	10	
Total for State		20		
<b>Nebraska:</b>				
Omaha	June 14-Dec.	13	81	
South Omaha	June 23-Nov.	30	24	
Total for State		105		
<b>New Hampshire:</b>				
Manchester	Aug. 17-Nov.	8	9	
Nashua	June 21-Dec.	13	253	2
Total for State		262	2	
<b>New Jersey:</b>				
Camden County (Camden included).	June 29-Nov.	29	26	2
Essex County (Newark included).	June 21-Dec.	13	101	29
Hudson County (Jersey City included).	June 15-Dec.	7	115	19
Passaic County	Aug. 1-Sept.	13	4	
Union County (Elizabeth and Plainfield included).	Mar. 29-Oct.	11	35	8
Total for State		281	58	One case imported from a Brooklyn hospital.
<b>New York:</b>				
Auburn	June 1-June	30	2	
Binghamton	Oct. 4-Dec.	13	6	
Buffalo	June 19-Dec.	13	17	1
				One case imported from Pittsburg, Pa.



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
New York—Continued.				
Elmira .....	July 28-Aug. 2	1	.....	
Middletown .....	Sept. 1-Sept. 30	4	.....	
New York .....	June 21-Dec. 13	202	54	
Niagara Falls .....	July 15-Sept. 28	11	.....	
Rochester .....	Oct. 1-Oct. 31	.....	2	
Total for State .....		243	57	
North Carolina:				
Alamance County .....	Aug. 1-Nov. 1	4	.....	
Beaufort County .....	May 1-May 31	1	.....	
Burke County .....	Oct. 1-Oct. 31	3	.....	
Cabarrus County .....	May 1-Oct. 31	7	.....	
Camden County .....	May 1-June 30	5	.....	
Carteret County .....	May 1-Oct. 31	17	1	
Catawba County .....	.....do.....	39	.....	
Cleveland County .....	July 1-Oct. 31	17	.....	
Craven County .....	Aug. 3-Oct. 31	74	2	One case imported.
Forsyth County .....	May 1-Oct. 31	164	.....	
Gaston County .....	.....do.....	93	.....	
Gates County .....	Aug. 1-Sept. 30	6	.....	
Graham County .....	Oct. 1-Oct. 31	2	.....	
Guilford County .....	Sept. 1-Oct. 31	14	.....	
Haywood County .....	Aug. 1-Sept. 30	18	.....	
Henderson County .....	July 1-Sept. 30	10	.....	
Iredell County .....	Oct. 1-Oct. 31	1	.....	
Johnston County .....	May 1-May 31	3	.....	
Jones County .....	Oct. 1-Oct. 31	4	.....	
Lincoln County .....	May 1-May 31	1	.....	
McDowell County .....	June 1-Sept. 30	13	.....	
Mecklenburg County (Char- lotte included) .....	May 1-Nov. 30	218	15	
Montgomery County .....	Aug. 1-Aug. 31	10	.....	
Nash County .....	.....do.....	1	.....	
New Hanover County .....	May 1-May 31	1	.....	
Northampton County .....	May 1-Oct. 31	47	.....	
Randolph County .....	Sept. 1-Sept. 30	1	.....	
Rockingham County .....	May 1-Sept. 30	61	.....	
Rowan County .....	.....do.....	24	.....	
Rutherford County .....	June 1-Oct. 31	9	.....	
Stanly County .....	May 1-May 31	3	.....	
Surry County .....	May 1-Sept. 30	33	.....	
Swain County .....	Oct. 1-Oct. 31	25	.....	
Union County .....	May 1-Oct. 31	42	.....	
Wilson County .....	May 1-June 30	12	.....	
Yadkin County .....	May 1-Oct. 31	5	.....	
Total for State .....		988	18	
North Dakota:				
Benson County .....	May 1-June 24	2	.....	
Cavalier County .....	May 1-Nov. 15	58	.....	
Griggs County .....	.....do.....	4	.....	
Kidder County .....	May 1-Nov. 10	18	.....	
Pierce County .....	May 1-Nov. 15	1	.....	
Ramsey County .....	June 24-Sept. 5	1	.....	
Richland County .....	May 1-Nov. 15	2	1	
Sargent County .....	.....do.....	6	.....	
Steele County .....	May 1-Oct. 8	10	.....	
Stutsman County .....	May 1-Nov. 15	15	.....	
Traill County .....	.....do.....	3	.....	
Wells County .....	.....do.....	1	.....	
Total for State .....		121	1	
Ohio:				
Adams County .....	June 1-Nov. 8	12	.....	
Allen County .....	.....do.....	2	.....	
Ashtabula County (Ashtabula included) .....	.....do.....	7	.....	
Athens County .....	.....do.....	56	.....	
Auglaize County .....	.....do.....	3	.....	
Belmont County .....	.....do.....	17	2	
Brown County .....	.....do.....	1	.....	
Butler County (Hamilton in- cluded) .....	June 1-Nov. 29	57	.....	
Carroll County .....	June 1-Nov. 8	8	.....	
Champaign County .....	.....do.....	6	.....	
Clark County .....	.....do.....	86	3	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ohio—Continued.				
Clermont County.....	June 1–Nov. 8	21	.....	
Clinton County.....	do	10	.....	
Columbiana County.....	do	8	1	
Crawford County.....	do	5	.....	
Cuyahoga County (Cleveland included).	June 1–Dec. 13	1,140	2.0	
Darke County.....	June 1–Nov. 8	1	.....	
Delaware County.....	do	6	.....	
Erie County.....	do	19	2	
Fayette County.....	do	13	.....	
Franklin County (Columbus included).	do	94	1	
Gallia County.....	do	2	.....	
Geauga County.....	do	4	.....	
Greene County.....	do	27	.....	
Hamilton County (Cincinnati included).	June 1–Dec. 12	179	1	
Hancock County.....	June 1–Nov. 8	2	.....	
Harrison County.....	do	7	.....	
Highland County.....	do	85	.....	
Holmes County.....	do	1	.....	
Huron County.....	do	59	6	
Jefferson County.....	do	38	.....	
Knox County.....	do	17	2	
Lake County.....	do	2	1	
Lawrence County.....	do	12	.....	
Licking County.....	do	67	1	
Logan County.....	do	8	3	
Lorain County.....	do	9	2	
Lucas County (Toledo included)	June 1–Dec. 6	101	8	
Madison County.....	June 1–Nov. 8	1	.....	
Mahoning County (Youngstown included).	do	37	7	
Marion County.....	do	43	7	
Medina County.....	do	4	.....	
Meigs County.....	do	9	.....	
Mercer County.....	June 1–Nov. 8	8	.....	
Monroe County.....	do	44	1	
Montgomery County (Dayton included).	June 1–Nov. 22	22	.....	
Muskingum County (Zanesville included).	June 1–Nov. 30	17	.....	
Ottawa County.....	do	2	.....	
Paulding County.....	do	19	.....	
Perry County.....	do	1	.....	
Portage County.....	do	6	1	
Preble County.....	do	5	.....	
Putnam County.....	do	100	1	
Richland County.....	do	10	1	
Ross County.....	do	16	.....	
Scioto County.....	do	36	1	
Seneca County.....	do	24	2	
Shelby County.....	do	10	.....	
Stark County.....	do	3	.....	
Summit County.....	do	20	1	
Trumbull County (Warren included).	June 1–Dec. 6	30	2	
Tuscarawas County.....	do	6	1	
Union County.....	do	3	1	
Van Wert County.....	do	1	.....	
Warren County.....	do	5	.....	
Williams County.....	do	6	.....	
Wood County.....	do	7	.....	
Total for State.....		2,687	259	
Oklahoma:				
Oklahoma County.....	June 16–July 9	6	.....	
Total for Territory.....		6	.....	
Oregon:				
Portland.....	June 1–Sept. 30	68	.....	
Total for State.....		68	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Pennsylvania:				
Allegheny County (Pittsburg, Allegheny, and McKeesport included).	June 21-Dec. 13	604	108	Eight cases imported.
Armstrong County (Ford City included).	Sept. 1-Oct. 31	5	1	
Bedford County .....	Oct. 1-Oct. 31	4	.....	Four cases imported from Pittsburg. Two cases in suburbs.
Berks County (Reading included).	Sept. 9-Oct. 13	10	.....	
Blair County (Altoona included).	June 21-Dec. 13	52	2	
Bradford County (Sayre included).	Oct. 1-Oct. 31	1	.....	
Bucks County (Bristol included).	Sept. 1-Sept. 30	4	.....	
Butler County (Butler included).	July 12-Aug. 21	3	.....	
Cambria County (Johnstown and Ehrenfeld included).	June 21-Dec. 13	221	22	
Carbon County (Parryville and Weissport included).	Sept. 1-Sept. 30	57	4	
Center County .....	Oct. 1-Oct. 31	2	.....	
Chester County .....	Sept. 1-Oct. 31	51	.....	
Clarion County (New Mayville and West Millville included).	.....do .....	14	.....	
Clearfield County (Dubois included).	.....do .....	19	5	
Delaware County (Chester included).	.....do .....	124	13	
Erie County (Erie and Delhil included).	June 29-Dec. 13	90	.....	
Fayette County (Bridgeport, Leisenring, and Highhouse included).	Sept. 1-Sept. 30	32	1	
Franklin County .....	Oct. 1-Oct. 31	14	.....	
Huntingdon County .....	Sept. 1-Oct. 31	6	2	
Jefferson County (Brookville and Ringgold included).	.....do .....	32	.....	
Lackawanna County (Scranton included).	June 14-Oct. 31	12	.....	
Lancaster County (Whitaker included).	Sept. 1-Oct. 31	5	.....	
Lawrence County (Hazel Dell included).	.....do .....	8	2	
Lehigh County (Allentown included).	July 6-July 12	1	.....	
Northumberland County (Sunbury included).	Sept. 1-Sept. 30	1	.....	
Philadelphia County .....	June 28-Dec. 13	118	18	
Schuylkill County (Pottsville included).	July 1-July 31	1	.....	
Tioga County .....	Oct. 1-Oct. 31	18	.....	
Warren County (Warren included).	Dec. 11-Dec. 17	4	.....	
Washington County (Midway included).	Sept. 1-Oct. 31	43	.....	
Wayne County (Garland and Lander included).	July 1-July 24	5	.....	
Westmoreland County (Greensburg included).	Sept. 1-Oct. 31	131	3	
Total for State .....	.....	1,692	181	
Rhode Island:				
Providence .....	June 14-Nov. 29	13	1	One case from ss. Essex. Imported from Canada.
Warwick .....	Dec. 2-Dec. 9	1	.....	
Total for State .....	.....	14	1	
South Carolina:				
Charleston County (Charleston included).	Aug. 10-Dec. 13	48	2	
Fairfield County (Monticello included).	Oct. 1-Oct. 31	22	.....	
Greenville County (Greenville included).	.....do .....	1	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>South Carolina—Continued.</b>				
Spartanburg County (Spartanburg included).	Oct. 1-Oct. 31	1	.....	
Union County (Jonesville and Union included).	.....do.....	23	.....	
James Island.....	.....do.....	3	.....	
Johns Island.....	.....do.....	3	.....	
Wadmalaw and Edisto islands.	.....do.....	31	.....	
Total for State.....		132	2	
<b>South Dakota:</b>				
Sioux Falls.....	Aug. 17-Nov. 22	6	.....	
Total for State.....		6	.....	
<b>Tennessee:</b>				
Benton County.....	Feb. 19-Sept. 15	142	.....	
Blount County.....	.....do.....	69	.....	
Campbell County.....	.....do.....	5	.....	
Carroll County.....	.....do.....	11	.....	
Cheatham County.....	.....do.....	13	.....	
Chester County.....	.....do.....	14	.....	
Claiborne County.....	.....do.....	1	.....	
Clay County.....	.....do.....	91	1	
Cocke County.....	.....do.....	9	.....	
Crockett County.....	.....do.....	28	.....	
Cumberland County.....	.....do.....	21	.....	
Davidson County (Nashville included).	Feb. 19-Sept. 20	20	.....	
Dyer County.....	.....do.....	31	6	
Fentress County.....	Feb. 19-Sept. 20	35	.....	
Gibson County.....	.....do.....	15	.....	
Giles County.....	.....do.....	22	1	
Greene County.....	.....do.....	5	1	
Hamilton County (Chattanooga included).	Feb. 19-Nov. 30	114	1	
Hardeman County.....	Feb. 19-Sept. 20	10	.....	
Hardin County.....	.....do.....	8	.....	
Hawkins County.....	.....do.....	5	.....	
Haywood County.....	.....do.....	12	.....	
Henderson County.....	.....do.....	16	.....	
Henry County.....	.....do.....	100	1	
Hickman County.....	.....do.....	35	1	
Houston County.....	.....do.....	6	.....	
Humphreys County.....	.....do.....	2	.....	
Jackson County.....	.....do.....	72	.....	
James County.....	.....do.....	8	.....	
Jefferson County.....	.....do.....	45	.....	
Knox County.....	.....do.....	34	6	
Lake County.....	.....do.....	8	.....	
Lauderdale County.....	.....do.....	12	3	
Lawrence County.....	.....do.....	1	.....	
Lincoln County.....	.....do.....	6	.....	
Loudon County.....	.....do.....	24	.....	
McMinn County.....	.....do.....	12	.....	
McNairy County.....	.....do.....	28	1	
Madison County.....	.....do.....	175	.....	
Marion County.....	.....do.....	6	.....	
Marshall County.....	.....do.....	6	1	
Maury County (Columbia included).	.....do.....	10	1	
Monroe County.....	.....do.....	78	.....	
Montgomery County (Clarks-ville included).	.....do.....	11	.....	
Obion County.....	.....do.....	125	8	
Overton County.....	.....do.....	23	.....	
Pickett County.....	.....do.....	65	.....	
Polk County.....	.....do.....	7	.....	
Putnam County.....	.....do.....	17	.....	
Roane County.....	.....do.....	63	.....	
Robertson County.....	.....do.....	9	.....	
Rutherford County.....	.....do.....	21	.....	
Shelby County (Memphis included).	Feb. 19-Oct. 4	274	22	One case on ss. Macomb.
Smith County.....	.....do.....	3	.....	
Sullivan County.....	.....do.....	18	3	
Sumner County.....	.....do.....	52	1	
Tipton County.....	.....do.....	100	3	
Warren County.....	.....do.....	2	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Tennessee—Continued.				
Washington County.....	Feb. 19-Oct. 4	4	.....	
Weakley County.....	do	55	7	
Williamson County.....	do	14	.....	
Total for State.....		2,228	68	
Texas:				
San Antonio.....	June 1-Nov. 30	2	.....	
Total for State.....		2	.....	
Utah:				
Ogden.....	June 1-Aug. 31	20	.....	
Salt Lake City.....	June 14-Dec. 13	46	1	Five cases imported.
Total for State.....		66	1	
Vermont:				
Burlington.....	July 27-Aug. 2	1	.....	
Total for State.....		1	.....	
Virginia:				
Danville.....	July 8-July 14	3	.....	
Petersburg.....	June 1-June 26	2	1	
Total for State.....		5	1	
Washington:				
Adams County.....	Jan. 1-June 30	65	.....	
Asotin County.....	do	21	.....	
Chehalis County.....	do	8	.....	
Clallam County.....	do	8	.....	
Cowlitz County.....	do	56	.....	
Douglas County.....	do	1	.....	
Ferry County.....	do	5	.....	
Franklin County.....	do	7	.....	
Garfield County.....	do	1	.....	
King County (Seattle included).	Jan. 1-Nov. 30	400	1	
Kitsap County.....	Jan. 1-June 30	3	.....	
Lincoln County.....	do	37	.....	
Okanogan County.....	do	17	.....	
Pierce County (Tacoma included).	Jan. 1-Dec. 7	58	.....	
Skagit County.....	Jan. 1-June 30	1	.....	
Snohomish County.....	do	24	.....	
San Juan County.....	do	3	.....	
Spokane County (Spokane included).	Jan. 1-Oct. 31	449	.....	
Stevens County.....	do	7	.....	
Wahkiakum County.....	do	2	.....	
Walla Walla County.....	do	45	.....	
Whatcom County.....	do	8	.....	
Whitman County.....	do	25	.....	
Yakima County.....	do	22	.....	
Total for State.....		1,273	1	
Wisconsin:				
Adams County.....	June 1-Aug. 28	8	.....	
Ashland County.....	do	19	.....	
Barron County.....	do	5	.....	
Bayfield County.....	do	1	.....	
Brown County (Green Bay included).	June 1-Dec. 7	22	.....	
Calumet County.....	June 1-Aug. 28	4	.....	
Chippewa County.....	do	14	.....	
Clark County.....	do	7	.....	
Columbia County.....	do	1	.....	
Dane County.....	do	13	.....	
Dodge County.....	do	5	.....	
Door County.....	do	9	1	
Douglas County.....	do	20	.....	
Fond du Lac County.....	do	10	.....	
Forest County.....	do	2	.....	
Gates County.....	do	7	.....	
Green Lake County.....	do	2	.....	
Iowa County.....	do	2	.....	
Jefferson County.....	do	95	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Wisconsin—Continued.				
Kenosha County .....	June 1-Aug. 28	1	.....	
Kewaunee County .....	do .....	23	.....	
La Crosse County .....	do .....	9	.....	
Lafayette County .....	do .....	3	.....	
Langlade County .....	do .....	10	.....	
Lincoln County .....	do .....	33	.....	
Manitowoc County .....	do .....	22	1	
Marathon County .....	do .....	1	.....	
Marinette County .....	do .....	56	.....	
Marquette County .....	do .....	13	.....	
Milwaukee County (Milwaukee included).	June 1-Dec. 6	169	1	
Monroe County .....	June 1-Aug. 28	20	.....	
Oconto County .....	do .....	20	.....	
Oneida County .....	do .....	2	.....	
Outagamie County .....	do .....	14	.....	
Ozaukee County .....	do .....	5	.....	
Pepin County .....	do .....	9	.....	
Pierce County .....	do .....	1	.....	
Polk County .....	do .....	2	.....	
Portage County .....	do .....	17	.....	
Price County .....	do .....	4	.....	
Racine County .....	do .....	8	.....	
Rock County (Janesville included).	June 1-Aug. 30	9	.....	
Sauk County .....	June 1-Aug. 28	4	1	
Sawyer County .....	do .....	1	2	
Shawano County .....	do .....	17	.....	
Sheboygan County .....	do .....	7	.....	
Trempealeau County .....	do .....	11	.....	
Vernon County .....	do .....	3	.....	
Vilas County .....	do .....	2	.....	
Walworth County .....	do .....	1	.....	
Washburn County .....	do .....	10	.....	
Washington County .....	do .....	4	.....	
Waupaca County .....	do .....	34	.....	
Waushara County .....	do .....	25	.....	
Winnebago County .....	do .....	29	.....	
Wood County .....	do .....	4	.....	
Total for State .....		849	6	
Grand total .....		15,653	806	

DECEMBER 27, 1902, TO JUNE 26, 1903.

Alabama:				
Mobile.....	Feb.	7-June 20	77	.....
Total for State .....			77	.....
Alaska:				
Sitka .....	Apr.	19 .....	1	.....
Total for Territory.....			1	.....
California:				
Berkeley .....	Feb.	19-Mar. 11	2	.....
Fresno .....	Dec.	1-May 31	79	1
Los Angeles .....	Dec.	8-June 6	52	.....
Oakland.....	Dec.	1-Dec. 31	6	.....
Sacramento .....	Dec.	7-Mar. 28	16	.....
San Francisco .....	Dec.	8-June 14	159	2
Stockton .....	Dec.	1-May 1	28	.....
Total for State.....			342	3
Colorado:				
Arapahoe County (Denver in- cluded).	Dec.	7-May 23	381	.....
Boulder County .....	Jan.	1-Feb. 28	11	.....
Chaffee County.....	Feb.	1-Feb. 28	2	.....
Clear Creek County.....	Jan.	1-Feb. 28	19	.....
Conejos County .....	Feb.	1-Feb. 28	2	.....
Costilla County.....	do	.....	1	.....



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Colorado—Continued.				
Delta County.....	Feb. 1-Feb. 28	4	.....	
Elbert County.....	do	1	.....	
El Paso County (Colorado Springs included).	do	9	.....	
Garfield County.....	Dec. 1-Feb. 28	4	.....	
Gilpin County.....	Feb. 1-Feb. 28	1	.....	
Jefferson County.....	Jan. 1-Feb. 28	9	.....	
Larimer County.....	Dec. 1-Feb. 28	3	.....	
Las Animas County.....	do	1	.....	
Mesa County.....	Dec. 1-Jan. 31	2	.....	
Otero County.....	Dec. 1-Feb. 28	129	.....	
Phillips County.....	Jan. 1-Feb. 28	4	.....	
Pueblo County.....	Dec. 1-Feb. 28	15	.....	
Rio Blanco County.....	Dec. 1-Jan. 31	65	.....	
Routt County.....	do	2	.....	
Summit County.....	Feb. 1-Feb. 28	4	.....	
Teller County.....	Jan. 1-Feb. 28	6	.....	
Yuma County.....	Dec. 1-Feb. 28	42	.....	
Total for State.....		717	.....	
Connecticut:				
Hartford.....	Dec. 1-Dec. 31	1	.....	Imported.
Killingly.....	do	3	.....	
New Britain.....	do	1	.....	
Norwich.....	do	6	.....	
Plainfield.....	do	4	.....	
Preston.....	do	1	.....	
Putnam.....	do	6	.....	
Sprague.....	do	15	.....	
Stamford.....	May 1-May 31	1	.....	
Thompson.....	Jan. 10	1	.....	
Willimantic.....	Dec. 1-Dec. 31	1	.....	
Total for State.....		40	.....	
Delaware:				
Wilmington.....	Mar. 15-Mar. 21	.....	1	
Total for State.....		.....	1	
District of Columbia:				
Washington.....	Jan. 11-May 9	15	1	
Total for District.....		15	1	
Florida:				
Laurelhill.....	Feb. 1-Feb. 14	3	.....	
Baker County (Sanderson included).	May 17-June 13	2	.....	
Columbia County (Lake City and Benton included).	Jan. 25-June 13	6	.....	
Dade County.....	Feb. 1-Feb. 14	5	.....	
De Soto (Nocatee included)....	Apr. 5-May 9	29	.....	
Duval County (Jacksonville included).	Jan. 25-June 13	61	.....	
Escambia County (Pensacola included).	Dec. 7-June 13	180	.....	
Gadsden County (Quincy included).	Jan. 25-Feb. 14	7	.....	
Holmes County (Westville included).	do	2	.....	
Lafayette County.....	Jan. 10-Jan. 24	8	.....	
Levy County (Otter Creek included).	May 17-June 13	20	.....	
Orange County (Orlando included).	Jan. 25-Feb. 14	4	.....	
Santa Rosa County (Milton included).	do	4	.....	
Wakulla County (Sopchoppy included).	do	2	.....	
Walton County (Florala included).	Jan. 10-Jan. 31	6	.....	
Washington County (Chipley included).	May 2-May 23	16	.....	
Total for State.....		355	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Georgia:</b>				
Atlanta.....	Dec. 11-June 17	127	9	
Lumpkin.....	Apr 6.....	6		
Total for State.....		133	9	
<b>Illinois:</b>				
Alton.....	Mar. 1-Apr. 4	3		
Belleville.....	Feb. 1-June 13	44	1	
Chicago.....	Dec. 14-June 20	265	18	
Danville.....	June 1-June 13	2		
Evanston.....	Jan. 1-Jan. 31	2		
Galesburg.....	Jan. 18-May 23	32		
Joliet.....	Dec. 29-Mar. 2	30	2	
Peoria.....	Dec. 1-Mar. 31	8		
Springfield.....	Apr. 1-Apr. 30		2	
Total for State.....		386	23	
<b>Indiana:</b>				
Adams County.....	Nov. 1-Jan. 31	49		
Allen County.....	Nov. 1-Apr. 30	25		
Bartholomew County.....	Dec. 1-Apr. 30	8		
Benton County.....	Mar. 1-Mar. 31	3		
Boone County.....	Nov. 1-Apr. 30	5		
Brown County.....	Mar. 1-Apr. 30	22		
Carroll County.....	Dec. 1-Apr. 30	6		
Cass County.....	Nov. 1-Apr. 30	186	2	
Clark County (Jeffersonville included).	Dec. 1-Apr. 30	24		
Clay County.....	Nov. 1-Apr. 30	17		
Clinton County.....	do	7	2	
Crawford County.....	Dec. 1-Dec. 31	1		
Daviess County.....	Nov. 1-Apr. 30	158	7	
Dearborn County.....	Jan. 1-Jan. 31	6		
Decatur County.....	Nov. 1-Apr. 30	37		
Dekalb County.....	do	55		
Delaware County.....	do	14		
Dubois County.....	Jan. 1-Apr. 30	15		
Elkhart County.....	Dec. 1-Apr. 30	15		
Fayette County.....	Nov. 1-Apr. 30	27		
Floyd County.....	do	8		
Fountain County.....	Nov. 1-Mar. 31	6		
Franklin County.....	Mar. 1-Apr. 30	38	4	
Fulton County.....	Nov. 1-Apr. 30	24		
Gibson County.....	do	16		
Grant County.....	do	95	2	
Greene County.....	do	39		
Hamilton County.....	Jan. 1-Apr. 30	31		
Hancock County.....	Nov. 1-Jan. 31	49		
Harrison County.....	Nov. 1-Apr. 30	13		
Howard County (Kokomo included).	Nov. 1-May 17	17	1	
Huntington County.....	Mar. 1-Apr. 30	2		
Jackson County.....	Dec. 1-Apr. 30	12		
Jasper County.....	Jan. 1-Mar. 31	19		
Jay County.....	Nov. 1-Jan. 31	18		
Jefferson County.....	Mar. 1-Apr. 30	4		
Jennings County.....	do	5		
Johnson County.....	Dec. 1-Apr. 30	2		
Knox County.....	Nov. 1-Apr. 30	262		
Kosciusko County.....	Nov. 1-Mar. 31	8		
Lagrange County.....	Dec. 1-Jan. 31	36		
Lake County.....	Nov. 1-Apr. 30	86	1	
Laporte County (Kankakee included).	do	54		
Lawrence County.....	do	174		
Madison County (Elwood included).	Nov. 1-May 24	82	1	
Marion County (Indianapolis included).	Nov. 1-June 13	555	100	
Marshall County.....	Dec. 1-Jan. 31	8		
Martin County.....	Nov. 1-Apr. 30	61		
Miami County.....	Apr. 1-Apr. 30	13		
Monroe County.....	Nov. 1-Apr. 30	185		
Montgomery County.....	Mar. 1-Apr. 30	11		
Morgan County.....	Dec. 1-Apr. 30	46		
Noble County.....	Nov. 1-Mar. 31	11		
Orange County.....	Nov. 1-Dec. 31	3		
Owen County.....	Dec. 1-Apr. 30	17	2	
Parke County.....	Apr. 1-Apr. 30	5		



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Indiana—Continued.</b>				
Perry County.....	Apr. 1-Apr. 30	4	.....	
Pike County.....	Jan. 1-Apr. 30	15	.....	
Posey County.....	do	8	.....	
Pulaski County.....	Dec. 1-Mar. 31	19	.....	
Putnam County.....	Jan. 1-Mar. 31	10	.....	
Randolph County.....	Nov. 1-Jan. 31	56	7	
Ripley County.....	Nov. 1-Mar. 31	79	.....	
St. Joseph County (South Bend included).	Nov. 1-Feb. 21	27	1	
Shelby County.....	Nov. 1-Jan. 31	10	.....	
Spencer County.....	Jan. 1-Apr. 30	10	.....	
Starke County.....	Dec. 1-Jan. 31	21	.....	
Steuben County.....	Dec. 1-Dec. 31	4	1	
Sullivan County.....	Mar. 1-Apr. 30	16	.....	
Tippecanoe County.....	Nov. 1-Apr. 30	63	1	
Tipton County.....	do	9	.....	
Vanderburg County (Evansville included).	Nov. 1-June 13	45	3	Three cases imported.
Vermillion County.....	Dec. 1-Apr. 30	90	3	
Vigo County.....	Nov. 1-Apr. 30	194	.....	
Wabash County.....	Nov. 1-Mar. 31	22	.....	
Warren County.....	Mar. 1-Mar. 31	12	.....	
Warriek County.....	Apr. 1-Apr. 30	4	.....	
Washington County.....	Dec. 1-Dec. 31	58	.....	
Wayne County.....	Dec. 1-Apr. 30	5	.....	
Wells County.....	Jan. 1-Jan. 31	1	.....	
White County.....	Mar. 1-Mar. 31	29	.....	
Whitley County.....	Mar. 1-Apr. 30	30	.....	
Total for State.....		3,536	138	
<b>Iowa:</b>				
Burlington.....	Feb. 1-Feb. 28	4	.....	
Davenport.....	Nov. 1-Mar. 31	52	.....	
Des Moines.....	Jan. 1-June 6	20	.....	
Dubuque.....	Mar. 8-May 2	5	.....	
Total for State.....		81	.....	
<b>Kansas:</b>				
Douglas County (Lawrence included).	Jan. 1-Feb. 28	3	.....	
Wichita.....	Jan. 11-May 9	13	1	
Total for State.....		16	1	
<b>Kentucky:</b>				
Covington.....	Dec. 1-Apr. 11	181	2	
Lexington.....	Dec. 14-May 2	33	.....	
Louisville.....	Jan. 1, 1902, to Apr. 30, 1903.	408	6	
Newport.....	Jan. 4-May 23	9	.....	
Total for State.....		631	8	
<b>Louisiana:</b>				
Orleans County (New Orleans included).	Dec. 14-June 13	92	3	Eighteen cases imported.
Sabine County.....	May 1-May 31	3	.....	
Terrebonne County.....	do	3	.....	
Total for State.....		98	3	
<b>Maine:</b>				
Biddeford.....	Dec. 15-May 23	112	.....	
Fort Kent and vicinity.....	Mar. 23-June 18	32	.....	
Jackman.....	May 10.....	1	.....	Imported
Kennebunk.....	Dec. 8.....	6	.....	
Lewiston.....	Jan. 10-Jan. 17	7	.....	
Medway.....	Apr. 10.....	1	.....	
Millinocket.....	Apr. 22.....	3	.....	
North Berwick.....	Feb. 10.....	2	.....	
Patten.....	May 25.....	1	.....	
Portland.....	Dec. 21-Feb. 7	1	1	
Rumford Falls.....	May 5.....	1	.....	
Sandy Bay.....	May 1-May 7	1	.....	Imported from St. George, Quebec.
Shiloh.....	Dec. 8.....	7	.....	
Aroostook County (Presque Isle included).	To Jan. 20.....	150	.....	
Total for State.....		325	1	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Maryland:				
Baltimore .....	Dec. 28-June 6	38	1	Four cases imported.
Cumberland.....	Dec. 1-Jan. 31	17	.....	
Total for State.....		55	1	
Massachusetts:				
Boston.....	Dec. 14-Apr. 4	115	26	
Cambridge .....	Dec. 28-Apr. 25	10	.....	
Chelsea.....	Dec. 27-Jan. 24	3	.....	
Everett.....	Dec. 14-Dec. 20	.....	1	
Fall River.....	Dec. 28-June 20	49	.....	
Haverhill .....	Jan. 18-Feb. 14	7	1	
Holyoke.....	Mar. 22-June 6	11	.....	
Lawrence .....	Dec. 14-Jan. 3	3	.....	
Lowell .....	Jan. 4-Apr. 25	10	.....	
Lynn.....	Feb. 1-Feb. 7	1	.....	
Melrose.....	Jan. 10-Jan. 17	1	.....	
New Bedford.....	Feb. 1-Mar. 21	6	.....	
Newton.....	Dec. 1-Feb. 28	1	1	
Northampton.....	Apr. 4-Apr. 11	1	.....	
Somerville .....	Dec. 21-Dec. 27	1	.....	
Total for State.....		219	29	
Michigan:				
Branch County (Harbor Beach included).	Jan. 1-Jan. 31	.....	1	
Genesee County (Flint included).	Jan. 31-June 13	8	.....	
Houghton County.....	Feb. 1-Feb. 28	.....	1	
Huron County.....	Jan. 1-Jan. 31	.....	1	
Kent County (Grand Rapids included).	Dec. 14-June 13	196	2	
Marquette County (Marquette included).	Feb. 7-Mar. 7	12	.....	
Menominee County .....	Feb. 7-Feb. 28	2	.....	
Ottawa County (Grand Haven).	Feb. 1-Feb. 28	.....	1	
St. Clair County (Port Huron included).	Feb. 15-June 13	38	.....	
Washtenaw County (Ann Arbor included).	Mar. 1-Apr. 11	3	.....	
Wayne County (Detroit and Wyandotte included).	Dec. 14-June 13	409	10	
Total for State.....		668	16	
Minnesota:				
Aitkin County.....	Dec. 8-Jan. 19	6	.....	
Anoka County .....	Feb. 2-May 11	33	.....	
Becker County .....	Jan. 19-June 1	12	1	
Beltrami County .....	Dec. 15-May 25	42	.....	
Benton County.....	Dec. 8-June 15	161	1	
Bigstone County.....	Dec. 15-June 15	90	.....	
Blue Earth County.....	Dec. 8-Apr. 27	51	.....	
Brown County .....	Jan. 27-May 11	6	.....	
Carlton County.....	Feb. 16-May 11	3	.....	
Carver County .....	Dec. 8-June 15	133	.....	
Cass County .....	Dec. 15-May 11	27	.....	
Chippewa County.....	Dec. 8-May 11	26	.....	
Chisago County.....	Apr. 20-June 1	4	.....	
Clay County.....	Feb. 16-May 18	42	.....	
Columbia County .....	Feb. 16-June 8	3	1	
Cottonwood County.....	Dec. 30-June 15	7	.....	
Crow Wing County.....	Dec. 8-May 18	41	.....	
Dakota County.....	Dec. 22-Mar. 23	8	.....	
Dodge County.....	May 11-June 8	10	.....	
Douglas County.....	Dec. 8-June 1	468	1	
Faribault County.....	June 1-June 8	1	.....	
Fillmore County .....	Mar. 9-May 18	4	.....	
Freeborn County.....	Dec. 30-Apr. 6	17	.....	
Goodhue County .....	Jan. 5-May 18	11	.....	
Grant County.....	Dec. 8-June 15	64	.....	
Hennepin County.....	do .....	254	4	
Houston County.....	do .....	4	.....	
Hubbard County.....	Dec. 30-June 15	51	.....	
Isanti County.....	Dec. 30-June 8	24	.....	
Itasca County.....	Jan. 20-Mar. 2	9	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Minnesota—Continued.</b>				
Jackson County .....	Dec. 22-June 8	10	.....	
Kanabec County .....	Dec. 8-Dec. 15	5	.....	
Kandiyohi County .....	Dec. 8-June 8	11	.....	
Kittson County .....	Dec. 30-Mar. 2	17	.....	
Lac qui Parle County .....	Dec. 8-Mar. 30	28	.....	
Lake County .....	Jan. 20-May 18	3	1	
Lesueur County .....	Jan. 9-June 15	13	.....	
Lincoln County .....	Feb. 2-June 1	8	.....	
Lyon County .....	Mar. 23-Apr. 27	3	.....	
McLeod County .....	Dec. 8-June 15	75	.....	
Marshall County .....	Dec. 15-May 18	7	.....	
Martin County .....	Jan. 20-Mar. 2	5	.....	
Meeker County .....	Dec. 8-June 8	86	.....	
Millelacs County .....	Dec. 8-Apr. 20	24	.....	
Morrison County .....	Dec. 30-June 15	83	.....	
Mower County .....	Dec. 8-June 8	24	1	
Murray County .....	do	49	1	
Nicollet County .....	Mar. 23-June 15	7	.....	
Nobles County .....	Dec. 15-June 8	74	.....	
Norman County .....	Dec. 15-June 1	4	.....	
Olmsted County .....	May 11-May 18	2	.....	
Ottertail County .....	Dec. 8-June 1	285	1	
Pine County .....	Jan. 5-June 15	30	.....	
Pipestone County .....	Mar. 2-Mar. 9	1	.....	
Polk County .....	Dec. 22-June 15	16	.....	
Pope County .....	Mar. 2-Apr. 6	13	.....	
Ramsey County .....	Dec. 8-June 15	201	13	
Redwood County .....	Feb. 23-Mar. 23	3	.....	
Renville County .....	Dec. 8-June 15	64	.....	
Rice County .....	Dec. 8-Apr. 20	95	.....	
Rock County .....	Mar. 30-May 11	9	.....	
Roseau County .....	Dec. 30-Apr. 6	78	.....	
St. Louis County .....	Dec. 31-June 8	131	6	
Scott County .....	Jan. 27-Feb. 2	3	.....	
Sherburne County .....	Jan. 27-May 11	4	.....	
Sibley County .....	Dec. 15-June 15	161	.....	
Stearns County .....	Dec. 8-June 15	196	.....	
Steele County .....	Dec. 15-May 18	10	.....	
Stevens County .....	Dec. 30-May 11	32	1	
Swift County .....	Jan. 27-June 15	40	.....	
Todd County .....	Dec. 15-June 15	64	4	
Wabasha County .....	Dec. 8-June 8	77	1	
Wadena County .....	Dec. 22-Apr. 20	3	.....	
Washington County .....	Jan. 12-June 1	35	.....	
Watsonwan County .....	Mar. 16-Mar. 23	1	.....	
Wilkin County .....	Dec. 30-May 18	13	.....	
Winona County .....	Mar. 16-June 8	10	4	
Wright County .....	Dec. 8-May 25	220	1	
Yellow Medicine County .....	Dec. 30-June 1	30	.....	
Total for State .....		3,975	42	
<b>Mississippi:</b>				
Gulfport .....	Apr. 10-Apr. 16	16	.....	
Natchez .....	Dec. 22-Apr. 11	11	.....	
Total for State .....		27	.....	
<b>Missouri:</b>				
Kansas City .....	Mar. 15-Apr. 12	6	1	
St. Joseph .....	Mar. 31-Apr. 4	1	.....	
St. Louis .....	Dec. 15-June 15	287	4	
Total for State .....		294	5	
<b>Montana:</b>				
Butte .....	Dec. 23-Dec. 29	1	.....	
Helena .....	Dec. 1-May 31	16	.....	
Total for State .....		17	.....	
<b>Nebraska:</b>				
Omaha .....	Dec. 14-June 6	86	.....	
South Omaha .....	Jan. 1-Apr. 30	8	.....	
Total for State .....		94	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>New Hampshire:</b>				
Concord .....	Jan. 1-Mar. 31	2	.....	
Manchester .....	Dec. 1-May 23	133	.....	
Nashua .....	Dec. 14-June 13	88	.....	
Total for State .....		223	.....	
<b>New Jersey:</b>				
Camden County (Camden included).	Dec. 14-May 23	39	.....	
Essex County (Newark included).	Dec. 14-Apr. 11	34	4	
Hudson County (Jersey City included).	Dec. 22-Apr. 5	25	1	
Mercer County (Trenton included).	June 6-13 .....	1	.....	
Union County (Plainfield included).	Jan. 10-Feb. 14	3	.....	
Total for State .....		102	5	
<b>New York:</b>				
Binghamton .....	Dec. 21-Apr. 4	2	.....	One case imported from Pennsylvania.
Buffalo .....	Dec. 14-May 9	26	3	
Elmira .....	Apr. 26-May 23	6	.....	One case imported.
New York .....	Dec. 14-June 6	33	3	
Rochester .....	Apr. 1-June 7	31	5	
Yonkers .....	Feb. 20-Feb. 27	.....	1	
Total for State .....		98	12	
<b>North Carolina:</b>				
Anson County .....	Jan. 1-Jan. 31	3	.....	
Buncombe County .....	Nov. 1-Jan. 31	297	.....	
Burke County .....	Nov. 1-Mar. 31	215	.....	
Cabarrus County .....	.....do .....	10	.....	
Caldwell County .....	.....do .....	30	.....	
Camden County .....	Feb. 1-Feb. 28	1	.....	
Catawba County .....	Jan. 1-Mar. 31	36	.....	
Chatham County .....	Mar. 1-Mar. 31	1	.....	
Cherokee County .....	Nov. 1-Dec. 31	7	.....	
Cleveland County .....	Nov. 1-Mar. 31	25	.....	
Craven County .....	Nov. 1-Feb. 28	136	.....	
Cumberland County .....	Nov. 1-Dec. 31	1	.....	
Currituck County .....	Jan. 1-Feb. 28	7	.....	
Davidson County .....	Feb. 1-Mar. 31	30	.....	
Davie County .....	Dec. 1-Mar. 31	3	.....	
Durham County .....	Jan. 1-Mar. 31	33	.....	
Forsyth County .....	Nov. 1-Mar. 31	175	.....	
Gaston County .....	.....do .....	.....	.....	Several.
Graham County .....	.....do .....	13	.....	
Granville County .....	Jan. 1-Feb. 28	78	.....	
Greene County .....	.....do .....	2	.....	
Guilford County .....	Nov. 1-Mar. 31	102	.....	
Haywood County .....	Feb. 1-Mar. 31	13	.....	
Henderson County .....	Dec. 1-Mar. 31	42	.....	
Iredell County .....	Nov. 1-Mar. 31	30	.....	
Jones County .....	.....do .....	20	.....	
Lincoln County .....	Dec. 1-Mar. 31	52	.....	
McDowell County .....	Nov. 1-Mar. 31	122	.....	
Macon County .....	Mar. 1-Mar. 31	9	.....	
Madison County .....	Jan. 1-Mar. 31	33	.....	
Mecklenburg County (Charlotte included).	Nov. 1-Mar. 31	308	21	
New Hanover County .....	Feb. 1-Feb. 28	1	.....	
Onslow County .....	Nov. 1-Feb. 28	76	2	
Orange County .....	Mar. 1-Mar. 31	6	.....	
Polk County .....	Dec. 1-Mar. 31	63	.....	
Randolph County .....	Nov. 1-Dec. 31	6	.....	
Richmond County .....	Feb. 1-Feb. 28	1	.....	
Rockingham County .....	Dec. 1-Mar. 31	52	.....	
Rowan County .....	.....do .....	32	.....	
Rutherford County .....	.....do .....	38	.....	
Sampson County .....	Jan. 1-Mar. 31	64	.....	
Stanly County .....	.....do .....	27	.....	
Stokes County .....	.....do .....	45	.....	
Surry County .....	Nov. 1-Mar. 31	128	.....	
Swain County .....	.....do .....	67	.....	
Transylvania County .....	Dec. 1-Dec. 31	4	.....	
Union County .....	Nov. 1-Mar. 31	71	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
North Carolina—Continued.				
Vance County.....	Feb. 1-Feb. 28	12	.....	
Wake County.....	Dec. 1-Mar. 31	2	.....	
Wilkes County.....	Feb. 1-Mar. 31	20	.....	
Yadkin County.....	Nov. 1-Jan. 31	14	.....	
Yancey County.....	Jan. 1-Jan. 31	2	.....	
Total for State.....		2,565	23	
North Dakota:				
Billings County.....	Jan. 1-Mar. 14	2	.....	
Burleigh County.....	Jan. 1-Mar. 31	11	.....	
Cass County.....	Jan. 1-Apr. 1	6	.....	
Cavalier County.....	Jan. 1-May 31	26	.....	
Kidder County.....	Jan. 1-Apr. 1	4	.....	
Pierce County.....	do	3	.....	
Rolette County.....	May 1-May 31	19	.....	
Stark County.....	Jan. 1-Feb. 28	1	.....	
Sargent County.....	Jan. 1-Apr. 25	1	.....	
Total for State.....		73	.....	
Ohio:				
Adams County.....	Jan. 1-May 9	99	7	
Allen County.....	do	102	.....	
Ashtabula County (Ashtabula included).	May 10-May 23	3	1	
Athens County.....	Jan. 1-May 9	145	30	
Auglaize County.....	do	10	.....	
Belmont County.....	do	7	.....	
Brown County.....	do	43	3	
Butler County (Hamilton included).	Jan. 1-June 13	61	2	
Carroll County.....	do	7	.....	
Champaign County.....	do	107	.....	
Clark County.....	do	113	3	
Clermont County.....	do	37	2	
Clinton County.....	do	3	.....	
Columbiana County (East Liverpool included).	do	7	.....	
Crawford County.....	do	76	.....	
Cuyahoga County (Cleveland included).	Jan. 1-June 20	124	35	
Darke County.....	Jan. 1-May 9	1	.....	
Defiance County.....	do	9	.....	
Delaware County.....	do	14	3	
Fayette County.....	do	79	.....	
Franklin County (Columbus included).	do	523	69	
Fulton County.....	do	20	.....	
Gallia County.....	do	9	.....	
Greene County.....	do	4	.....	
Guernsey County.....	do	16	1	
Hamilton County (Cincinnati included).	Jan. 1-June 19	380	8	
Hancock County.....	Jan. 1-May 9	150	1	
Hardin County.....	do	5	.....	
Henry County.....	do	5	.....	
Highland County.....	do	82	1	
Hocking County.....	do	2	2	
Holmes County.....	do	2	2	
Huron County.....	do	4	.....	
Jackson County.....	do	15	2	
Jefferson County.....	do	17	2	
Lawrence County.....	do	563	7	
Licking County.....	do	44	3	
Logan County.....	do	2	.....	
Lorain County.....	do	1	.....	
Lucas County (Toledo included).	Jan. 1-June 20	310	5	
Madison County.....	Jan. 1-May 9	21	2	
Mahoning County.....	do	8	3	
Marion County.....	do	4	.....	
Meigs County.....	do	35	.....	
Mercer County.....	do	6	.....	
Miami County.....	do	54	2	
Monroe County.....	do	4	2	
Montgomery County (Dayton included).	Jan. 1-June 20	164	12	
Morgan County.....	Jan. 1-May 9	4	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Ohio—Continued.</b>				
Morrow County .....	Jan. 1-May 9	2	.....	
Muskingum County (Zanesville included).	Jan. 1-May 31	74	.....	
Noble County .....	do	3	.....	
Ottawa County .....	do	51	.....	
Perry County .....	do	36	.....	
Pike County .....	do	36	3	
Portage County .....	do	8	.....	
Preble County .....	do	45	.....	
Putnam County .....	do	23	.....	
Richland County .....	do	41	4	
Ross County (Chillicothe included).	Jan. 1-May 23	18	.....	
Sandusky County .....	Jan. 1-May 9	2	.....	
Scioto County .....	do	82	13	
Seneca County .....	do	11	.....	
Stark County (Massillon included).	do	48	.....	
Summit County (Akron included).	do	169	5	
Trumbull County (Warren included).	Jan. 1-June 20	18	.....	
Tuscarawas County .....	do	12	2	
Van Wert County .....	do	28	.....	
Vinton County .....	do	23	3	
Washington County (Marietta included).	Jan. 1-May 9	54	6	
Wayne County .....	do	1	.....	
Williams County .....	do	57	.....	
Wood County .....	do	78	1	
Wyandot County .....	do	1	.....	
Total for State .....		4,422	247	
<b>Oregon:</b>				
Portland .....	Apr. 1	1	.....	
Total for State .....		1	.....	
<b>Pennsylvania:</b>				
Adams County .....	Mar. 1-Apr. 30	1	.....	
Allegheny County (Pittsburg and McKeesport included).	Jan. 1-June 13	591	90	Thirty-one cases imported.
Armstrong County (Freeport included).	Jan. 1-Apr. 30	10	.....	
Beaver County .....	Mar. 1-Apr. 30	6	.....	
Berks County (Reading included).	Jan. 6-May 25	4	.....	
Blair County (Altoona included).	Dec. 21-June 6	35	6	Seven cases imported.
Bucks County (Bristol included).	Jan. 1-Apr. 30	50	3	
Butler County (Butler included).	Jan. 18-Apr. 30	56	2	
Cambria County (Johnstown included).	Dec. 14-June 6	242	24	Two cases imported.
Carbon County .....	Mar. 1-Apr. 30	2	.....	
Chester County (Spring City included).	Jan. 1-Apr. 30	6	2	
Clarion County .....	Jan. 1-Jan. 31	4	.....	
Clearfield County .....	Jan. 1-Apr. 30	189	.....	
Crawford County .....	do	169	5	
Cumberland County .....	Mar. 1-Apr. 30	1	.....	
Dauphin County .....	Jan. 1-Apr. 30	7	.....	
Delaware County .....	do	95	2	
Elk County .....	do	232	1	
Erie County (Erie included) ..	Dec. 14-June 6	71	3	
Fayette County .....	Feb. 1-Apr. 30	13	.....	
Forrest County .....	Mar. 1-Apr. 30	3	.....	
Greene County .....	Jan. 1-Jan. 31	5	.....	
Huntingdon County (Huntingdon included).	Jan. 1-Apr. 30	10	1	
Indiana County .....	do	13	.....	
Jefferson County .....	do	119	5	
Lackawanna County (Scranton, Dunmore, and Carbon-dale included).	Feb. 1-May 1	27	.....	
Lawrence County (Newcastle included).	Jan. 1, 1902-Apr. 30, 1903.	52	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Pennsylvania—Continued.</b>				
Lycoming County (Williamsport included).	Dec. 28-Apr. 30	161	.....	
Mercer County .....	Jan. 1-Apr. 30	19	.....	
Montgomery County (Norristown included).	Feb. 22-Apr. 30	3	.....	
Northumberland County .....	Dec. 1-Apr. 30	24	.....	
Perry County .....	Mar. 1-Apr. 30	32	1	
Philadelphia County .....	Dec. 14-June 20	685	70	
Potter County .....	Mar. 1-Apr. 30	13	.....	
Schuylkill County (Pottsville included).	Dec. 1-Apr. 30	66	.....	
Somerset County .....	Jan. 1-Apr. 30	21	.....	
Susquehanna County .....	Mar. 1-Apr. 30	31	.....	
Venango County .....	Feb. 1-Apr. 30	29	1	
Warren County .....	Jan. 1-Apr. 30	32	.....	
Washington County .....	Feb. 1-Apr. 30	10	1	
Westmoreland County .....	Jan. 1-Apr. 30	35	1	
York County (York included) ..	Jan. 1-Jan. 31	1	.....	
Total for State .....		3,175	218	
<b>Rhode Island:</b>				
Newport .....	Dec. 28-Jan. 3	1	1	
Warwick .....	Dec. 25-June 15	8	.....	
Total for State .....		9	1	
<b>South Carolina:</b>				
Charleston .....	Dec. 21-June 13	100	6	
Douglass .....	Nov. 1-Nov. 30	32	.....	
Georgetown .....	Jan. 23-May 20	3	.....	
Greenville .....	Jan. 18-Apr. 11	7	.....	
Jonesville .....	Nov. 1-Nov. 30	4	.....	
Monticello .....	do	4	.....	
Wolling .....	do	50	3	
James Island .....	do	7	.....	
Wadmalaw and Edisto islands ..	do	49	1	
Total for State .....		256	10	
<b>South Dakota:</b>				
Sioux Falls .....	Dec. 21-Dec. 27	1	.....	
Total for State .....		1	.....	
<b>Tennessee:</b>				
Anderson County .....	Sept. 15-Mar. 15	10	.....	
Campbell County .....	do	46	1	
Carroll County .....	do	10	.....	
Carter County .....	do	1	.....	
Chester County .....	do	2	.....	
Claiborne County .....	do	4	.....	
Cocke County .....	do	28	.....	
Davidson County (Nashville included).	Sept. 15-June 20	34	.....	
Dickson County .....	Sept. 15-Mar. 15	28	1	
Dyer County .....	do	42	.....	
Fayette County .....	do	56	.....	
Franklin County .....	do	5	.....	
Gibson County .....	do	78	1	
Giles County .....	do	13	3	
Greene County .....	do	26	.....	
Hamblen County .....	do	31	.....	
Hamilton County .....	do	545	7	
Hardeman County .....	do	1	.....	
Hardin County .....	do	1	.....	
Hawkins County .....	do	5	2	
Haywood County .....	do	13	1	
Henderson County .....	do	5	.....	
Henry County .....	do	169	2	
Houston County .....	do	17	1	
Humphreys County .....	do	9	6	
Jefferson County .....	do	9	.....	
Knox County (Knoxville included).	do	6	1	
Lake County .....	do	35	1	
Lauderdale County .....	do	10	.....	
Lawrence County .....	do	15	.....	
Lincoln County .....	do	5	.....	



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
<b>Tennessee—Continued.</b>				
McMinn County.....	Sept. 15-Mar. 15	23	1	
McNairy County.....	do	3		
Madison County.....	do	20	1	
Marion County.....	do	16		
Maury County.....	do	19	1	
Montgomery County.....	do	7		
Obion County.....	do	112	1	
Perry County.....	do	2		
Rhea County.....	do	2		
Roane County.....	do	7		
Robertson County.....	do	12		
Rutherford County.....	do	4		
Sequatchie County.....	do	1		
Sevier County.....	do	18		
Shelby County (Memphis in- cluded).....	Sept. 15-June 20	99	1	
Smith County.....	Sept. 15-Mar. 15	7		
Sullivan County.....	do	1		
Sumner County.....	do	1		
Tipton County.....	do	80		
Washington County.....	do	105		
Williamson County.....	do	35		
Total for State.....		1,833	32	
<b>Texas:</b>				
Galveston.....	Mar. 27.....	1		
San Antonio.....	Dec. 1-May 31	12		
Total for State.....		13		
<b>Utah:</b>				
Ogden City.....	Jan. 1-Jan. 31	17		Ten cases imported.
Salt Lake City.....	Dec. 1-June 6	350	2	
Total for State.....		367	2	
<b>Virginia:</b>				
Danville.....	Jan. 10-Jan. 17	9	1	
Richmond.....	Jan. 1-Jan. 31		1	
Total for State.....		9	2	
<b>Washington:</b>				
Adams County (Ritzville in- cluded).....	Mar. 1-May 31	3		
Chelan County.....	Apr. 1-Apr. 30	1		
Clarke County.....	Apr. 1-May 31	42		
Cowlitz County (Kelso in- cluded).....	Mar. 1-Mar. 31	5		
King County (Seattle included).....	Mar. 1-May 31	24		
Lewis County.....	May 1-May 31	2		
Lincoln County.....	Apr. 1-Apr. 30	2		
Okanogan County (Chesaw in- cluded).....	Apr. 1-May 31	14	3	
Pierce County (Tacoma in- cluded).....	Dec. 8-June 1	16		
Snohomish County.....	May 1-May 31	11		
Spokane County (Spokane in- cluded).....	Apr. 1-Apr. 30	7		
Walla Walla County (Walla Walla included).....	Mar. 1-May 31	181		
Whatcom County (Blaine and Laurel included).....	do	13	1	
Whitman County (Colfax in- cluded).....	do	17		
Yakima County.....	May 1-May 31	1		
Total for State.....		339	4	
<b>West Virginia:</b>				
Morgantown.....	Mar. 6.....	9		
Total for State.....		9		
<b>Wisconsin:</b>				
Eighteen counties, 25 places ...	Sept. 1-Sept. 30	52	1	
Twenty-three counties, 34 places.....	Oct. 1-Oct. 31	184		



*Smallpox in the United States as reported to the Surgeon-General Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Wisconsin—Continued,				
Twenty-eight counties, 46 places.....	Nov. 1-Nov. 30	278	1	
Thirty-nine counties, 65 places.....	Dec. 1-Dec. 31	317	1	
Forty-one counties, 74 places....	Jan. 1-Jan. 31	410	3	
Greenbay.....	Feb. 16-May 3	14	.....	
Milwaukee.....	Feb. 1-June 20	84	.....	
Total for State.....		1,339	6	
Wyoming:				
Rock Springs.....	Feb. 23.....	1	.....	
Total for State.....		1	.....	
Grand total.....		26,937	842	

## FOREIGN AND INSULAR.

During the year ended June 30, 1903, smallpox was reported in 43 islands and countries outside of the United States, as may be seen in the two tables given below—one for each half year. It will be seen from these tables, judging by the number of deaths, that the disease was most prevalent in India; then Russia, Great Britain, France, Brazil, Belgium, and Mexico. It is instructive, again, to invite attention to the small number of deaths reported from the German Empire, where vaccination is thoroughly enforced, as compared with other countries where vaccination is not enforced. For example, there were only 7 deaths in the German Empire, while there were 162 in Belgium, 321 in France, 376 in Great Britain, and so on.

*Smallpox as reported to the Surgeon-General, Public Health and Marine-Hospital Service.*

JUNE 28 TO DECEMBER 26, 1902.

[Reports received from United States consuls through the Department of State and from other sources.]

Place.	Date.	Cases.	Deaths.	Remarks.
Argentina:				
Buenos Ayres.....	May 1-June 30	.....	13	
Austria-Hungary:				
Prague.....	May 26-Nov. 22	132	.....	
Trieste.....	Aug. 10-Aug. 16	1	.....	
Barbados.....	July 1-Nov. 29	1,368	117	
Belgium:				
Antwerp.....	May 26-Nov. 22	32	12	
Brussels.....	Aug. 17-Sept. 27	.....	7	
Ghent.....	Aug. 31-Nov. 8	.....	14	
Brazil:				
Bahia.....	Sept. 28-Nov. 1	9	.....	
Pernambuco.....	May 17-Oct. 31	.....	108	
Rio de Janeiro.....	Sept. 21-Nov. 16	.....	32	
Canada:				
Amherstburg.....	Sept. 20-Nov. 8	9	.....	
Quebec (Mégantic District included).	June 7-Dec. 13	18	1	
Rogersville (New Brunswick)...	Nov. 27.....	3	.....	
St. John.....	July 13-July 26	2	.....	One case imported.
Vancouver.....	July 1-July 31	2	.....	
Winnipeg.....	June 7-June 28	3	.....	
Cape Colony:				
Cape Town.....	Nov. 19.....	42	.....	
Ceylon:				
Colombo.....	June 14-June 21	.....	1	



*Smallpox as reported to the Surgeon-General, Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Chile:				
Pisagua.....	Oct. 13.....	6	.....	
China:				
Hongkong.....	Apr. 26-Sept. 13	13	10	
Shanghai.....	Aug. 24-Sept. 6	.....	3	
Colombia:				
Cartagena.....	June 1-July 13	.....	3	
Panama.....	June 1-July 21	12	.....	
Cuba:				
Habana.....	Sept. 30.....	1	.....	On Spanish ss. Onton from Hamburg and Bilbao.
Dutch West Indies:				
Curacao.....	Aug. 3-Aug. 9	1	.....	
Ecuador:				
Guayaquil.....	Aug. 23-Nov. 15	.....	31	
Egypt:				
Cairo.....	June 25-July 1	.....	1	
England:				
Birmingham.....	May 31-Aug. 9	35	2	
Bradford.....	To Nov. 29.....	38	.....	
Bristol.....	Oct. 4-Oct. 18	1	1	
Leeds.....	Oct. 4-Nov. 22	13	1	
Liverpool.....	May 31-Nov. 22	135	8	
London.....	May 31-Nov. 29	779	154	
Manchester.....	Sept. 27-Nov. 29	6	.....	
Newcastle-on-Tyne.....	May 31-Sept. 20	3	.....	
Sheffield.....	Nov. 2-Nov. 29	9	.....	
South Shields.....	May 31-Sept. 20	6	1	
Sunderland.....	June 7-Sept. 27	8	1	
Swansea.....	Sept. 20-Sept. 27	.....	1	
Warrington.....	do.....	.....	1	
France:				
La Rochelle.....	Oct. 20-Oct. 26	.....	1	
Marseille.....	June 1-Sept. 30	.....	35	
Paris.....	June 7-Nov. 22	.....	11	
Rheims.....	Oct. 5-Nov. 30	.....	4	
Roubaix.....	Oct. 1-Oct. 31	.....	1	
Gibraltar.....	Aug. 11-Nov. 30	.....	10	
Greece:				
Athens.....	June 29-Nov. 22	4	1	
India:				
Bombay.....	May 13-Nov. 18	.....	110	
Calcutta.....	May 10-Oct. 25	.....	25	
Karachi.....	May 25-July 27	13	6	
Madras.....	May 10-Oct. 10	.....	18	
Ireland:				
Belfast.....	June 7-June 14	.....	1	
Dublin.....	Aug. 3-Aug. 23	2	.....	
Italy:				
Milan.....	May 1-Sept. 30	46	5	
Naples.....	June 21-Dec. 1	28	2	
Palermo.....	May 24-Nov. 22	137	21	
Japan:				
Formosa.....	May 1-May 31	73	3	
Yokohama.....	May 31-June 7	1	.....	
Malta:				
Valletta.....	June 22-June 28	1	.....	
Mexico:				
City of Mexico.....	June 1-Nov. 30	.....	15	
Nogales.....	Nov. 9-Nov. 29	15	.....	
Vera Cruz.....	June 7-July 12	3	3	
Netherlands:				
Rotterdam.....	June 14-Aug. 23	3	.....	
Philippine Islands:				
Manila.....	Apr. 26-June 21	8	2	
Porto Rico:				
Arecibo.....	Feb. 1-June 15	381	1	
Bayamon.....	do.....	3	.....	
Caguas.....	do.....	71	.....	
Camuy.....	do.....	121	.....	
Ciales.....	do.....	6	.....	
Corozal.....	do.....	2	.....	
Fajardo.....	do.....	1	.....	
Hatillo.....	do.....	5	.....	
Humacao.....	do.....	1	.....	
Isabela.....	do.....	9	.....	
Lares.....	do.....	3	.....	
Ponce.....	do.....	128	.....	
San Juan.....	do.....	110	.....	
Utuado.....	do.....	79	.....	



*Smallpox as reported to the Surgeon-General, Public Health and Marine-Hospital Service—Continued.*

JUNE 28 TO DECEMBER 26, 1902—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Russia:				
Moscow .....	May 31-Nov. 8	92	29	
Odessa .....	May 24-Nov. 22	65	8	
Riga .....	Apr. 1-Sept. 30	.....	66	
St. Petersburg .....	Apr. 1-Nov. 22	.....	38	
Warsaw .....	May 18-Nov. 1	.....	25	
Scotland:				
Dundee .....	July 6-Dec. 5	20	.....	
Edinburgh .....	Sept. 27-Oct. 4	2	.....	
Glasgow .....	June 13-Aug. 22	6	.....	
Leith .....	Aug. 3-Aug. 9	1	.....	
Spain:				
Barcelona .....	Sept. 2-Sept. 30	.....	4	
Corunna .....	June 29-Sept. 27	.....	4	
Malaga .....	May 1-July 31	.....	26	
Valencia .....	June 1-June 15	.....	1	
Straits Settlements:				
Singapore .....	May 3-Nov. 1	.....	33	
Switzerland:				
Geneva .....	May 31-Oct. 18	5	.....	
Turkey:				
Constantinople .....	Oct. 13-Nov. 2	.....	3	
Smyrna .....	June 16-June 22	.....	1	
Uruguay:				
Montevideo .....	June 5-Oct. 30	217	14	
Venezuela:				
Valencia .....	Aug. 25	.....	.....	Present.

DECEMBER 27, 1902, TO JUNE 26, 1903.

Argentina:				
Buenos Ayres .....	Nov. 23-Mar. 31	.....	25	
Austria-Hungary:				
Prague .....	Oct. 1-May 30	198	2	
Barbados .....	July 1-Feb. 27	1,433	116	
Belgium:				
Antwerp .....	Nov. 23-May 30	74	22	
Brussels .....	Dec. 1-May 30	.....	89	
Ghent .....	Nov. 23-May 16	.....	17	
Liege .....	Feb. 1-Feb. 7	1	1	
Brazil:				
Bahia .....	Nov. 16-May 30	22	2	
Pernambuco .....	Nov. 1-Apr. 30	.....	45	
Rio de Janeiro .....	Dec. 26-May 17	.....	78	
British Guiana:				
Demerara .....	Feb. 10-May 16	344	2	
Canada:				
Manitoba, Winnipeg .....	Dec. 14-May 16	11	1	
New Brunswick (St. John, Fredericton, and Vancouver included).	Jan. 8-June 12	23	.....	One case imported from Aroostook County, Me.
Nova Scotia (Halifax, Amherst included).	Dec. 24-June 12	6	.....	One on ss. Assyria and 1 on ss. Corinthian.
Ontario .....	Jan. 1-Jan. 31	196	.....	
	Feb. 1-Feb. 28	152	.....	
	Mar. 1-Mar. 31	175	1	
	Apr. 1-Apr. 30	122	2	
Quebec (Megantic included).	Dec. 21-May 9	10	.....	
Chile, Antofagasta .....	Jan. 1-Mar. 31	.....	18	
China:				
Hongkong .....	Dec. 26-May 2	12	7	
Shanghai .....	Nov. 30-May 2	.....	15	
Colombia:				
Barranquilla .....	Mar. 16-May 30	.....	10	
Bocas del Toro .....	To June 9	35	12	
Cartagena .....	Apr. 6-Apr. 12	.....	1	
Cuba:				
Habana .....	May 16	4	.....	Three from Sp. ss. Montserrat, Spanish ports, and 1 from Sp. ss. Ernesto, Liverpool.
Ecuador:				
Guayaquil .....	Nov. 33-Feb. 14	.....	8	
Formosa .....	Jan. 1-Mar. 31	31	2	
France:				
Havre .....	To Feb. 11	23	2	
Lyon .....	Feb. 22-Feb. 28	.....	1	
Marseille .....	Nov. 1-Apr. 30	.....	216	
Nantes .....	Mar. 1-Mar. 31	1	.....	
Paris .....	Dec. 14-May 30	.....	7	



*Smallpox as reported to the Surgeon-General, Public Health and Marine-Hospital Service—*  
Continued.

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued

Place.	Date.	Cases.	Deaths.	Remarks.
France—Continued.				
Rheims.....	Jan. 19-Apr. 12	3	1	
Roubaix.....	Dec. 1-Mar. 31	.....	41	
Rouen.....	Apr. 1-Apr. 30	1	1	
Germany:				
Altona.....	To Jan. 22.....	11	1	
Hamburg.....	Jan. 25-May 16	7	5	
Leipzig.....	Jan. 18-Jan. 24	.....	1	
Gibraltar.....	Nov. 24-Mar. 1	7	1	One case imported.
Great Britain:				
Birmingham.....	Dec. 1-June 6	241	7	
Bradford.....	Dec. 1-May 30	143	5	
Bristol.....	Mar. 29-June 6	23	3	
Cardiff.....	Dec. 20-May 2	36	2	
Dublin.....	Dec. 20-June 6	183	22	
Dundee.....	Dec. 1-June 6	22	.....	
Edinburgh.....	Dec. 1-Apr. 4	6	.....	
Glasgow.....	Jan. 9-May 15	3	1	
Hebburn.....	Mar. 15-May 21	1	.....	
Leeds.....	Dec. 1-May 30	290	19	
Leith.....	Apr. 5-Apr. 11	1	.....	
Liverpool.....	To June 6.....	1,105	118	
London.....	Dec. 1-June 6	166	4	
Manchester.....	.....do.....	313	20	
Newcastle-on-Tyne.....	Mar. 15-June 6	20	1	
Nottingham.....	Jan. 4-May 23	84	1	
Sheffield.....	Dec. 1-May 30	52	3	
South Shields.....	Mar. 22-May 16	7	.....	
Sunderland.....	Mar. 1-June 6	14	.....	
Walker-on-Tyne.....	Mar. 8-Mar. 14	1	.....	
Wallsend.....	Mar. 15-Mar. 21	2	.....	
West Hartlepool.....	May 17-May 23	2	.....	
Hawaiian Islands:				
Honolulu.....	Dec. 1-June 1	5	.....	One on ss. Solace, 1 on ss. Gaelic, 1 on U. S. Navy collier Saturn, and 1 on ss. Korea.
India:				
Bombay.....	Nov. 19-May 19	.....	1,046	
Calcutta.....	Nov. 16-May 16	.....	36	
Karachi.....	Nov. 24-Mar. 22	2	1	
Madras.....	Nov. 15-Apr. 24	.....	7	
Italy:				
Milan.....	Nov. 1-Mar. 31	6	1	
Palermo.....	Nov. 23-Apr. 25	106	6	
Jamaica:				
Duan Vale.....	Feb. 1.....	.....	.....	Present.
Japan:				
Kobe.....	Mar. 30-May 16	11	.....	
Yokohama.....	Mar. 7-May 23	3	.....	One on ss. Gaelic from Hongkong.
Korea, Seoul.....	Apr. 18.....	.....	.....	Present.
Malta.....	Nov. 24-Feb. 28	4	2	
Mexico:				
City of Mexico.....	Dec. 1-June 7	203	116	
Nuevo Laredo.....	Mar. 19.....	3	.....	
Tampico.....	Apr. 1-Apr. 30	4	.....	
Vera Cruz.....	Feb. 1-Feb. 7	1	.....	
Netherlands:				
Amsterdam.....	Mar. 15-Apr. 25	2	1	
Flushing.....	Mar. 8-Mar. 18	2	.....	
Rotterdam.....	Apr. 12-Apr. 18	1	.....	
Newfoundland:				
St. Johns.....	Apr. 7-Apr. 13	2	.....	
Philippine Islands:				
Manila.....	Feb. 1-Apr. 4	23	2	
Porto Rico:				
Ponce.....	Mar. 23-Apr. 6	12	.....	
Rio Piedras.....	Apr. 1-Apr. 30	.....	1	
San Juan.....	Mar. 17-May 31	11	.....	Three on ss. Alliance from Port of Spain.
Russia:				
Moscow.....	Nov. 16-May 23	84	35	
Odessa.....	Nov. 23-May 23	53	14	
Riga.....	Jan. 1-Mar. 31	.....	68	
St. Petersburg.....	Nov. 23-May 31	1,097	150	
Warsaw.....	Jan. 3-May 16	.....	62	
Spain:				
Canary Islands, Las Palmas.....	Dec. 7-May 9	422	8	
Corunna.....	Jan. 31-Feb. 7	.....	1	
Santander.....	Mar. 31-Apr. 6	.....	.....	Present.
Teneriffe.....	May 10-May 16	2	.....	
Straits Settlements:				
Singapore.....	Nov. 1-May 2	.....	51	



*Smallpox as reported to the Surgeon-General, Public Health and Marine-Hospital Service—Continued.*

DECEMBER 27, 1902, TO JUNE 26, 1903—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Switzerland:				
Zurich.....	Feb. 8-Feb. 14	1	.....	
Turkey:				
Alexandretta.....	Feb. 22-Apr. 4	15	1	
Constantinople.....	Nov. 24-Mar. 22	.....	9	
Smyrna.....	Jan. 26-Apr. 26	.....	4	
Uruguay:				
Montevideo.....	Nov. 2-Apr. 12	41	8	
West Indies:				
Antigua.....	Mar. 25.....	1	.....	On Br. ss. Solent from England.

## GENERAL MORTALITY STATISTICS FOR THE UNITED STATES.

These statistics are for the calendar year 1902, and are compiled from 1,563 replies received in response to 3,780 letters, one to every city or town having, according to the United States census of 1900, a population of 1,000 or more. The complete table is published in Public Health Reports No. 32, August 7, 1903. The total number of deaths from all causes is given, namely, 378,394 in a population of 22,469,816 of the cities and towns reporting; also the deaths from the common infectious diseases, namely, tuberculosis, smallpox, enteric fever, measles, scarlet fever, diphtheria and membranous croup, and whooping cough, according to cities and towns in every State.

The annual mortality per thousand is given on the United States census of 1900 and also on the estimated census reported by the cities and towns.

The mortality per thousand for 1902 on the United States census is 16.84, while that for 1901 was 17.12, showing a decrease in death rate of 0.28 per thousand. It is interesting also to see a marked decrease in the deaths from tuberculosis—41,404 in a total of 378,313 deaths, as compared with 41,938 deaths from tuberculosis in a total of 365,216 deaths for the year 1901, a decrease of 0.54 per cent. There was an increase in the number of deaths from enteric fever, measles, and whooping cough, a decrease in diphtheria and membranous croup, and practically no change in the number of deaths from scarlet fever.

So far as these statistics, which are entirely urban and somewhat incomplete, indicate the health of the States, it would seem that the death rate was lowest in Nebraska, 10.03 per thousand, with Montana a close second, with 10.52 per thousand, and Minnesota, with 10.89, third, and highest in Wyoming, with 25.95 per thousand, Florida being second, with 24.32.

Respectfully submitted.

GEORGE T. VAUGHAN,  
*Assistant Surgeon-General.*

SURGEON-GENERAL, PUBLIC HEALTH  
AND MARINE-HOSPITAL SERVICE.



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DIVISION OF FOREIGN AND INSULAR  
QUARANTINE.

(EMBRACING MEDICAL INSPECTION OF IMMIGRANTS.)

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DIRECTOR OF FORENSIC AND IDENTIFICATION  
DEPARTMENT

REPORT OF THE DIRECTOR OF IDENTIFICATION



## REPORT OF THE DIVISION OF FOREIGN AND INSULAR QUARANTINE (EMBRACING MEDICAL INSPECTION OF IMMIGRANTS).

By W. J. PETTUS,

*Assistant Surgeon-General, Public Health and Marine-Hospital Service, in charge.*

SIR: I have the honor to submit the following report of the transactions of the division of foreign and insular quarantine and immigration for the fiscal year ended June 30, 1903:

### CUBA.

#### CHANGES IN DETAIL OF OFFICERS.

When Surg. A. H. Glennan was relieved from duty at Habana, August 23, 1903, Asst. Surg. F. E. Trotter was placed in temporary charge. Passed Asst. Surg. R. H. von Ezdorf was stationed in charge at Matanzas, Acting Asst. Surg. R. L. McMahon at Cienfuegos, and Acting Asst. Surg. R. Wilson at Santiago.

#### NO YELLOW FEVER REPORTED.

During the fiscal year just ended not a single case of yellow fever has been reported as originating on the island. Eight cases have been taken from vessels arriving at Habana from Mexican ports. They were promptly removed to Las Animas hospital, where they were carefully screened to prevent mosquitoes having access to them. The success of this treatment is shown by the fact that not a single case of infection arose from any of these patients.

#### PASSENGERS FROM INFECTED MEXICAN PORTS TO FLORIDA VIA HABANA.

On account of a rumor that nonimmunes from infected Mexican ports could arrive at Habana and, by changing steamers there, land in Florida in less than five days from the Mexican port, the following telegram was sent to the medical officer in charge of the service at Habana:

[Telegram.]

WASHINGTON, June 18, 1903.

EHEMENDIA, *Public Health and Marine-Hospital Service, Habana, Cuba:*

Reliably informed that Mr. Montes, nonimmune from Merida, via Progreso and Habana, changed steamers at Habana and landed in Florida less than five days from Progreso. Investigate and wire if this is possible.

By direction Surgeon-General:

PETTUS,  
*Assistant Surgeon-General.*



[Telegram in reply to above.]

HABANA, June 19, 1903.

WYMAN, Washington:

Investigation shows that Mr. Avelino Montes arrived at Habana on May 26, thirty-two hours out from Progreso; was accepted as immune by Cuban authorities on certificate issued by Dr. Pla, Cuban medical officer at Progreso, based on ten years' residence. He was not detained at Triscornia for this reason. Mr. Montes sailed from Habana to Tampa on May 28. It is possible for an immune to reach Florida from Progreso within five days, but not possible with nonimmunes, as they are detained five days at Triscornia.

EHEMENDIA,  
*In temporary charge.*

#### CUBAN QUARANTINE METHODS.

On account of the importance in quarantine matters that Habana occupies as a stopping point between infected ports in Mexico and the United States, it was thought best to institute an inquiry into the method of handling vessels in vogue at Habana. The following telegram was sent to Assistant Surgeon Trotter. His reply by telegram, followed by a letter, is given below.

[Cablegrams.]

WASHINGTON, April 7, 1903.

TROTTER, Habana:

Wire Bureau the intention of the Cuban authorities with regard to vessels from infected Mexican ports. Will they disinfect for mosquitoes?

WYMAN.

HABANA, April 9, 1903.

WYMAN, Washington:

Vessels from infected Mexican ports at present are treated under orders contained in Presidential decree transmitted to Bureau in my letter dated December 11. Doctor Finlay states that more stringent measures and disinfection for mosquitoes will be enforced after May 1.

TROTTER.

[Letter.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Habana, Cuba, April 11, 1903.*

SIR: Relative to my cablegram of the 9th instant in regard to the treatment of vessels from infected ports on arrival at Cuba, I have the honor to report that I discussed the matter with Dr. Carlos J. Finlay, chief quarantine officer for Cuba, who stated that the disinfection of vessels, after May 1, would be done on arrival, provided the vessel had not been disinfected at port of departure. Doctor Finlay proposes to use formaldehyde in the cabins and pyrethrum powder in other parts of the vessel. During the past winter vessels on arrival from infected Mexican ports were placed in quarantine, and remained so until their departure, all nonimmune passengers being sent to quarantine to complete five days from port of departure, provided the vessel had not been at the dock at that port. If the vessel had touched at the dock the passengers were held to complete five days from arrival at the Cuban port. Sanitary guards were placed on all vessels in quarantine, and no communication was allowed, except by permission of the chief quarantine officer. Stevedores working on these vessels were required to be immune to yellow fever.

Doctor Finlay has paid particular attention to the quarantine service since taking charge, and evidently intends to take all measures to prevent the introduction of yellow fever into Cuba. The quarantine work at the port of Habana is in my opinion well performed, and the Cuban authorities have always rendered me full reports of any sickness occurring aboard of vessels in the bay. Doctor Menocal, in charge of



the detention camp for nonimmunes, is engaged in remodeling the quarters of that camp, in order to render them mosquito proof and thus prevent any possible infection.

As stated in my weekly report transmitted on April 8, 1903, the President has allotted sufficient funds for the construction of a ward at Las Animas Hospital, to be used for the isolation of contagious diseases. I have again to add that every precaution is being taken to prevent the introduction of yellow fever, and the measures in force are being rigidly carried out.

Respectfully,

F. E. TROTTER,

*Assistant Surgeon, in temporary charge.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

In this connection it is interesting to note the very excellent quarantine methods adopted by the quarantine authorities of Cuba given below.

NOTES OBTAINED FROM DOCTOR GIRALT, CHIEF QUARANTINE PHYSICIAN OF HABANA.

The Cuban Government has resident medical inspectors at Progreso, Vera Cruz, and Tampico.

They issue certificates of immunity to passengers who prove that they have had yellow fever or that they have resided ten years in an endemic focus of yellow fever.

They will burn pyrethrum powder in the holds of vessels at the ports of departure.

They place a guard on board of vessels which anchor away from the wharf to prevent anyone from going ashore except the captain or anyone from going aboard except the laborers.

There is no line of vessels coming from Mexican ports which have Habana as a final port of destination. They are all in transit to somewhere else, except the cattle vessels, which go back within twenty-four hours.

All the regulations are based on the mosquito principle, and no attention whatever is paid to fomites on the vessels or at the yellow-fever hospital.

Considering the transient vessels, which only touch at Habana, the following are the regulations governing them:

Vessels which have anchored away from the wharf and which have no passengers, upon arriving at Habana are not disinfected, but a guard is placed on board until they are ready to proceed to New York, etc.

If such transient vessels carry passengers, those having certificates of immunity are set free at once.

Those which have no such certificates are detained at Tricornia.

Their detention begins from the day of departure.

Transient vessels which have come to the wharf at the Mexican ports or have had communication with any other suspected or infected craft are considered infected.

If they have no passengers they are not disinfected, but a guard is placed on board until she leaves for New York, etc.

If they have passengers the immunes are set free.

The nonimmunes are detained at Tricornia for five days, the detention beginning from the day of arrival at Habana.

When a transient vessel arrives at Habana with a case of yellow fever on board, the case is taken directly to Las Animas Hospital.

The immune passengers are set free.

The nonimmunes are taken to Tricornia station for five days.

The vessel is disinfected for mosquitoes with formalin or sulphur.

A guard is placed on board until the vessel is ready to go to New York, etc.

Should a staying noninfected vessel come to Habana the passengers are treated as above; the crew are kept aboard; the vessel is disinfected; she is not detained if five days in transit, but is detained if less than five days; a guard is placed on board.

Should a staying infected vessel come to Habana the immunes are set free; the nonimmunes are sent to Tricornia; the case is sent to Las Animas direct; the crew is kept five days on board; the vessel is disinfected; she is detained five days in the bay from the completion of the disinfection.

In short, immunes are never detained under any circumstances, even those coming on actually infected vessels.

Nonimmunes from all kinds of vessels are sent to the detention station of Tricornia, where they are detained five days, except those which have come on a vessel which has anchored in the harbor at the port of departure.



When a case of yellow fever is found on board it is sent direct to the Las Animas Hospital.

Vessels which come to stay are treated as we treat them.

No transient vessel is disinfected unless it had a case of yellow fever on board.

Tricornia is an observation station across the bay to which are sent nonimmune passengers from vessels from infected ports.

There also are sent the immigrants until they find employment in the city or in the island.

Mariel is a quarantine detention station situated on the coast, about 20 miles from Habana.

The Bureau wished to know exactly how the Service work in regard to vessels leaving Habana for United States ports was being conducted, so wired Trotter as follows:

[Cablegrams.]

APRIL 15, 1903.

TROTTER, *Habana, Cuba:*

Wire briefly description of quarantine work now being done under your direction, showing employment of each officer; also same report of precautions to be taken after May 1. Doctor Delgado will report to you before May 1, especially for furnishing information regarding the sanitary condition of shipping and port.

WYMAN.

HABANA, *April 16, 1903.*

WYMAN, *Washington:*

Quarantine work now being done consists of inspecting of vessels, crews, and passengers when bound direct to United States ports, issuing of certificates and labeling of baggage bound for Florida. Doctor Echemendia issues certificates, Frick inspects baggage and with myself clears vessels. After May 1 Florida boats will transact business under sanitary guard and passengers for Florida will be required to obtain certificates of health. Vessels for Gulf ports will ask disinfection after May 1.

TROTTER.

#### DISINFECTION AT HABANA OF VESSELS LEAVING FOR UNITED STATES PORTS.

Several requests were made to the Bureau for the disinfection of vessels leaving Habana for the United States. On account of the excellent sanitary record of the island and very efficient methods of incoming quarantine practiced by the quarantine authorities, the Bureau did not consider that any quarantine procedures against the island were justifiable. It was agreed, however, to use the *Sanator* for the disinfection of vessels sailing from infected Mexican ports for the United States via Habana, and the following letter was written to the medical officer in command at Habana, giving him instructions on the subject:

[Letter.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, July 3, 1903.*

MEDICAL OFFICER IN COMMAND,

*Public Health and Marine-Hospital Service, Habana, Cuba.*

SIR: You are informed that the Bureau has been requested to fumigate vessels sailing from Mexican ports, infected or suspected of being infected with yellow fever, for ports in the United States south of the southern boundary of Maryland via Habana. In view of these requests, you are directed to disinfect such vessels upon request of their agents or masters, with the distinct understanding that the disinfection is done on account of the sailing from the Mexican port, as long as sanitary matters are as satisfactory in Cuba as at present.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*



## HABANA.

REPORT OF ASST. SURG. F. E. TROTTER, IN TEMPORARY CHARGE.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Habana, Cuba, July 22, 1903.*

SIR: I have the honor to submit the following report of the transactions at this port for the fiscal year ended June 30, 1903:

The following changes occurred among the personnel: Surg. A. H. Glennan, who was relieved August 23, 1902, served as chief quarantine officer of Cuba from July, 1900, to May 20, 1902, deserves especial credit for the able and systematic organization of the Cuban quarantine service, as well as for its efficient administration, which prevented the introduction of yellow fever into Cuba, and thereby assisted greatly in the eradication of that disease from Habana.

Acting Asst. Surg. John Frick was relieved on April 28, 1903, and assigned to duty at Tampico, Mexico, his position being filled by the appointment of Acting Asst. Surg. J. M. Delgado.

The work of the Service has continued upon the lines established during previous years and has been uniformly carried out. The alcovapor launch of the disinfecting steamer *Sanator* has been used since the 20th of May, 1902, for boarding and clearing of vessels and has rendered fairly efficient service, but owing to her size, being but 26 feet over all, she was found to be too small and had to be laid up whenever the water in the bay became at all rough. Even in moderate weather she is a very wet boat, owing to her low freeboard, and a wetting of all on board usually results on such occasions.

Through the courtesy of the Republic of Cuba the Service still retains the use of the large office room in the passenger building fronting on the bay, a most convenient arrangement, as all of the shipping entering and departing can be seen, and as all passengers enter and leave Habana from this building the issuing of health certificates and labeling of baggage is performed without delay.

During the fiscal year the boarding launch and *Sanator* have been kept in good condition. The latter was docked this spring, and besides being cleaned, a new propeller, stern bearing, etc., were installed; in addition, new mast and booms were put in and general repairs made, so that at the present time the vessel is in first-class condition and ready for any service.

During the quarantine season of 1902 immune certificates were issued to passengers for New York who were entitled to them. Only immune travel was permitted to Florida ports, and passengers for Gulf ports were required to obtain a certificate of good health prior to embarkation. Baggage for New York was passed without inspection, while that for Florida ports was inspected and passed if clean, and disinfected if not so. Baggage for Gulf ports was disinfected.

The present year is the first in many years that nonimmune travel was permitted to Florida ports, this being due to the freedom of Cuba from yellow fever. No health certificates are required for ports in the United States except those of Florida. Passengers bound for the latter State are required to obtain a certificate of health twenty-four hours before the sailing of the vessel and have their baggage inspected, the latter being passed if clean and containing no bedding, and if dirty, disinfected and the bedding removed. Passengers for New York and the Gulf ports were inspected on board prior to sailing. Baggage for these ports received no treatment whatever.

The quarantine laws and regulations of the United States were made applicable to Cuba by order of Brigadier-General Wood under date of April 29, 1902, and these laws and regulations have been enforced by the Cuban quarantine service since May 20, 1902. The following modifications relative to yellow fever were made by the secretary of government under date of June 9, 1902:

## DEPARTMENT OF GOVERNMENT.

*Decree No. 39.*

In virtue of the authority conferred upon me by the constitution, I deem it well to promulgate the following:

## I.

The crew and passengers of any vessel proceeding from a port infected with yellow fever will be subjected, in the ports of Cuba, to a sanitary observation of five days which will be counted from the hour of the arrival in port.



## II.

The crew and passengers of any vessel coming from ports infected with smallpox, who have not good marks to show that they have been successfully vaccinated, will be vaccinated and subjected to the necessary sanitary observation.

Habana, June 9, 1902.

T. ESTRADA PALMA,  
*President.*

DIEGO TAMAYO,  
*Secretary of Government.*

Under December 5, 1902, the following additional decree was issued by the secretary of government:

## DEPARTMENT OF GOVERNMENT.

The secretary of dispatch, by agreement of this date, dictates the following resolution:

In virtue of the powers conferred upon me by article 3rd of Military Order No. 122, current series, and Presidential decree No. 40, I have deemed it well to dictate the following regulations, which shall be observed by the employees of the maritime quarantine service of the Republic:

"For the purpose of quarantine against yellow fever which proceeds from Mexico, Central America, or any other point where this disease exists, we will consider the vessels (coming therefrom) as 'infected' and 'not infected.'"

(A) "The vessels (considered) 'not infected' are those which during their stay in the ports of the above-cited countries have anchored more than half a mile from the wharf or coast, and that no other vessel, which because of its conditions is considered 'infected' by the Cuban medical officer (stationed in that country), has been alongside of the 'noninfected' vessel; or in case of a vessel which has not fulfilled these conditions, but has been fumigated at a distance of more than half a mile from the wharf or coast by means of pyrethrum powder, one pound for each thousand cubic feet of space, under the inspection of a Cuban medical officer properly detailed for that purpose."

(B) "The vessels (considered) 'infected' are all of those from ports mentioned above which have not complied with the above requisites; these are prohibited to tie up at the wharves in the ports of the Republic. Such vessels will continue to be considered 'infected' so long as they have not been disinfected."

(C) "For passengers who are not immune that arrive aboard of vessels (considered) 'not infected,' the period of quarantine will be counted from the time of the sailing of the vessel from the port where such passengers embarked, if the vessel has always complied with Sec. A of this decree in all of the ports of call, and if no passenger (in transit) has gone ashore in such ports."

(D) "Passengers who arrive aboard of vessels which are included in the provisions of Sec. B are to be subjected to five days quarantine, which period will begin from the moment that they disembark."

(E) "The workmen who load and discharge cargo in the 'infected' vessels will have to be certified immunes, properly authorized by the maritime quarantine service."

EDUARDO YERO,  
*Secretary of Government.*

This order is published in the official Gazette of the Republic of Cuba for the general information.

Habana, December 5, 1902.

The chief of dispatch.

JOSE SAEZ MEDINA.

By the 1st of May, 1903, the Cuban Government had medical officers stationed at Vera Cruz, Progreso, and Tampico, the duties of these officers being to inspect vessels bound for Cuban ports, to disinfect same for mosquitoes prior to sailing when requested, and issue certificates of immunity, the evidence of immunity upon which a certificate was based being the same as that prescribed in our quarantine laws and regulations.



The President of Cuba under date of January 2, 1903, issued decree No. I, nominating the members of the superior sanitary board of the island of Cuba. The following is a copy of the translation:

## DEPARTMENT OF GOVERNMENT.

*Decree No. I.*

In virtue of the provisions of articles 1 and 3, first section of military order No. 159, series of 1902, with the object of proceeding with the constitution of the superior sanitary board of the island of Cuba, and as proposed by the secretary of government, I have to promulgate the following:

ARTICLE 1. The nominations of the members of the superior sanitary board of the island of Cuba made under military order No. 179, of the date of the 18th of March last, being of a temporary character pending their approval by the Government of the Republic, are hereby revoked.

ART. 2. The following are appointed as active members of the superior sanitary board of the island of Cuba: Dr. Joaquin L. Dueñas, as resident member in the city of Habana, and in his capacity of president of the special commission of hygiene of the island of Cuba; Dr. Enrique B. Barnet, as resident member in the city of Habana, and Drs. Juan Guiteras and Ambrosio Grillo, representing the western and eastern parts of the island, respectively. Doctors Guiteras, Grillo, and Barnet will hold office for a period of two, three, and four years, respectively.

ART. 3. The following-named persons because of their official positions are appointed as honorary members of the aforesaid superior sanitary board: Dr. Hugo Roberts, first physician of the port of Habana, and Dr. Joaquin L. Jacobsen, president of the league against tuberculosis. In representation of the respective corporations, Dr. Juan Santos Fernandez, for the Academy of Sciences of Habana; Dr. José Varela Zequeira, for the University; Dr. Gonzalo Arostegui, for the board of education, and Dr. José del Cueto y Pazos, professor of law, for the law faculty.

ART. 4. The superior sanitary board of the island of Cuba will act as a dependency (bureau) of the department of government (interior) in accordance with the provisions of decree No. II, of this Presidential office, dated May 20 last.

ART. 5. The secretary of government will dictate the necessary measures to give possession of the offices to the gentlemen appointed, and will propose what is deemed necessary to establish this dependency (bureau) and the offices of the superior sanitary board in harmony with the fundamental law of the Republic.

Habana, January 2, 1903.

The Secretary of Government.

T. ESTRADA PALMA.

EDUARDO YERO.

This board immediately assumed charge of all sanitary matters, including the quarantine service. For various reasons, principally political, the members of the Cuban quarantine service who had been trained were gotten rid of and their places taken by men who had had no quarantine experience whatever and who were not fitted for the positions. The amalgamation of the quarantine service with the internal sanitary affairs of the island was a mistake and resulted in the breaking up of an excellent quarantine system, which the officers of this Service had labored so faithfully to complete.

The relations existing between this office and the quarantine and sanitary departments of the Cuban Government have been most cordial, the officials of both branches having rendered us full reports on all matters pertaining to sanitary affairs. I desire to express my appreciation to Drs. Juan Guiteras and Carlos J. Finlay for numerous courtesies extended.

I inclose herewith list of vessels arriving at quarantine with yellow fever aboard, together with the mortuary report, report of vessels inspected, disinfected, etc.

Respectfully,

F. E. TROTTER,

*Assistant Surgeon in Temporary Charge.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[Inclosures.]

## VESSELS ARRIVING WITH QUARANTINABLE DISEASES ABOARD.

August 4, 1902.—American steamship *Vigilancia*, from Vera Cruz and Progreso, with one case of yellow fever among the crew. The patient, a coal passer, was sent to hospital and the crew's quarters disinfected by the Cuban quarantine service. In this case the man became infected at Vera Cruz, the ship having lain at the wharf, and the man gave a history of having been ashore at night. Case ended fatally August 6.

September 8, 1902.—American steamer *Monterey*, from Vera Cruz and Progreso, with one of ship's crew, a waiter, ill with yellow fever. Case was removed and quarters disinfected. The ship laid at the wharf at Vera Cruz and the man was ashore at night. Case recovered.

September 15, 1902.—American steamship *Havana*, from Vera Cruz and Progreso. On the 16th, the day after arrival, a third-class passenger in transit for New York was found with fever and removed to Las Animas Hospital, where a diagnosis of yellow fever was made. The patient, a Turk, had resided in Mexico for two and a half years and for past month had lived at Progreso, where he undoubtedly received his infection. Case recovered.

September 30, 1902.—Spanish steamship *Onton*, from Hamburg and Bilbao, with one of the crew ill with smallpox. Case was removed to Las Animas Hospital and crew vaccinated. The vessel was disinfected by this service. Case recovered.

November 17, 1902.—American steamship *Esperanza*, from Vera Cruz and Progreso. A nonimmune passenger from this vessel under detention at Tricornia detention station, was found with fever and transferred to Las Animas Hospital, where he developed a severe case of yellow fever. This passenger had been in Vera Cruz eight days, and embarked on the *Esperanza* on November 13. The vessel arrived here on the 17th and the patient was sent to Las Animas on the 18th. The case ended fatally December 3, 1902.

December 11, 1902.—American steamship *Matanzas*, from Tampico. One of the crew, an Italian, was taken sick on the night of arrival with fever, and was removed the next morning to Las Animas Hospital, where the Commission diagnosed the case, and decided it to be one of yellow fever. This vessel had been at dock at Tampico, and this sailor had been ashore. Case recovered.

February 12, 1903.—American steamship *Esperanza*, from Vera Cruz and Progreso, with one cabin passenger ill with symptoms of yellow fever. The case was removed to Las Animas Hospital, and diagnosis confirmed by Yellow Fever Commission. The patient, a captain in the New York and Cuba Mail Steamship Company, had resided at Progreso for some months. He was taken ill on February 7, boarded the *Esperanza* on the 9th, so he was on the fifth day of his sickness on arrival at this port.

May 1, 1903.—Spanish steamship *Montserrat*, from Spain, Canary Islands, and Porto Rico, with one case of smallpox among steerage passengers. This case and the remainder of family were removed to Las Animas Hospital, where two other members of the family developed the disease. The cabin passengers were vaccinated and allowed to land, while the steerage passengers, unprotected by previous attack, were sent to Mariel Quarantine Station for fourteen days' observation. The baggage of passengers and the vessel were disinfected by this Service upon request of Cuban authorities. All of the cases recovered.

May 16, 1903.—Spanish steamship *Ernesto*, from Liverpool, with one of the crew ill with smallpox. Case removed to Las Animas, crew vaccinated and vessel disinfected by this Service upon request of Cuban authorities. Case recovered.

June 15, 1903.—American steamship *Niagara*, from Tampico, with one of the crew ill with fever. Case died while being taken ashore, and autopsy at Las Animas Hospital showed death to be due to yellow fever. Vessel was disinfected by this Service upon request of the Cuban authorities.

June 30, 1903.—American steamship *Matanzas*, from Tampico, with one cabin passenger ill with yellow fever. Patient was taken ill at Tampico on June 25, and boarded the steamer *Matanzas* on the afternoon of the following day. Case was removed to Las Animas Hospital, and cabin compartments on vessel disinfected.



*Annual report of transactions at the national quarantine station, Habana, Cuba, for year ended June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed .....	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed...	71	68	69	64	61	71	71	70	95	72	82	76	870
Steamers disinfected .....	15	15	11	9	0	0	0	0	0	0	2	1	53
Sailing vessels inspected and passed.....	17	18	10	8	15	18	11	18	21	25	13	24	198
Sailing vessels disinfected .....	13	12	4	2	0	0	0	0	0	0	1	0	32
Crews on steamers.....	2,832	2,701	3,282	3,246	3,126	3,747	4,430	3,856	4,693	3,896	3,903	3,572	43,284
Crews on sailing vessels.....	160	140	86	65	136	142	89	153	180	185	100	196	1,632
Passengers on steamers .....	1,196	1,200	1,306	1,259	1,384	1,576	2,405	2,821	3,640	2,006	3,074	1,857	23,724
Passengers on sailing vessels...	0	0	0	1	0	4	3	5	12	3	2	2	32

*Mortuary data of Habana for fiscal year ended June 30, 1903.*

Month.	Number of deaths.	Month.	Number of deaths.
1902.		1903.	
July .....	584	January .....	474
August.....	533	February.....	416
September.....	404	March.....	456
October.....	412	April.....	474
November.....	418	May.....	451
December.....	457	June.....	400

Total deaths during year, 5,479.

## MATANZAS.

REPORT OF ASST. SURG. R. H. VON EZDORF.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Matanzas, Cuba, August 11, 1903.*

SIR: I have the honor to submit herewith an annual report of the transactions at this port for the period covered from July 1, 1902, to June 30, 1903, inclusive.

The object of the service at this port has been to enforce the United States quarantine regulations to be observed at foreign ports, with reference to the sanitary condition of the passengers, cargo, and crew of vessels whose ultimate destination was a port in the United States. A bill of health, in duplicate, setting forth these facts, was issued to each such vessel after satisfying myself that the requirements were duly complied with.

For this purpose an inspection of the vessel, cargo, passengers, and crew was made in each instance where a vessel was leaving this port direct for the United States, and the conditions found noted on the bill of health. Where a vessel was leaving via other Cuban ports a bill of health was issued in the office.

The fact of having made a personal inspection was always noted on the bills of health, and if any person on board at such inspection was found sick, a short history and diagnosis was also noted. Several instances occurred where one of the crew was suffering with typhoid fever or tuberculosis. Instructions of precautionary measures to be taken were issued either verbally or in writing to the captains of the respective vessels.

During the close quarantine season of 1902 vessels leaving for New Orleans or Mobile were disinfected immediately prior to sailing. This work was done under my personal supervision by the Cuban quarantine service, which is fully equipped with a floating disinfecting plant as established by the Service during the intervention of the United States.



The necessity of disinfection of vessels during close quarantine of 1903 has so far not arisen, as quarantine against Cuba by the Southern States has been less rigid, a disinfection upon arrival at port of destination being the only requirement.

For the period covered by this report, the sanitary condition of the port has been good, and the diseases prevailing have been reported on the bills of health as "ordinary."

In relation to the quarantine service conducted by the Cuban authorities at this port, it may be said that it has been efficient and rigid, the same officer and employees trained under the American régime being in control.

A quarantine by Cuba was declared against vessels from Mexican ports early in the year. Vessels so quarantined were required to keep their quarantine flag hoisted, and no communication with shore was permitted except by persons holding an immune certificate and by the stevedores employed in loading or unloading the cargo.

No quarantinable disease has during this period appeared upon any vessel entering this port. When anyone has been reported sick aboard any vessel arriving, the quarantine officer has invariably notified me.

Weekly reports of the transactions of the Service at this port have been regularly submitted.

The good sanitary work in the city continues under the direction of its efficient health officer, Dr. Alberto Schweyer.

The streets are kept clean, garbage is collected daily, inspection of houses made every day and, when found necessary, are lined and disinfected. No accumulation of filth is tolerated anywhere. A report of all infectious diseases occurring is required.

A summary of such reports for the year follows:

Diseases.	Cases.	Deaths.
Typhoid fever.....	20	6
Diphtheria.....	23	1
Scarlet fever.....	2	0
Dysentery.....	1	0
Leprosy.....	2	1

The following are the statistics of the transactions for the period covered by this report:

Bills of health issued.....	279
Crew of vessels.....	8,320
Passengers.....	1,386
Vessels disinfected.....	16
Immune certificates issued.....	15
Total deaths in city of Matanzas.....	828
Annual rate of mortality.....	17.25
Estimated population.....	48,000
Quarantinable diseases reported.....	None.

Pleasant relations with the Cuban authorities have been maintained and every facility has been offered and extended by them for obtaining the required facts in the conduct of this office.

Respectfully,

R. H. VON EZDORF,  
*Passed Assistant Surgeon.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### NUEVITAS.

REPORT OF ACTING ASST. SURG. E. F. McCONNELL.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Nuevitas, Cuba, July 6, 1903.*

SIR: I have the honor to inclose herewith report of the transactions of this station for the fiscal year ending June 30, 1903.

No repairs or improvements were done at this station during the past year, and none will be necessary during the ensuing year.



The sanitary condition of this port is and has been excellent throughout the year. No quarantinable diseases were reported.

I inclose mortuary reports of the city of Puerto Principe and this port, which includes the villages of Lugareno and Ensenada.

Respectfully,

E. F. McCONNELL,  
Acting Assistant Surgeon.

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosures.]

*Annual report of transactions at the Nuevitas National Quarantine Station for year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed .....	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed .....	8	6	5	7	5	3	4	4	4	9	16	11	82
Steamers disinfected .....	1	1	0	0	0	0	0	0	0	0	0	0	2
Sailing vessels inspected and passed .....	2	2	0	0	2	2	0	3	2	0	6	2	21
Sailing vessels disinfected .....	2	0	0	0	0	0	0	0	0	0	0	0	2
Crew on steamers .....	331	290	241	307	256	134	198	207	204	343	417	380	3,308
Crew on sailing vessels .....	36	18	0	0	19	17	0	21	12	.....	54	18	195
Passengers on steamers .....	180	178	185	125	221	9	43	34	207	128	53	97	1,460
Passengers on sailing vessels .....	0	0	0	0	0	0	0	0	0	0	0	0	0

*Mortality report for the twelve months ending June 30, 1903.*

PUERTO PRINCIPE, CUBA.

[Estimated population, 30,000.]

Cause of death.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
Anemia .....	1	.....	.....	1	1	1	.....	.....	.....	1	.....	.....
Bright's disease .....	.....	1	.....	.....	.....	.....	2	.....	.....	.....	2	1
Cancer .....	3	1	2	1	2	1	.....	2	1	.....	.....	4
Cerebral lesions .....	.....	1	1	5	4	5	2	5	1	6	2	1
Cirrhosis .....	1	1	.....	.....	1	1	.....	.....	.....	1	2	.....
Cholera, infantile .....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dysentery .....	1	1	1	2	.....	.....	.....	1	1	1	.....	.....
Enteritis .....	6	9	5	1	4	1	6	6	6	5	2	1
Fever:												
Malarial .....	2	1	4	4	.....	1	1	1	.....	1	.....	1
Pernicious malarial .....	1	2	3	2	1	1	2	2	2	1	5	.....
Enteric .....	.....	2	1	.....	.....	2	1	.....	.....	1	1	1
Enteric malarial .....	.....	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Gastric .....	1	2	2	.....	1	2	.....	.....	.....	.....	.....	.....
Gastro-enteritis .....	1	2	2	.....	4	.....	.....	.....	.....	5	3	1
Inanition .....	9	3	3	3	8	6	2	9	2	1	3	1
Leprosy .....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Meningitis .....	.....	4	5	5	2	2	1	4	1	5	5	2
Pneumonia .....	3	.....	2	1	.....	1	4	4	4	.....	3	1
Tuberculosis .....	8	6	8	5	10	8	3	4	13	7	5	8
Tetanus, infantile .....	3	2	3	2	4	4	8	3	6	2	12	10
All other causes .....	17	15	18	19	15	22	28	20	23	18	18	9
Total .....	57	55	61	51	57	58	60	61	61	56	63	41

Total deaths, 681.



*Mortality report for the twelve months ending June 30, 1903—Continued.*

## NUEVITAS, CUBA.

[Estimated population, 4,000.]

Cause of death.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
Anemia .....		1										
Bright's disease .....												
Cancer .....	1				1					1		1
Cerebral lesions .....				1	1	2	1					
Cholera, infantile .....	2	2										
Dysentery .....		1							1			
Enteritis .....	1	1	1	1		1						
Fever:												
Malarial .....											1	
Pernicious malarial .....	1	3		1		1					1	
Enteric .....		1				1						
Gastric .....												
Gastro-enteritis .....												1
Inanition .....	1		1	1					1			
Leprosy .....												
Meningitis .....				1	1					1		
Pneumonia .....	1			1	1	1						
Tuberculosis .....	2					2	3	2	3	2		
Tetanus, infantile .....	1		1	3	1				2			1
All other causes .....	2	2	2	4		1	4	3		3	3	4
Total .....	12	11	5	13	5	9	8	5	7	7	5	7

Total deaths, 94.

## SANTIAGO.

## REPORT OF ACTING ASST. SURG. RICHARD WILSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Santiago de Cuba, July 18, 1903.*

SIR: I have the honor to make the following report for the fiscal year ended June 30, 1903.

July 1, 1902, found Acting Asst. Surg. Alexander B. McDowell in charge. He was taken sick soon after this and went to Habana, leaving here July 9. He left Dr. H. S. Caminero, the port physician, in charge of his work, leaving him some bills of health signed in blank.

On July 15 I received a telegram from Surgeon Glennan, then at Habana, nominating me acting assistant surgeon, to date from the 16th.

The United States consul had not yet arrived, and through the courtesy of Dr. H. S. Caminero, port physician and director of the fourth maritime district of Cuba, the Service was occupying a room in the office of the Sanidad Maritima. Like Doctor McDowell, I was treated with the greatest consideration, and was allowed the use of the steam launch for official duties.

On July 20 Consul R. E. Holaday arrived. He opened his office July 30. On July 31 the consul signed his first bill of health; beginning with this one, I signed them in the margin. On July 31 the consul was officially notified by telegraph that I was attached to his office, and on August 2 I moved in.

On October 15 I was informed by telegram that closed quarantine against Cuba had been removed. Another telegram, dated October 20, informed me that this "did not apply to Porto Rico; continue disinfection." November 1 this too was removed, and since then no vessel has been disinfected.

Last July the work at this station consisted of the following: To sign bills of health, inspect passengers and crews, supervise disinfection of vessels bound for the United States and Porto Rico, certify to same, and forward weekly reports.

You will notice by referring to the summary of the work done during this fiscal year (inclosure No. 1) that at first there were from two to four vessels disinfected every month. I was always present on these occasions and watched the process to see that everything was well done. After November 1 there has been no vessel disinfected. With this exception the work has not changed.

The number of vessels going to the United States has increased slowly and slightly. It is likely to decrease again a little, as part of this increase was caused by vessels going to Daiquiri being compelled to come to Santiago de Cuba to enter and clear in the custom-house. This began the end of March and continued until the beginning



of June, when it was discontinued again. The smallest number of vessels leaving Santiago for the United States was in September, 1902, when there were only twenty. The greatest number was in March, 1903, when there were 34.

The greatest number of passengers went off in March, 1903, the total being 402; the smallest number in April, 1903, there being only 140.

Personal certificates were issued only during July and August, 1902; then they were discontinued.

Baggage continued to be inspected or disinfected and properly labeled until the end of October, 1902, when the disinfection of vessels was stopped.

#### HEALTH OF THE CITY.

Taken as a whole, the health of the city has been good. The only contagious disease present has been diphtheria, of which a few cases have been reported during the year. To the best of my knowledge there were only 5 deaths from this cause during the fiscal year.

No case of yellow fever has developed in this city, nor has any been brought here from foreign ports.

There has been no smallpox in the city or surrounding district, but for the last five months the city authorities have been vaccinating several thousand every month. These have been principally children.

The greatest mortality in this city is caused by general diseases (Bertillon classification), especially by tuberculosis. During the year 1902 there were 170 deaths from tuberculosis, this being about one-fifth of the total deaths. During the first semester of 1903, there have been 78 deaths, which is about one-sixth of the total deaths.

After general diseases the greatest mortality is caused by digestive diseases, of which, in 1892, there were 141, which is about one-sixth of the total deaths. Of this number 80 were under 2 years old. During the first semester of 1903, there have been 118 deaths from digestive diseases, which is not quite one-fourth of the total deaths. Of this number 69 were under 2 years old.

In June, 1903, the total deaths from digestive diseases was 49, which is a tremendous increase, being more than three times the number for May, 1903, which was 15. In June, 1902, the mortality from this cause was 14, and in June, 1901, the mortality was 19. Of these 49 deaths, 46 were under 2 years old, and most of these under 1 year. I do not know to what to attribute this enormous death rate among infants. Probably the long severe drought, followed by the heavy rains of this season, would account for part of these cases by affecting the water supply; bad care and excess of moist heat have undoubtedly caused many to succumb. I am glad to say that the first week of July has shown a decrease in the death rate.

For further details I will refer you to inclosure No. 2, which is a table of mortality statistics for the fiscal year 1902-3.

The streets of the city as a whole are kept clean; even out-of-the-way places are swept, but these are difficult to clean, being unpaved and wearing out unevenly, leaving holes for dirt and water to collect in.

#### SANIDAD MARITIMA.

The Cuban quarantine officers at this port seem to be doing good work, but should a vessel come in requiring disinfection, they will be at a great disadvantage, for not only is the disinfecting barge *Rough Rider* in bad condition, but the detention camp at Cayo Duan has been taken away from them and all the property has been removed, so that they have no place where they can send contagious diseases.

The new vessel, *San Rafael* (the purchase of which was announced in Public Health Reports, Vol. XVIII, No. 26), has not yet arrived.

#### MOSQUITO BRIGADE.

A gang of eight men, with a boss, has been organized under the orders of the medical director of the sanitary department of the city, whose business is to make an inspection of the houses and streets and drain or put crude petroleum wherever they deem it necessary in order to kill the larvæ of mosquitoes. This is a permanent organization, with a sufficient appropriation to do the work well. They will work only within the city limits. They begin work with the new fiscal year, July 1, 1903.

I inclose herein a tabulated summary of the work for the fiscal year 1902-3 (inclosure No. 1), and a table of mortality statistics for the fiscal year 1902-3 (inclosure No. 2).

Respectfully,

RICHARD WILSON,  
Acting Assistant Surgeon, in Charge.

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.



[Inclosure No. 1.]

*Summary of work at Santiago de Cuba for the fiscal year ending June 30, 1903.*

	1902.						1903.					
	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.
Bills of health issued and outgoing vessels inspected.....	21	24	20	26	22	22	24	21	34	28	28	25
Crews.....	815	937	745	923	813	755	1,139	953	1,297	896	1,194	855
Passengers.....	189	374	239	243	384	202	587	405	442	140	423	141
Vessels quarantined.....	0	0	0	0	0	0	0	0	0	0	0	0
Vessels disinfected.....	3	2	4	2	0	0	0	0	0	0	0	0
Certificates issued:												
(a) Immune.....	6	19	2	0	0	0	0	0	0	0	0	0
(b) Nonimmune.....	63	74	0	0	0	0	0	0	0	0	0	0
Applicants for immune certificates rejected.....	9	9	0	0	0	0	0	0	0	0	0	0
Persons vaccinated.....	4	0	0	0	0	0	0	0	0	0	0	0
Pieces of out-bound baggage:												
(a) Inspected.....	59	321	30	28	0	0	0	0	0	0	0	0
(b) Disinfected.....	76	112	85	77	0	0	0	0	0	0	0	0
Deaths from yellow fever.....	0	0	0	0	0	0	0	0	0	0	0	0
Deaths from other contagious diseases.....	0	0	0	0	a 1	a 3	a 1	0	0	0	0	0
Deaths from all causes (stillbirths not counted).....	83	79	48	59	81	70	78	71	80	59	78	121
Cases of quarantinable diseases reported in city.....	0	0	0	0	0	0	0	0	0	0	0	0
Cases of other contagious diseases reported in city.....	(b)	(b)	(b)	(b)	(b)	(b)	0	0	0	0	a 2	0
Certificates issued for shipping remains of dead bodies to the United States.....	0	0	0	0	0	0	c 1	d 5	0	0	0	0

	1902.			1903.			Grand total.
	Third quarter.	Fourth quarter.	Total.	First quarter.	Second quarter.	Total.	
Bills of health issued and outgoing vessels inspected.....	65	70	135	79	81	160	295
Crews.....	2,497	2,491	4,988	3,389	2,945	6,334	11,322
Passengers.....	802	829	1,631	1,434	704	2,138	3,769
Vessels quarantined.....	0	0	0	0	0	0	0
Vessels disinfected.....	9	2	11	0	0	0	11
Certificates issued:							
(a) Immune.....	27	0	27	0	0	0	27
(b) Nonimmune.....	137	0	137	0	0	0	137
Applicants for immune certificates rejected.....	18	0	18	0	0	0	18
Persons vaccinated.....	4	0	4	0	0	0	4
Pieces of out-bound baggage:							
(a) Inspected.....	410	28	438	0	0	0	438
(b) Disinfected.....	273	77	250	0	0	0	250
Deaths from yellow fever.....	0	0	0	0	0	0	0
Deaths from other contagious diseases.....	0	4	4	1	0	1	5
Deaths from all causes (stillbirths not counted).....	210	210	420	229	257	486	906
Cases of quarantinable diseases reported in city.....	0	0	0	0	0	0	0
Cases of other contagious diseases reported in city.....	(e)	(e)	(e)	0	2	2	(f)
Certificates issued for shipping remains of dead bodies to the United States.....	0	0	0	6	0	6	6

a Diphtheria.

b Two to 4 cases of diphtheria reported each month.

c Shipping body to France via New York.

d American soldiers.

e Exact number not known.

f A few.



[Inclosure No. 2.]

*Mortality statistics at Santiago de Cuba for the fiscal year ending June 30, 1903.*

	1902.						1903.					
	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.
I. General diseases.....	35	28	14	26	30	31	32	19	30	30	25	28
II. Diseases of the nervous system and of organs of special sense.....	8	8	10	7	9	12	11	10	10	6	2	3
III. Diseases of the circulatory apparatus.....	5	7	6	4	7	6	9	6	6	5	14	9
IV. Diseases of the respiratory apparatus.....	2	3	2	5	8	3	2	5	4	2	7	3
V. Diseases of the digestive apparatus.....	20	19	10	10	11	10	15	14	16	9	15	49
VI. Diseases of the genito-urinary apparatus and its adnexa.....	2	3	2	1	7	1	3	2	3	1	0	6
VII. The puerperal state.....	2	2	1	0	1	0	0	0	1	0	2	1
VIII. Diseases of the skin and cellular tissues.....	0	0	1	1	0	0	0	0	0	0	0	1
IX. Diseases of the organs of locomotion.....	0	0	0	0	0	0	0	0	0	0	0	0
X. Malformations.....	0	1	0	1	0	0	0	2	0	0	1	1
XI. Early infancy.....	2	0	0	1	0	0	1	1	2	1	6	1
XII. Old age.....	0	2	0	0	1	3	0	1	0	0	0	3
XIII. Affections produced by external causes.....	0	0	0	0	0	0	1	2	2	2	0	0
XIV. Ill-defined diseases.....	7	6	2	3	7	5	4	9	6	3	5	6
Total.....	83	79	48	56	81	70	78	71	80	59	77	121
Stillbirths reported.....	8	11	14	7	11	11	14	12	15	10	11	14
Total official number of deaths.....	91	90	62	66	92	81	92	83	95	69	88	135

	1902.			1903.			Grand total.
	Third quarter.	Fourth quarter.	Total.	First quarter.	Second quarter.	Total.	
I. General diseases.....	77	87	164	81	93	174	338
II. Diseases of the nervous system and of organs of special sense.....	26	28	54	31	11	42	96
III. Diseases of the circulatory apparatus.....	18	17	35	21	28	49	84
IV. Diseases of the respiratory apparatus.....	7	16	23	11	12	23	46
V. Diseases of the digestive apparatus.....	49	31	80	45	73	118	198
VI. Diseases of the genito-urinary apparatus and its adnexa.....	7	9	16	8	7	15	31
VII. The puerperal state.....	5	1	6	1	3	4	10
VIII. Diseases of the skin and cellular tissues.....	1	1	2	0	1	1	3
IX. Diseases of the organs of locomotion.....	0	0	0	0	0	0	0
X. Malformations.....	1	1	2	2	2	4	6
XI. Early infancy.....	2	1	3	4	8	12	15
XII. Old age.....	2	4	6	1	3	4	10
XIII. Affections produced by external causes.....	0	0	0	5	2	7	7
XIV. Ill-defined diseases.....	15	15	30	19	14	33	63
Total.....	210	210	420	229	257	486	906
Stillbirths reported.....	33	29	62	41	35	76	138
Total official number of deaths.....	243	239	482	270	292	562	1,044



## CIENFUEGOS.

REPORT OF ACTING ASST. SURG. R. L. McMAHON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
Cienfuegos, Cuba, June 30, 1903.

SIR: I have the honor to make the following annual report of the transactions at this station, health condition, sanitation, and other matters pertaining to the public health for the year ended June 30, 1903:

*Statement of the office transactions and inspection service.*

Month.	Bills of health.	Vessels inspected.	Crews inspected.	Passengers inspected.	Health certificates.	Immune certificates.	Vessels disinfect.
1902.							
July .....	16	16	592	106	15	7	2
August .....	16	16	527	110	15	0	3
September .....	15	15	641	73	16	0	4
October .....	14	14	514	0	0	0	0
November .....	11	11	412	19	0	0	0
December .....	17	17	633	24	0	0	0
1903.							
January .....	11	11	397	34	0	0	0
February .....	23	23	745	70	0	0	0
March .....	23	23	781	74	0	0	0
April .....	25	25	819	35	0	0	0
May .....	16	16	460	8	0	0	0
June .....	17	17	536	1	0	0	0
Total .....	204	204	7,057	554	46	7	9

All bills of health issued at this port during this year were clean.

No quarantinable disease appeared among either crews or passengers.

In addition to the above service performed, four shipments of bones and hides were inspected and passed for shipment, being dry and in good condition.

The remains of two dead bodies were inspected and proper certificates given for shipment to the United States.

Only water and stone ballast was taken from this port and properly inspected before departure.

*Mortuary report for Cienfuegos for the year 1902-3.*

[Population, 30,080.]

Month.	Tubercu- losis.	Malaria.		Gastro-in- testinal diseases.	Tetanus.	Menin- gitis.	Conta- gious dis- eases.	Other causes.	Total.
		Perni- ciosa.	Palu- dism.						
1902.									
July .....	18	8	7	7	2	2	.....	44	78
August .....	7	2	6	5	4	2	.....	23	49
September .....	6	8	12	16	4	3	.....	18	67
October .....	10	7	8	9	1	0	.....	37	72
November .....	12	1	5	2	1	0	.....	36	57
December .....	14	1	9	5	1	2	.....	19	51
1903.									
January .....	12	2	4	1	6	1	a 1	50	77
February .....	12	2	0	10	4	1	b 1	21	51
March .....	5	2	9	6	4	3	.....	23	52
April .....	8	2	2	9	4	3	.....	17	55
May .....	9	5	7	7	1	3	b 1	39	72
June .....	17	3	7	7	2	2	b 1	36	75
Total .....	130	43	76	84	34	22	4	363	756

a Anthrax.

b Diphtheria.



*Comparative table of mortality for past three years.*

Month.	1900-1901.	1901-2.	1902-3.
July .....	80	80	78
August .....	89	85	49
September .....	72	50	67
October .....	66	50	72
November .....	84	60	57
December .....	73	69	51
January .....	102	64	77
February .....	75	57	51
March .....	72	64	52
April .....	69	58	55
May .....	87	61	72
June .....	87	61	75
Total .....	956	759	756

## SANITATION.

*Water supply.*—The water supply of Cienfuegos is obtained from a small river 5 miles from the city. This water is not of good quality for drinking purposes, but is used by a great many people after being boiled and filtered.

There is not sufficient for the needs of the city, and most of the people depend on rain water stored in cisterns. During the protracted dry season the cistern water gives out, and there is often a great scarcity of water, especially among the poorer people.

*Sewerage.*—There is practically no sewerage system in the city. Kitchen slops, bath water, and other liquid refuse from the houses are thrown into the streets, and heavier garbage is placed in boxes and removed at night by garbage wagons to the outskirts of the city and burned.

Most of the houses are provided with cesspools, but a great many of the poorer houses have only surface closets.

The streets of the city are kept fairly clean all of the time by sweepers.

*Mosquitoes.*—With the exception of the distribution of a little oil by a few families, there has been no effort made here to extinguish these pests, which abound in great numbers and of all varieties.

*Incoming inspection by Cuban quarantine officials.*—All vessels entering this port are inspected and treated by the Cuban quarantine officer the same as is practiced under the United States quarantine laws. The work done here by these officials is very efficient, and no contagious sickness has been allowed to enter the city through this port during this year.

*Local government.*—Sanitary and health affairs are controlled by a local board of health which is subordinate to the superior board of health of Habana. In addition to the local board there is a provincial inspector (physician) for the entire province of Santa Clara, who makes investigations regarding health conditions and reports the same to the superior board.

There is also a local board consisting of four physicians whose duty it is to investigate all suspicious contagious and quarantinable sickness that might appear in the city, with a view to making a proper diagnosis.

No yellow fever has appeared here during this year, and with the continuance of the present strict quarantine maintained against infected ports there is not likely to be any introduced through this port.

I have the honor to be, respectfully,

R. L. McMAHON,  
*Acting Assistant Surgeon, in Charge.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## PORTO RICO.

During the past year the sanitary condition of Porto Rico has been very satisfactory. On October 22, 1902, Passed Assistant Surgeon Mathewson was relieved from duty as chief quarantine officer for Porto Rico, and Asst. Surg. W. W. King was ordered from Ponce to



San Juan to succeed him. On April 21, 1903, Asst. Surg. Joseph Goldberger was ordered from Ponce to Vera Cruz, Mexico, Acting Asst. Surg. F. Aleman being left in temporary charge. The following named acting assistant surgeons were on duty at the subports: P. F. Martelo, at Humacao; E. Lopez, at Fajardo; J. T. Piza, at Arroyo; Manuel Martinez Rossello, at Arecibo; J. Benejam, at Aguadilla, and Rafael Miranda, at Mayaguez. Acting Asst. Surg. J. F. Torres relieved Dr. Aleman at Ponce.

#### TITLE TO MIRAFLORES ISLAND.

As it is proposed to make considerable improvements to the quarantine plant on Miraflores Island, in San Juan Harbor, it became necessary to investigate the validity of the title of the Service to that island, and the following correspondence ensued:

[Letters.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, April 10, 1903.*

SIR: I have the honor to request that the proper authorities ascertain whether the title of the Department to Miraflores Island, in San Juan Harbor, Porto Rico, is properly vested in the United States? Miraflores Island was transferred by Executive order July 22, 1902, to this Department for use by the Public Health and Marine-Hospital Service as a quarantine station.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*

The SECRETARY OF THE TREASURY.

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TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,  
*Washington, April 14, 1903.*

SIR: This Department has the honor to acknowledge the receipt of your letter of the 10th instant, requesting "that the proper authorities ascertain whether the title of the Department to Miraflores Island, in San Juan Harbor, Porto Rico, is properly vested in the United States." You state that Miraflores Island was transferred by Executive order July 22, 1902, to the Treasury Department for the use of the Public Health and Marine-Hospital Service as a quarantine station.

In reply, you are advised that the effect of the proclamation referred to is not to change, in any way, the title of the United States to the island in question, but to place the custody and control thereof under this Department for the use of the Bureau of Public Health and Marine-Hospital Service for the site for a marine hospital, or for a quarantine station, or for both of these purposes, as recited in said proclamation.

Assuming that the title of the United States to said island is good, this Department has the undisputed custody and control of said island for the objects and purposes mentioned.

Respectfully,

M. E. AILES,  
*Assistant Secretary.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

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TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, May 13, 1903.*

SIR: Referring to Executive order of July 22, 1902, transferring Miraflores Island, San Juan Harbor, P. R., to the Treasury Department for the use of the Public Health and Marine-Hospital Service as a quarantine station, I have to request that a written opinion be requested from the honorable the Attorney-General, as to the validity of the title of the United States to the property, and that a copy of such opinion be furnished to this Bureau.

The full description of the property in question, by metes and bounds, is as follows:



"All that piece of land in the easterly part of the harbor of San Juan, P. R., known as Miraflores Island, and which is bounded and described as follows:

"Beginning at the westerly end of the stone pier on the westerly side of said island, in the center of said westerly end, and running thence N.  $39^{\circ} 15'$  W. 930 feet; thence N.  $54^{\circ} 40'$  W. 1,200 feet; thence N.  $88^{\circ} 45'$  E. 1,500 feet; thence S.  $58^{\circ} 45'$  E. 400 feet; thence N.  $79^{\circ} 30'$  E. 900 feet; thence S.  $6^{\circ} 45'$  E. 1,650 feet; thence S.  $64^{\circ} 40'$  W. 830 feet; thence N.  $45^{\circ} 20'$  W. 840 feet to the point or place of beginning.

"Together with a right of way out by the present roadway to the military road in Santurce.

"Together with the land under water adjacent to said island to deep water."

Respectfully,

GEO. PURVIANCE,  
*Acting Surgeon-General.*

SUPERVISING ARCHITECT,  
*Treasury Department, Washington, D. C.*

The Executive order above referred to is as follows:

[Executive order.]

WHITE HOUSE, Washington, D. C., July 22, 1902.

By virtue of the authority vested in me by the act of Congress approved July 1, 1902, entitled "An act authorizing the President to reserve public lands and buildings in the island of Porto Rico for public uses and granting other public lands and buildings to the government of Porto Rico, and for other purposes," Miraflores Island, in the harbor of San Juan, P. R., is hereby reserved for use as a quarantine station or a site for a marine hospital or for both said purposes, under the control of the Public Health and Marine-Hospital Service of the United States.

THEODORE ROOSEVELT.

A reply has been received from the Supervising Architect stating that the matter has been referred to the Attorney-General with request for opinion as requested.

#### STEGOMYIA MOSQUITOES IN SAN JUAN.

The following report by Passed Assistant Surgeon Lumsden as to the number of stegomyia mosquitoes in San Juan is interesting, showing the necessity for strict quarantine against ports infected with yellow fever:

SAN JUAN, PORTO RICO, June 17, 1903.

SIR: I have the honor to report that, after making a very slight study of the mosquitoes of this city, I am of the opinion that the proportion of the species *stegomyia fasciata* is rather large.

For instance, during the evenings of the 13th and 14th instant, in a well-ventilated room at the Hotel Inglaterra, I succeeded in capturing five mosquitoes of this species.

The Hotel Inglaterra is centrally located, and the neighborhood immediately surrounding it is in better sanitary condition than are many other parts of the city.

The number of mosquitoes generally in San Juan at the present time seems to me to be only moderate, as compared with the numbers found in many of the cities of the Southern States during the summer months, and therefore the number of specimens of *stegomyia fasciata* seen here becomes conspicuous.

It is my intention to make a further study of this subject and to communicate the findings to the insular superior board of health, with the hope that some measures may be adopted tending to the extermination of the *stegomyia fasciata* in this port.

Respectfully,

L. L. LUMSDEN,  
*Passed Assistant Surgeon.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



## SAN JUAN AND SUBPORTS.

REPORT BY P. A. SURG. L. L. LUMSDEN, ACTING CHIEF QUARANTINE OFFICER OF PORTO RICO.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*San Juan, Porto Rico, July 7, 1903.*

SIR: As directed by Bureau letter of June 13, 1903, I have the honor to submit the following report of the transactions at this station for the fiscal year ending June 30, 1903:

## SAN JUAN.

*Equipment.*—The addition of one 10-ton barge, constructed in accordance with Department authority of August 12, 1902, intended for use in transporting persons and baggage to the quarantine station from the vessels in quarantine, marks the only change during the year in the equipment of the station.

*In quarantine.*—All vessels subject to quarantine inspection arriving at San Juan are required to fly a yellow flag at the foremast head from the time of their entrance into the bay until pratique is given by the quarantine officer. They are boarded and inspected in the "out-quarantine" anchorage, which anchorage is located about 1 mile from the main water front of the city.

Vessels are inspected between sunrise and sunset, except in case of vessels in distress. The method of making the inspection has been described in full in previous annual reports from this station. It is similar to that followed generally at the national quarantine stations in the United States. Particular search is made to determine whether or not there are mosquitoes on board vessels which come from ports infected with or suspected of being infected with yellow fever. Vessels from clean ports with satisfactory sanitary history while at ports of departure and en route are inspected and allowed to dock.

Vessels arriving with cases of quarantinable disease on board or with histories indicating that they have been exposed to and are probably harboring infection of quarantinable nature are taken to the "in-quarantine" anchorage, which is located opposite the quarantine station and about 2 miles from the city. There the disinfecting barge *Defender* is placed alongside and the vessel disinfected in accordance with the United States Quarantine Regulations. Personal effects of passengers and crew, baggage, and mails are disinfected in the Kinyoun-Francis chambers on the *Defender*, either steam or formalin being used as indicated. Passengers and crew are taken to the station on Miraflores Island, where they are given a bath and change of clothing and placed in detention barracks.

The sick are isolated in the "lazaretto," and necessary precautions taken to prevent communication between the sick and well. When the illness is yellow fever all possible care is taken to prevent mosquitoes gaining access to the patients.

Vessels from infected or "suspected" ports with no history of quarantinable disease having developed aboard en route, and which stop at San Juan for only a few hours and then proceed to their regular ports of destination, are held in quarantine during their stay at this port and allowed to take passengers and cargo under guard.

Of this class of vessels there arrive here monthly, on regular schedule, three passenger steamers which come from ports infected with or suspected of being infected with yellow fever. Of these, two are of the (American) Red D Line and one of the Spanish Transatlantic Line. The steamers of the Red D Line come from Puerto Cabello, La Guaira, and Curaçao. They remain at San Juan about six hours, discharging and taking passengers and cargo, and proceed on their regular run to New York.

The steamers of the Spanish Transatlantic Line come from Habana, Port Limon, Colon, Barranquilla, Curaçao, Puerto Cabello, and La Guaira via Ponce. They remain at San Juan about twenty-four hours, discharging passengers for Porto Rico, taking coal, water, and passengers, and depart on their regular run to Barcelona, Spain.

Passengers for this port arriving on vessels of these lines, or on other vessels coming from similar ports, who can present evidence of immunity from yellow fever, are allowed to land after an inspection of their baggage has been made to determine its freedom from mosquitoes. Passengers who can not present evidence of such immunity are detained at the quarantine station for the required observation period (five days) before being allowed to land.

The quarantine restrictions placed on vessels of this class during their stay at this port are, briefly, as follows: The vessel is held in the "out-quarantine" anchorage and required to anchor as far as is practicable from other vessels lying in the bay. Quarantine attendants, presumably immunes, are stationed aboard as guards to see



that there is no unauthorized communication held with the vessel. No persons unauthorized by the quarantine officer are allowed to go within 200 feet of the vessel. To enforce this restriction the quarantine launch *Long* is used to patrol the anchorage when considered necessary. The stevedores employed to work cargo and the boatmen employed to transport passengers to and from the vessel are required to present evidence that they are immunes, and be so registered at this office.

The number of small boats which take passengers and cargo to and from the vessel is limited as much as possible, and the boats designated for that purpose are registered at this office.

The captain and other officers of the vessel are allowed to go ashore during the day to transact necessary business. No others of the vessel's personnel are allowed ashore.

By a rigid enforcement of these precautions the danger of infection being brought ashore from these (only) presumably infected vessels becomes apparently very slight; so slight, in fact, that the method appears preferable to one of disinfecting and detaining these vessels upon arrival here, since such an extreme measure as the latter would probably drive considerable commerce away from the port.

During the year 3 vessels have arrived at San Juan with cases of quarantinable disease on board—2 with yellow fever and 1 with smallpox. Two of these vessels were disinfected and held; the third, viz, the Spanish steamship *Buenos Aires*, from Central American and Venezuelan ports, with a case of suspected yellow fever on board, declined disinfection and put to sea. The suspected case died soon after the vessel arrived here, and the findings at the autopsy tended to confirm the diagnosis of yellow fever.

Two vessels without cases of illness aboard were disinfected during the year. These were the Dutch schooner *Trader* and the American schooner *Corozon de Maria*. These vessels came from a port infected with yellow fever, and mosquitoes (*stegomyia*) in considerable numbers were found aboard at the inspection.

*Out Quarantine.*—As this port throughout the year has been free from quarantinable disease, with the exception of a few sporadic cases of smallpox, there has been done practically no quarantine work on outgoing vessels. Certificates of vaccination have been issued to passengers leaving here bound for ports in Cuba and Santo Domingo. No disinfection of outgoing baggage, mails, or cargo has been done.

At the Public Health and Marine-Hospital Service office, located at No. 3 San Justo street, San Juan, the general administrative part of the quarantine work of the island is transacted. In this office the clerical work of San Juan quarantine station is done, the Marine-Hospital business for San Juan transacted, the reports from the subports prepared, etc.

No cases of yellow fever have occurred on the island of Porto Rico during the fiscal year.

A report obtained from the office of the superior board of health, containing the number and location of cases of smallpox occurring in Porto Rico during the fiscal year ended June 30, 1903, shows 103 cases, with no deaths, a marked improvement in the smallpox situation on the island, as during the fiscal year ended June 30, 1902, there occurred 920 cases, with one death.

Efforts have been continued to exterminate mosquitoes at the quarantine station on Miraflores Island, and the results are somewhat encouraging. The number of mosquitoes prevailing there appears to be not greater than about one-fourth of what it was. It is now very unusual to see a specimen of the *Stegomyia fasciata* on the station, while formerly they were quite numerous.

Samples of blanks used at this station are herewith inclosed.

#### SUBPORTS.

The six subports reporting to this office are Mayaguez, Arecibo, Humacao, Aguadilla, Arroyo, and Fajardo. An acting assistant surgeon is in charge at each of these stations. Weekly and monthly reports of all quarantine transactions at, and mortality statistics of, each of these subports are rendered to this office.

None of the substations are equipped for the disinfection of vessels, and vessels requiring disinfection arriving at any of these subports are remanded to San Juan or Ponce for treatment.

The station at Mayaguez is provided with facilities for the disinfection of mails and baggage by means of formaldehyde gas generated with an autoclave into a metallic-lined room.

The amount of shipping at the other five subports has not been considered sufficiently large to yet warrant the making of any provision for disinfection at these places. Thus the stations at these subports are maintained principally as inspection stations.



At Humacao a 20-foot Whitehall, received from the purveying depot in August, 1902, is used for boarding purposes, and at the end of the fiscal year a boathouse is nearing completion at that station.

At the other subports vessels are boarded in boats operated by the customs service.

During the year no vessels with cases of quarantinable disease on board have arrived at any of the subports.

Respectfully,

L. L. LUMSDEN,  
Passed Assistant Surgeon,

Acting Chief Quarantine Officer for Porto Rico.

The SURGEON-GENERAL,  
Public Health and Marine-Hospital Service.

[Inclosures.]

*Annual report of transactions at San Juan (P. R.) National Quarantine Station for the fiscal year ended June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vesselsspokanand passed.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamersinspected and passed.....	14	15	12	16	22	15	16	25	20	14	13	13	195
Steamers disin- fected.....	0	0	0	1	0	0	0	0	1	0	0	0	2
Sailing vessels in- spected and passed.....	1	1	0	2	6	6	3	10	11	1	5	2	48
Sailing vessels dis- infected.....	0	0	0	0	2	0	0	0	0	0	0	0	2
Crew on steamers..	935	1,170	901	1,479	2,058	1,011	1,296	1,588	1,995	9,151	222	1,123	15,693
Crew on sailing vessels.....	8	7	0	15	52	46	20	789	120	7	42	19	1,125
Passengers on steamers.....	904	806	1,154	857	1,141	932	943	995	822	929	952	676	11,111
Passengers on sail- ing vessels.....	0	0	0	0	4	0	0	9	9	0	4	5	31

*Report of quarantine transactions for the fiscal year ended June 30, 1903, at the subport of Arroyo, P. R.*

[Acting Asst. Surg. J. T. Piza, in charge of station.]

Vessels inspected during the year.....	18
Bills of health issued.....	9
Crews of vessels inspected.....	217
Passengers inspected (total).....	4
Vessels detained in quarantine.....	0
Pieces of baggage disinfected.....	0
Persons vaccinated.....	0
Vessels disinfected.....	0

*Report of quarantine transactions for the fiscal year ended June 30, 1903, at the subport of Arecibo, P. R.*

[Acting Asst. Surg. Manuel M. Rossello, in charge of station.]

Vessels inspected during the year.....	31
Bills of health issued.....	52
Crews of vessels inspected.....	1,024
Passengers inspected (total).....	163
Vessels detained in quarantine.....	0
Pieces of baggage disinfected.....	0
Persons vaccinated.....	33
Vessels disinfected.....	0

*Report of quarantine transactions for the fiscal year ended June 30, 1903, at the subport of Mayaguez, P. R.*

[Acting Asst. Surg. Rafael U. L. Miranda, in charge of station.]

Vessels inspected during the year.....	111
Bills of health issued.....	174
Crews of vessels inspected.....	7,424







## PONCE.

REPORT BY ACTING ASST. SURG. J. F. TORRES.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND.*Ponce, P. R., July 3, 1903.*

SIR: In accordance with Bureau letter June 13, 1903, I have the honor to forward the following report of the quarantine transactions at this station for the fiscal year ended June 30, 1903:

Vessels inspected.....	168
Vessels in quarantine.....	46
Vessels disinfected.....	0
Crew inspected.....	7,870
Passengers for Ponce inspected.....	855
Passengers in transit inspected.....	4,378
Pieces of baggage inspected.....	225
Pieces of baggage disinfected.....	353
Sacks of mail disinfected.....	19
Bills of health issued.....	248

During the year no vessel arrived with quarantinable disease on board. Vessels from suspicious ports of Cuba, Haiti, Santo Domingo, and Central and South America have been held in quarantine, but were not disinfected, as they remained in port only a few hours, transacting business under guard, and only such communication with the shore as was necessary and not considered dangerous.

Nonimmune passengers from suspicious or infected ports were detained in the barge *Argus*. Baggage and mail of these ports were also duly disinfected in the barge.

Since the last report of this station, dated October 20, 1902, for the fiscal year ended June 30, 1902, the same has been furnished with a disinfecting barge containing the appropriate machinery for disinfection, which has been a great improvement added to this station.

Bills of health were issued to all vessels sailing for American ports, and to other ports when application was made for them.

Weekly sanitary reports were made of the sanitary condition, mortality, etc., of this district.

Very respectfully,

J. F. TORRES,  
*Acting Assistant Surgeon.*

Respectfully forwarded.

L. L. LUMSDEN, *Passed Assistant Surgeon,*  
*Acting Chief Quarantine Officer for Porto Rico.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## MEXICO.

## PLAGUE IN ENSENADA AND MAZATLAN.

On December 8, 1902, Assistant Surgeon Decker, at San Diego, Cal., sent the following communication to the Bureau:

[Telegram.]

SAN DIEGO, CAL., *December 8, 1902.*

The president of the local health board has information from physician of Ensenada, Mexico, that 10 cases and 10 deaths by very suspicious disease have occurred there since middle of October. First case in Chinaman, rest in Mexicans, last death on December 5. Sickness lasts from two to eight days and glandular swellings have been observed. Rats dying. There is traffic by steamer with this port 6 times a month, also some overland travel. Health authorities here anxious to have an inspector sent to investigate.

DECKER.

The SURGEON-GENERAL.



On December 12, 1902, Passed Asst. Surg. S. B. Grubbs was ordered to Ensenada, Mexico, to investigate these rumors of plague. Doctor Liceaga, the president of the superior board of health of Mexico, furnished him with a letter of introduction to the Mexican authorities at Ensenada. He arrived at that place on the 17th instant, and immediately proceeded to investigate the suspicious sickness prevailing in the town. On December 26 he wired the Bureau as follows:

[Telegram.]

ENSENADA, MEXICO, *December 26, 1902.*

Surgeon-General WYMAN,  
Washington:

Provisional diagnosis, plague. During past twenty-four hours there have been 2 deaths; very suspicious. There are cases reported at Mazatlan, Mexico. Local quarantine officer thinks it is plague. Port Pacific Mail Line for Chinese. Steamer once month to 'Frisco touches here and other Mexican ports.

GRUBBS.

On January 1, 1903, he reported to the Bureau by letter as follows:

[Letter.]

ENSENADA, MEXICO, *January 1, 1903.*

SIR: I have the honor to submit the following summary concerning the epidemic that has existed in Ensenada, Mexico, during the past ten weeks:

Ensenada is a town claiming 1,400 inhabitants, situated on the northern slope and plain at the extremity of the Bayo de Todos Santos, which is about 70 miles south of San Diego, Cal.

The town has no sewers or waterworks, but is kept fairly clean. Most of the houses are separated one from another, and are built well up off the ground.

The first case of the suspicious malady occurred on October 20, 1902, and was treated, together with 6 other cases, by Dr. L. Goldschmeidt. He has written some excellent notes on these cases, from which I quote the following:

"Number of cases under treatment, 7; number of deaths, 7. [Besides these, 8 other cases with 6 deaths are reported.]"

\* \* \* \* \*

In conclusion, I would state that I believe some, if not a majority, of the above cases were due to plague. However, I believe the conditions here are favorable to the extinction of the disease, built as Ensenada is, of small houses, well separated and flooded with sunlight. Considering the proximity, the danger of spread to the United States is also not very great, in my opinion, especially under mild precautions.

The stage line, running 3 times a week, carries few passengers and no freight on its two days' trip to Tiajuana on the boundary line. The *St. Dennis*, making 6 trips a month to San Diego, stops but twelve hours, lies at anchor, lighters from the beach, and carries very little freight north.

I have to acknowledge the courtesy of all Mexican officials I have met while in Ensenada, especially Doctor Peterson, the local representative of the Consejo de Salubridad. My thanks are also due to Dr. E. B. Alexander, Dr. C. H. Power, and Dr. L. Goldschmeidt for very valuable assistance rendered.

Respectfully,

S. B. GRUBBS,  
*Passed Assistant Surgeon.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Upon receipt of foregoing news from Doctor Grubbs active measures were taken to prevent infection being brought into the United States, and inspectors were placed at all the points on the border at which danger was most to be apprehended.

On December 22, 1902, Dr. Eduardo Liceaga, president of the superior board of health of Mexico, wrote the Bureau as follows:

[Letter.]

MEXICO CITY, MEXICO, *December 22, 1902.*

SIR: With regret I have to inform you that a disease has appeared in the port of Mazatlan which is similar to the plague. I have already sent a bacteriologist to that



place, in order that he may study the nature of the disease. The symptoms lead us to presume that it is really the plague, and up to the present 50 cases have appeared in the poorer quarters of the city. I make this declaration to you in accordance with the resolution of the Washington convention. I am obliged to you for your telegram of the 20th, and have sent to Chicago ordering a supply of serum from the firm whose name was given me from Washington at your request.

Respectfully,

E. LICEAGA.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Ensenada is a small town of 1,400 inhabitants, on the western coast of Mexico, about 70 miles south of San Diego, Cal. From the beginning of this outbreak of plague, on October 20, 1902, the Mexican health authorities adopted and enforced all possible means of suppressing the epidemic. An isolation hospital was established, where all cases were taken for treatment, and a thorough system of disinfection was adopted in houses where infection had occurred, including means to insure the destruction of rats. These same measures were also instituted at Mazatlan.

Foci of infection appeared in Oso, Siqueros, and Villa Union, towns near Mazatlan, but under the stringent measures adopted by health authorities the plague was speedily stamped out.

On February 13, 1903, Asst. Surg. Edward Francis was ordered from the Hygienic Laboratory at Washington to the City of Mexico to confer with Doctor Liceaga and to keep in touch with the situation.

Doctor Liceaga reported the existence of plague in Mazatlan and Ensenada to the Bureau of American Republics, Washington, D. C., on December 22, 1902, and December 31, 1902, respectively, and declared Ensenada free of plague on February 7, 1903. On April 18, 1903, United States Consul Kaiser at Mazatlan reported that plague was officially declared extinct at that port.

#### DETAIL OF OFFICERS TO VERA CRUZ, TAMPICO, AND PROGRESO ON ACCOUNT OF PREVALENCE OF YELLOW FEVER.

Owing to the important shipping interests connecting ports on the Gulf coast of Mexico with ports in the United States, medical officers of the Public Health and Marine-Hospital Service were detailed for duty in the office of the consul at Vera Cruz, Progreso, and Tampico, Mexico, as follows: On April 21, 1903, Asst. Surg. Joseph Goldberger was ordered from Ponce, P. R., to Vera Cruz, Mexico; on April 16, 1903, Acting Asst. Surg. J. F. Harrison was ordered to Progreso, Mexico, and on April 21, 1903, Acting Asst. Surg. John Frick was ordered from Habana, Cuba, to Tampico, Mexico. The following is a copy of the letter of instructions sent to each of these officers:

[Letter of instructions.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, May 4, 1903.*

SIR: Referring to Bureau telegram of April 21, 1903, detailing you for duty in the office of the United States consul at Vera Cruz, Mexico, I have to inform you that your duties comprise the enforcement of the United States quarantine regulations for foreign ports, including the inspection of all vessels leaving Vera Cruz for ports of the United States, either direct or via other ports, and signing, in conjunction with the United States consul, the bills of health issued to same.

You are requested to make a weekly report to the Bureau of your transactions, detailing also the public-health conditions of Vera Cruz and vicinity.



Your attention is specially called to the agency of the *Stegomyia fasciata* as the intermediate host in yellow fever, and all due precautions should be taken to prevent vessels leaving your port for the United States from carrying any of these mosquitoes.

You will find in the files of the consulate a letter from Surg. H. R. Carter, of this Service, under date of March 8, 1902, which it will be well for you to read, as it contains many suggestions of interest on the subject.

You are also requested to enter into communication with medical officers of the Public Health and Marine-Hospital Service located on the Texas-Mexican border, with a view to mutual interchange of information concerning matters of public health. Their addresses are as follows: Acting Asst. Surg. Lea Hume, Public Health and Marine-Hospital Service, Eagle Pass, Tex.; Acting Asst. Surg. E. Alexander, Public Health and Marine-Hospital Service, El Paso, Tex.; Acting Asst. Surg. H. J. Hamilton, Public Health and Marine-Hospital Service, Laredo, Tex.

You should keep complete records of all transactions, in order that report of the same may be transmitted at the close of the season. You are also informed that it will be your duty to submit a complete report of transactions at your station from the time of your arrival up to and including June 30 of this year. This report you will submit to the Bureau immediately after July 1, 1903.

Should any cases of yellow fever or cases suspected of being yellow fever occur at your port, you will immediately inform the Bureau by wire of the fact.

The Department of State has been requested to inform the consul at Vera Cruz of your detail and to instruct him to afford you any assistance he can render.

A copy of the United States laws and regulations will be forwarded to you under separate cover, also list of property left in charge of the consul by the acting assistant surgeon on duty at the port last year. The consul will be instructed by the State Department to turn this property over to you upon your arrival.

Respectfully,

WALTER WYMAN, *Surgeon-General.*

#### ISSUE OF CERTIFICATES OF IMMUNITY FORBIDDEN.

The issuance of certificates of immunity was considered such an important matter last summer by the Bureau that orders were sent to the acting assistant surgeons serving at Vera Cruz and Progreso, Mexico, not to issue immune certificates, as it was not thought that they could collect or properly certify to the necessary data for issuing such a certificate, founded on either a previous attack of yellow fever or residence for at least ten years in the yellow-fever zone. During the present season the same orders have held good.

#### INVESTIGATION AS TO MOSQUITOES CARRIED BY SHIPS.

The following letter from Surg. H. R. Carter, in response to Bureau invitation, contains suggestions which formed part of the instructions to the officers at Mexican ports:

[Letter.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF THE MEDICAL OFFICER IN COMMAND,  
*Baltimore, Md., April 29, 1903.*

SIR: In answer to your letter of the 23d instant, asking for a copy of my letter of March 8, 1902, relative to mosquitoes aboard ship, I would say that I can find no copy of said letter on my files. My recollection is that as the subject of the letter was in no way related to any of my duties at this station, I did not think it proper to write on it officially, and wrote said letter personally to the Surgeon-General. As well as I recollect it, the substance of said letter was as follows:

The purpose is to find out: (1) What vessels from tropical ports bring stegomyia to the United States; (2) which of these bring stegomyia coming aboard at the tropical port with immigrants; (3) which take stegomyia aboard at a United States port and return with them, the active stegomyia making a round trip, as it were; (4) to find at what anchorages in tropical ports vessels are liable to receive stegomyia from shore—i. e., what anchorages are safe or unsafe for vessels in the event of yellow fever prevailing in said port.



For this there should be undertaken a systematic examination of vessels for stegomyia at the tropical port and the United States port of arrival, and (if a regular liner) of departure. This is best done by exposing bowls of water in various places—especially dark places—and hatching the eggs; i. e., bowls should be placed aboard at the United States port, to be renewed on arrival at the tropical port and examined there; fresh bowls to be placed aboard on arrival, to be removed either when she leaves or when she reaches her United States destination.

Adult stegomyia should also be looked for; but failure to find them is far from conclusive evidence of their absence, unless they be sought for, and carefully sought for, several days at the proper time of day—late afternoon.

Obviously a vessel which has stegomyia aboard on arrival at a tropical port need not be investigated there to see if other stegomyia go aboard her from that port. If, however, a vessel is free from stegomyia on arrival at a tropical port, the presence of such insects aboard while in port, en route, or on arrival at a United States port is evidence (proof if larvæ on arrival be excluded) that such stegomyia were received aboard in the tropical port.

It is obvious then that the class of vessels the examination of which will yield the most information are those between ports in both of which we have our own officers and an observation of which could be made at both ports. It is also important that most of these vessels should come to the tropical port free from stegomyia.

For the solution of the fourth question, vessels arriving free from stegomyia lying at moorings at different places in the harbor should be examined. I can not think much would be learned by examining any vessel lying at a wharf, like those in Habana; she would almost certainly acquire stegomyia. Similarly the examination of vessels arriving with stegomyia aboard—no matter where they lay—would give, I think, no useful data. I think that in this latter category would fall the regular liners from the Gulf and South Atlantic ports. Of the regular liners at Cuban ports I think the Ward and Munson vessels offer the best chance for this information, or would if the New York quarantine people would cooperate with us.

However, many vessels come clean of stegomyia to Habana from European ports and clear for United States ports from Philadelphia south. Indeed, we can do without the cooperation of the New York people by letting the bowl placed aboard in Habana stay aboard until the vessel returns to that port, the chance of getting stegomyia aboard in New York being so small that it may be neglected.

Respectfully,

H. R. CARTER, *Surgeon.*

THE SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### DISINFECTION AT MEXICAN PORTS OF VESSELS SAILING FOR THE UNITED STATES.

The following letter of instruction was sent to each of the medical officers at Vera Cruz, Tampico, and Progreso relative to disinfection of vessels leaving for United States ports:

[Letter.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
Washington, May 18, 1903.

*Acting Assistant Surgeon in Charge, Public Health and Marine-Hospital Service, care United States Consulate:*

SIR: You are informed that the Bureau has tentatively entered into an arrangement for the disinfection of vessels of the regular lines sailing from Vera Cruz, Tampico, and Progreso for points on the Gulf coast of the United States, which arrangement is in effect a disinfection of the vessels by their owners under the supervision of a service officer, in order to meet the objections of the Mexican Government to the establishment of disinfecting plants in Mexican ports.

Under the provisions of this agreement, each one of the regular lines will provide on board of each of their vessels a designated number of pots (Dutch ovens) for sulphur fumigation and an equal number of water containers for use in conjunction with these pots, and the companies will agree that the orders of medical officers of the Public Health and Marine-Hospital Service with regard to the disinfection of



their vessels above referred to, shall be rigidly carried out by the captains of their vessels.

The disinfection in all cases is to be done after the vessel has left her dock and is lying well out in the stream, so as to prevent any fresh influx of mosquitoes aboard the vessel, if such prevention is at all possible, and the method to be pursued will be as follows:

Each compartment of the vessel must be subjected to a fumigation with sulphur dioxide gas of 2 per cent volume for at least two hours. This volume of gas is obtained by burning sulphur at the rate of 2 pounds for each 1,000 cubic feet of air space to be disinfected. The compartments must in each case be tightly closed. The two hours prescribed is deemed sufficient to kill all mosquitoes—the object desired.

To prevent danger of fire the sulphur should be burned in the following-described manner: Place a Dutch oven in a tub or pan of considerably greater diameter than itself. The tub or pan should contain water to a depth of at least 2 or 3 inches, and if the Dutch oven has no legs to raise it above the water level, brick or stone may be substituted. No Dutch oven should be more than half full of sulphur, a portion of which should be pulverized, and a small quantity of alcohol poured thereon and the flame started with a match, great care being taken to observe in each case before closing the door that the fire is well started and there is no danger of its going out.

This process is to be simultaneous in every part of the vessel except the engine rooms, which are not believed to need it, and the passengers must be put on deck under an awning or in some other manner provided for until this fumigation is over.

It is imperatively necessary, and in no instance must there be any departure from the rule, that this fumigation shall take place after the vessel has cleared, all passengers and crew are on board, and no one else shall return ashore subsequent to this disinfection except yourself, and you must in all cases remain on board until two hours' fumigation has been assured under your observation.

When you have assured yourself that all these matters have been attended to, you will furnish the captain with a certificate stating exactly what has been done, and then allow the vessel to proceed on her voyage.

Respectfully,

GEO. PURVIANCE,  
*Acting Surgeon-General.*

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#### VERA CRUZ.

REPORT OF TRANSACTIONS AT VERA CRUZ, BY ASST. SURG. JOSEPH GOLDBERGER.

U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Vera Cruz, Mexico, July 6, 1903.*

SIR: I have the honor to transmit herewith a tabulated statement of the transactions of this station for the year ended June 30, 1903. It will be noted that this covers only the six months of the quarantine season, or, more accurately, only five and a half months, inasmuch as the transactions for May date from the 18th of that month, the date of my taking charge.

During the period under consideration, bills of health were issued to 148 vessels, which were manned by a total of 6,015 crew, and carried 2,699 passengers. The bills of health are issued after inspection, and are signed jointly by the consul and myself.

The boarding of vessels is done either at the wharves or anchorages. In the latter case it is done in a small boat provided by the vessel's agent or in one hired by the Service.

This station is provided with one Kinyoun-Francis autoclave, which will require overhauling and repair to be made serviceable. In view of our knowledge of the mode of transmission of yellow fever (the only disease that need be considered with reference to quarantine measures to be taken at this port), this apparatus is more than sufficient. No disinfection was done during the period under consideration.

Respectfully,

JOSEPH GOLDBERGER, *Assistant Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[illegible]



## PROGRESO.

REPORT OF TRANSACTIONS AT PROGRESO BY ACTING ASST. SURG. J. F. HARRISON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Progreso, Mexico, August 20, 1903.*

SIR: I herewith inclose report for part of May and the whole of June, 1903, the period covered in my records—May 20 to June 30, inclusive.

Respectfully,

J. F. HARRISON,  
*Acting Assistant Surgeon.*

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Annual report of transactions at Progreso, Mexico, national quarantine station for year ending June 30, 1903.*

[J. F. Harrison, acting assistant surgeon.]

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed .....											0	0	0
Steamers inspected and passed .....											3	14	17
Steamers disinfected .....											0	0	0
Sailing vessels inspected and passed .....											1	7	8
Sailing vessels disinfected .....											0	0	0
Crew on steamers .....											45	498	543
Crew on sailing vessels .....											7	43	50
Passengers on steamers .....											75	425	500
Passengers on sailing vessels .....											0	0	0

Original forwarded July 10, 1903; duplicate, August 20, 1903.

## CENTRAL AND SOUTH AMERICA.

FRUIT PORT INSPECTION SERVICE—SEASON OF 1902—JULY TO NOVEMBER.

## PORT LIMON.

REPORT OF TRANSACTIONS AT PORT LIMON, COSTA RICA, BY ACTING ASST. SURG. WM. H. CARSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Port Limon, Costa Rica, September 16, 1902.*

SIR: I have the honor, complying with Bureau letter dated May 26, 1902, to transmit herewith my supplemental report of transactions at this station from July 1, 1902, to and including September 15, 1902:

Passengers inspected from this port .....	209
Passengers inspected in transit .....	261
Vaccinated .....	0
Vessels inspected .....	61
Vessels disinfected .....	0
Pieces of baggage inspected .....	2
Pieces of baggage disinfected .....	2



There were 75 deaths here from all causes, mainly due to malarial fever and gastro-enteric diseases, and there were 11 cases of yellow fever, 7 originating in this port, 4 being brought here from points on the Costa Rica Railway between this port and San José, the capital, only 2 of these cases resulting in death.

Respectfully,

WM. H. CARSON,  
*Acting Assistant Surgeon.*

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### PUERTO CORTES.

REPORTS OF TRANSACTIONS BY ACTING ASST. SURG. S. H. BACKUS.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Puerto Cortes, Honduras, September 25, 1902.*

SIR: I have the honor to hereby make my report of the transactions at this station from June 30, 1902, to September 15, 1902:

Vessels inspected.....	29
Passengers inspected.....	89
Pieces baggage inspected.....	30
Pieces baggage disinfected.....	160

Respectfully,

SAMUEL HARRIS BACKUS,  
*Acting Assistant Surgeon.*

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Puerto Cortes, Honduras, October 30, 1902.*

SIR: I have the honor to hereby make a report of transactions at this station from September 15 to October 31, and also a résumé of the entire work done here this season:

Vessels inspected.....	20
Passengers inspected.....	39
Pieces baggage disinfected.....	63

#### REPORT ON TOTAL WORK DONE.

May 1 to June 27 (30):	
Vessels inspected.....	22
Passengers inspected.....	77
Pieces baggage disinfected.....	120
June 27 (30) to September 13 (15):	
Vessels inspected.....	29
Passengers inspected.....	89
Pieces baggage disinfected.....	160
September 13 (15) to October 25 (31): As above.	
May 1, 1902, to October 31, 1902:	
Passengers inspected.....	205
Vessels inspected.....	71
Pieces baggage disinfected.....	343

Respectfully,

SAMUEL H. BACKUS,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



## BOCAS DEL TORO.

## REPORTS OF TRANSACTIONS BY ACTING ASST. SURG. PAUL OSTERHOUT.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Bocas del Toro, Colombia, September 16, 1902.*

SIR: As per instructions contained in Bureau letter dated May 28, 1902, I have the honor to transmit herewith a supplemental report of the transactions at this station for the period from July 1, 1902, to September 15, 1902, inclusive:

Vessels inspected.....	33
Persons inspected:	
Ships crews.....	651
Passengers.....	2
Total.....	653

No baggage inspected or disinfected.  
Respectfully,

PAUL OSTERHOUT,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Bocas del Toro, Colombia, November 5, 1902.*

SIR: I have the honor to submit the following report of the transactions at this station for the period September 16, 1902, to November 1, 1902, inclusive:

Vessels inspected.....	17
Persons inspected:	
Ships crews.....	332
Passengers.....	29
Total.....	361
Pieces of baggage inspected.....	22
Pieces of baggage disinfected.....	20

Respectfully,

PAUL OSTERHOUT,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL.

## CEIBA.

## REPORT OF TRANSACTIONS BY ACTING ASST. SURG. W. B. ROBERTSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*La Ceiba, Honduras, C. A., September 16, 1902.*

SIR: I have the honor to submit the following supplementary report on the conditions and transactions at this port from July 1 till September 15, 1902, inclusive:

The general conditions remain the same as those stated in the general report for the period ending June 30, 1902.

There has, with one exception, been no passenger traffic from this port. The statistics are:

Passengers inspected.....	1
Passengers vaccinated.....	0
Vessels inspected.....	25
Vessels disinfected.....	0
Pieces of baggage inspected.....	1
Pieces of baggage disinfected.....	1

The general health of the crews of the vessels inspected has been uniformly good.

Repeated searches for the presence of mosquitoes aboard the vessels at anchor in this harbor have been attended with negative results.



*General remarks.*—The estimated population is about 4,000. The deaths during past two and one-half months about 12.

The prevailing diseases have been principally malarial, and usually mild types thereof. Some pneumonia and bronchitis, also a few cases of phthisis.

The general health conditions of the port and vicinity for the period have been uniformly good.

On July 16 to 18 an inspection was made of the islands of Utila and Ruatan and the health conditions there found to be good.

On September 4 an inspection trip was made to Truxillo and the health conditions there found to be very good.

On August 21 assumed temporarily the duties of resident inspector for the Louisiana State board of health, vice D. P. Ahrons, absent on sick leave.

Respectfully, yours,

W. B. ROBERTSON,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL.

### BLUEFIELDS.

REPORT OF TRANSACTIONS BY ACTING ASST. SURG. D. W. GOODMAN.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Bluefields, Nicaragua, September 16, 1902.*

SIR: I have the honor to submit the following report of the transactions at this station from July 1, 1902, to and including September 15, 1902:

Twenty-three ships have been examined and given bills of health for ports of the United States; 49 passengers have been inspected and passed, and their 68 pieces of baggage have been disinfected. In addition, the clothing of about 40 laborers for each of the 23 fruit vessels was disinfected prior to their going aboard the vessels to receive and store the fruit.

This has been an unusually protracted and severe rainy season, resulting, however, in keeping Bluefields in a healthful condition, the immense amount of water flushing the natural and artificial sewers and washing all surface filth into the lagoon. Twelve deaths have occurred in the two and one-half months, which, based on an estimated population of 4,000, gives a rate of 14.4 per 1,000 per annum. None of these deaths were from quarantinable diseases, tuberculosis and malarial fever being given as the cause in the larger number of the deaths.

Respectfully,

D. W. GOODMAN,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL.

### BELIZE.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Belize, British Honduras, September 20, 1902.*

SIR: I have the honor to submit supplemental report of the transactions at this station covering the period from July 1 to September 15, 1902.

From the 1st of July to 15th of September 26 vessels cleared from Belize for ports in the United States; 687 crew were inspected; 59 passengers were given certificates from this port, and 113 pieces of baggage were disinfected.

Of the 26 vessels cleared, 16 were for New Orleans, 6 for Mobile, 2 for Pensacola, Fla., and 1 each for Norfolk, Va., and Boston, Mass.

The health of Belize and adjacent country has remained good, there being very little sickness in the city. During the months of July and August there were some ten or twelve cases of diphtheria in Belize with 2 deaths, which were reported in weekly report for July 26.

Respectfully,

R. H. PETERS,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL.



## SEASON OF 1903—APRIL, MAY, JUNE.

On March 28, 1903, the following officers were detailed for service at the ports named for the present season, ending November 1, 1903, to inspect vessels, their cargoes and crews, leaving said ports for ports of the United States: Acting Asst. Surg. Fleetwood Gruver, Port Limon, Costa Rica; Acting Asst. Surg. C. S. Carter, Puerto Cortez, Honduras; Acting Asst. Surg. R. H. Peters, Livingston, Guatemala; Acting Asst. Surg. Paul Osterhout, Bocas del Toro, Colombia; Acting Asst. Surg. W. B. Robertson, Ceiba, Honduras; Acting Asst. Surg. D. W. Goodman, Bluefields, Nicaragua; Acting Asst. Surg. W. H. Carson, Belize, British Honduras.

The following letter of instructions was sent to each of these officers:

[Letter of instructions.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
Washington, March 28, 1903.

SIR: Referring to Bureau letter of 24th instant, transmitting your appointment as an acting assistant surgeon at the above-named port, you are requested to observe the following instructions in carrying out your duties. As soon as possible an order will be issued attaching you to the consular agency, in accordance with the law of February 15, 1893.

You should call upon the consular agent immediately upon your arrival and inform him of your orders. The State Department will be requested to instruct said consular agent to transfer to you the public property left in his custody by your predecessor at the close of the last quarantine season, a list of which is inclosed herewith.

I have transmitted to you under separate cover certain blank forms and printed instructions for your guidance as described below, a copy of the United States quarantine laws and regulations with amendments to date, also copy of the special rules provided for the government of vessels engaged in the fruit trade between the fruit ports of Central and South America and the ports of the United States, as promulgated in Department circular No. 134, of August 31, 1900. Amendment to the last-named circular is inclosed herewith, reducing the period of detention of prospective passengers from ten to five days.

Baggage of passengers bound for places north of the southern boundary of Maryland need not be disinfected.

I have to also transmit a supply of two blank forms, one of which is an individual certificate to be issued to each passenger about to embark on a fruit vessel bound to a United States port; the other is a certificate to be issued to the master of the vessel as an adjunct to the bill of health, which certificate he may deliver, if requested, to the quarantine officer at the port of arrival. One copy of each certificate issued by you should be inclosed with the weekly report from your station.

Your attention is called to the spread of yellow fever through the agency of the mosquito known as the *stegomyia fasciata*, and special precautions should be taken to prevent their presence aboard vessels.

At the close of each week you should transmit a report of conditions and transactions at your port on the blank form, a supply of which has been forwarded.

Should yellow fever break out at your port you are requested to immediately cable the Bureau. You should keep complete records of all transactions in order that a report of the same may be submitted at the close of the season. You are informed that the active quarantine season for the States of Louisiana, Alabama, and Texas will take effect on the 1st day of April.

You should, immediately upon your arrival, ascertain the amount of supplies on hand, and should make timely requisition for replenishing the same, in order that you may be fully equipped to carry out the duties assigned to you.

An immediate acknowledgment of receipt of this letter is requested, and you will report to the Bureau the date of your departure and also the date of your arrival at destination.

Respectfully,

WALTER WYMAN,  
Surgeon-General.



## ADDITIONAL PRECAUTIONS ON ACCOUNT OF YELLOW FEVER AT PORT LIMON.

Owing to an outbreak of yellow fever at Port Limon, Costa Rica, it was considered necessary to take additional precautions to prevent infection of passengers or crews on fruit vessels bound for the United States. Hence the following telegram was sent to the medical officer stationed at Port Limon:

[Telegram.]

WASHINGTON, July 8, 1903.

GRUVER, *American Consulate, Port Limon, Costa Rica:*

During prevalence yellow fever take temperature passengers and crews vessels bound for United States. Detain all with temperature above normal. Authorized to purchase dozen thermometers.

WYMAN, *Surgeon-General.*

After sending the above telegram the following circular letter of instructions was forwarded to the medical officer for his information and guidance. A copy of this letter was also sent to all the medical officers serving at the fruit ports in South and Central America for their instruction and guidance.

[Circular letter.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, July 11, 1903.*

SIR: Should yellow fever break out at your port, you are directed to take the temperature of the passengers and crews of all vessels leaving the port for ports of the United States, and if the temperature of anyone is found to be above normal you will detain the patient until positive diagnosis can be made. These precautions relate to yellow fever only. You will realize the importance of this precaution when you are informed that during this season two instances have occurred in which persons sick with yellow fever have been allowed to sail from a port infected with yellow fever to the United States. Hence the importance of taking the temperature of every person who leaves a port infected with yellow fever before granting the bill of health.

You are especially directed to personally supervise the taking of temperatures so that no fraud can be practiced, such as holding ice water in the mouth before insertion of thermometer, or keeping the mouth open, etc.

Respectfully,

WALTER WYMAN, *Surgeon-General.*

## OFFICER AT LIVINGSTON AUTHORIZED TO ISSUE CERTIFICATES TO VESSELS SAILING FROM PUERTO BARRIOS.

[Letters.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Livingston, Guatemala, April 14, 1903.*

SIR: I have the honor to ask for instructions as to Puerto Barrios. I find no record in the office here as to former actions in regard to same. Puerto Barrios is only about 12 or 13 miles from Livingston, and is under this consulate. Nearly all the passengers embark from there on the mail steamers, and it will be necessary for me to go there to issue certificates, as well as in Livingston. I would respectfully ask for copies of former instructions, or for new ones, as to my duties at Puerto Barrios, as I do not like to act without authority in such cases.

Respectfully,

R. H. PETERS,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL.



TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, April 24, 1903.*

SIR: Referring to your letter of the 14th instant, requesting to be authorized to visit Puerto Barrios, to be present on the day of the sailing of the mail steamers from that port so that you can issue certificates to passengers embarking there, you are informed that you are authorized to make these necessary visits so that you can conscientiously sign the certificates and bills of health.

By direction of the Surgeon-General:

Respectfully,

W. J. PETTUS,  
*Assistant Surgeon-General.*

Acting Asst. Surg. R. H. PETERS,  
*U. S. Public Health and Marine-Hospital Service,  
Livingston, Guatemala.*

PORT LIMON.

REPORT OF TRANSACTIONS BY ACTING ASST. SURG. FLEETWOOD GRUVER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Port Limon, Costa Rica, July 1, 1903.*

SIR: I have the honor to inclose herewith a tabulated statement of transactions at this port for that part (from April 9, 1903) of the year ending June 30, 1903, during which I have been in charge of this station. I submit also a supplemental detailed report of conditions and transactions during that period.

Since my arrival here, on April 9, to date this port has not been free of yellow fever infection. Within that period 40 cases have been treated at the several hospitals with a total mortality of 11, an increase, as compared with the record of the same quarter in 1902, of 22 cases and 10 deaths. Total number of deaths from all causes, quarter ending June 30, 1903, was 66, or an annual death rate for the quarter of 65½ per 1,000. During the same quarter in 1902 the total number of deaths was 46; annual rate per thousand, 46.

The sanitary condition of Limon continues very poor, and yellow fever infection is confined to no particular section. Many of the cases come from the interior. Zent, Rio Blanco, Matina, and Castro, small settlements within a radius of 30 miles of Limon, are infected. The infection of Rio Blanco seems directly traceable to the Charity Hospital here. In this case I would report that fomites seemed to play an important part in the primary infection of Rio Blanco, which, with a susceptible population of about 15, furnished 5 cases. However, the opportunities of studying comparatively the mosquito and fomite theory of the origin of yellow fever are so few here that no intelligent report can be rendered on that subject.

The Limon cuartel or jail has furnished 8 cases of yellow fever, and again fomites seemed to be an important causative factor. The infected houses in Rio Blanco were fumigated with sulphur, but, owing to the open character of the structure, I would say to no purpose. The same can be said of the cuartel, which was fumigated by means of formaldehyde gas generated by an autoclave.

The recommendations for sanitary improvement on the part of the city officials in Limon to the faculty at San José were, I understand, never transmitted, and the activity of the authorities in cleaning the city, reported to you under date of April 24, has ceased. (See Public Health Reports, May 15, 1903, p. 750.) The only sanitary measures really enforced are the quarantine against Bocas del Toro on account of smallpox and compulsory vaccination here.

During the quarter ended June 30, 1903, I have examined and passed 60 steamers for United States ports, as follows: For New York, 19; New Orleans, 31; Mobile, 8; Porto Rico, 2. Of the steamers cleared for New York 7 were fruiters with cargo bound direct to England. These took American papers in case it should be found necessary to put into New York.

The health of the passengers on all the steamers examined was good. A few cases of malarial infection were noted among the crews of several steamers, and after examination allowed to proceed. On May 30 David Close, a fireman on the steamship *Appomattox*, suffering from typhoid fever, was removed to the United Fruit Company's hospital, where he subsequently contracted yellow fever.

The sanitary condition of the steamers was, with a single exception, satisfactory. This exception was in the case of the steamship *John Bright*, which was cleaned and fumigated before being allowed to proceed to Mobile. This was reported under date of May 21.



From the reports of medical officers and masters of steamers arriving here I find a unanimity of opinion as regards the uselessness of pyrethrum powder fumigation for the destruction of mosquitoes. The observations as to the length of time the mosquito remains on board during the voyage from here to New Orleans or Mobile, and from there here, varies from two days to the entire trip.

Intercourse with the shore by all vessels intending to clear for a port in the United States has been reduced to a minimum. The importance of this regulation is shown in the experience of the sloop *Sunbeam*, which arrived here in the early part of May from Bluefields. It had open communication with the shore and a member of the crew developed yellow fever on the return trip.

Finally, I have to invite attention to the thoroughly unreliable character of the bills of health issued by the health authorities and the foreign consuls here. With a certain knowledge of the sanitary condition of Limon and the presence of yellow fever here clean bills of health are issued to all ships leaving for any but United States ports. The minister of the interior, Doctor Flores, himself a physician, after receiving a telegram from the medico del pueblo of Limon, reporting yellow fever here, ordered a clean bill of health to be issued.

Respectfully,

FLEETWOOD GRUVER,

*Acting Assistant Surgeon, Public Health and Marine-Hospital Service.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Summary of transactions at Port Limon, Costa Rica, for the quarter ending June 30, 1903.*

[This report is for the period from April 10 to June 30, 1903.—Fleetwood Gruver, acting assistant surgeon, Public Health and Marine-Hospital Service.]

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed .....										0	0	0	0
Steamers inspected and passed .....										11	24	24	59
Steamers disinfected .....										0	1	0	1
Sailing vessels inspected and passed .....										0	0	0	0
Sailing vessels disinfected .....										0	0	0	0
Crew on steamers .....										430	892	895	2,217
Crew on sailing vessels .....										0	0	0	0
Passengers on steamers .....										82	215	241	538
Passengers on sailing vessels .....										0	0	0	0

#### PUERTO CORTES.

REPORT OF TRANSACTIONS BY ACTING ASSIST. SURG. C. S. CARTER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,

OFFICE OF MEDICAL OFFICER IN COMMAND,

*Puerto Cortes, Honduras, July 1, 1903.*

SIR: I have the honor to submit the following report of transactions for Puerto Cortes for the quarter ending June 30, 1903:

Certificates have been issued during the months of April, May, and June to 50 steamers. One hundred and forty-three passengers have been given certificates, and 229 pieces of baggage have been disinfected.

I also viséed the consul's bills of health of the ships of the Caribbean squadron; also the steamship *Maneunia* going to Boston, and schooner *Carib II*, bound for New York.

Our efforts here against the mosquito have consisted of three methods, the fumigation of all baggage by steam and formaldehyde, and the burning of pyrethrum



powder in the forecabin, cabin, and quarters of the vessel immediately before sailing. Also, all of the captains are requested to keep covered up all the open water vessels, and if possible to have the cabin and quarters screened in and to use mosquito bars. Steamers which I have boarded on their arrival have been mostly free from mosquitoes. Only two have complained of having them during the voyage down.

After using the pyrethrum powder captains have stated that the ship has been free from them after leaving the port, while before having used the powder quite a number were found on board at least one day out and probably longer. This powder has added much to the comfort of officers and crew, and especially the crew. While this powder has been a great help in ridding the ship of these pests I do not think it could be relied on entirely for their destruction.

The health of this port has been very good, and there has been very little sickness during the past three months, the prevailing diseases being malarial fever of a mild form, and intestinal troubles.

At San Pedro, 36 miles from here, on the line of railroad, there is considerable sickness among the children (cholera infantum) and several cases of dysentery. Several deaths have occurred from the former, and as far as I have learned only one from the latter. Information received from as far into the interior as the capital, shows that there is no contagious or quarantinable diseases of any kind. Reports from the Pacific coast say while no yellow fever has been announced, there have been several cases of pernicious fever, with several deaths. The sickness mentioned at San Pedro is due to the drinking water, which is very bad. The general sanitary condition of the place, for a tropical town, is fairly good.

The different small towns along the coast report no sickness of any kind. Since the change of administration at this port, the health authorities seem to be taking an active interest in having the town put in proper condition; streets are being cleaned, cattle rounded up, grass cut, yards cleaned, etc.

The chief of police, who is the head of the health department, informed me that he was going to issue an order that all water tanks and open water vessels should be covered and oil should be placed in each of the tanks and in vessels in which water was kept for any purpose. As he is a very efficient officer, I think this order will be carried into effect.

Any vessel coming to this port with a contagious or infectious disease on board would be promptly quarantined and treated very energetically by the authorities at this port.

#### COMMUNICATION WITH PACIFIC COAST TOWNS.

In regard to communication from infected Pacific coast towns, a person coming direct from the Pacific coast to Puerto Cortes would take from twelve to fifteen days en route; via Puerto Barrios, about seven days; coming from the Mexican border via Belize, sailing vessel or steamer, about five days.

All persons who wish to go as passengers to the United States must have a consular certificate or reliable physician's certificate stating that the passenger has been under his supervision for five days prior to starting for this port. These certificates are placed on file for future reference, if necessary. Special attention has been paid to persons from interior points and from the Pacific coast towns. Only three passengers have sailed from here who have been to the coast, returning this way.

#### VESSELS LOADING ON COAST.

The United Fruit Company has one vessel which loads along the coast, going to Tela and Omoa. The J. B. Cefalu Company has one vessel. This steamer only goes to Omoa, 20 miles away. These vessels have been inspected from time to time while on the coast by the representative of the Louisiana State board as well as myself, and the regulations are carried out as far as the captain's word goes. I understand that there have never been inspectors on board these ships, but if yellow fever should break out I think that, unless the inspector stationed here inspects them, inspectors should be placed on these vessels.

Respectfully,

C. S. CARTER,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[Inclosure.]

*Summary of transactions at Puerto Cortes, Honduras, for quarter ended June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed.....	0	0	0	0	0	0	0	0	0	11	21	18	50
Steamers disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers.....	0	0	0	0	0	0	0	0	0	271	426	363	1,060
Crew on sailing vessels.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Passengers on steamers.....	0	0	0	0	0	0	0	0	0	30	64	49	143
Passengers on sailing vessels.....	0	0	0	0	0	0	0	0	0	0	0	0	0

Rejected 6 pieces baggage (boxes).

## LIVINGSTON.

## REPORT OF TRANSACTIONS BY ACTING ASST. SURG. R. H. PETERS.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Livingston, Guatemala, July 6, 1903.*

SIR: In compliance with Bureau letter, June 13, 1903, directing the forwarding of report of transactions at this station for fiscal year ending June 30, 1903, I have the honor to submit the following report:

The station was opened on April 7, 1903, from which date active work commenced. As directed in Bureau letter of April 24, 1903, I have regularly visited the port of Puerto Barrios to inspect the mail steamers and issue certificates to passengers embarking there. No passengers have left Livingston direct, as the steamers from this port do not carry them. The Louisiana board of health has a steam-disinfecting chamber at Puerto Barrios which has been used for disinfecting baggage, but its use has been discontinued. All baggage is sealed and kept sealed until arrival at the Mississippi River quarantine station, at which place it is subjected to steam disinfection.

Since the opening of the station 26 vessels have been inspected and given certificates, and 617 crew inspected; 99 passengers were given certificates, and 141 pieces of baggage disinfected.

Of the 26 vessels cleared 14 were from Livingston and 12 from Puerto Barrios. Their destination in the United States were: New Orleans, 18; Mobile, 7; New York, 1. Livingston has been free from all quarantinable diseases, and there has been very little sickness in the town. In the last part of May and first of June there were a number of cases of varicella of a mild type; otherwise the principal trouble is malarial.

Respectfully,

R. H. PETERS,  
*Acting Assisting Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.







## CEIBA.

REPORT OF TRANSACTIONS BY ACTING ASST. SURG. W. B. ROBERTSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*La Ceiba, Honduras, July 1, 1903.*

SIR: I have the honor to submit the following general report of the conditions and transactions at this station from the date of opening till June 30, inclusive:

This station was reopened April 13, and active quarantine began at once for the States of Alabama, Louisiana, and Texas; that for the remaining territory was instituted May 1.

There is a disinfecting plant, consisting of a Kuhn generator, replacing the autoclave formerly in use, and a supply of wood alcohol for same.

The boarding of vessels is done by boats furnished by the agent or master of the vessel for which the inspection is made.

The staff consists of an acting assistant surgeon only. Any labor required in boarding vessels or in disinfecting is provided by the fruit companies.

The duties of the acting assistant surgeon consist in: (1) A general supervision of the shipping entering the harbor; (2) keeping a check upon the working of the ship; (3) inspecting vessels, crews, and passengers, and issuing certificates for same; (4) inspecting and disinfecting baggage, clothing, etc.; (5) investigating the health conditions of the port and vicinity and furnishing weekly reports thereon, and indorsing same upon bills of health.

At present no passengers are being carried from this port.

Disinfection of baggage is not required up to the present, owing to the absence of passenger traffic. Should such become necessary, formaldehyde gas, from Kuhn generator, would be used.

Laborers' clothing is disinfected by sprinkling with formalin and keeping in a closed box for twelve hours.

Total number of vessels inspected was 42 (39 steamships and 3 sailing vessels).

*Mosquitoes on vessels.*—Repeated examinations have failed to detect their presence aboard the vessels in this port.

*General remarks.*—The health conditions of this port from a quarantine standpoint have been excellent since the opening of the season, and such has, so far as can be ascertained, been the case for several years. But the local authorities place no restrictions upon traffic with infected ports.

The estimated population is about 4,000.

From April 13 to June 30 of this year there were only 6 deaths recorded, but owing to the disturbance of official system by the revolution and the consequent reconstructive changes, the mortality records are not to be relied upon.

The general health conditions are even better than for the same period of last year, though the average temperature has been higher with little or no rainfall, and the authorities now entering office seem disposed to improve the cleanliness and sanitation of the town.

Malaria is the prevailing disease, generally manifesting itself in the milder forms of intermittents and short remittents, occasionally assuming the bilious remittent type, and in some cases being complicated by dysentery.

The *ascaris lumbricoides* is exceedingly prevalent in children.

Respectfully submitted.

W. B. ROBERTSON,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[Inclosure.]

*Summary of transactions at La Ceiba, Honduras, for quarter ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....	10	9	10	14						8	17	14	82
Steamers disinfected.....													
Sailing vessels inspected and passed.....		1		1						1	2		5
Sailing vessels disinfected.....													
Crew on steamers.....	199	175	197	271						183	353	282	1,660
Crew on sailing vessels.....		8		7						7	14		36
Passengers on steamers.....		1		1									2
Passengers on sailing vessels.....													

## BLUEFIELDS.

REPORT OF TRANSACTIONS BY ACTING ASST. SURG. D. W. GOODMAN.

UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Bluefields, Nicaragua, July 1, 1903.*

SIR: I have the honor to submit the following as part of the annual report of transactions at this port for the year ended June 30, 1903. It commences April 15, when this station was opened for the quarantine season. Inclosed is tabulated statement of steamers inspected, with number of passengers and crews thereof.

The baggage of these 62 passengers, 92 pieces in all, was disinfected by means of either the steam chamber or formaldehyde, as was also the clothing of the laborers employed on the various fruit vessels loaded at this port.

Bluefields, from its topography, being situated on a lagoon at the foot of a range of hills, with a rolling surface inclining to the water's edge, is naturally healthful. The prevailing diseases are mainly due to malaria and auto-infection from the intestinal tract.

The nature of the food and its improper preparation for digestion, used by the lower classes of the population, readily accounts for the latter condition; the presence of the anopheles and the many breeding places therefor furnished by the tanks of rain water explain the former.

For the trimester ended June 30 there occurred in this town of 4,000 inhabitants 21 deaths from various causes. This rate—per 1,000 per annum—of 21 is larger than for the last few years, due to the 10 deaths in the Government hospital of soldiers, of which an unusually large number have been kept here in anticipation of political trouble.

The town has been free of any quarantinable disease, and, with proper precautions, can be easily kept so. The only danger point is Port Limon, Costa Rica, 120 miles south, with which there is occasional intercourse by sailing craft.

When Port Limon was reported infected with yellow fever by the acting assistant surgeon, United States Public Health and Marine-Hospital Service, in April last, the health authorities here were so informed and were urged to take extra precautions. About May 1 they established a detention quarantine of six or more days against crafts from that port. This was most fortunate, for on May 8 the schooner *Sunbeam* arrived here from Port Limon with a case of yellow fever aboard. The schooner and her personnel were put in quarantine, proper disinfection done by the acting assistant surgeon, United States Public Health and Marine-Hospital Service, at the request of the local authorities, and six days' detention and observation enforced thereafter. The man recovered and no other case developed.

The *Stegomyia fasciata* does not abound in this port or vicinity, but exists in sufficient numbers to propagate yellow fever should favorable opportunities be given.

Respectfully,

D. W. GOODMAN,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.



[Inclosure.]

*Summary of transactions at Bluefields, Nicaragua, for quarter ending June 30, 1903.*

[D. W. Goodman, acting assistant surgeon, United States Public Health and Marine-Hospital Service.]

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....										10	17	14	41
Steamers disinfected.....													
Sailing vessels inspected and passed.....													
Sailing vessels disinfected.....													
Crew on steamers.....										182	278	243	703
Crew on sailing vessels.....													
Passengers on steamers.....										15	18	29	62
Passengers on sailing vessels.....													

## BELIZE.

REPORT OF TRANSACTIONS BY ACTING ASST. SURG. WILLIAM H. CARSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Belize, British Honduras, July 1, 1903.*

SIR: I have the honor, complying with circular letter dated May 11, 1903, to transmit herewith my report of the transactions at this station for (April, May, and June) the fiscal year ending June 30, 1903.

No contagious or infectious diseases of a quarantinable character have occurred at the port of Belize during the past three months, and I can also reasonably state that equally satisfactory sanitary conditions prevail in the surrounding territory.

Forty-six deaths (4 white, 42 colored—14 infants) occurred in the port of Belize (population, 8,500) during the past three months—April, May, and June—mainly due to malarial fever, tuberculosis, and intestinal diseases.

Respectfully,

WM. H. CARSON,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Summary of transactions at Belize, British Honduras, for quarter ending June 30, 1903.*

[William H. Carson, acting assistant surgeon.]

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....										0	0	0	0
Steamers inspected and passed.....										8	12	9	29
Steamers disinfected.....										0	0	0	0
Sailing vessels inspected and passed.....										0	0	0	0
Sailing vessels disinfected.....										0	0	0	0
Crew on steamers.....										232	353	291	876
Crew on sailing vessels.....										0	0	0	0
Passengers on steamers.....										46	44	15	105
Passengers on sailing vessels.....										0	0	0	0



## HAWAII.

## TITLE TO QUARANTINE ISLAND AT HONOLULU CONFIRMED.

The long-disputed title of the Government to Quarantine Island in Honolulu Harbor has been cleared, as shown by the following letter from the Acting Attorney-General:

[Letter.]

DEPARTMENT OF JUSTICE,  
Washington, D. C., March 25, 1903.

SIR: I have the honor to transmit to you herewith sundry papers forwarded to this Department by the United States attorney for the district of Hawaii with a letter dated the 17th of January last, all relating to the title to certain land at or near the harbor of Honolulu, known as Quarantine Island, which is occupied by the Marine-Hospital Service. Among these papers are the following-described instruments:

1. Deed of the Dowsett Company, Limited, dated June 30, 1902, granting to the United States an undivided half of the premises (which include said island), upon certain conditions therein expressed.

2. Deed of Alfred W. Carter et al., as trustees, dated July 9, 1902, releasing the premises described in the deed next above mentioned from the operation of two certain deeds of trust made by said Dowsett Company, dated January 19, 1900, and March 30, 1900, respectively.

3. Deed of the Oahu Railway and Land Company, dated October 16, 1902, granting to the United States an undivided half of the same premises, upon the same conditions hereinabove referred to.

These deeds have been duly acknowledged and recorded. They are the result of a compromise of an action of ejectment involving the title to the granted premises, the terms of which compromise are more particularly set forth in the recitals of the first and last of the above-mentioned deeds. From an examination of the accompanying papers I am of the opinion that the United States derives under said deeds a good and valid title to the premises thereby granted, subject to the conditions expressed therein.

I am, sir, very respectfully,

H. M. HOYT,  
*Acting Attorney-General.*

The SECRETARY OF THE TREASURY.

## HONOLULU AND SUBURBS.

## REPORT OF TRANSACTIONS BY PASSED ASST. SURG. L. E. COFER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Honolulu, Hawaii, July 1, 1903.*

SIR: In compliance with Bureau circular letter of May 11, 1903, and also with Bureau letter of June 13, 1903, both letters being from the division of foreign and insular quarantine, I have the honor to make the following report of all of the transactions at this station for the fiscal year ended June 30, 1903:

## ROSTER OF OFFICERS ON DUTY IN THE HAWAIIAN ISLANDS.

Passed Asst. Surg. L. E. Cofer, chief quarantine officer for Hawaii.

*Port of Honolulu.*—Passed Asst. Surg. L. E. Cofer (in command), Asst. Surg. W. C. Hobdy, Asst. Surg. F. J. Thornbury, Asst. Surg. J. M. Holt, Asst. Surg. R. L. Wilson, Acting Asst. Surg. A. N. Sinclair, Pharmacist F. L. Gibson, Medical Inspector E. F. Smith, Pilot Frederick Rouse (steam launch), Engineer Charles E. Bradley (steam launch), Engineer B. B. Courtney (quarantine station), Engineer Samuel Pinao (channel wharf), and 17 attendants.

*Port of Hilo, Hawaii.*—Acting Asst. Surg. J. G. Grace.

*Port of Kahului, Maui.*—Acting Asst. Surg. John Weddick.

*Port of Kihei, Maui.*—Acting Asst. Surg. R. H. Dinegar.

*Port of Lahaina, Maui.*—Acting Asst. Surg. William Peters.

*Port of Koloa, Kauai.*—Acting Asst. Surg. E. G. Goodhue.



## HONOLULU—INCOMING QUARANTINE.

*Summary of incoming transactions at Honolulu National Quarantine Station for year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	0	0	0	0	0	0	0	0	0	0	0	0	.....
Steamers inspected and passed.....	19	18	17	18	17	20	20	17	16	24	20	19	225
Steamers disinfected.....	0	0	0	0	0	1	0	0	0	1	0	0	2
Sailing vessels inspected and passed.....	20	23	22	22	18	23	15	25	15	23	29	26	261
Sailing vessels disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	.....
Crew on steamers.....	2,597	1,935	2,601	2,428	3,065	2,156	2,445	2,621	2,037	3,806	2,565	2,635	30,891
Crew on sailing vessels.....	263	330	193	328	277	325	219	372	230	388	478	385	3,788
Passengers on steamers.....	3,209	3,446	3,288	3,426	4,612	4,415	3,455	2,303	3,215	4,237	2,209	3,546	41,361
Passengers on sailing vessels.....	38	37	38	21	18	37	8	22	11	23	44	37	334

## SUBPORTS—INCOMING QUARANTINE.

*Incoming quarantine transactions at the subports in the Hawaiian Islands.*

	Hilo.	Kahului.	Kihei.	Lahaina.	Koloa.
Vessels inspected.....	49	13	1	9	2
Crew inspected.....	876	174	18	147	20
Passengers inspected.....	205	3	0	7	0
Vessels remanded.....	0	0	0	0	0

## OUTGOING QUARANTINE.

The following restrictions are carried out in this division:

## RESTRICTIONS FOR BOTH STEAM AND SAILING VESSELS.

(1) Your vessel to lie not less than 6 feet from the dock at all times, with rat funnels and tar on all lines. Funnels to be not less than 3 feet in diameter. All ropes to be tarred for at least 2 feet immediately to the landward side of the funnels. Funnels to be so placed that they will be at least 6 feet from the wharf, from all other ropes, and from contact with anything whatsoever. Funnels must be kept stiffened, so that the rim of same is at all times equally distant from the line encircled.

(2) The gangway to be well lighted at night and a special guard (man) stationed there to prevent any rats from going aboard or coming ashore. When it is not practicable to have this gangway guard, you will have the gangway raised clear of the dock at night by not less than 6 feet.

(3) All persons to be on board by 10 p. m. every night and to pass the rest of the night on board.

(4) This office must be notified of the intended shipment of all baggage and certain freight, as hides, scrap iron, household goods, and personal effects.

(5) All persons embarking at this port to be inspected immediately before sailing.

## RESTRICTIONS FOR SAILING VESSELS ONLY, IN ADDITION TO ABOVE.

(1) Must be fumigated unless they have laid either in the stream or at railroad wharf No. 2 during their entire stay in port. In the latter case there must be no contact with other wharves or vessels.

(2) Must not lie at night alongside of interisland steamers.



(3) Crews must be inspected just before departure of vessel, and crew's baggage must be disinfected at the United States quarantine wharf (Channel Wharf) the night before sailing day. After crew's baggage has been disinfected and returned aboard your vessel it must not be unsealed, unpacked, nor disturbed in any way until inspected by the officer in charge of outgoing quarantine business immediately before sailing.

(4) Masters must arrange personally for the disinfection of their vessels or else through their accredited commercial agents.

RESTRICTIONS FOR STEAMERS, IN ADDITION TO ABOVE FOR BOTH STEAM AND SAILING VESSELS.

(1) An alphabetical typewritten list of cabin and steerage passengers in duplicate embarking at this port to be furnished the officer in charge of outgoing quarantine business two hours before sailing hour.

(2) On day of departure as soon as hour for sailing has been determined upon the officer in charge of outgoing quarantine business must be notified of such sailing hour.

(3) Steerage passengers and new crew to report at United States quarantine wharf, foot of Punchbowl street, at 9 a. m. on the day prior to the steamer's sailing day, bringing all baggage, after which permits for travel will be issued. Steerage passengers must have the final inspection at the gang plank upon the wharf and will not be permitted to embark carrying personal effects, as hand baggage, undisinfected.

HONOLULU.

The outgoing quarantine transactions at Honolulu were as follows: Number of vessels disinfected, 113; number of vessels inspected, 197; number of cabin passengers inspected, 1,972; number of steerage passengers inspected, 2,156; number of crew inspected, 3,360; number of pieces baggage disinfected, 3,931; number of hides disinfected, 4,660; number of pelts disinfected, 1,024; number of bags of hide trimmings disinfected, 40; number of bags of bones disinfected, 79; number of cases of lily bulbs disinfected, 115; number of wharves fumigated, 6; number of pieces of freight disinfected, 4; number of pounds of sulphur consumed in disinfecting, 52,620.

HILO.

The outgoing quarantine transactions at Hilo, island of Hawaii: Number of vessels disinfected, 14; number of crew inspected and passed, 229; number of cabin passengers inspected and passed, 173; number of pieces of baggage disinfected, 382; number of vessels disinfected, 14.

DIVISION OF QUARANTINE STATION PROPER.

Number of persons detained under observation, 648; number of persons bathed, 648; number of persons vaccinated, 1,042; number of persons sick with quarantinable disease, 4; number of persons sick with nonquarantinable disease, 15; number of pieces of baggage disinfected, 1,790.

DIVISION OF FREIGHT CERTIFICATION.

During the fiscal year just closed 197 vessels have had their cargoes certified to. This has been done by the shippers appearing at the office with the shipping permit containing a description of each package or set of packages. Each shipping permit has been indorsed when the shipment was not barred by regulations, otherwise a memorandum of the intended shipment was made and the articles ordered to the Channel Wharf for disinfection. The arrangement of certificates for freight from noninfected ports in the other islands of this group has been carried out at this office. The transactions in this division is roughly estimated at 3,940 certificates.

Respectfully,

L. E. COFER,

*Passed Assistant Surgeon, Public Health and Marine-Hospital Service,  
Chief Quarantine Officer, Territory of Hawaii.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



## PHILIPPINE ISLANDS.

## ASSISTANT SURGEON HEISER DETAILED AS CHIEF QUARANTINE OFFICER.

On July 17, 1902, and November 21, 1902, the following orders were issued, assigning Asst. Surg. V. G. Heiser for duty as chief quarantine officer for the Philippines, to succeed Passed Asst. Surg. J. C. Perry:

[Letters.]

WASHINGTON, July 17, 1902.

SIR: Upon being relieved by Asst. Surg. W. C. Billings you are directed to proceed to Manila, P. I., and report to chief quarantine officer of said islands for duty.

Respectfully,

WALTER WYMAN, *Surgeon-General*.

Asst. Surg. V. G. HEISER,

*Public Health and Marine-Hospital Service, St. Johns, New Brunswick.*

TREASURY DEPARTMENT,

BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,

Washington, November 21, 1902.

SIR: Referring to Bureau order of July 17, 1902, directing you to proceed to Manila, P. I., and report to Passed Asst. Surg. J. C. Perry for duty, you will, after thoroughly familiarizing yourself with the duties of the station (for at least one month, or longer, if, in his opinion, a greater length of time will be necessary), relieve Passed Assistant Surgeon Perry, receipting to him for the public property now in his charge, and, under the provisions of Executive order of January 4, 1900, assume the duties of chief quarantine officer of the Philippine Islands.

Respectfully,

WALTER WYMAN, *Surgeon-General*.

Asst. Surg. V. G. HEISER,

*Public Health and Marine-Hospital Service, Washington, D. C.*

Approved.

H. A. TAYLOR,

*Acting Secretary.*

## WORK OF PASSED ASSISTANT SURGEON PERRY COMMENDED BY PHILIPPINE GOVERNMENT.

Upon receipt of the news that Passed Asst. Surg. J. C. Perry had been relieved as chief quarantine officer for the Philippine Islands, the following letter was written him, expressing, in behalf of the government of the Philippines, their hearty thanks for the good work he had done in so successfully carrying out the arduous duties falling upon the chief quarantine officer during his term of office:

[Letter.]

THE GOVERNMENT OF THE PHILIPPINE ISLANDS,

EXECUTIVE BUREAU,

Manila, P. I., March 26, 1903.

SIR: I have the honor to acknowledge receipt of your letter of the 24th instant, informing me that you have been succeeded as chief quarantine officer for the Philippine Islands by Dr. Victor G. Heiser, of the United States Public Health and Marine-Hospital Service.

On behalf of the government of the Philippine Islands, and in the name of the civil governor thereof, I desire to assure you of the hearty appreciation of your excellent work during your period of service as chief quarantine officer, and to extend to you the expressions of gratitude of the government for same.

Very respectfully,

BEEKMAN WINTHROP,  
*Acting Executive Secretary.*Dr. J. C. PERRY, *P. H. and M. H. S.,**Chief Quarantine Officer for the Philippine Islands, Manila, P. I.*

A true copy:

VICTOR G. HEISER,  
*Assistant Surgeon, Chief Quarantine Officer for the Philippine Islands.*



## MANILA AND SUBPORTS.

REPORT OF TRANSACTIONS JULY 1 TO SEPTEMBER 15, 1902, BY PASSED ASST. SURG.  
J. C. PERRY, CHIEF QUARANTINE OFFICER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF CHIEF QUARANTINE OFFICER FOR PHILIPPINE ISLANDS,  
*Manila, P. I., October 10, 1902.*

SIR: I have the honor to hereby submit supplemental report of quarantine transactions in the Philippine Islands for the period from July 1 to September 15, 1902.

There is little new in a general way to report, although when a number of the ports in the southern islands became infected by the cholera spreading overland and the disease was carried to adjacent ports by bancas and paraos, the quarantine regulations were modified in accordance with circular submitted below:

OFFICE OF CHIEF QUARANTINE OFFICER FOR PHILIPPINE ISLANDS,  
*Manila, P. I., July 19, 1902.*

*To steamship agents, Manila, P. I.*

SIRS: Owing to the fact that other ports in the Philippine Islands have become infected with cholera, the following regulations governing maritime quarantine in the Philippine Islands will apply until further notice:

1. Vessels sailing from one badly infected port to another seriously infected port will not be subject to quarantine at port of departure or upon arrival.
2. Vessels sailing from infected ports to infected ports via clean ports will be subject to quarantine at port of departure to protect the clean port.
3. Vessels sailing from infected ports to clean ports will be subject to quarantine as usual, preferably at port of departure.
4. Vessels which have been quarantined at port of departure will not be quarantined at port of arrival, unless vessel has sickness of a contagious nature on board.
5. Vessels sailing from one clean port to another clean port will not be subject to quarantine.
6. Vessels sailing from a clean port, via an infected port, for a clean port, will be subject to quarantine upon arrival at the clean port.
7. Under the above regulations the following ports are considered infected: Manila, San Fernando, Taal, Balayan, Batangas, Calapan, Naujan, Vigan, Boac, Gasan, and vessels will be cleared from Manila to any of these ports direct or via other infected ports without quarantine at Manila.
8. The ports that are considered infected will vary from time to time, since new ports will probably become infected, and the disease will disappear from those previously infected.
9. Since Cebu, Nueva Caceres, and Catbalogan are not yet seriously infected, a quarantine of three days will be imposed on vessels sailing from Manila to these ports, allowing the time of the voyage to complete the five days' detention and observation.
10. It is recommended that agents arrange the schedule of their vessels so that they will either sail to clean ports or infected ports only on the voyage.
11. No green vegetables, except potatoes and onions, must be taken either as cargo or food for crew and passengers.
12. Vessels desiring to sail for infected ports must anchor in the bay, raise the yellow flag, and wait for the inspection and clearance from both the quarantine officer and customs officials.
13. Agents must notify quarantine officers to what ports the vessel will sail, and no change must be made in this schedule after clearance under penalty provided for violation of quarantine regulations.

Respectfully,

J. C. PERRY,  
*Passed Assistant Surgeon,  
Chief Quarantine Officer for the Philippine Islands.*

On July 28, upon the request of the commissioner of public health for the Philippine Islands, Asst. Surg. H. A. Stansfield, on duty at Cebu, was detailed as supervisor of the quarantine enforced at ports in the Cebu collection district, with instructions from this office, and the result has been a cooperation on the part of the different quarantine officers, the institution of uniform regulations for all the ports, with the disappearance of much of the friction and delay to commerce.

During this period Cebu has suffered from a severe epidemic of cholera, and the islands of Panay and Negros are badly infected; in fact, the epidemic of cholera in the last-named places has assumed alarming proportions, and Iloilo province has suffered more severely than any other province. An outgoing quarantine was instituted at both Cebu and Iloilo for vessels sailing for clean ports, in order to afford as much protection as possible.



The cholera epidemic at date of writing shows improvement, except in the islands of Negros and Panay, and the disease has practically disappeared from the provinces that were infected at an early date. The situation in Manila is much improved, and this fact is demonstrated by the occurrence of fewer cases on board vessels in quarantine.

The electric-lighting plant at the Mariveles quarantine station has been completed and accepted; but the plan to install a small motor, to be operated by a water wheel, has been abandoned, since a careful study of the water pressure showed that it was impracticable to use it as a motive power.

On August 30 the transport *Sherman*, in docking for disinfection, on account of cholera on board, struck the wharf at Mariveles bow on, and did damage to the structure in amount of \$6,000. A claim was made to the quartermaster's department for repair of the damages, and this has been allowed, consequently this work will be accomplished at an early date.

The work performed and disbursements made are hereby submitted in the usual tabulated form:

## MANILA.

*Statistics of quarantine transactions at the port of Manila, P. I., for the period from July 1 to September 15, 1902.*

Month.	Vessels inspected from—		Vessels in quarantine.	Vessels disinfected.	Bills of health issued.	Pieces of baggage disinfected.	Pieces inspected and passed.
	Foreign ports.	Domestic ports.					
July .....	55	182	44	43	189	10,106	64
August .....	46	149	24	25	188	4,876	106
September 1-15 .....	20	77	9	9	96	662	42
Total .....	121	408	77	77	373	15,644	212

Month.	Crew inspected.	Passengers inspected.		Persons vaccinated.		Persons bathed and effects disinfected.	Persons quarantined (suspects).
		Cabin.	Steerage.	Crew.	Passengers.		
July .....	9,821	1,375	8,183	46	28	5,797	4,472
August .....	8,218	1,024	3,470	88	6	2,546	1,500
September 1-15 .....	3,603	500	1,921	.....	.....	771	799
Total .....	21,642	2,899	13,574	134	34	9,114	6,771

*Outgoing quarantine transactions at the port of Manila, P. I., for the period from July 1 to September 15, 1902.*

Month.	Vessels inspected.	Vessels in quarantine.	Vessels disinfected.	Vessels remanded to Mariveles.	Pieces of baggage disinfected.	Pieces of baggage inspected and passed.
July .....	154	154	2	16	21,750	3,041
August .....	170	99	1	9	7,199	1,352
September 1-15 .....	38	33	.....	.....	4,420	922
Total .....	362	286	3	25	33,369	5,315

Month.	Crew (outgoing) inspected.	Crew quarantined.	Passengers (outgoing) inspected.	Passengers quarantined.		Quarantinable diseases in quarantine—cholera.
				Cabin.	Steerage.	
July .....	21,486	5,206	50,964	2,988	13,820	18
August .....	15,792	5,450	30,110	2,245	7,858	7
September 1-15 .....	4,913	866	4,586	175	1,197	.....
Total .....	42,191	11,522	85,660	5,408	22,875	25



*Summary of quarantine transactions at Manila, P. I., for the period from July 1 to September 15, 1902.*

Vessels inspected.....	891
Vessels held in quarantine.....	363
Vessels disinfected.....	80
Bills of health issued.....	373
Pieces of baggage disinfected.....	49,013
Pieces of baggage inspected and passed.....	5,527
Cases of quarantinable diseases occurring on vessels quarantined prior to sailing—cholera.....	25
Crew in quarantine.....	15,585
Passengers in quarantine.....	30,991
Crew inspected.....	63,833
Passengers inspected.....	102,133
Persons vaccinated.....	168
Persons bathed and effects disinfected.....	9,114
Suspects and contacts in quarantine at Mariveles quarantine station.....	6,771

## CEBU.

*Statistics of quarantine transactions at the port of Cebu, P. I., for the period from July 1 to September 15, 1902.*

Month.	Vessels inspected from—		Vessels in quarantine.	Bills of health issued.	Crew inspected.	Passengers inspected.		Persons held in quarantine.	Crew and passengers vaccinated.
	Foreign ports.	Domestic ports.				Cabin.	Steerage.		
July.....	4	60	3	60	1,865	141	712	60	700
August.....	4	89	.....	91	2,679	176	633	.....	.....
September 1-15.....	2	46	.....	45	1,197	87	289	.....	.....
Total.....	10	195	3	196	5,741	304	1,634	60	700

*Outgoing quarantine transactions at the port of Cebu, P. I., for the period from July 1 to September 15, 1902.*

Month.	Vessels inspected.	Vessels in quarantine.	Vessels disinfected.	Pieces of baggage disinfected.	Pieces of baggage inspected and passed.	Crew (outgoing) inspected.
July.....	170	170	9	115	.....	7,535
August.....	164	149	8	164	239	7,962
September 1-15.....	61	40	5	148	86	2,312
Total.....	395	359	22	427	325	17,809

Month.	Crew quarantined.	Passengers (outgoing) inspected.	Passengers quarantined.		Persons bathed and clothing disinfected.	Cases of cholera on vessels.
			Cabin.	Steerage.		
July.....	1,507	2,225	102	343	92	10
August.....	1,878	3,310	53	440	114	11
September 1-15.....	570	283	11	58	88	8
Total.....	3,955	5,818	166	841	294	29

*Summary of quarantine transactions at Cebu, P. I., for the period from July 1 to September 15, 1902.*

Vessels inspected.....	600
Vessels held in quarantine.....	362
Vessels disinfected.....	22
Bills of health issued.....	196
Pieces of baggage disinfected.....	427
Pieces of baggage inspected and passed.....	325



Cases of cholera occurring on vessels.....	29
Crew in quarantine.....	3,999
Passengers in quarantine.....	1,023
Crew inspected.....	23,550
Passengers inspected.....	7,756
Persons vaccinated.....	700
Persons bathed and effects disinfected.....	294

## ILOILO.

*Statistics of quarantine transactions at the port of Iloilo, P. I., for the period from July 1 to September 15, 1902.*

Month.	Vessels inspected from—		Vessels in quarantine.	Vessels disinfected.	Bills of health issued.
	Foreign ports.	Domestic ports.			
July.....	3	33			12
August.....	9	83	15	5	13
September 1-15.....	6	65	3		120
Total.....	18	181	18	5	145

Month.	Pieces of baggage—		Crew inspected.	Passengers inspected.		Persons held in quarantine.	Persons bathed and effects disinfected.
	Disinfected.	Inspected and passed.		Cabin.	Steerage.		
July.....			1,166	159	275		
August.....	192	44	1,963	330	710	366	148
September 1-15.....			1,168	143	534	27	
Total.....	192	44	4,297	632	1,569	393	148

*Outgoing quarantine transactions at the port of Iloilo, P. I., for the period from July 1 to September 15, 1902.*

Month.	Vessels inspected.	Vessels in quarantine.	Vessels disinfected.	Pieces of baggage disinfected.	Pieces baggage inspected and passed.	Number crew (outgoing) inspected.
July.....						
August.....	50	48	6	412	32	1,746
September 1-15.....	102	62	6	165	510	3,204
Total.....	152	110	12	517	542	4,950

Month.	Number of crew quarantined.	Number passengers (outgoing) inspected.	Passengers quarantined.		Persons bathed and clothing disinfected.	Cases of cholera on vessels.
			Cabin.	Steerage.		
July.....						
August.....	362	714	26	142	64	4
September 1-15.....	843	1,174	27	330	68	7
Total.....	1,205	1,888	53	472	132	11

*Summary of quarantine transactions at Iloilo, P. I., for the period from July 1 to September 15, 1902.*

Vessels inspected.....	351
Vessels held in quarantine.....	128
Vessels disinfected.....	17
Bills of health issued.....	145
Pieces of baggage disinfected.....	709
Pieces of baggage inspected and passed.....	586



Cases of quarantinable diseases occurring on vessels quarantined prior to sailing, cholera.....	11
Crew in quarantine.....	656
Passengers in quarantine.....	1,867
Crew inspected.....	9,247
Passengers inspected.....	4,089
Persons bathed and effects disinfected.....	280

## FINANCIAL STATEMENT, UNITED STATES CURRENCY BASIS.

*Receipts and disbursements for the United States quarantine service for the Philippine Islands, during the period from July 1 to September 15, 1902—funds of fiscal years 1902 and 1903.*

## DEBITS.

July 1.	Balance from June account current.....	\$10,430.36
July 1.	Received refund subsistence furnished.....	32.50
July 29.	Received of treasurer P. A., A. W., 1769.....	10,000.00
Aug. 1.	Received refund disallowment.....	11.25
Aug. 1.	Received refund subsistence furnished.....	4.80
Aug. 5.	Received refund subsistence furnished.....	14.00
Aug. 9.	Received of treasurer P. A., A. W., 1769.....	1,430.10
Aug. 23.	Received of treasurer P. A., A. W., 1795.....	6,000.00
Aug. 28.	Received refund subsistence furnished.....	40.55
Sept. 1.	Received refund subsistence furnished.....	15.50
Sept. 2.	Received refund subsistence furnished.....	9.00
Sept. 11.	Received refund subsistence furnished.....	7.50
Total cash receipts.....		\$27,995.56

## REFUNDS TO TREASURER.

July 21.	Refund to treasurer, receipt 5502.....	.04
July 21.	Refund to treasurer, receipt 5503.....	2,543.54
July 21.	Refund to treasurer, receipt 5504.....	88.42
Aug. 28.	Refund to treasurer, receipt 6181.....	30.05
Aug. 28.	Refund to treasurer, receipt 6180.....	40.55
Sept. 13.	Refund to treasurer, receipt 6411.....	1,699.66
Sept. 15.	Refund to treasurer, receipt 6427.....	9.00
Sept. 15.	Refund to treasurer, receipt 6449.....	23.00
Sept. 15.	Refund to treasurer, receipt 6450.....	1,856.03
		6,290.29
Balance to be accounted for.....		21,705.27

## CREDITS.

## DISBURSEMENTS.

July:		
	Station supplies and disinfectants.....	\$1,017.50
	Office and miscellaneous expenses.....	82.50
		\$1,100.00
August:		
	Salaries and wages of personnel.....	5,059.22
	Launch expenses, supplies, and repairs.....	252.06
	Rents, new construction, and equipment.....	1,766.38
	Station supplies and disinfectants.....	1,969.77
	Office and miscellaneous expenses.....	519.29
		9,566.72
September:		
	Rents and new construction.....	2,000.00
	Station supplies and disinfectants.....	178.03
		2,178.03
Total disbursements.....		12,844.75
Balance on hand Hongkong and S. Bank \$20,822.23 Mexican currency, at 2.35.....		8,860.52
		21,705.27



*Total expenditures by details, July 1 to September 15, 1902.*

Compensation of personnel.....	\$5,059.22
Stationery, blanks, and printing.....	0.00
Incidental expenses, general service.....	681.79
Launch supplies and repairs to launches.....	252.06
Station supplies, including disinfectants.....	3,165.30
New construction and station equipment.....	3,686.38
	<hr/>
	12,844.75
	<hr/>

*Expenditures by station.*

Manila:	
General service expenses.....	\$2,291.73
Launch expenses.....	999.65
	<hr/>
	3,291.38
Mariveles:	
General service expenses.....	4,284.34
New construction and equipment.....	2,700.00
	<hr/>
	6,984.34
Cebu:	
General service expenses.....	134.80
Launch expenses.....	127.51
Station equipment (barge).....	486.95
	<hr/>
	749.26
Iloilo:	
General service expenses.....	748.42
Launch expenses.....	417.94
Station equipment (barge).....	653.41
	<hr/>
	1,819.77
	<hr/>
Total disbursements.....	12,844.75

Respectfully,

J. C. PERRY,  
*Passed Assistant Surgeon,*  
*Chief Quarantine Officer for the Philippine Islands.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

FLOATING DISINFECTING PLANTS (BARGES) AT ILOILO AND CEBU.

[Letter.]

OFFICE OF THE CHIEF QUARANTINE OFFICER  
FOR THE PHILIPPINE ISLANDS,  
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Manila, P. I., January 21, 1903.*

SIR: I have the honor to hereby report for your information the following, relative to the floating disinfecting plants that have been equipped and installed at the ports of Iloilo and Cebu:

The barge at Iloilo is of 138.75 gross tonnage, 95 feet long, 23 feet wide, and 9 feet deep, and has been named *Esmeralda*. The barge is a dismantled schooner bought and equipped for this purpose. The equipment consists of two 9 foot 6 inch Kinyoun-Francis disinfecting chambers with formaldehyde attachment, one 40-horsepower vertical boiler, one sulphur furnace, and one bichloride force pump.

The barge at Cebu has been named *Proteccion*, and is a new barge, built in 1901, and is of the following dimensions: One hundred and eighteen feet long, 23 feet wide, and 9½ feet deep. The equipment of this barge is the same as that given in describing the *Esmeralda*.

The *Proteccion*, as already reported to the Bureau, was wrecked in a typhoon while en route to Cebu, and after considerable difficulty was raised and brought to Manila for thorough repair. This has been completed and the barge is now moored at the port of Cebu in as good a condition as she was before the accident occurred.

Respectfully,

J. C. PERRY,  
*Passed Assistant Surgeon,*  
*Chief Quarantine Officer for the Philippine Islands.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



## MANILA AND SUBPORTS.

REPORT OF TRANSACTIONS TO JUNE 30, 1903, BY ASST. SURG. V. G. HEISER, CHIEF  
QUARANTINE OFFICER.

TREASURY DEPARTMENT,  
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF THE CHIEF QUARANTINE OFFICER  
FOR THE PHILIPPINE ISLANDS,  
*Manila, P. I., July 31, 1903.*

SIR: In pursuance of the instructions contained in Bureau letters of April 11, 1903, and May 11, 1903, I have the honor to submit herewith a report of the quarantine transactions in the Philippine Archipelago for the year ended June 30, 1903.

I reported for duty at Manila, February 17, 1903. The greater portion of the work of the year therefore was done under the direction of Passed Asst. Surg. J. C. Perry, who was relieved by myself March 24, 1903, and I shall therefore quote liberally from his reports.

## CHOLERA.

Sixty-eight vessels with cholera on board arrived at this port, and 37 vessels had cholera appear on board during the time they were serving their outgoing quarantine. This makes a total of 105 vessels disinfected for cholera.

The epidemic has taxed the resources of the stations to the utmost, and the long period over which it has continued has left several of the officers on duty in the islands almost physically exhausted. The large amount of work caused by the many infected ships and the incoming and outgoing quarantine can scarcely be realized by the perusal of the figures alone. It is probably the first time in the history of quarantine that so many ships were treated in a scientific manner. It is a matter of congratulation that the practice prescribed by the quarantine laws and regulations has been so thoroughly vindicated by practical experience. Of the 105 cholera-infected vessels that were disinfected at the Manila station, only 1 developed the disease after being released from quarantine, and then nine days after disinfection, the cases developing in the ship's hospital among the dysentery cases. The protection afforded the United States ports by quarantining vessels prior to their departure for the United States is strikingly illustrated by the vessels of the army transport service. During the period from July 1, 1902, to January 1, 1903, 12 transports carrying steerage passengers cleared for the United States. Of this number 4 vessels had cholera develop on board before the expiration of the quarantine period. When it is remembered that these ships carried 10,708 steerage passengers, some of them carrying as high as 1,800 persons of this class on one vessel, it will be realized what a large number of human lives were saved, pain and suffering avoided, and danger to the United States obviated. It has been contended that with the facilities of the modern troopship cholera could be as effectually stamped out while the vessel is at sea as when the facilities of a modern quarantine station are at hand. That such is not the case was well shown in the instance of the United States army transport *Sherman*, which left here September 4, 1902. Two days after her departure cholera developed on board and before the port of Nagasaki could be reached four cases had made their appearance, and before the passengers could be properly quarantined on shore six more cases developed. When it is considered that the four cases mentioned above occurred on a modern troopship, where every possible provision is made for stamping out infection, that these vessels have medical officers on board who have had special training, and that in spite of these advantages the cholera spread, it is certainly reasonable to assume that quarantine for all ships in cholera epidemics like the present one is a necessity. The assumption is still further fortified by the fact that three other vessels had experiences similar to that of the *Sherman*, and in the large number of cholera-infected vessels treated at Mariveles one case after disinfection was all that ever appeared, and even that happened only once. It has been the experience here that on the appearance of the first case prompt removal from the ship of the patient and the contacts and disinfection of the vessel generally resulted in the disease being confined to the original case. Had the cholera on the *Sherman* occurred in mid-ocean or at a place where the facilities of a quarantine station were not at hand, it is difficult to say when the spread of the disease would have been checked. In this case the vessel was only two days' away from Nagasaki when the disease appeared.

The dissemination of the cholera has been widespread throughout the islands. From the commencement of the epidemic, March 18, 1902, until the ending of the fiscal year 1903 there have been reported and made a matter of record 138,639 cases, with 88,761 deaths, which gives a mortality of 63 per cent. A conservative estimate made by medical men of large experience in the islands is that at least one additional case occurred for every one that was reported, which would make in round



numbers about 300,000 cases. The proximity of the islands to one another, and the many small craft that ply between the islands at places where inspection is practically impossible, rendered interisland maritime quarantine almost useless as a means to check the spread of the disease when it had once gained a foothold in the islands.

One of the most difficult problems encountered has been the management of cargo, and especially of vegetables. The daily question has been: "Are they infected?" An extended search through the literature of the disease fails to reveal much information that would be of service to the quarantine officer. Opinions, presumptions, and unsupported statements occur in profusion, but so far it has been impossible to find an authoritative statement that sheds much light on the question. The question of vegetables is a very serious one to Manila. All products of this kind are not produced in sufficient quantities in the islands to affect the market, and they must, therefore, be imported. The principal importations come from China. Since cholera is practically endemic in the districts in which the vegetables are grown, and the farms are fertilized with liquid human excrement, it would seem that the exclusion of vegetables from these districts was justified on theory at least. On the other hand it is pertinent to state that during the past six months the city of Hongkong has been consuming the vegetables from districts which were suspected of being infected, and yet no case of cholera has made its appearance in that city during the period mentioned. It is a serious matter to deprive a city like Manila of a great portion of its food supply in the way of vegetables. The price of these products became greatly enhanced. The population had to depend principally upon canned goods for their supply of vegetables. During the latter portion of the epidemic the trouble was overcome to a great extent by the officers of the Public Health and Marine-Hospital Service stationed in China and Japan being able to certify that such vegetables as were allowed to be shipped to Manila had not been grown in infected territory or exposed to infection in transit. With the view of being able to obtain more accurate information about cargo, the detail of a competent bacteriologist has been requested. The material exists here for making practical tests of this nature and results might be obtained which would make it possible to lessen the restrictions which are placed upon commerce at the present time.

During the early part of February, 1903, the cholera situation improved so much in Manila that the circular letter of February 4 (copy of which is appended) was issued. On May 7 the cholera again assumed such proportions in Manila that an outgoing quarantine of five days was placed on vessels carrying steerage passengers to the United States. The situation up to the present time has not warranted the complete withdrawal of the restriction. The principal danger at this writing, so far as Manila is concerned, is the fact that cholera is present in the villages situated on the watershed from which the city drinking water is obtained. During the past few weeks there have been several cases reported daily from the village of San Mateo, which is situated on the bank of the Mariquina River, about a mile above the point at which the intake is located. The rainy season has not commenced yet, and for that reason the water in the stream is low, and if the river should become infected most of the infection would find its way into the Manila water system. The constant menace which hangs over the city will therefore be appreciated. For a detailed report of the management of the cholera quarantine, see the report of Passed Asst. Surg. J. C. Perry, which was in course of preparation at the time he was relieved from duty at this station. (Doctor Perry's report will be found under "Contributed articles.")

#### PLAGUE.

It is particularly creditable to the officers on duty in China and Japan that notwithstanding the fact that plague has been epidemic at Hongkong and Amoy during the year, and present at other ports in those countries, not a single case of this disease found in Manila could be traced to introduction from without. This fact is particularly noteworthy because the plague at Hongkong and Amoy has been epidemic, and these ports are only two and three days' sail, respectively, from Manila. It is also a matter for congratulation that the plague has been confined to Manila. So far the other ports in the Philippines have not become infected. Much of the success in the management of the plague is no doubt due to the mutual cooperation which exists between the board of health and the Public Health and Marine-Hospital Service. An effort has been made to fumigate with sulphur, for the purpose of killing rats and vermin, the entire shipping which enters the port of Manila. This work has been almost accomplished, there being very few vessels that have not been fumigated at least once. The board of health has kept a force of rat catchers along the water front and has fumigated with sulphur all the smaller vessels which are engaged in river and harbor work.

During the year 163 vessels were fumigated, for which purpose about 20 tons of sulphur were used. In the treatment of this large number of vessels many practical



facts with regard to the technique of fumigation were learned which will be made the subject of a special report later in the year.

On the whole we have had the hearty cooperation of the shipping interests in this work. In addition to the destruction of rats, the destruction of cockroaches and other vermin on board vessels was very agreeable to them. The work, so far, has been accomplished with practically no delay or loss to shipping. It had been the custom heretofore to suggest to the steamship companies not to bring steerage passengers during that portion of the year at which plague was at its height in Hongkong and Amoy. This suggestion has always been complied with in the past. This year a different course was pursued. It was found that abolishing the steerage accommodations for the time being resulted in that class of passengers engaging cabin accommodations. This made the last condition worse than the first, because they avoided thereby the measures which would have been employed had they been allowed to come as steerage passengers. The method of procedure this year has been, whenever possible, to detain them under medical observation for seven days at the port of embarkation, and after bathing them and disinfecting their effects they were permitted to proceed to Manila. Upon their arrival here they were again bathed and their effects disinfected. If they made no objection, the board of health injected them with shiga serum before landing. In summing the matter up, however, it is probably safe to say that the principal factor in dealing with the plague was that the rats and vermin were destroyed in the vessels before the plague epidemic began and then kept free from vermin since that time. The same course has been pursued at the other ports of entry in the islands. Two vessels which were lying in the harbor were reported to us by the board of health as having had a case of plague on board. These vessels were remanded to Mariveles and thoroughly disinfected and held to complete the incubation period of the disease. No further cases developed on either vessel.

#### SMALLPOX.

Five vessels arrived at Manila with smallpox on board. The usual course was pursued; nothing of note occurred. Eight thousand nine hundred and seventy-two persons were vaccinated.

#### LEPROSY.

This disease was detected on five vessels during the year. Four of the cases were in transit to Hongkong. One was ordered returned to Hongkong by the collector of customs acting on the authority of the immigration laws. The remaining case was taken in charge by the board of health and placed in the San Lazaro Leper Hospital. The necessary precautions to prevent the spread of the disease were taken in each instance.

#### STATION AT JOLO ESTABLISHED.

On April 13, 1903, Assistant Surgeon Amesse was detailed by the following letter to visit Jolo and Zamboanga and report upon advisability of opening a new station.

[Letter detailing Assistant Surgeon Amesse to investigate.]

OFFICE OF THE CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,  
*Manila, P. I., April 13, 1903.*

SIR: You are directed to proceed to Zamboanga and Jolo for the purpose of making an investigation as to the advisability of establishing a quarantine service at those ports under the direction of the Public Health and Marine-Hospital Service. It is particularly desired that you ascertain whether it would be practicable to open a station at one or the other of these ports which would meet the quarantine requirements of both Zamboanga and Jolo.

You are requested to submit, as soon as possible, to this office a full report of the result of your investigation, with such recommendations as you may think advisable. Upon the completion of this duty you are directed to await further orders at the last port visited.

Upon your arrival at the above-named ports your status will be that of temporary duty.

Respectfully,

VICTOR G. HEISER,

*Assistant Surgeon,*

*Chief Quarantine Officer for the Philippine Islands.*

Asst. Surg. J. W. AMESSE,

*U. S. Public Health and Marine-Hospital Service,*

*Manila, P. I.*



[Report of Assistant Surgeon Ames.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Jolo, P. I., April 28, 1903.*

SIR: Pursuant to instructions in your letter of the 14th instant, directing me to proceed to Jolo and Zamboanga for the purpose of ascertaining whether conditions warranted the establishment at one of these ports of an inspection station under the authority of the Public Health and Marine-Hospital Service, I have the honor to make the following report:

Securing transportation on the U. S. army transport *Liscum*, which left Manila on April 14, I arrived in Jolo four days later, and through the courtesy of the collector of customs was promptly placed in possession of full data bearing upon the subjects of foreign and domestic trade, immigration, and sanitation.

Jolo is a flourishing town located on a small bay indenting the northwest coast of the island of that name, affording a safe anchorage at all seasons.

It is the home of the sultan of the Sulu Archipelago, and has been for many years the most important commercial outpost in the Moro country, by reason of its accessibility to the neighboring ports of Singapore and Sandakan.

This favorable geographical relation makes it the natural distributing center of commerce, not only for the Sulu group, but also, through the branch houses of the large Chinese wholesale establishments of Jolo, for the entire southern portion of the island of Mindanao.

In the past year there have been 43 entries from foreign ports, bringing cargoes consisting chiefly of rice and other food stuffs, clothes, illuminating oil, and opium.

From Jolo these vessels return to Singapore by the way of Zamboanga and Iloilo, or via Zamboanga to Sandakan, or the German possessions in the Celebes group, carrying as exports hemp and hemp rope, copra, gums, pearls, and pearl shells.

Notwithstanding the severe cholera epidemic of the last year, which almost paralyzed trade throughout the Philippines as a whole, and in spite of the unrest following the Moro uprising in Mindanao, the volume of foreign trade increased 10 per cent over the year 1901, and the outlook for the future seems very bright.

The civil government has recognized this in the recent appropriation of a large amount for the purchase of a suitable building to be used for a custom-house, and for the extension of the pier begun during Spanish control, whereby large steamers may discharge directly at the wharf.

When this latter facility is secured, it is expected that a direct bimonthly service will be established with Singapore and additional coastwise vessels placed on the local route to Mindanao.

In addition to island steamers making Jolo a regular port of call, there is a fleet of perhaps 500 Moro sailboats, or "sapits," as they are called, measuring from 3 to 12 tons, and with crews of 4 or 5 each, trading among the adjacent islands with Jolo as a rendezvous.

These boats touch at all the coast towns of the archipelago, going frequently as far south as Borneo and carrying with absolutely no surveillance, as far as customs and quarantine are concerned, large numbers of passengers and important consignments of native products.

They constitute, therefore, a constant menace, and become the chief agency in the dissemination of epidemic diseases.

It was through this avenue that cholera entered the island of Jolo last year, and, though checked at the gates of the town by the vigorous and consistent quarantine maintained by the military authorities, it spread with great rapidity among the neighboring Moro villages.

From Jolo I proceeded via the U. S. C. T. *Formosa* to Zamboanga, arriving there April 25. This is a rapidly growing town of 8,000 inhabitants, situated in the extreme southwestern part of the island of Mindanao, on a strait about 9 miles in width, through which the tide runs at a rate of 5 to 7 knots an hour.

Here are located the headquarters of the Department of Mindanao and Jolo, together with a small garrison, and on account of its strategic position will doubtless long remain an important military post.

It is also the trading center for numerous large cocoanut plantations, copra being the chief item of export. There is no harbor at Zamboanga, and but one small wharf, owned by the army and used exclusively by its transports. Commercial vessels are therefore obliged to anchor and discharge under very adverse circumstances in the open roadstead.

Trade is almost entirely domestic. During the year 1902 there were 118 arrivals from Philippine and 25 from foreign ports, and of these latter entries 18, or 72 per cent, were by way of Jolo. During this period 157 immigrants were admitted.



In view of the policy of the civil government to promptly discontinue ports of entry which enjoy but limited foreign trade, as was shown recently in the case of Aparri, and in consideration of there being another port in close proximity to Zamboanga (Jolo) which could issue special license for such trade as might offer, it seems probable that Zamboanga will be abandoned for some protected port on the north coast of Mindanao.

It is evident from the facts that Jolo would be the logical point for the institution of an inspection service, since practically all vessels from foreign ports could be examined immediately on entering American waters, and all subsequent ports of call be, in a measure, protected.

Masters of vessels could be instructed here to promptly report at way points any sickness appearing aboard after clearing from Jolo, and customs inspectors at those stations could be authorized to remand any vessel showing quarantinable diseases for disinfection to Iloilo or Cebu.

In view of these natural advantages for the prompt detection of infected vessels, I have to respectfully recommend that an inspection station be immediately established at the port of Jolo.

Respectfully,

J. W. AMESSE,  
*Assistant Surgeon (on temporary detail).*

Asst. Surg. VICTOR G. HEISER,  
*Chief Quarantine Officer for the Philippines, Manila.*

STATION AT JOLO OPENED.

OFFICE OF THE CHIEF QUARANTINE OFFICER  
FOR THE PHILIPPINE ISLANDS,  
PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Manila, P. I., May 15, 1903.*

SIR: I have to confirm my telegram of May 6, namely:

"In accordance with the provisions of executive order of January 3, 1900, you are hereby detailed temporary quarantine officer of the port of Jolo. Institute inspection at once. Boat shipped you last week. In meantime if can not board with customs, authorized to hire rowboat not to exceed \$20 gold per month."

Your report upon the advisability of establishing a quarantine station at Jolo under the direction of this Service has been received.

Your nomination as permanent quarantine officer at the port of Jolo has been forwarded to the Secretary of the Treasury for approval. In the meantime you are to act as temporary quarantine officer at Jolo under the direction of this office. The adjutant-general of the division has been informed of our action with the request that the proper military authorities at Jolo be notified by his office.

You are directed to institute a thorough quarantine inspection based upon the United States quarantine laws and regulations. Questions to which the above rules and regulations do not seem applicable should be submitted to this office for decision. It is particularly desired that you attempt to regulate the traffic carried on by the small boats, which you mentioned in your report and which receive no inspection at the present time.

You will keep the necessary records required by the regulations and transmit the usual weekly reports to the Surgeon-General through this office.

The insular purchasing agent has been directed to ship you the rowboat, which arrived here May 2. You are hereby authorized to employ two sailors to man it, at a compensation not to exceed \$10 United States currency per month each.

Inform this office at once whether it will be necessary to rent an office and, if so, what the rate per month will be. You are further directed to make requisition for such supplies as you need.

In view of the fact that estimates for appropriations must be submitted by June 1, 1903, you are directed to prepare and forward to this office at once an estimate of the probable expenses of the Service at your port for the coming year.

Respectfully,

VICTOR G. HEISER,  
*Assistant Surgeon,  
Chief Quarantine Officer for the Philippine Islands.*

Asst. Surg. J. W. AMESSE,  
*Public Health and Marine-Hospital Service,  
Jolo, Jolo, P. I.*



## EXAMINATION FOR CHOLERA INFECTION IN PASIG RIVER WATER.

On June 12 the deduction that cholera infection was located in the Pasig was practically confirmed by report of Assistant Surgeon Long.

[Letter.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF THE CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,  
*Manila, P. I., June 12, 1903.*

SIR: I have the honor to transmit herewith the weekly tabulated report of cholera cases which occurred in Manila and the provinces during the week ended June 6, 1903.

The cholera situation has been improving steadily. At the present time there are only a few cases daily.

The investigation made by Assistant Surgeon Long on the whole confirmed the opinion expressed in the report of May 26, namely, that the majority of the cholera could be traced to the shallow side of the Pasig River. Numerous samples of water were taken from the river and examined bacteriologically. The samples that gave the most pronounced cholera reactions were those taken from places in the river at which cholera-infected vessels had been lying. It is extremely regretted that the great amount of work and the few officers on duty here prevented us from making the water examination complete. From a scientific standpoint it can only be considered as preliminary. The insular board of health has been requested to continue the examination. Their investigation has so far confirmed our work that they are now discussing plans for ridding the river of infection.

The army transport service is carrying out rigid rules directed against using water from the Pasig River, and since this practice was adopted no further cases of cholera have appeared on their vessels.

The report of Assistant Surgeon Long is inclosed.

Respectfully,

VICTOR G. HEISER,  
*Assistant Surgeon,  
Chief Quarantine Officer for the Philippine Islands.*

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, D. C.*

[Inclosure.]

MANILA, P. I., *June 1, 1903.*

SIR: I have the honor to report that in accordance with verbal orders received from you on the 26th ultimo I began an inspection of the *cascos* and other craft in the Pasig River with a view to determine, if possible, the source of infection of the cases of cholera that have been and are occurring in the river. A careful inspection was made, extending over a period of two days, of the *cascos* themselves and the persons living aboard of them. No cases of sickness were found. The *cascos* were in a fair sanitary condition. The sources of food and water supply were inquired into, and it was found that the food was gotten in the markets of Manila, the particular market being determined by the location of the *casco* at the time of buying, no more than a day's supply being purchased at one time. Drinking water was invariably obtained from the nearest fountain of the city supply. The food was almost always of a kind that needed cooking before eating, the only eatable particularly open to suspicion being a sort of sweet made from rice and ground cocoanut, which was sold in small cakes or wrapped in a piece of palm leaf. The *buyo* leaf also is open to question. It is chewed in connection with the betel nut. The custom is to keep them continually moistened with water to keep them green, and prospective buyers usually handle the entire stock in trade, in order to get the most tender leaves before buying. Several schooners and launches, from which cholera cases had been removed, were visited with the purpose of tracing the infection, if possible. Nothing in addition to the above was learned, however.

One almost universal custom was noted, bathing, either by swimming in the river or by drawing buckets of water from the river; the rice was frequently washed in river water prior to cooking, as are also the dishes and cooking utensils. In order to determine the condition of the river water twelve samples were taken, as follows:

No. 1. Near the Farola dry dock, close to shore. There are always numbers of *cascos* and small schooners at this place, and an estero empties into the river a short distance above.

No. 2. South bank, just below the Bridge of Spain. A favorite anchorage for inter-island schooners and smaller craft. The steamship *Bun Uan* on one occasion had a



case of cholera while lying here, as also had the launch *Mariposa* and the Japanese steamship *Meiko Maru*.

No. 3. Near Anda Monument, at the lower extremity of the anchorage for small schooners.

No. 4. At the mouth of the Binondo Canal, an anchorage for island boats and cascos. The launch *Alpine Eagle* had a case of cholera occur on board at this point.

No. 5. Opposite the captain of the port's, at the upper end of the anchorage for schooners. Here there is a public latrine emptying direct into the river.

No. 6. At the captain of the port's, where a sewer empties, and all "floaters" are tied up awaiting removal.

No. 7. Above San Miguel Brewery, a favorite place for washing clothes, bathing, etc.

No. 8. Below Santa Mesa. Cascos tie up here; also considerable washing and bathing done.

No. 9. Chinese dry dock, north bank, just above suspension bridge. Several sewers and esteros empty near this point, and a large number of cascos are always tied here. The river close to shore is very black, contains refuse, and a foul odor is always present. There is very little current close to shore.

No. 10. At the mouth of the estero of Santa Cruz, north bank. A landing place for river boats, and a favorite place for tying up cascos, lighters, etc. No current in shore, water filthy, and foul odor always present.

No. 11. Nagtaja, north bank, between Malacañan and Santa Mesa; a favorite place for washing clothes and bathing.

No. 12. Water barrel, steamship *Tagadito*. Everyone wishing a drink dips in with the first convenient vessel.

A small bottle of water was taken from each of the above places on the 28th ultimo. They were taken to Mariveles for examination.

Each sample was placed in the centrifugal machine, and a flask of Dunham's solution inoculated from the sediment.

These were incubated for eight hours, and examined as follows:

Sample No.	Appearance of culture.	Hanging drop.	Stained slides.	Reaction on addition of H SO.	Motility.
1.....	Cloudy .....	Commas, spirals, and S forms numerous.	Commas and S forms numerous.	Marked red...	Marked.
2.....	.....do .....	Organisms numerous; tendency to curve, but not marked.	Short thick rods; no commas or S forms.	Yellowish ....	Do.
3.....	.....do .....	Commas and spirals numerous.	Commas and few incomplete S forms.	.....do .....	Do.
4.....	Cloudy, slight pellicle.	Commas, spirals, and S forms.	Commas and few incomplete spirals.	.....do .....	Do.
5 <sup>a</sup> .....	Cloudy .....	Curved organisms..	Commas numerous.	Marked red...	Do.
6.....	.....do .....	Commas and S-shaped organisms numerous.	Commas and incomplete S forms.	Yellowish ....	Do.
7.....	.....do .....	Yeast-like bodies; curved organisms.	Curved organisms; no S forms or spirals.	.....do .....	Of curved organisms, marked.
8 <sup>b</sup> .....	Slightly turbid.	Organisms slightly curved.	Slightly curved organisms.	Faint red.....	Not marked.
9 <sup>c</sup> .....	.....do .....	Numerous curved and semispiral organisms.	Few commas seen.	Marked red...	Marked.
10.....	.....do .....	Curved organisms numerous.	Curved forms numerous.	Yellowish ....	Do.
11.....	.....do .....	Curved organisms..	Numerous curved and some spiral forms.	Marked red...	Do.
12.....	.....do .....	Few nonmotile organisms.	No distinctive organisms.	Yellowish ....	None.

<sup>a</sup> In hanging drop other organisms numerous; confused view of comma.

<sup>b</sup> Several slides made, but none turned out well.

<sup>c</sup> Several slides tried; results not as good as wished.

The examination was necessarily incomplete on account of lack of time plating out organisms and the preparation of the media. It will be noticed that in four of the samples organisms were found in which all the tests applied agreed with the reaction produced by the cholera organism, while in others there was some resemblance, but



it was not carried out in all the tests. It will also be noticed that marked reaction took place in the samples obtained from the situations in the river where the most of the cases have occurred. To conclude, it would seem from the foregoing that the food and water supply can hardly be infected, else there would be many cases, as the source is the same for all, and as there is constantly being fed into the river through esteros, etc., cholera-infected material, and as cholera "floaters" are frequently found, the river must necessarily be infected a portion of the time at least.

Respectfully,

J. D. LONG, *Assistant Surgeon.*

CHIEF QUARANTINE OFFICER FOR THE PHILIPPINE ISLANDS,  
Manila, P. I.

#### FUMIGATION OF VESSELS AT SUBPORTS.

[Circular letter.]

U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF THE CHIEF QUARANTINE OFFICER  
FOR THE PHILIPPINE ISLANDS,  
Manila, P. I., June 21, 1903.

MEDICAL OFFICERS IN COMMAND,

*U. S. Public Health and Marine-Hospital Service,  
Philippine Island ports.*

SIR: It has been the custom here to fumigate with sulphur all vessels which come from foreign ports, or which carry cargo from foreign ports, whenever the cargo or vessels have been exposed to plague infection, or if it is not possible to certify that they have not been exposed to plague infection.

In order to make the practice uniform you are directed to take the same action.

You are directed to acknowledge receipt of this circular.

Respectfully,

VICTOR G. HEISER,  
*Assistant Surgeon, Chief Quarantine Officer for the Philippine Islands.*

Decisions No. 4, Volume III, of April 30, 1903. On page 41, No. 86, you will observe that the United States Public Health and Marine-Hospital Service has been placed in charge of the medical inspection of arriving aliens. You are directed to commence this examination July 1, 1903. The same is to be conducted in accordance with the general rules and regulations promulgated by the Surgeon-General and approved by the Acting Secretary of the Treasury, January 15, 1903.

It is expected that the necessary blanks and books required for this purpose will soon arrive, whereupon a supply will be sent you. In the meantime you are directed to keep an accurate record of the number of people examined and the number of certificates issued. The name, date, nationality, and the disease should be recorded in every certificate issued and a copy kept thereof. When such questions come up as are not covered by the regulations, you are directed to submit the matter to this office for decision.

Respectfully,

VICTOR G. HEISER,  
*Assistant Surgeon, Chief Quarantine Officer for the Philippine Islands.*

#### SUMMARY.

*Personnel.*—There are now on duty in the Philippines 4 commissioned officers at Manila and Mariveles—1 each at Cebu, Iloilo, and Jolo, 1 pharmacist at Manila, who acts as disbursing officer, chief clerk, and pharmacist; and 70 attendants who act in the capacity of clerks, launch crews, quarantine employees, etc.

*Vessels disinfected.*—One hundred and sixty-three vessels were fumigated with sulphur. One hundred and five cholera-infected vessels were disinfected. Five small-pox and 2 plague infected vessels were disinfected, and in addition to these large figures there were 119 vessels disinfected because they came from infected ports.

*Mariveles, largest disinfecting station in the world.*—With the possible exception of the work done at Tor, Egypt, there is probably more disinfection accomplished at the Mariveles Quarantine Station than at any other plant in the world. When it is considered that the work had to be performed with labor that speaks a foreign tongue and at best is disinclined to work, the result is to be marveled at and reflects great credit on the officers who brought it about.



*Officers break down from exhaustion caused by overwork.*—The strain has told on the officers severely, two of them breaking down from physical exhaustion. When the amount of work is taken into consideration and that this is a trying tropical climate, with few facilities for obtaining labor, it would seem to be wise to fall into the footsteps of the Army and make the detail in the islands not to exceed two years.

*Physical examinations, masters, pilots, etc.*—In addition to the quarantine work the Service has conducted the physical examination of masters, pilots, patrons, and engineers, and also the men who enter the Coast Guard Service. A total of 165 applicants were examined, eleven of whom were rejected.

*Immigrant inspection.*—Commencing with the fiscal year 1904, the physical examinations of arriving aliens will also be done by this Service.

*Vessels disinfected; rinderpest and diseases of cattle.*—A considerable number of vessels were disinfected, upon the request of the board of health, because they had carried animals infected with rinderpest and other diseases peculiar to cattle.

*Condition of steamers operated by Service.*—The steamers operated by the Service in the different ports of the islands have been kept in a high state of efficiency, and the seamanlike manner in which they are handled has been the subject of much favorable comment. This is especially encouraging because the vessels are operated more economically than any similar vessels in the islands.

*Comments on quarantine of the future in the Philippines.*—To prevent the occurrence of quarantinable diseases in the islands after those present have been stamped out, will require the strict observance of the quarantine laws and regulations at the ports of entry. As some of these ports are less than forty-eight hours by steamer from countries in which diseases like cholera are endemic, the problem will be a difficult one, and perhaps more than can be expected of the quarantine service alone, but with the assistance of an intelligent and energetic board of health it should not be impossible.

*Tables of statistics.*—Tables in accordance with those prescribed by the Bureau are appended. In order to bring out the work in more detailed form a number of additional tables are submitted.

*Financial report.*—The financial report showing the receipts, expenditures, and disbursements is also appended.

*Work at substations.*—With the exception of the report on transactions, the work of the Service at the substations is all included in the reports of the chief quarantine officer under the separate headings as directed by the Bureau.

*Summary of quarantine transactions at Manila, P. I., during fiscal year ended June 30, 1903.*

Vessels inspected.....	5, 921
Vessels held in quarantine.....	666
Infected vessels disinfected.....	231
Vessels fumigated to kill rats.....	163
Bills of health issued.....	4, 012
Pieces of baggage disinfected.....	101, 395
Pieces of baggage inspected and passed.....	21, 539
Cases of quarantinable diseases detected on vessels:	
Cholera.....	129
Smallpox.....	6
Plague.....	2
Leprosy.....	6
Crew in quarantine.....	20, 902
Passengers in quarantine.....	45, 898
Crew inspected.....	238, 635
Passengers inspected.....	257, 602
Persons vaccinated (including 2,220 residents of village of Mariveles).....	8, 972
Persons bathed and effects disinfected.....	24, 813
Suspects and contacts quarantined at least five days at the Mariveles quarantine station.....	10, 867



*Statistics of incoming quarantine transactions at the port of Manila, P. I., for the fiscal year ended June 30, 1903.*

Month.	Vessels inspected from—		Vessels in quar- antine.	Vessels disin- fected.	Bills of health issued.	Pieces of baggage disin- fected.	Baggage inspected and passed.
	Foreign ports.	Domestic ports.					
1902.							
July .....	55	182	48	43	189	10,106	64
August .....	46	149	26	25	188	4,876	106
September .....	51	160	19	18	224	2,541	46
October .....	56	283	3	20	300	4,675	1,081
November .....	74	260	4	10	321	3,423	624
December .....	64	326	8	4	353	1,923	406
1903.							
January .....	62	293	6	6	372	945	390
February .....	49	288	.....	4	356	862	894
March .....	71	387	.....	5	434	3,664	980
April .....	70	379	7	72	448	4,177	890
May .....	64	411	16	93	451	1,451	271
June .....	61	297	3	36	366	1,920	419
Total .....	723	3,415	140	336	4,012	40,563	6,171

Month.	Crew in- spected.	Passengers inspected.		Persons vaccinated.		Persons bathed and effects dis- infected.	Persons quaran- tined (sus- pects).
		Cabin.	Steerage.	Crew.	Passen- gers.		
1902.							
July .....	9,821	1,375	8,183	46	28	5,797	4,472
August .....	8,218	1,024	3,470	88	6	2,546	1,500
September .....	8,269	1,174	3,962	42	2	1,266	1,007
October .....	9,564	1,219	7,168	36	12	3,531	139
November .....	11,059	1,589	8,414	69	51	2,751	1,612
December .....	11,482	1,312	6,067	28	.....	632	28
1903.							
January .....	10,827	1,209	4,690	76	3	630	.....
February .....	10,784	1,094	5,796	26	8	511	.....
March .....	13,341	1,839	8,485	42	.....	903	.....
April .....	13,528	1,701	8,146	29	4	1,341	390
May .....	16,108	2,090	7,999	32	2	560	416
June .....	14,684	2,391	16,678	114	8	1,440	1,303
Total .....	137,685	18,017	89,058	628	124	21,908	10,867

*Statistics of outgoing quarantine transactions at the port of Manila, P. I., for the fiscal year ended June 30, 1903.*

Month.	Vessels inspected.	Vessels in quarantine.	Vessels disinfected.	Vessels remanded to Mari-veles.	Pieces baggage disinfected.	Pieces baggage inspected and passed.	Number crew (outgoing) inspected.	Number of crew quarantined.
1902.								
July .....	154	154	2	16	21,750	3,041	21,486	5,206
August .....	171	99	1	9	7,199	1,352	15,792	5,450
September .....	175	79	1	1	7,364	2,112	13,237	2,277
October .....	271	78	.....	2	4,203	478	14,280	2,101
November .....	281	48	1	5	4,712	1,089	10,223	1,621
December .....	309	50	.....	.....	7,445	2,007	12,205	1,367
1903.								
January .....	312	15	.....	.....	2,476	799	9,526	345
February .....	51	1	.....	.....	2,174	2,118	1,498	.....
March .....	.....	.....	.....	.....	.....	.....	.....	.....
April .....	.....	.....	.....	.....	.....	.....	.....	.....
May .....	35	1	31	.....	1,293	563	1,011	184
June .....	24	1	22	1	2,216	1,809	1,692	174
Total .....	1,783	526	58	34	60,832	15,368	100,950	18,725



*Statement of outgoing quarantine transactions at the port of Manila, P. I., for the fiscal year ending June 30, 1903—Continued.*

Month.	Number passengers (out-going) inspected.	Passengers quarantined.		Persons vaccinated.	Persons bathed and clothing disinfected.	Cases of quarantinable diseases among persons in quarantine.		
		Cabin	Steerage.			Leprosy.	Small-pox.	Cholera.
1902.								
July .....	50,964	2,988	13,820	.....	984	.....	.....	18
August .....	30,110	2,245	7,858	.....	667	.....	.....	7
September .....	10,872	322	1,460	.....	33	.....	.....	1
October .....	14,795	254	1,994	.....	66	.....	.....	2
November .....	9,488	172	1,724	.....	101	.....	.....	8
December .....	14,836	157	1,786	.....	.....	.....	.....	.....
1903.								
January .....	4,059	18	19	.....	.....	.....	.....	.....
February .....	1,953	.....	.....	.....	.....	.....	.....	.....
March .....	.....	.....	.....	.....	.....	.....	.....	.....
April .....	.....	.....	.....	.....	.....	.....	.....	.....
May .....	6,941	106	1,121	.....	436	.....	.....	.....
June .....	6,509	118	982	.....	618	.....	.....	1
Total .....	150,527	6,380	30,764	.....	2,905	.....	.....	37

*Report of patients treated in hospital at the Mariveles quarantine station during the fiscal year 1903.*

Disease.	Number of cases.	Nationality.				Result.	
		Americans.	Porto Ricans.	Filipinos.	Chinese.	Recovery.	Death.
Smallpox .....	3	.....	.....	3	.....	1	2
Cholera .....	16	4	.....	12	.....	7	9
Malarial fevers .....	3	.....	.....	3	.....	3	.....
Tubercle of lungs .....	1	.....	1	.....	.....	.....	1
Degeneration of heart, fatty .....	1	.....	.....	.....	1	.....	1
Ascaris lumbricoides .....	1	.....	.....	1	.....	.....	1

The small number of cases of cholera and other diseases treated in the hospital at the quarantine station is accounted for by the fact that most of the cases of sickness were removed to the hospitals of Manila before the vessels were remanded to Mariveles.

#### REPORTS OF TRANSACTIONS AT SUBPORTS.

Reports from Assistant Surgeons Carroll Fox, M. K. Gwyn, and J. W. Ames, in charge, respectively, at the ports of Cebu, Iloilo, and Jolo, follow:

##### CEBU.

REPORT BY ASST. SURG. CARROLL FOX.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF THE UNITED STATES QUARANTINE OFFICER,  
Port of Cebu, P. I., July 30, 1903.

SIR: I have the honor to report as follows with regard to the maritime quarantine conducted by the Service at the port of Cebu, P. I., during the fiscal year ended June 30, 1903:

The health conditions at Cebu and surrounding islands at the beginning of this year were fairly good, with the exception of smallpox, which is always present in varying amount, and leprosy in the Lazaretto.

Quarantinable diseases were present in Hongkong, from which port vessels came to Cebu on an average of two per month.



A large number of vessels came from Saigon, but that port remained uninfected and danger from there was comparatively small.

As an instance of the danger from Hongkong, one vessel, the *Kaifing*, had on arrival 134 stowaways, who of course were not known to have embarked by the officer on duty there and were not disinfected. This happened while Hongkong was badly infected with cholera.

Shipping during the year increased about 25 per cent, most of which was confined to the coasting trade; there was, however, a slight increase in foreign trade. Hemp is shipped in considerable quantity to the United States, principally to Boston via Suez.

The health conditions remained good until July 9, when cholera made its appearance, having been brought from the island of Leyte to a small town 4 miles from Cebu and thence down the coast. On the appearance of cholera in Manila, a quarantine was instituted against incoming vessels of all descriptions.

Native vessels, called "bancas," enter Cebu at the rate of 20 and 30 daily; carry large numbers of natives and are the great source of danger to the port. It is impossible to control their movements after they leave the larger ports, as they exist by thousands, are dirty, and peopled by the most ignorant natives, who take no precautions whatever. There is no doubt that the rapid spread of cholera from island to island was due principally to these. Most of the cholera cases taken from vessels during the epidemic came from these boats and from those lying in the mud flats near shore, as they get their water supply from the wells in the lowest portion of the city, where it is likely to be infected from drainage and seepage. No method is used to dispose of sewage except to throw it upon the ground. A large number of these vessels were disinfected by the Service after having cases on board.

Immediately on the appearance of cholera, an outgoing quarantine of five days was instituted against vessels leaving for other ports in the islands. This included bancas, and at one time 70 vessels and 600 people were in quarantine. This was rigidly enforced until July 30, 1902, when an order from the chief quarantine officer permitted vessels to clear for infected ports without detention. The detention was still necessary for vessels to clean ports. The epidemic was at its height from July 9 to about the middle of October, during which time there were in the city 1,300 cases and 700 deaths. After this the number of cases gradually decreased until only an occasional case was noted. The town had enough cases still to be considered continually infected.

In the early part of the epidemic the barge *Proteccion* started from Manila to Cebu in tow of a steamer. She broke from her tow during a storm and went ashore. She was finally recovered, but by the time she was raised and repaired did not arrive in Cebu until December 10, 1902. In the meantime disinfecting was done under great difficulties, but with fairly good results. After the arrival of the barge fewer difficulties were encountered.

During the year no plague and only 1 case of smallpox was found on a vessel.

One case of leprosy arrived on a steamer from Hongkong and was certified as such. This case was returned to Hongkong on the same vessel by the collector of customs, acting as immigration officer.

Respectfully,

Asst. Surg. V. G. HEISER,  
Chief Quarantine Officer.

CARROLL FOX,  
Assistant Surgeon.

*Summary of quarantine transactions at Cebu, P. I., for the fiscal year ended June 30, 1903.*

Vessels inspected.....	3,390
Vessels held in quarantine.....	483
Vessels disinfected.....	48
Bills of health issued.....	1,568
Pieces of baggage disinfected.....	2,245
Pieces of baggage inspected and passed.....	536
Cases of quarantinable diseases detected on vessels:	
Smallpox.....	3
Cholera.....	51
Leprosy.....	1
Crew in quarantine.....	6,095
Passengers in quarantine.....	1,857
Crew inspected.....	76,920
Passengers inspected.....	25,806
Persons vaccinated.....	753
Persons bathed and effects disinfected.....	808



*Statistics of incoming quarantine transactions at the port of Cebu, P. I., for the fiscal year ended June 30, 1903.*

Month.	Vessels inspected from—		Vessels in quarantine.	Vessels disinfected.	Bills of health issued.	Pieces baggage disinfected.
	Foreign ports.	Domestic ports.				
1902.						
July.....	4	60	3	.....	60	.....
August.....	4	89	.....	.....	91	.....
September.....	3	104	2	2	112	306
October.....	4	125	3	1	120	204
November.....	8	146	6	1	137	392
December.....	7	126	1	1	129	38
1903.						
January.....	5	118	.....	.....	125	.....
February.....	3	114	3	3	111	41
March.....	12	152	6	6	141	248
April.....	5	398	4	4	170	297
May.....	15	686	2	3	178	14
June.....	8	567	8	8	194	109
Total.....	78	2,685	38	29	1,568	1,649

Month.	Crew in- spected.	Passengers in- spected.		Persons held in quaran- tine.	Persons bathed and effects dis- infected.	Crew and passengers vaccinated
		Cabin.	Steerage.			
1902.						
July.....	1,865	141	712	60		700
August.....	2,679	176	633			
September.....	2,769	118	618	79	79	
October.....	3,170	188	802	93	84	
November.....	3,787	188	896	238	58	
December.....	3,383	237	1,394	22	22	
1903.						
January.....	3,340	204	836			
February.....	3,276	142	717	32	37	
March.....	4,888	185	1,203	83	131	15
April.....	5,600	257	1,751	41	97	12
May.....	8,531	263	3,340	10	10	10
June.....	7,402	180	2,248	66	84	16
Total.....	50,690	2,279	15,150	724	602	753

*Statistics of outgoing quarantine transactions at the port of Cebu, P. I., for the fiscal year ended June 30, 1903.*

Month.	Vessels inspected.	Vessels in quarantine.	Vessels disinfected.	Pieces baggage disinfected.	Pieces baggage inspected and passed.	Crew (outgoing) inspected.
1902.						
July.....	170	170	9	115	.....	7,535
August.....	164	139	8	164	239	7,962
September.....	145	68	2	233	135	6,804
October.....	148	68	.....	84	162	3,929
November.....	.....	.....	.....	.....	.....	.....
December.....	.....	.....	.....	.....	.....	.....
1903.						
January.....	.....	.....	.....	.....	.....	.....
February.....	.....	.....	.....	.....	.....	.....
March.....	.....	.....	.....	.....	.....	.....
April.....	.....	.....	.....	.....	.....	.....
May.....	.....	.....	.....	.....	.....	.....
June.....	.....	.....	.....	.....	.....	.....
Total.....	627	445	19	596	536	26,230



*Statistics of outgoing quarantine transactions at the port of Cebu, P. I., for the fiscal year ended June 30, 1903—Continued.*

Month.	Number of crew quarantined.	Number passengers (outgoing) inspected.	Passengers quarantined.		Persons vaccinated.	Persons bathed and clothing disinfected.	Cases cholera on vessels.
			Cabin.	Steerage.			
1902.							
July .....	1,507	2,225	102	343	.....	92	10
August .....	1,878	3,310	53	440	.....	114	11
September .....	1,477	1,835	18	170	.....	.....	4
October .....	991	1,007	31	218	.....	.....	.....
November .....	.....	.....	.....	.....	.....	.....	.....
December .....	.....	.....	.....	.....	.....	.....	.....
1903.							
January .....	.....	.....	.....	.....	.....	.....	.....
February .....	.....	.....	.....	.....	.....	.....	.....
March .....	.....	.....	.....	.....	.....	.....	.....
April .....	.....	.....	.....	.....	.....	.....	.....
May .....	.....	.....	.....	.....	.....	.....	.....
June .....	.....	.....	.....	.....	.....	.....	.....
Total .....	5,853	8,377	204	1,171	.....	206	25

### ILOILO.

REPORT BY ASST. SURG. M. K. GWYN.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF THE UNITED STATES QUARANTINE OFFICER,  
*Port of Iloilo, P. I., July 31, 1903.*

SIR: I have the honor to submit the following report on the transactions of the Service during the fiscal year ended June 30, 1903:

The city of Iloilo, Panay, has an estimated population of about 20,000. The census figures not being available yet, accurate information can not be given. Situated on a low plain a few feet above the level of the sea, with an arm of the sea, the Iloilo River, placing it on an island, and the island of Guimaras giving a sheltered harbor for the largest vessels. The population is made up, with the exception of the troops, of a few Americans, Englishmen, quite a number of Spaniards, and a large number of Chinese and Filipinos.

The city is the principal sugar-exporting port in the islands.

The river is navigable for vessels drawing not over 14.6 feet for a mile, that being the depth of water on the bar at high tide.

About 100 foreign vessels touch there per year. These arrive with general cargoes and rice, and take out sugar and dyewood.

For boarding purposes a boarding launch 65 feet long, 9 crew, with a speed of 7 knots, is maintained.

A floating plant, the barge *Esmeralda*, crew of 4, with two modern steam chambers and a sulphur furnace, is used for disinfecting purposes. The barge arrived at the station August 27, 1902.

The office of the quarantine officer is located in the building occupied as offices by the depot quartermaster.

During the past year an epidemic of cholera visited Iloilo. The first cases were found on a small banca, which had been lying in the river several days. Out of a crew of 12 there were 5 cases and 2 deaths.

These men were promptly isolated, but my impression at the time was that the infection took place in Iloilo. After finding these cases, there was a lull of several days, during which there were rumors of cases all over the city. Then the board of health began reporting from 10 to 30 cases per day. August 27 I found a case of cholera on a lorch in the river. This removed all doubt in my mind as to the town being infected. The epidemic reached its height in November. December saw the decline of the epidemic and the advent of the northeast monsoon.

In all about 4,000 lost their lives—with a few exceptions all natives and usually the poorer ones.

This is not surprising when we consider the insanitary condition of the native shacks, the under part of which is used to deposit all refuse and sometimes made the house of the family pig, the chickens and dogs occupying their owners' beds and rooms.



Water is obtained from surface wells, naturally very easy to infect. Contrast this with the white population who used distilled water and rain water in tanks, usually of iron and placed above the ground, and paid some attention to cleanliness and food, and we have a reason why they escaped cholera.

The Chinese population were also remarkably free from cholera. Few, if any cases occurred among them, due probably to their tea-drinking habits, and most of them belonging to the merchant class were better able to look after themselves. The Chinese shopkeepers who handled articles of food had lattice screens in front of their counters to prevent their customers, principally natives, from handling articles in the shop and thus infecting them.

From December to May there was entire absence of cholera. In the latter month there occurred five cases, all of which proved fatal.

Smallpox occurs seldom, as considerable compulsory vaccination has been done.

There is said to be considerable leprosy in the interior of Panay, but in Iloilo but few cases can be seen on the streets. At one time all the lepers were segregated, but owing to lack of funds this policy was abandoned.

So far as I know there never has been any plague in the city.

There have been several epidemics of dengue, but no reported fatal cases.

Beriberi and dysentery occur frequently, but malaria occurs seldom in town, but in the surrounding country it is frequently very fatal at certain seasons of the year.

As soon as the cholera was officially declared an outgoing quarantine was established, vessels for clean ports being detained five days and disinfected if infected.

As new ports were declared infected, and before Iloilo became infected, rigid quarantine was enforced. But information was very difficult to obtain, and it was frequently necessary to hold vessels on suspicion based on rumors and information given by local firms through their correspondents. This information was usually found to be correct, especially so since no detention was imposed on vessels sailing for infected ports.

Another difficulty was the smaller vessels, the praos, bancas, and viloses. These small craft, ranging in size from 1 to 10 tons, carrying from 8 to 30 crew, represent the native trading element. They go from port to port, from Mindanao on the south to Luzon on the north, on voyages of several months' duration. Their usual cargoes are hats and clothes, linen and cotton goods.

Others take shorter voyages of a week or two, bringing in fish, dyewood, and firewood.

A great many are the only means of communication between the smaller towns. Several thousand of them touch annually at Iloilo.

Respectfully,

M. K. GWYN,  
*Assistant Surgeon.*

Asst. Surg. V. G. HEISER,  
*Chief Quarantine Officer.*

*Summary of quarantine transactions at Iloilo, P. I., for the fiscal year ended June 30, 1903.*

Vessels inspected .....	2, 093
Vessels held in quarantine .....	217
Vessels disinfected .....	35
Bills of health issued .....	1, 269
Pieces of baggage disinfected .....	2, 358
Pieces of baggage inspected and passed .....	7, 265
Cases of quarantinable diseases found on vessels:	
Cholera .....	33
Smallpox .....	1
Crew in quarantine .....	2, 077
Passengers in quarantine .....	1, 677
Crew inspected .....	42, 561
Passengers inspected .....	25, 102
Persons bathed and effects disinfected .....	899
Persons vaccinated .....	932



*Statistics of incoming quarantine transactions at the port of Iloilo, P. I., for the fiscal year ended June 30, 1903.*

Month.	Vessels inspected from—		Vessels in quaran- tine.	Vessels dis- infected.	Bills of health issued.	Pieces baggage—	
	Foreign ports.	Domestic ports.				Disin- fected.	Inspect ed and passed.
1902.							
July .....	3	33			12		
August .....	9	53	15	5	13	192	44
September .....	9	197	13	2	258	286	417
October .....	2	202	6	2	185	156	68
November .....	1	195	5	1	166	22	184
December .....	4	243			252		
1903.							
January .....	1	114	2	2	82	200	78
February .....	4	33	1	1	42	75	
March .....	5	62			48		
April .....	4	44			40		
May .....	6	71			74		
June .....	7	56			97		
Total .....	55	1,303	42	13	1,269	931	791

Month.	Crew in- spected.	Passengers inspected.		Persons held in quaran- tine.	Persons bathed and effects dis- infected.	Crew and passengers vaccinated.
		Cabin.	Steerage.			
1902.						
July.....	1, 166	159	275			
August.....	1, 963	330	710	366	148	
September.....	3, 084	250	1, 586	249	68	
October.....	2, 593	195	1, 911	209	126	
November.....	3, 361	209	2, 987	9	9	
December.....	3, 548	243	2, 825			
1903.						
January.....	2, 604	273	851	141	141	
February.....	1, 381	216	831	100	100	
March.....	2, 111	298	701			
April.....	1, 853	254	896			932
May.....	2, 728	323	1, 410			
June.....	2, 371	329	629			
Total.....	28, 763	3, 079	15, 612	1, 074	592	932

*Statistics of outgoing quarantine transactions at the port of Iloilo, P. I., for the fiscal year ended June 30, 1903.*

Month.	Vessels in- spected.	Vessels in quaran- tine.	Vessels dis- infected.	Pieces bag- gage dis- infected.	Passengers quaran- tined.	
					Cabin.	Steerage.
1902,						
July.....						
August.....	50	48	6	412	26	142
September.....	201	109	11	638	53	545
October.....	192	9	3	267	42	120
November.....	171	8	1	58	7	26
December.....	121	1	1	52		
1903.						
January.....						
February.....						
March.....						
April.....						
May.....						
June.....						
Total.....	735	175	22	1,427	128	833



*Statistics of outgoing quarantine transactions at the port of Iloilo, P. I., for the fiscal year ended June 30, 1903—Continued.*

Month.	Persons vaccinated.	Persons bathed and clothing disinfected.	Cases cholera on vessels.	Pieces baggage inspected and passed.	Crew (outgoing) inspected.	Crew quarantined.	Passengers (outgoing) inspected.
1902.							
July .....							
August .....		64	4	32	1,746	362	714
September .....		174	10	1,796	4,329	1,104	2,119
October .....		54	3	1,173	1,771	111	994
November .....		8	1	107	2,619	135	2,465
December .....		7	2	3,366	3,333	7	119
1903.							
January .....							
February .....							
March .....							
April .....							
May .....							
June .....							
Total .....		307	20	6,474	13,798	1,719	6,411

### JOLO.

REPORT BY ASST. SURG. J. W. AMESSE.

OFFICE OF THE UNITED STATES QUARANTINE OFFICER,  
*Port of Jolo, Jolo, P. I., July 31, 1903.*

SIR: I have the honor to make a brief report of the transactions of the Public Health and Marine-Hospital Service for the period from the opening of this station to the ending of the fiscal year 1903, as follows:

On the 5th of May telegraphic orders were received from the chief quarantine officer for the Philippine Islands detailing me temporary quarantine officer of the port of Jolo, whereupon an inspection of arriving vessels was immediately instituted under the provisions of the United States quarantine laws and regulations. Previous to this time the quarantine supervision was under the control of a medical officer of the United States Army.

The port of Jolo is the center of the shipping interests for the islands of the Sulu group and of southern Mindanao. There is considerable traffic at all times between Jolo and the nearby islands of the Celebes group, also Borneo, Saigon, and Singapore. Quite a number of interisland steamers make Jolo a port of call, as do also a number of foreign vessels en route to and from other island ports. During the past year there were 43 entries from foreign ports, and a steady increase in the foreign trade has been observed. In addition to the above there are about 500 small sail boats ("Sapits or Moro sail boats"), whose headquarters are at Jolo, and these vessels ply between Jolo and all the surrounding islands; in fact, they come in and go out unrestricted, land at any place along the coasts, whether a port or not, discharge and load cargo, and even go to and from many of the nearby foreign ports, carrying large numbers of passengers and valuable cargoes. These sail vessels, as well as the other vessels entering the port in the past, received very little sanitary supervision, only such as was possible and absolutely necessary, owing to the military status of the district and the exigencies of war.

Immediate action was taken to gradually obtain control over the many small Moro sailing craft. This, on account of the peculiar characteristics of the Moro, and in order to prevent antagonism on their part, was done with the greatest caution and in a manner to create the impression among them that the work done is for their benefit and is not compulsory. Should the measures become objectionable to them, they would land their cargo and passengers at the nearest village and not come into the port of Jolo proper, and thereby all control over them would be lost.

Vessels entering this port between sunrise and sunset are now inspected immediately. The boarding so far has been done by means of a rowboat manned by two Filipino attendants.

An office was secured in the Government building used as the custom-house. No furnishings for the office have as yet been obtained, although the collector of cus-



toms kindly loaned the Service sufficient furniture to conduct the office work until such as was necessary could be secured from Manila.

During the past four months the health conditions of the island of Jolo have greatly improved. The epidemic of cholera has almost entirely subsided. In the walled city, Jolo proper, there has been no cholera; all the cases occurred in the adjoining Moro villages.

The work instituted by the Service has progressed without friction or opposition from any quarter, and the Service enjoys the respect and support of both military and insular authorities. The importance of a station at Jolo can not be overestimated. Its proximity to the infected ports in the Celebes, the Dutch Indies, and Straits Settlements make the port a vital one, as through this port quarantinable diseases could quickly gain a foothold in the island of Jolo and the infection be rapidly disseminated to the other islands of the Philippine Archipelago by the hundreds of small boats which stop at every landing on the coasts of the adjoining islands. The primary infection of the cholera epidemic of 1882 was directly traced to Jolo, and from there carried to the other islands and Manila by vessels.

During the two months much has been accomplished. The quarantine work has been placed on a rational and scientific basis. Masters, owners, and agents of vessels have been persuaded to adopt sanitary measures and to maintain their vessels in a better sanitary condition not only when entering port, but also throughout the voyage. The cooperation of the quarantine officers and customs inspectors at the ports of Siassi and Bongao has been obtained and uniform regulations relative to the arrival and departure of interisland vessels prevail in the larger ports of the district. While but little quarantining and disinfecting of vessels was accomplished (only one vessel being disinfected), yet the work done and results obtained are gratifying when the existing conditions are taken into consideration.

The port of Jolo promises to be one of the principal gateways to the Philippines and one of the most important ports. The fine harbor, and the fact that vessels will soon be able to come directly alongside the wharves to load and discharge, will no doubt cause every vessel coming from the south to make Jolo the first port of call. Thus, from a quarantine standpoint, Jolo will be the point for the detection of quarantinable diseases before the same have entered far into American territory.

The United States quarantine laws and regulations of 1903 were put into effect at this port on June 1, 1903.

The provisions of circular letters of June 21 and 22, issued by the chief quarantine officer for the Philippine Islands, were immediately put in force upon their receipt, although the provisions relative to mechanical cleanliness of vessels had already been, in a measure, successfully carried out. No vessels were fumigated with sulphur to kill the rats and other vermin on board during May or June.

Every assistance possible has been given the customs authorities to regulate the Moro sailing craft, it being desired that these vessels be regularly enrolled (for which no charge is made) and that they carry "ship's papers" the same as other coastwise vessels. These measures have been successful to a degree, about 150 of the "sapits" being registered. The bearing of these regulations on sanitary matters is palpable, since the efficiency of the quarantine service in the archipelago must be in direct proportion to the measure of official control over the vessels which are engaged in the interisland traffic. Where vessels enter and clear at island ports an inspection and supervision is possible, but no control can be exercised over such as come and go when and where they like, many of them as far as Borneo, and all too swift to be overtaken even by ordinary steamers.

There are two attendants on duty at the station. They are the acting oarsmen, who man the boarding boat. The advisability of remanding the disinfecting barge *Proteccion* from Cebu to Jolo, as soon as the contemplated quarantine station at Cebu is finished, is now under consideration.

The quarantine transactions for the two months during which this station has been under Service control are shown in the inclosed tabulated statements.

Respectfully,

Asst. Surg. V. G. HEISER,  
Chief Quarantine Officer.

J. W. AMESSE,  
Assistant Surgeon, in Temporary Command.



*Summary of quarantine transactions at Jolo, P. I., during the fiscal year ended June 30, 1903.*

[Station opened May 5, 1903.]

Vessels inspected.....	43
Vessels held in quarantine.....	0
Vessels disinfected.....	1
Bills of health issued.....	27
Pieces of baggage disinfected.....	0
Pieces of baggage inspected and passed.....	0
Cases of quarantinable diseases found on vessels:	
Cholera.....	0
Smallpox.....	0
Crew in quarantine.....	0
Passengers in quarantine.....	0
Crew inspected.....	1,780
Passengers inspected.....	1,081
Persons bathed and effects disinfected.....	0
Persons vaccinated.....	0

*Monthly transactions at Jolo, P. I., national quarantine station for year ended June 30, 1903.*

[Station opened May 5, 1903.]

	May.	June.	Total.
Vessels spoken and passed.....			
Steamers inspected and passed.....	18	21	39
Steamers disinfected.....			
Sailing vessels inspected and passed.....	2	2	4
Sailing vessels disinfected.....	1		1
Number of crew on steamers.....	864	884	1,748
Number of crew on sailing vessels.....	14	18	32
Number of passengers on steamers.....	654	427	1,081
Number of passengers on sailing vessels.....	2	8	10

*Statistics of quarantine transactions at the port of Jolo, P. I., during the fiscal year ended June 30, 1903.*

[Station opened May 5, 1903.]

Month.	Vessels inspected from—		Number of vessels disinfected.	Bills of health issued.	Number of crew inspected.	Number of passengers inspected.	
	Foreign ports.	Domestic ports.				Cabin.	Steerage.
May.....	2	18	1	12	878	100	556
June.....	3	20		15	902	64	371
Total.....	5	38	1	27	1,780	164	927

**FINANCIAL STATEMENT—QUARANTINE SERVICE IN THE PHILIPPINE ISLANDS (UNITED STATES CURRENCY).**

*I. Appropriation account, insular treasurer, fiscal year 1903.*

DEBITS.

To appropriation, act 430, quarantine service.....	\$26,940.66
To appropriation, act 490, quarantine service.....	24,440.00
To appropriation, act 595, quarantine service.....	53,141.00
Total.....	104,521.66



## CREDITS.

By net withdrawals by disbursing officer.....	\$64,950.93
By amount credited insular purchasing agent.....	6,772.02
By amount credited bureau of printing.....	395.40
By balance unwithdrawn.....	32,403.31
Total.....	104,521.66

II. *Statement of funds (disbursing officer), appropriations of fiscal year 1902.*

## DEBITS.

July 1. Balance June, 1902, account current.....	\$10,430.36
Aug. 9. Received from treasurer, A. W. 1769.....	1,430.10
1903.	
Apr. 11. Received from treasurer, A. W. 3013.....	160.72
Total.....	12,020.18

## CREDITS.

1902.	
July 21. Refund to treasurer, receipt 5502.....	.04
July 21. Refund to treasurer, receipt 5503.....	2,511.04
July 21. Refund to treasurer, receipt 5504.....	88.42
Sept. 13. Refund to treasurer, receipt 6411.....	1,699.66
Sept. 16. Refund to treasurer, receipt 6450.....	1,856.03
1903.	
Apr. 11. Balance to be accounted for by disbursements.....	5,865.99
Total.....	12,020.18

III.—*Statement of funds (disbursing officer) appropriations of fiscal year 1903. United States currency.*

## DEBITS.

1902.	
July 29. Received from treasurer, A. W. 1676.....	\$10,000.00
Aug. 27. Received from treasurer, A. W. 1795.....	6,000.00
Sept. 30. Received from treasurer, A. W. 1934.....	3,000.00
Oct. 30. Received from treasurer, A. W. 2058.....	7,500.00
Dec. 1. Received from treasurer, A. W. 2236.....	5,540.00
Dec. 31. Received from treasurer, A. W. 2397.....	4,000.00
1903.	
Jan. 26. Received from treasurer, A. W. 2483.....	13,000.00
Feb. 24. Received from treasurer, A. W. 2728.....	3,500.00
Mar. 24. Received from treasurer, A. W. 2926.....	4,000.00
Apr. 28. Received from treasurer, A. W. 3087.....	4,400.00
May 20. Received from treasurer, A. W. 3241.....	7,000.00
June 22. Received from treasurer, A. W. 3375.....	2,560.00
Total.....	70,500.00

## CREDITS.

1902.	
Oct. 22. Refund to treasurer, receipt 7165.....	1,041.14
Nov. 6. Refund to treasurer, receipt 7432.....	369.43
1903.	
Jan. 16. Refund to treasurer, receipt 8653.....	460.37
June 30. Refund to treasurer, receipt 259.....	3,678.13
June 30. Balance to be accounted for by disbursements.....	64,950.93
Total.....	70,500.00



*Statement of funds to be accounted for by expenditures July 1, 1902, to June 30, 1903.*

Disbursements by disbursing officer, funds fiscal year 1902 .....	\$5,865.99
Disbursements by disbursing officer, funds fiscal year 1903 .....	64,950.93
Insular purchasing agent, supplies, funds fiscal year 1903 .....	6,772.02
Bureau of public printing, printing, funds fiscal year 1903 .....	395.40
Total .....	77,984.34

*Expenditures.*

July, 1902:		
Launch and barge expenses, supplies and repairs .....	\$82.50	
Station supplies and disinfectants .....	1,017.50	
		\$1,100.00
August, 1902:		
Compensation of personnel .....	5,059.22	
Office and general service expenses .....	519.29	
Launch and barge expenses, supplies and repairs .....	252.06	
Station supplies and disinfectants .....	1,969.77	
New construction and new equipment .....	1,766.38	
		9,566.72
September, 1902:		
Compensation of personnel .....	2,491.58	
Office and general service expenses .....	579.03	
Launch and barge expenses, supplies and repairs .....	195.06	
Station supplies and disinfectants .....	496.00	
New construction and new equipment .....	2,478.78	
		6,240.45
October, 1902:		
Compensation of personnel .....	3,537.89	
Office and general service expenses .....	385.89	
Launch and barge expenses, supplies and repairs .....	655.62	
Station supplies and disinfectants .....	300.90	
		4,880.30
November, 1902:		
Compensation of personnel .....	142.95	
Office and general service expenses .....	43.51	
Launch and barge expenses, supplies and repairs .....	160.37	
Station supplies and disinfectants .....	299.71	
New construction and new equipment .....	1,201.05	
		1,847.59
December, 1902:		
Compensation of personnel .....	6,052.92	
Office and general service expenses .....	951.14	
Launch and barge expenses, supplies and repairs .....	1,432.62	
Station supplies and disinfectants .....	324.16	
New construction and new equipment .....	1,715.61	
		10,476.45
January, 1903:		
Compensation of personnel .....	2,946.27	
Office and general service expenses .....	537.50	
Launch and barge expenses, supplies and repairs .....	1,605.74	
Station supplies and disinfectants .....	290.66	
New construction and new equipment .....	2,855.32	
		8,235.49
February, 1903:		
Compensation of personnel .....	2,687.67	
Office and general service expenses .....	1,061.78	
Launch and barge expenses, supplies and repairs .....	197.41	
Station supplies and disinfectants .....	354.69	
Repairs to buildings and wharves .....	4,498.00	
		8,799.55
March, 1903:		
Compensation of personnel .....	3,447.46	
Office and general service expenses .....	754.09	
Launch and barge expenses, supplies and repairs .....	159.61	
Station supplies and disinfectants .....	254.96	
		4,616.12



## April, 1903:

Compensation of personnel.....	\$3, 267. 90	
Office and general service expenses.....	451. 64	
Launch and barge expenses, supplies and repairs.....	98. 09	
Station supplies and disinfectants.....	348. 75	
New construction and new equipment.....	160. 72	
		\$4, 327. 10

## May, 1903:

Compensation of personnel.....	2, 443. 58	
Office and general service expenses.....	636. 02	
Launch and barge expenses, supplies and repairs.....	248. 30	
Station supplies and disinfectants.....	363. 15	
Repairs to buildings and wharves.....	1, 911. 25	
		5, 602. 30

## June, 1903:

Compensation of personnel.....	3, 043. 60	
Printing blanks, books, and stationery.....	395. 40	
Office and general service expenses.....	1, 048. 63	
Launch and barge expenses, supplies and repairs.....	3, 325. 44	
Station supplies and disinfectants.....	3, 603. 10	
Repairs to buildings and wharves.....	593. 87	
New construction and new equipment.....	282. 23	
		12, 292. 27

Total..... 77, 984. 45

*Total expenditures, quarantine service in the Philippine Islands, July 1, 1902, to June 30, 1903.*

## DETAILS.

Compensation of personnel.....	\$35, 121. 04
Printing blanks, books, and stationery.....	395. 40
Office and general service expenses.....	7, 051. 02
Launch and barge supplies and repairs.....	8, 330. 32
Station supplies and disinfectants.....	9, 623. 35
Repairs to buildings and wharves.....	7, 003. 12
New construction and new equipment.....	10, 460. 09

Total expenditures, United States currency..... 77, 984. 34

*Expenditures by station.*

## Manila:

General service expenses.....	\$17, 404. 92	
Launch expenses.....	8, 391. 49	
New station equipment.....	199. 10	
		\$25, 995. 51

## Mariveles:

General service expenses and supplies.....	19, 255. 39	
Repairs to buildings and wharves.....	7, 003. 12	
New construction and new equipment.....	2, 860. 72	
		29, 119. 23

## Iloilo:

General service expenses.....	3, 514. 04	
Launch and barge expenses.....	4, 273. 19	
New station equipment.....	924. 31	
		8, 711. 54

## Cebu:

General service expenses.....	3, 614. 13	
Launch and barge expenses.....	2, 910. 21	
New station equipment.....	7, 113. 35	
		13, 637. 69

## Jolo:

General service expenses.....	437. 24	
New station equipment.....	83. 13	
		520. 37

Total expenditures, United States currency..... 77, 984. 34



*Statement miscellaneous receipts.*

[Expressed in United States currency.]

## DEBITS—1902.

July, collections for subsistence at maritime quarantine station.....	\$32. 50
August, collections for subsistence at maritime quarantine station.....	59. 35
September, collections for subsistence at maritime quarantine station.....	32. 00
October, collections for subsistence at maritime quarantine station.....	46. 00
November, collections for subsistence at maritime quarantine station.....	51. 50
December, collections for subsistence at maritime quarantine station.....	60. 00

## 1903.

January, collections for subsistence at maritime quarantine station.....	62. 00
February, refund Hongkong and Shanghai Bank, excess deposit account....	1. 50
February, collections for subsistence at maritime quarantine station.....	57. 50
March, collections for subsistence at maritime quarantine station.....	56. 00
April, collections for subsistence at maritime quarantine station.....	62. 00
May, collections for subsistence at maritime quarantine station.....	47. 00
June, collections for subsistence at maritime quarantine station.....	93. 00

Total .....	660. 35
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## CREDITS—1902.

July 21. Deposit insular treasurer, receipt 5503.....	32. 50
Aug. 28. Deposit insular treasurer, receipt 6180.....	40. 55
Aug. 28. Deposit insular treasurer, receipt 6181.....	18. 80
Sept. 11. Deposit insular treasurer, receipt 6427.....	9. 00
Sept. 28. Deposit insular treasurer, receipt 6449.....	23. 00
Oct. 11. Deposit insular treasurer, receipt 6999.....	7. 50
Oct. 15. Deposit insular treasurer, receipt 7000.....	38. 50
Nov. 11. Deposit insular treasurer, receipt 7500.....	51. 50
Dec. 8. Deposit insular treasurer, receipt 7991.....	60. 00

## 1903.

Jan. 16. Deposit insular treasurer, receipt 8852.....	62. 00
Feb. 20. Deposit insular treasurer, receipt 9251.....	59. 00
Mar. 14. Deposit insular treasurer, receipt 9652.....	56. 00
Apr. 7. Deposit insular treasurer, receipt 10058.....	62. 00
May 20. Deposit insular treasurer, receipt 10834.....	47. 00
June 9. Deposit insular treasurer, receipt 11278.....	46. 50
June 27. Deposit insular treasurer, receipt 11672.....	46. 50

Total .....	660. 35
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Respectfully submitted.

VICTOR G. HEISER,

*Asst. Surg., P. H. and M. H. S.,**Chief Quarantine Officer, Philippine Islands.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## JAPAN.

## DESTRUCTION OF RATS ON VESSELS LEAVING PLAGUE-INFECTED PORTS.

In order to insure thorough cooperation between the officers stationed at Japanese ports and the chief quarantine officer of the Philippines in all measures for protection against plague, the following letter



was addressed by the Bureau to its officers at Yokohama, Nagasaki, and Kobe:

[Letter.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, June 26, 1903.*

SIR: Your attention is called to the circular letter sent out to the officers of this Service on duty in China and Japan, under date of April 29, 1903, by Asst. Surg. Victor G. Heiser, chief quarantine officer for the Philippine Islands, in which he requests cooperation as far as possible in the fumigation of vessels with sulphur to kill rats and vermin as a preventive measure against the plague gaining access to the United States.

You are informed that the Bureau approves of this letter, and requests that you cooperate in securing the fumigation as far as possible, as the matter of destroying rats and vermin on vessels is considered a very important quarantine measure.

Respectfully,

GEO. PURVIANCE,  
*Acting Surgeon-General.*

#### YOKOHAMA.

#### REPORT OF TRANSACTIONS BY ASST. SURG. DUNLOP MOORE.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE OF THE UNITED STATES,  
OFFICE OF THE MEDICAL OFFICER IN COMMAND,  
*Yokohama, Japan, July 18, 1903.*

SIR: I have the honor to transmit herewith a report of transactions at this station for the year ended June 30, 1903. An additional report is in preparation, which will be forwarded to the Bureau as soon as certain desired data can be secured.

Respectfully,

DUNLOP MOORE,  
*Assistant Surgeon.*

The SURGEON-GENERAL.

[Inclosure.]

#### *Summary of transactions at Yokohama, Japan, for year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vesselsspokenand passed <sup>a</sup> .....	1	2	0	2	1	2	0	1	2	7	4	0	22
Steamersinspected and passed.....	16	16	18	14	19	19	19	17	16	17	14	20	205
Steamers disin- fected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels in- spected and passed.....	1	3	2	1	1	1	0	0	0	0	0	1	10
Sailing vessels dis- infected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers..	1,427	1,434	1,697	1,588	1,763	1,955	1,945	1,680	1,731	1,901	1,481	1,876	20,478
Crew on sailing vessels.....	22	68	66	24	11	24	0	0	0	0	0	26	241
Passengers on steamers.....	2,454	1,643	2,511	3,416	2,521	2,738	2,738	1,890	2,332	4,566	2,981	3,016	33,786
Passengers on sail- ing vessels.....	0	0	1	0	0	0	0	0	0	0	0	0	1

<sup>a</sup> Under this heading are included vessels to which a bill of health was granted without inspection.



## NAGASAKI.

## REPORT OF TRANSACTIONS BY SANITARY INSPECTOR R. J. BOWIE.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE OF THE UNITED STATES,  
OFFICE OF THE MEDICAL OFFICER IN COMMAND,  
*Nagasaki, Japan, July 10, 1903.*

SIR: In accordance with the terms of the circular letter of May 11, I have the honor to inclose herewith my report for the year ending June 30, 1903. The figures are necessarily incomplete, as I did not receive my appointment until July 29, 1902. Under the heading of "Vessels spoken and passed" there is no record kept either by the Japanese officials or by this office. The harbor is not visible from the sea and no outside lookout is maintained. With the exception of the cholera epidemic last summer and fall, the health of the port has been very good. I have kept no record of cases rejected for any cause. With a few exceptions, trachoma has been the main cause of rejection. The stringent provisions of the recently-amended immigration act have developed an excessive timidity on the part of the steamship surgeons, and a number of steerage passengers were refused passage after they had been examined by me and certified to the agents as entitled to pass. Consequently I have made it a rule to let the ship's doctor examine them first. Should Congress amend the act, as seems likely, I respectfully suggest that the opinions of examining surgeons at ports of departure be obtained. The steamship companies trading from Oriental ports have expressed their earnest desire to meet the Government more than half way. As I understand my duty, it is to safeguard the health of the people of the United States and to assist trade when compatible with the law. Under present conditions, owing to lack of uniform application of the regulations, injustice is done both to the corporations and to individuals, for those refused passage by our steamers simply travel via Victoria, and cross over the border from British Columbia. I am further of the opinion that a feeling of resentment is gradually being engendered in the minds of the Japanese, which will manifest itself later on. This, however, is only submitted as information.

Respectfully,

ROBERT J. BOWIE,  
*Sanitary Inspector.*

[Inclosure.]

*Summary of transactions at Nagasaki, Japan, for year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....		9	9	10	8	10	9	7	9	9	9	8	97
Steamers disinfected.....			1										1
Sailing vessels inspected and passed.....	1											1	2
Sailing vessels disinfected.....													
Crew on steamers.....	1,501	1,356	1,946	1,149	1,628	857	1,099	1,306	1,240	1,428	1,207	14,717	
Crew on sailing vessels.....	23											21	44
Passengers on steamers.....	3,532	2,255	2,990	2,260	3,318	1,130	1,803	2,134	2,578	2,522	1,787	26,309	
Passengers on sailing vessels.....													

## KOBE.

## REPORT OF TRANSACTIONS BY ACTING ASST. SURG. J. B. FOWLER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE SANITARY INSPECTOR,  
*Kobe, Japan, September, 1903.*

SIR: I have the honor to submit the following report of the transactions at the port of Kobe, Japan, covering the period from June 30, 1902, to and including June 30, 1903.



I have officially inspected 251 vessels bound for ports in the United States and ports in the possession of the United States.

Of these vessels 56 were under the United States flag, 127 were British, 51 Japanese, 10 German, 3 French, 2 Norwegian, and 1 Austrian.

Their ports of destination were as follows:

Manila .....	56
San Francisco .....	52
New York .....	46
Seattle .....	36
Tacoma .....	35
Portland .....	14
Port Townsend .....	4
Astoria (Oreg.) .....	2
Cebu .....	2
Iloilo .....	2
Honolulu .....	1
Port George .....	1

The crews of these vessels amounted to 22,193.

Of these vessels inspected 232 were steamers and 19 were sailing ships, and of the steamers 116 carried steerage passengers as follows:

Steerage passengers embarked here for—

Honolulu .....	828
San Francisco .....	521
Seattle .....	1,044
Portland .....	242
Tacoma .....	192
Manila .....	313
Canada .....	96

Steerage:

Chinese through from Hongkong .....	6,236
Koreans through from Nagasaki .....	586
Chinese through for Manzanillo .....	1,848

11,906

The number of steerage passengers, 11,906, added to the crews of all vessels inspected, 22,193, gives a total of 34,099 individually examined by me during the period of the twelve months.

All emigrants and steerage passengers whose port of departure is Kobe are also thoroughly examined by myself the day before the vessel sails; then on their fitness being determined their inspection cards are collected and taken to the United States consulate, and are there officially stamped and then distributed to the emigrants on board ship, where they go through the usual inspection before departure.

Present method of disinfection of baggage is by superheated steam and bichloride of mercury.

Doctor Boyer acts as the inspector of baggage fumigation.

The number of pieces of baggage inspected and disinfected for the period of twelve months was 3,273.

#### CHOLERA IN 1902.

The total number of cases reported in the empire was approximately 5,239, of which 2,625 ended fatally.

Authorities say that the cholera was first brought to Karatsu by a Chinese junk, and from there carried by boat to Tokyo, where the disease was at once diagnosed and every measure taken to stamp it out, but with only partial success.

The first case in Kobe and Hyogo occurred on June 16, and the last case on December 2, 1902. In June there were 3 cases and no deaths; July, 10 cases and 6 deaths; August, 29 cases and 13 deaths.

On the 8th of August all matting, strawbraid, and other articles from the City of Okayama, or within 5 miles of it, were prohibited from being dispatched from Kobe for any port in the United States.

On the 28th of August an American citizen, a first-class passenger from Shanghai, via Nagasaki, died on board steamship *Saikyo Maru* from Asiatic cholera; the ship was ordered into quarantine and remained there eight days, six cases and three deaths occurring on board while in quarantine. In September there were 105 cases and 108 deaths; October, 110 cases and 46 deaths; November, 5 cases and 11 deaths; December, 1 case and 1 death.



This makes a total of 263 cases and 185 deaths from cholera in Kobe and Hyogo prefectures.

Scarlet fever in Kobe and Hyogo prefectures: In January, 1903, there was 1 case and 1 death; in February, 1903, no deaths; in March, 1903, 1 case and no deaths; in April, 1903, 1 case and no deaths.

Smallpox in Kobe and Hyogo prefectures: In April, 1903, there were 7 cases and no deaths; in May, 1903, 10 cases and no deaths; in June, 1903, 10 cases and no deaths. Last case on 13th of June.

Respectfully,

J. BUCKNILL FOWLER,  
*Acting Assistant Surgeon.*

To the SURGEON-GENERAL.

## CHINA.

### DESTRUCTION OF RATS ON VESSELS LEAVING PLAGUE-INFECTED PORTS.

A letter similar to that sent the officers of the Public Health and Marine-Hospital Service at Japanese ports was sent to the Service officers at Hongkong and Shanghai, China, relative to destruction of rats on vessels leaving those ports, in accordance with the request of the chief quarantine officer of the Philippines at Manila, Asst. Surg. V. G. Heiser. (A copy of the letter in full will be found under "Japan" immediately preceding this chapter.)

## HONGKONG.

### REPORT OF TRANSACTIONS BY PASSED ASST. SURG. JOHN McMULLEN.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Hongkong, China, September 19, 1903.*

Sir: I have the honor to submit herewith the annual report of transactions at this station for the year ended June 30, 1903.

The year just ended has proved a more busy one at this station than the preceding one, as the increased numbers of vessels inspected, individuals bathed and baggage disinfected will show. During the year bills of health were issued to 481 steamers and 23 sailing vessels, representing a total of 39,537 officers and crew, and 21,103 passengers—7,131 cabin and 13,972 steerage. Two hundred and ninety-five individuals were rejected for various causes just prior to sailing. A majority of these vessels were bound for the Pacific coast and the Philippine Islands, although quite a number cleared for New York.

### INSPECTION SERVICE.

Inspections have been made on all vessels granted bills of health with the exception of very small craft bound for Manila and men-of-war. The time of sailing of the small launches to Manila is so uncertain that these vessels have been sent to Mariveles quarantine direct for treatment, but the crews are always inspected before delivery of bills of health. Inspection of vessels has been made as near the sailing hour as possible, when all persons sailing with the ship and the cargo are required to be on board. The different steamship companies have always furnished launches for these inspections, and with one exception there has been no great trouble experienced in this regard. If, however, a launch could be furnished this office it would facilitate the work, obviate any trouble, and make this office more independent in this respect. All Asiatic crews and steerage passengers have been examined physically, with special reference to the glandular regions, and any case of illness at all suspicious rejected. The temperatures of all Asiatic steerage passengers have been taken at the time of disinfection and noted on the disinfection card given the passenger, but the temperatures of the crews have not been taken except for some special reason. The ships' manifest, or, when none has been prepared, the boat notes, are examined at the time of inspection and a note made on the bill of health of any cargo which is considered suspicious.



## DISINFECTING WORK.

Asiatic crews and steerage passengers on vessels bound for the Pacific coast and the Philippine Islands and Guam have been bathed and their clothing disinfected in a routine way during the entire year, but those for the Atlantic coast have been inspected only, and not disinfected. The reason for not disinfecting the latter is because of the length of time required for the passage, and a number of these vessels change their crews at Singapore.

During the past year 40,517 individuals were bathed and 45,304 pieces of baggage disinfected. This work was done on the disinfecting hulk, which has been described previously. Considerable improvement is required on this plant, as the disinfection is not so satisfactory in some respects as would be desired, and it is often overtaxed.

Great difficulty has been experienced in obtaining all bedding, clothing, etc., for disinfection, since the crew, in nearly all instances, either secrete their clothing, etc., on board or put it into a sampan until after the disinfection is completed, when the the nondisinfected articles are put on board. In many instances this has been discovered at inspection just prior to sailing. All of these vessels are thoroughly searched at the time that clothing is sent to the disinfecting hulk and all articles found are immediately taken over to the hulk for treatment. This practice of the Chinese, however, of putting their clothing off the ship temporarily, until after disinfection and then taking on board, makes it exceedingly difficult to certify that "all clothing has been disinfected."

While this difficulty has been noted upon all classes of ships, it is more noticeable on Manila steamers that are disinfected about once a week, and these crews give no little trouble and annoyance in this regard. Another difficulty which has been noted in doing this work here is the substitution of one Chinaman for another. This has been detected and the man, of course, rejected, but it is a difficult matter usually to say positively whether the passenger embarking is the same individual bathed at the disinfecting hulk. A number of ships have been fumigated with sulphur for the destruction of rats, etc., when it was suspected that rats had gone on board here by reason of the vessel being in dock.

## SUPERVISION OF CARGO.

Owing to the epidemic of cholera last year all fresh fruit and vegetables were prohibited shipment and none were allowed until December, when fresh fruit was passed. No fresh vegetables, however, have yet been allowed shipment from here into the Philippine Islands, by order of the chief quarantine officer for the Philippine Islands. Supervision of all cargo shipped has been maintained throughout the year, and all shipping orders of Chinese cargo for the United States are viséd at this office before being taken on board, and the invoices also inspected and initialed. All articles on the shipping order not allowed shipment were crossed with red ink and the order signed with red ink, and those whose nature was not clearly understood were inspected. Two hundred and forty-seven bales of hides were disinfected with sulphur fumes for shipment to Manila. The following cargo was inspected and held in an approved godown for at least thirty days prior to shipment: 1,291 cases of bristles, 81 cases human hair, 243 bales of hides, and 883 bales feathers. The majority of this cargo, with the exception of the hides, was shipped to New York via the Suez.

## QUARANTINABLE DISEASES.

The only quarantinable diseases which have occurred in the colony for the period covered by this report are cholera, plague, and smallpox.

## CHOLERA.

The cholera epidemic, which commenced the latter part of February, 1902, continued until about September 1, when it began to decrease, and by October 1 the epidemic had practically ceased in the colony, since only 8 deaths occurred from October 1, 1902, to January 1, 1903. From July 1, 1902, to June 30, 1903, there were 110 cases with 99 deaths. Only 5 cases have been reported from January 1 to June 30, 1903. The whole of southern China suffered to a great extent from this cholera epidemic, during which time many foreigners died of the disease, and probably no district escaped its ravages, which were greatly aggravated by the long absence of rain and scarcity of water. The consular reports concerning the health of the various districts have proved of much value to this office, and especially so during the epidemic of cholera.



## PLAGUE.

Considerably more plague has occurred in the colony the past year than the one preceding, 1,479 cases with 1,402 deaths having been reported for the year ended June 30, and 1,282 of these occurred between January 1 and June 30. Only a few cases occurred during the winter months, but the number increased in February and continued to increase, while last year the epidemic did not commence until April. The local health authorities have a regular force of rat catchers who have been immunized with Haffkine's serum, and no deaths have occurred from plague among these.

Previous to organizing this force rats were caught and brought in by anyone, but this was discontinued, since 75 per cent of those so engaged died of the plague. Just prior to the epidemic, commencing in February last, the number of infected rats caught showed a marked increase, as did the previous year, and this is the history of previous epidemics. The history of plague in Hongkong for some years past shows that the disease commences about February, March, or April, and decreases suddenly about August 1. After these months there are very few cases, although 2 to 7 per cent of the rats caught show plague infection. The sanitary board endeavor at all times to eradicate the plague by thorough disinfection of houses where plague has occurred, etc., but it is often a difficult matter, if not an impossibility, to know where the patient died, since the Chinese are in the habit of "dumping" the bodies some distance from the house in which they died, dreading the disinfection more than the disease. The city bacteriologist has found the plague bacillus in fowls taken from the central market here, also in the flea, bedbug, and mosquito. A larger percentage of Europeans have been attacked the past year than usual, 34 having contracted the disease. A number of cases occurred on vessels in the harbor, and several of these were on H. M. S. *Ocean*, British battle ship. The great majority of the cases were Chinese of the cooly class, but some were Japanese, Indians, and Portuguese.

## SMALLPOX.

There have been sporadic cases of smallpox throughout the year, Chinese generally, the total number of cases reported being 57, with 43 deaths. One hundred and forty-two deaths from tuberculosis were reported for the twelve months. Deaths from all causes for the year amounted to 7,121 in a population, estimated, of 300,600.<sup>a</sup>

Respectfully,

JOHN McMULLEN,  
*Passed Assistant Surgeon*

The SURGEON-GENERAL.

[Inclosure.]

*Summary of transactions at Hongkong, China, for year ending June 30, 1903*

[JOHN McMULLEN, *Passed Assistant Surgeon*.]

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....	31	46	32	30	45	41	46	42	39	48	45	36	481
Steamers disinfected.....													
Sailing vessels inspected and passed.....	5	3	2	1	3	0	3	0	0	3	1	2	23
Sailing vessels disinfected.....													
Crew on steamers.....	2,617	2,964	2,708	2,946	2,740	3,517	3,139	3,725	3,301	4,570	3,524	3,207	38,958
Crew on sailing vessels.....	179	51	40	63	53	0	70	0	0	72	28	23	579
Passengers on steamers.....	1,239	1,211	893	2,144	1,316	1,265	1,279	1,464	1,813	3,656	2,833	1,900	21,513
Passengers on sailing vessels.....	1	0	1	0	0	0	0	0	0	0	0	0	2
Individuals bathed.....	2,900	3,150	2,160	3,311	2,386	3,054	3,092	3,439	3,384	5,201	4,951	3,489	40,517
Pieces baggage disinfected.....	3,621	3,763	2,453	4,398	2,826	3,586	2,900	3,480	3,774	5,942	4,796	3,505	45,304

<sup>a</sup>The other communicable diseases reported for the year are as follows: Enteric fever, 57 cases and 20 deaths; diphtheria, 17 cases and 4 deaths; scarlet fever, 7 cases and no deaths.



## SHANGHAI.

REPORT OF TRANSACTIONS BY ACTING ASST. SURG. S. A. RANSOM.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Shanghai, China, July 15, 1903.*

SIR: I have the honor to transmit herewith the annual report of transactions at this station during the fiscal year ended June 30, 1903.

This station was established in August, 1902, work being formally commenced on the 26th of that month. There were some difficulties to be overcome, not the least of which was the attitude of the merchants and shipping people, who regarded the restrictions imposed as an invasion of their rights, and they were inclined to argue that because in the past they had been allowed to ship any and everything at all times with no quarantine supervision there was no cause for "the useless hampering of trade" by the enforcement of the regulations.

This difficulty was, however, finally surmounted, partly through the good offices of Consul-General Goodnow, who throughout has supported and aided this office in every possible way, and partly through strict adherence to the regulations and the impartial treatment accorded to all.

Another difficulty arose from the fact that the office was opened in the face of an epidemic of cholera which had existed for some little time, and it was almost impossible to make the laity understand why restrictions not imposed at the beginning of the outbreak should be imposed at all, and this, of course, interfered to a greater or less extent with the work of the office.

It required also not a little trouble to become acquainted with the shipping interests that are represented here, and a very considerable expenditure of time and energy to become familiar with the conditions which obtain with regard to the various articles exported from this port to the United States, and which might be conveyors of infection.

The work done here includes the inspection of vessels, crews and passengers, and freight, such disinfection as may be deemed necessary, together with the issuance of bills of health and general sanitary supervision over all vessels and cargoes bound to ports of the United States or dependencies.

Inspections are made of all ships leaving Shanghai proper and bound to American ports, and vessels remaining more than forty-eight hours at Woosung, at the mouth of the Whangpoo River, 12 miles from Shanghai, and which clear from here, are also subjected to inspection, as are all tenders leaving Shanghai with passengers for vessels bound to American ports. And any vessel en route to an American port, arriving at Woosung with suspicious sickness on board is, irrespective of the length of her stay, required to undergo inspection by this office before bill of health is granted. To this end agents are required to present at this office the pratique issued by the quarantine officer of the imperial Chinese customs (an English physician) and a certificate from the ship's surgeon as to the character of any sickness which may have occurred during the voyage, from which data it is determined whether an inspection of the vessel herself is necessary or not.

The inspections as conducted here by this office consist of an examination into the general physical condition of every member of the ship's company and the taking of the temperature of all Asiatics; not cabin passengers.

It is required of all ships that they keep their Asiatic crews and steerage passengers on board during their stay here. This is somewhat difficult to carry out with regard to the crews of vessels remaining here forty-eight hours or more, but I believe it is carried out to the letter on the regular passenger boats which remain here only a short time, and it undoubtedly has the effect of preventing the men on the other ships from getting their luggage ashore so that it might become infected. This precaution is taken on account of the presence of smallpox here at all times, to say nothing of the other communicable diseases which are not officially reported.

Such disinfection as has been attempted has been carried out under considerable difficulties, owing to the lack of suitable apparatus to do the work.

In the fumigation of vessels which was done in three instances on account of the occurrence of smallpox on board, and once on account of cholera, sulphur was burned by the pot method, and for the disinfection of the clothing of the crew (there were no passengers) sulphur was the only thing available once, the use of the municipal disinfecting chamber being secured upon the other three occasions. This chamber of the de Mayer pattern is situated at the general hospital which renders it



more or less inaccessible, and in addition it is out of service a good part of the time. It is also rather small.

For the disinfection of steerage passengers' effects, from which all bedding except blankets is excluded, formaline-saturated sawdust (using an average of 30 c. c. of formaline, 40 per cent to each trunk or box) has been sprinkled between each layer of fabrics, and the whole put in a tight box and sealed for not less than twenty-four hours, the seal being inspected and broken here before shipment. This method has also been followed in cases where one or two new members of crew have been shipped here.

For the disinfection of freight formaline or sulphur has been used, the former by dipping the articles (vegetables for Philippine ports) in a 2 per cent solution and the latter by burning in pots.

All freight shipped from this port to the United States or its possessions is subject to the visé of this office. This was formerly done by requiring the shippers to bring in the boat notes or shipping orders for signature. This caused the parties interested more or less inconvenience, and upon the subsidence of cholera which prevailed at the time this method was adopted, and no other condition existing which in the opinion of this office justified the procedure, it was discontinued, and in its stead the method now followed, the visé of the cargo manifests, adopted.

This will explain why Table No. 2 does not show the number of pieces of freight viséd after December, 1902.

The only recommendation that this office has to submit is that a launch be provided for the transportation of the inspecting officer to and from vessels. As stated in a previous communication on this subject, this would facilitate to a considerable degree the work done here by making it possible to visit ships at such time as was desired instead of being compelled to suit official visits to the convenience of the shipping people. It would also enable this office to maintain such supervision as was desirable over vessels during their stay in this port, and this advantage during the prevalence of an epidemic could hardly be overestimated. There are other advantages which could be enumerated, but it is hardly thought necessary.

As previously stated, a suitable launch could be purchased here for between \$3,500 and \$5,500 gold, but it may be as well to mention in this connection that it is understood upon good authority that there were recently turned over by the military authorities to the Philippine civil government some 50 launches, many of which are now at Manila unused. One of these boats might be obtained and sent here for use on an army transport.

It is needless to say that it would be a great advantage to this station if it were supplied with apparatus for steam and formaldehyd disinfection, sufficient in size to take care of small lots of clothing, etc. This has been suggested to the shipping interests here, but they can not appreciate that a plant of this nature would be of any advantage to them, and hence are unwilling to incur any expense in that direction.

An autoclave for the disinfection of small compartments on board infected ships would be a very useful adjunct, although there have not been so far very many instances in which it could have been profitably used.

The health of the European settlement of Shanghai during the year just closed, with the exception of the epidemic of cholera last summer, has been, generally speaking, good. The quarantinable diseases reported present were cholera, smallpox, and typhus fever, and the annual report of the municipal health officer for the calendar year 1902 shows that the former disease was responsible for the death of 41 Europeans and 1,500 natives, while smallpox claimed 4 victims among the foreign population and 434 among the Chinese. Typhus fever caused the death of 1 foreigner, but is not reported among the Chinese.

It might be mentioned in passing that the death rate for cholera last year is estimated as having been about 56 per cent of the cases.

Typhoid fever, diphtheria, scarlet fever, and tuberculosis caused, respectively, 12, 8, 34, and 15 deaths among the foreigners, while from scarlet fever 1,493 deaths, and from tuberculosis 1,828 deaths occurred among the Chinese population. Diphtheria caused the death of a number of Chinese, but the statistics seem not to be given.

Beriberi is more or less prevalent here among the natives at all times. The mortality is stated as 10, with 52 cases.

Diarrheal diseases, exclusive of typhoid fever and cholera, were responsible for the death of 18 foreigners. The mortality from these diseases among the Chinese is not given, but it is certainly quite high.

The deaths from all causes among foreigners is stated to have been 263, estimated population 7,000, and among the Chinese 10,801, estimated population 350,000.

Among domestic animals rinderpest, glanders, and rabies prevail here, the former



amounting to practically an epidemic, while chicken cholera has been very prevalent among fowls.

It should be borne in mind that the statistics quoted are based upon such returns as the health authorities are able to obtain through the courtesy of the medical practitioners here, and through their own inspectors, as there is no compulsory report of contagious diseases. And as a good many of these inspectors are Chinese with little or no knowledge of disease, and a majority of the natives in the settlement patronize Chinese physicians only, who make no report to the municipal authorities, it will be readily understood that many inaccuracies may creep into the results obtained.

It should also be remembered that the statistics published by the health officer do not include any of the Chinese who live outside the settlement limits, nor those in the native city of Shanghai, numbering probably 1,000,000 or more souls who have free access to the settlement, and many of whom have their employment here. The mortality stated, therefore, represents but a small percentage of the deaths which actually occur in Shanghai and its immediate environs. For instance, 1,500 deaths from cholera were reported last year, while through other channels, which I have every reason to believe to be thoroughly reliable, I learn that the mortality from that disease among the natives between June and October was from 18,000 to 20,000.

The only quarantinable disease reported in Shanghai since January 1, 1903, was smallpox, from which 210 deaths seem to have occurred, while the cases are reported as 27.

The mean barometer for the year was 30.01.

The mean temperature 60.4, the maximum and minimum not being stated. It but rarely freezes here in the winter, however, while in the summer the mercury frequently rises to considerably above 100 in the shade, with a great deal of humidity.

The rainfall for the year was 39.35 inches.

Two tables are appended to this report, No. 1, supplied by the Bureau, and No. 2, to give some additional data. It will be observed that a discrepancy exists between the number of ships inspected and the number of bills of health issued. This is accounted for by the fact that some of the regular liners remain at Woosung instead of coming up to Shanghai, and in these cases the tenders and passengers, and not the vessels themselves, are inspected.

In closing this report I desire to state that this office is much indebted to Consul-General Goodnow and Deputy Consul-General White at this port for many courtesies extended and much valuable assistance in carrying out the aims of the service.

Very respectfully,

S. A. RANSOM, *Acting Assistant Surgeon.*

The SURGEON-GENERAL.

[Inclosures.]

*Summary of transactions at Shanghai, China, for year ending June 30, 1903.*

TABLE 1.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vesselsspokenand passed.....													
Steamers inspect- ed and passed.....		4	13	11	9	7	7	4	4	8	10	5	82
Steamers disin- fected.....						2	1						3
Sailing vessels in- spected and passed.....			2	1	1	1	1	1	2	3	1	2	15
Sailing vessels disin- fected.....			1										1
Crew on steamers.....		338	894	561	540	328	293	216	250	484	586	372	4,862
Crew on sailing vessels.....			39	10	31	26	11	11	41	65	23	27	284
Passengers on steamers.....		216	467	54	106	75	190	74	300	500	237	509	2,764
Passengers on sail- ing vessels.....									2	4			6



TABLE 2.

	Bills of health issued.	Pieces of freight vised.	Pieces of freight inspected and passed.	Pieces of freight disinfected.	Pieces of freight rejected.	Pieces of baggage disinfected.
July.....						
August.....	4	21,295			552	
September.....	20	123,952	201	25	2,717	26
October.....	19	87,075	94	59	52	11
November.....	13	86,582	1,145		3	
December.....	14	30,000	195		5	
January.....	12			7		57
February.....	11					
March.....	11					16
April.....	14			52	2	33
May.....	16			303		9
June.....	12			1		23
Total.....	146	348,904	1,635	447	3,331	175

## INDIA.

## DETAIL OF MEDICAL OFFICER TO UNITED STATES CONSULATE AT CALCUTTA ON ACCOUNT OF PREVALENCE OF PLAGUE.

Owing to the alarming prevalence of plague in many parts of India, and the danger of its being brought to the United States by vessels sailing from Calcutta and Bombay to ports of this country, the following detail for duty in the office of the United States consul-general at Calcutta, India, was made under authority contained in the act approved February 15, 1893:

[Letters detailing Passed Assistant Surgeon Sprague.]

JUNE 25, 1903

SIR: You are hereby relieved from duty at Fort Stanton, N. Mex., and directed to proceed to Calcutta, India, where you have been assigned, by approval of the President, to duty in the office of the consul-general. Copy of letter approved by the President is herewith inclosed.

Letter of instructions relative to your duties will form the subject of a separate communication.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*

Passed Asst. Surg. E. K. SPRAGUE,  
*Public Health and Marine-Hospital Service, Fort Stanton, N. Mex.*  
(Through medical officer in command.)

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, June 18, 1903.*

SIR: You are hereby detailed for duty in the office of the United States consul-general at Calcutta, India, signing bills of health in connection with the consul-general, in accordance with the provisions of section 2 of "An act granting additional quarantine powers to and imposing additional duties upon the Marine-Hospital Service," approved February 15, 1893.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*

Passed Asst. Surg. E. K. SPRAGUE,  
*Public Health and Marine-Hospital Service, Fort Stanton, N. Mex.*  
(Through medical officer in command.)

JUNE 19, 1903.

Approved:

H. A. TAYLOR, *Acting Secretary.*

WHITE HOUSE, *June 23, 1903.*

Approved:

T. ROOSEVELT.



[Letter of instructions.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
Washington, June 27, 1903.

SIR: Referring to orders of the 25th instant, detailing you for duty in the office of the United States consul-general at Calcutta, India, you are informed that the duties required of you are enumerated in the United States Quarantine Regulations, under the heading of quarantine regulations to be observed at foreign ports and at ports in the possessions and dependencies of the United States.

You will sign the bills of health in conjunction with the consul-general, and the State Department has been requested to notify him of your detail, so that he may render you the necessary courtesies and assistance. Your attention is especially called to the prevalence of plague in different parts of India, and hence to the importance of preventing the presence of rats and vermin on vessels leaving India for ports in the United States, its possessions, or dependencies.

Respectfully,

GEO. PURVIANCE,  
*Acting Surgeon-General.*

Passed Asst. Surg. E. K. SPRAGUE,  
*Public Health and Marine-Hospital Service, Fort Stanton, N. Mex.*

(Through medical officer in command.)

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## EGYPT.

### INSPECTION OF DISINFECTION OF RAGS AT ALEXANDRIA AND CAIRO.

While en route to the Philippines to relieve Passed Assistant Surgeon Perry as chief quarantine officer of those islands, Assistant Surgeon Heiser was detailed as representative of the Public Health and Marine-Hospital Service at the Egyptian Medical Congress which met at Cairo on December 19, 1902. As the Bureau was anxious to learn the methods for the disinfection of rags in the ports of Cairo and Alexandria, prior to their shipment to the United States, the following order was addressed to Assistant Surgeon Heiser. His report on this inspection is given below.

[Letter.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
Washington, November 24, 1902.

SIR: While in Egypt, as representative of the Public Health and Marine-Hospital Service, at the Egyptian Medical Congress, to meet at Cairo, December 19, 1902, you are directed to make an inspection of the methods of disinfection of rags at the ports of Cairo and Alexandria, preparatory to shipment to the United States, under the United States Quarantine Regulations in regard thereto.

You are informed that the State Department has been requested to authorize the consul-general at Cairo to afford you the necessary facilities for the above inspections. The State Department has notified this Bureau that the above instructions will be sent to the consul-general at Cairo, Egypt. In this connection, you are informed that this is by no means an inspection of the consular methods; it is simply as to the methods of disinfection of rags as above alluded to, so you will observe every courtesy in making these inspections.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*

Asst. Surg. V. G. HEISER,  
*Public Health and Marine-Hospital Service, New York, N. Y.*



## REPORT OF ASSISTANT SURGEON HEISER.

ALEXANDRIA, EGYPT, *January 8, 1903.*

SIR: In pursuance of the instructions contained in Bureau letter of November 24, 1902, relative to the disinfection of rags preparatory to shipment to the United States, I have the honor to submit the following report:

On stating the object of my mission to Consul-General Long, he expressed himself as being much pleased that the Service had extended him this aid in connection with the technical part of the disinfection, and that he was also glad because it gave him an opportunity to have me inquire into some sanitary matters upon which he was desirous of having further information. He stated that he would be pleased to put in force any suggestions which might be made.

On inquiry I learn that no rags have been shipped to the United States for more than a year. This is due to the fact that the Egyptian Government has not permitted the transportation of rags during this period owing to the presence of cholera and plague in the country.

The inspection of the disinfecting facilities was very unsatisfactory because they were not in working order. But from such inspection as I was able to make it was quite evident that the facilities were much better than when I was here before on similar duty.

The names of the firms and the details connected with the business are the same now as three years ago. In order to avoid repetition, for further particulars I would, therefore, respectfully refer to my report of December, 1899.

It has been customary to keep rags here after their disinfection for periods amounting sometimes to a year or more. This is open to the objection that the rags may become infected before shipment, but the principal objection is that it is difficult to identify the rags as the same which have been previously disinfected. It is also open to the objection that fraud is much more possible when long periods exist between the disinfection and the shipment.

I inclose herewith a copy of the report containing the suggestions to the consul-general.

The rag business between Egypt and the United States seems to be on the decline; the rag merchants attribute this to the increase in the use of wood pulp in the manufacture of paper.

Respectfully,

VICTOR G. HEISER,  
*Assistant Surgeon.*

The SURGEON-GENERAL.

[Inclosure.]

ALEXANDRIA, EGYPT, *January 7, 1903.*

SIR: In accordance with your verbal request relative to the disinfection of rags intended for shipment to the United States, I have the honor to report as follows:

Owing to the fact that the shipment of rags has been prohibited for more than a year by the Egyptian Government, the various rag establishments have not been operated, thus making the inspection of their disinfecting facilities rather unsatisfactory, because they are out of repair owing to disuse. In the case of the establishment of I. Salama, of Cairo, an exception can, however, be made. From an inspection of his disinfecting room, it is evident that no amount of repairs can make it a tight room within the meaning of the regulations. I would suggest that a new room be constructed. In the construction of rooms, particular attention should be given to the doors, in order to insure their fitting properly when closed. The racks must be so constructed that the sulphur fumes can come in contact with the rags on all sides. The disinfecting room of L. Onofrio, of Alexandria, has been found very satisfactory in practice.

Before disinfection is again commenced, I would respectfully suggest that you have an inspection made of the various disinfecting rooms in order to insure their being put in good repair.

I would also suggest that the disinfection of rags at long periods before shipment be discouraged wherever possible. It is always possible that they may become infected while being thus stored, and in that case require a second disinfection.

In conclusion, I have to thank you for the many courtesies which you have extended me since my arrival.

Respectfully,

VICTOR G. HEISER,  
*Assistant Surgeon.*

Hon. JOHN G. LONG,  
*United States Agent and Consul-General, Cairo, Egypt.*



## ENGLAND.

Asst. Surg. Carroll Fox, stationed in the office of the United States consul at Liverpool, England, under the authority of section 2 of the act approved February 15, 1893, was detached from that station on the 15th of September, and ordered to proceed to Manila, P. I.

## LIVERPOOL.

REPORT BY ASST. SURG. CARROLL FOX.

LIVERPOOL, ENGLAND, *September 30, 1902.*

SIR: I have the honor to make the following brief report for the period between June 30 and September 15, 1902. During this time there were 78 cases of smallpox and 7 deaths, 2 of these occurring in unvaccinated people, 3 occurring in people who had been improperly vaccinated, and 2 in persons with good scars. None of the cases in which death took place were revaccinated. For the same period there were also 34 cases of typhus fever, with 8 deaths.

The hospital accommodation for infectious diseases is very good, there being in all 6 municipal hospitals. The newest hospital is worthy of description. The site, comprising 120 acres, is situated just without the city in practically open country, and near the railroad station. It is an ideal spot for a contagious hospital, and the grounds cover such a large area that it will be impossible to erect dwellings or such structures in too close proximity to the hospital buildings. There are at present about 4 pavilions, 3 of which are wooden and were erected hurriedly at the time of the plague outbreak. They are only intended for temporary buildings but are well planned and built, and I should imagine quite as satisfactory for permanent use as more elaborate brick structures. These buildings are however not plastered inside which is a fault, as it has been the experience that nurses and attendants are more apt to contract disease when working in rooms where the walls and ceilings are of wood. It is the intention to demolish these three buildings, utilizing the fourth, which is of brick, for smallpox, and building another of about 300 beds in a different part of the grounds in which to care for other infectious diseases.

All of the city hospitals are equipped with a steam disinfectant and modern laundry. In the hospital under consideration the clean end of the steam chamber opens into the laundry so that clothes after disinfection can be taken out and immediately subjected to the washing process.

An interesting feature of this hospital is the system by which refuse water from the wards and laundry is filtered before passing into a little stream which carries it away. There is a separate filter for the wards and one for the laundry. Each filter is composed of two beds. The bed consists of a layer of coke having a depth of two feet and resting on a layer of cement. The water after passing through the first filter flows into the second bed of similar composition, but on a lower level. Before emptying into the stream there is a scheme used by which the filtered water is mixed with a disinfectant as it passes out. The results obtained have been extremely satisfactory, as is proven by the bacteriological examination of the filtered water. This filter is worthy of a longer and better description, but I am unable to go further into detail.

The steam disinfectors used by this city differ somewhat from those used by the Service. They are alike in that there is a central chamber surrounded by a jacket which can be heated and maintained at a certain temperature; and there is also a steam vacuum apparatus. But the steam for the chamber just before entering passes through a hot copper coil to insure its noncondensation, and, after withdrawing the steam and producing a second vacuum, instead of allowing cold air to pass in, air heated by first passing through the before-mentioned hot copper coil is allowed to enter in order to dry the clothes more thoroughly. There is no formalin apparatus attached to any of these disinfectors. In fact, formaldehyde gas is not often used as a disinfectant.

The doors are screwed tight in a similar manner to ours, but the nuts are larger and heavier, and are tightened by means of handles permanently attached to them, and no wrench is required. Nor are there as many nuts used as in our apparatus. It would seem that unnecessary time and labor were expended in applying and reapplying a wrench to a number of nuts in order to tighten them, and the leverage



obtained by so doing is sufficient to twist off a screw, as has been done several times to my knowledge, especially where the chamber has been used many times.

In comparing the steam disinfectors used here with those of the Service I have always kept in mind the disinfecting chamber at the Port Townsend quarantine station, as it was there that all my practical experience in disinfecting was obtained. This, however, may not be a fair comparison as that particular chamber was of an old type.

I have been much interested in seeing some typhus fever during my stay here. I am told that nearly all cases show marked evidence of having been bitten by fleas or bedbugs. This would probably also be true of many cases of other infectious disease admitted to the city hospitals; but taking into consideration the fact that typhus fever outbreaks have always arisen in dirty, overcrowded ships and jails or among the filthy slum population of a city, it is not at all unlikely that fleas or bedbugs or both may play an important part in the carrying of contagion.

The following speaks well for vaccination. All nurses and attendants, inspectors, etc., who are likely to come in contact with infectious diseases are thoroughly vaccinated and revaccinated. Not one of these employees has caught smallpox, though a number of them have been many times exposed to it. On the other hand, 200 have contracted those diseases against which there is no known method of producing an acquired immunity, as typhus, enteric, and scarlet fevers.

Respectfully,

CARROLL FOX,  
*Assistant Surgeon.*

### MEDICAL INSPECTION OF IMMIGRANTS.

#### DETAIL OF OFFICERS TO UNITED STATES PORTS AND QUEBEC, CANADA.

During the fiscal year ended June 30, 1903, 857,046 immigrants came to the United States. Practically all of these were physically examined by officers of the Service.

The new immigration law, entitled "An act to regulate the immigration of aliens into the United States," approved March 3, 1903, put into effect more stringent laws against the landing of aliens afflicted with loathsome or with dangerous contagious diseases, idiots, insane persons, epileptics, and persons who have been insane within five years previously, persons who have had two or more attacks of insanity at any time previous, or who from physical causes are likely to become a public charge. These increased restrictions added greatly to the responsibility and amount of work to be done by officers of the Service detailed for the medical inspection of aliens, and upon request of the Commissioner-General of Immigration, the following-named medical officers were detailed exclusively for the physical examination of aliens: Asst. Surg. M. W. Glover at Baltimore, Md., Asst. Surg. A. M. Stimson at New Orleans, La., Asst. Surg. C. E. Lord at San Francisco, Cal., and Acting Asst. Surg. M. V. Safford at Boston, Mass. Asst. Surg. W. C. Billings, who was stationed at St. Johns, New Brunswick, where aliens bound for the United States were examined during the closure of navigation in Canada, was moved to Quebec as soon as the spring season allowed the reopening of navigation. In addition to these special details all medical officers of the Service stationed at points on the borders between the United States and Canada, and Mexico, were instructed to physically examine all immigrants referred to them by the immigration officials. Under the new immigration law the Service is reimbursed by the Bureau of Immigration for all expenditures incurred in carrying out the medical inspection of aliens.

The following general letter of instructions was sent to all of the above-mentioned officers.



[Letter of instructions.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
Washington, July 3, 1903.

*Medical officers, acting assistant surgeons, Public Health and Marine-Hospital Service, and others concerned:*

Your attention is called to paragraph 804, Revised Regulations of the Service, and you are directed in future to physically examine all aliens submitted to you by the immigration officer at your port. In making this physical examination you will follow, as far as possible, the directions in the Book of Instructions for the Medical Inspection of Immigrants.

Respectfully,

WALTER WYMAN, *Surgeon-General.*

#### BOOK OF INSTRUCTIONS.

To insure uniformity in the method of conducting the medical inspection of immigrants the Bureau detailed a board of medical officers to prepare a book of instructions for the medical inspection of immigrants. This book of instructions has proved to be of great advantage in conducting these inspections. It was sent to each medical officer.

#### CERTIFICATES OF INSANITY.

The following correspondence in regard to the requirement of paragraph 810 of the Revised Regulations, that at least two medical officers of the Service should concur in issuing certificates of insanity, is self-explanatory.

[Letters.]

TREASURY DEPARTMENT, BUREAU OF IMMIGRATION,  
Washington, June 8, 1903.

SIR: With reference to paragraph 810 of the Regulations of the Public Health and Marine Hospital Service, I have to invite attention to a case where an exception thereto would seem to be desirable, to wit: Under the laws of the State of Pennsylvania no one can be admitted to a hospital for the insane unless two physicians make certificates as to the person's insanity, and in the case of aliens who become public charges in Pennsylvania on account of being insane it is suggested, subject to your approval, that the rule mentioned be amended so that the certificate of but one medical officer in your service will be necessary. The case which brought this matter up arose in the city of Philadelphia, where there is but one marine hospital surgeon available for immigration work, and the regulation is tacitly complied with by the State law mentioned, two civil physicians making the examination upon which original commitment is made.

Respectfully,

F. H. LARNED,  
*Acting Commissioner-General.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
Washington, June 11, 1903.

SIR: Referring to your letter of the 8th instant, with reference to paragraph 810 of the Regulations of the Public Health and Marine-Hospital Service, asking that this paragraph be amended so that the certificate of but one medical officer of this Service will be necessary in giving a certificate of insanity at the port of Philadelphia, Pa., and stating as a reason for this request, that there is but one marine hospital surgeon available for immigration work at that port, I have to inform you that the medical officer in command at Philadelphia, Surg. Fairfax Irwin, is prepared at any time to examine aliens in conjunction with Assistant Surgeon Korn in compliance with paragraph 810 of the regulations of this Service.

In this connection you are informed that the same rule holds good in such cases at the ports of New Orleans, La.; Baltimore, Md.; Boston, Mass.; San Francisco, Cal.;



Detroit, Mich., and Buffalo, N. Y. At all of these places the medical officers in command have been directed to assist the medical officer specially detailed for the medical inspection of immigrants when he is in need of assistance.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*

The COMMISSIONER-GENERAL OF IMMIGRATION,  
*Treasury Department, Washington D. C.*

#### BOARDS OF MEDICAL OFFICERS TO CONSIDER SPECIAL CASES.

Under the provisions of paragraph 813 of the Service regulations authorizing the Surgeon-General to appoint a board to consist of at least three medical officers of the Service to serve at ports where immigrants are landed for the consideration of such cases as may be brought before it under the provisions of paragraph No. 811, the following letter was sent to Surg. Fairfax Irwin, Public Health and Marine-Hospital Service, Philadelphia, Pa.; Surg. H. R. Carter, Baltimore, Md.; Surg. R. M. Woodward, Boston, Mass.; Surg. G. W. Stoner, Ellis Island, New York, N. Y.; P. A. Surg. C. P. Wertenbaker, New Orleans, La.; P. A. Surg. Hugh S. Cumming, San Francisco Quarantine, Angel Island, Cal.; Surg. H. W. Austin, Marine Hospital, Detroit, Mich.; Surg. Eugene Wasdin, Buffalo, N. Y.; P. A. Surg. L. E. Cofer, Honolulu, Hawaii; Asst. Surg. V. G. Heiser, Manila, P. I.:

[Letter.]

APRIL 6, 1903.

SIR: Under the provision of paragraph 813, Regulations of the Public Health and Marine-Hospital Service of the United States, November 21, 1902, you are hereby designated as chairman of the board for the consideration of such cases as may be brought before it under the provision of paragraph 811 of the above regulations.

The other two members of the board will be the officers who may be on duty at your station at such time as you may convene the board.

Respectfully,

WALTER WYMAN, *Surgeon-General.*

#### NIGHT INSPECTION AT QUEBEC, CANADA.

Upon receipt of the following letter from the Commissioner-General of Immigration, the telegram appended below was sent to Asst. Surg. W. C. Billings, Quebec, Canada:

[Letters.]

TREASURY DEPARTMENT, BUREAU OF IMMIGRATION,  
*Washington, May 6, 1903.*

SIR: Conditions in the matter of inspection of aliens at Canadian ports differ widely from those existing at ports within the United States. At the former we have to deal with the matter of passengers professing to be destined to points in Canada; with these passengers we have nothing to do, but it has been found impracticable to postpone inspection of those coming under our jurisdiction until after the Canadian authorities have inspected the passengers going to that country only. In consequence, it has been found necessary to make inspections at night or any time that the ships arrive, in order to prevent the landing of our passengers along with those going to Canada.

At Quebec, Doctor Billings declines to make medical inspection at night, citing with perfect propriety the regulations of your Service. Inasmuch, however, as it will be absolutely necessary to continue inspection at night, so far as Quebec is concerned, I have to request that you will issue a waiver of the regulations in this case for the reasons cited. Every facility for night inspection will be provided Doctor Billings.

Respectfully,

F. H. LARNED,  
*Acting Commissioner-General.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, May 13, 1903.*

SIR: Referring to your letter of the 6th instant, stating that it was absolutely necessary to make the medical inspection of aliens at Quebec, Canada, at night, and requesting that a waiver of the regulations be issued so that Assistant Surgeon Billings can make the inspection at night, I have to inform you that, in view of the emergency stated, a telegram has been sent to Doctor Billings to make the examination as requested.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*

The COMMISSIONER-GENERAL OF IMMIGRATION,  
*Treasury Department, Washington, D. C.*

[Telegram.]

WASHINGTON, May 15, 1903.

BILLINGS,

(Care U. S. Commissioner of Immigration, Quebec, Canada.)

Inspect at night. Consider each one an emergency. Commissioner-General states every facility for night inspection will be provided.

WYMAN.

#### SHIPS' MANIFESTS OF IMMIGRANTS NOT TO BE SIGNED BY SERVICE OFFICERS.

Several requests have been made to officers of the Service engaged in the medical inspection of immigrants to sign ships' manifests of immigrants. The following correspondence in that connection is herewith shown:

[Letters.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*San Juan, P. R., May 26, 1903.*

SIR: I have the honor to request the decision of the Bureau as to whether it is the duty of a medical officer, Public Health and Marine-Hospital Service, to sign the manifest of immigrants going from here to the United States.

These manifests are signed by the ship's surgeon, but when there is no surgeon on board the law allows the agent to have any reputable physician to sign them. Lately, however, they have been brought to this office for signature, presumably to save the fee paid to the private physicians.

Respectfully,

W. W. KING,  
*Assistant Surgeon,  
Chief Quarantine Officer for Porto Rico.*

THE SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, June 2, 1903.*

SIR: Referring to your letter of May 26, requesting a decision from the Bureau as to whether it is the duty of the medical officer of this Service to sign the manifests of immigrants coming from your port to the United States, you are informed that such duty does not belong to officers of this Service, and it is not deemed advisable for them to perform it.

The law says, "If no surgeon sails with any vessel bringing aliens, the mental and physical examinations and the verifications of the lists or manifests shall be made by some competent surgeon employed by the owners of the said vessel."

Respectfully,

GEO. PURVIANCE,  
*Acting Surgeon-General.*

Asst. Surg. W. W. KING,  
*Public Health and Marine Hospital Service,  
Chief Quarantine Officer, San Juan, P. R.*



INSPECTION OF IMMIGRANTS FROM BARKENTINE *VERA CRUZ* WRECKED  
NEAR NEWBERN, N. C.

On May 7, 1903, the barkentine *Vera Cruz*, with several hundred immigrants on board, was wrecked near Newbern, N. C. Upon the request of the Commissioner-General of Immigration that a medical officer of this Service be detailed to make the medical inspection of these aliens, the following telegram was sent to Surg. H. R. Carter, Baltimore, Md. Assistant Surgeon Glover's report of the inspection of these aliens is hereto appended:

[Telegram.]

WASHINGTON, May 12, 1903.

Surg. H. R. CARTER, *Marine Hospital, Baltimore, Md.*:

Instruct Glover proceed by first train to Newbern, to assist Inspector Stump by medical inspection immigrants.

WYMAN.

## REPORT OF ASSISTANT SURGEON GLOVER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Baltimore, Md., June 3, 1903.*

SIR: I have the honor to submit the following report of special duty under Department telegraphic orders of May 12, 1903:

I left my station, Baltimore, Md., on May 12, 1903, for Newbern, N. C., meeting Inspector Stump and stenographer en route, and arrived at destination about 6 p. m., May 13. Was met by Doctor Primrose, who had been in charge of the aliens, and drove with him to the Government dock, where the immigrants were held by order of the collector of customs. The only accommodations for the aliens consisted of an old shed without any windows, about 100 by 30 feet in size. This was divided into two unequal portions by a wooden partition. In the smaller room were placed the 22 women and 3 children, with considerable baggage, while in the larger room the rest of the aliens were housed. I found that there were 11 ill—10 men and 1 woman—with severe diarrhea. All the aliens were insufficiently clad and suffered greatly from cold, particularly at night. Fortunately, all through this time the weather was fair, for the shed would have afforded little protection from rain. As soon as conversant with the situation a recommendation was made to Mr. Stump that those who were ill be placed in more suitable quarters, where they could receive proper attention. There is no hospital in Newbern, and none nearer than Wilmington, N. C. It was therefore imperatively necessary to rent a house and fit out a temporary hospital, as no tents could be secured. Fortunately, a large building used for church fairs and other festal occasions was available, and with Mr. Stump's approval was rented and a dozen wooden cots, blankets, sheets, pillows, necessary medicines, food, etc., purchased. A negress was secured as nurse and a white man as watchman and orderly. By 9 o'clock that night the 11 patients had been transported to this hastily organized hospital and started upon a proper routine of diet and medication.

On the 14th the inspection of the aliens was begun by Mr. Stump, and as this necessitated my presence on the dock I turned the care of those in the hospital over to Doctor Primrose. On making rounds among the aliens 3 were discovered ill and ordered to the hospital. I decided to change the diet from canned meats to soup, mush, milk, bread, and coffee. It was found to be a difficult matter to secure the necessary food stuffs—not only on account of the limited facilities of the town but also on account of the lethargy of its inhabitants. In the evening 3 more were taken to the hospital with fever and diarrhea. Owing to the mixed-up condition of the manifests and lack of accommodations the inspection was of necessity slow.

On Friday, the 15th, the women and children were removed from their cramped quarters and placed in the upper floor of the hospital building. Five more ailing aliens were sent to the hospital in the morning and evening. Eleven were discharged from the hospital much improved.



On Saturday, the 16th, the inspection was concluded. On this day there were 10 discharged from the hospital and 5 admitted—2 in the morning and 3 in the evening. There were 6 cases of trachoma found among the aliens, for the most part well-marked cases. Taken as a whole the aliens were in good condition considering the privations they had undergone. They were a cleanly, docile class of negroes. The diarrhea from which so many suffered was caused, I think, by the eating of large quantities of canned meats, which, with bread, constituted their sole diet for almost three days after being landed in Newbern. They had suffered greatly from lack of food and water on board ship and when landed gorged themselves on potted ham and tongue and canned beef, many eating two and three cans at a meal. The disorder, however, yielded quickly to proper diet, rest in bed, and simple medication. In a few cases it was necessary to use rectal irrigations of salt solution. The illness was confined almost wholly to the men, but 1 woman being afflicted, due in all probability to the fact that the males were the stronger and the greedier.

On Sunday, the 17th, preparations were made by Mr. Stump to move the aliens to New Bedford, Mass. Seven were discharged from the hospital, leaving 3 who were unable to travel. These were Manoel Jose Barbossa, admitted May 16; Francisco Pires and Eugenio dos Santos, admitted May 14, the last named being the most seriously ill. The trip to New Bedford required two nights and a day and a half. There were several cases of colic and diarrhea and a number of sick headaches, due to riding in the cars. To these relief was given from the few drugs carried along from Newbern, N. C. On arrival at New Bedford the medical care of the aliens was transferred to Doctor Bullard and his attention called to a few cases coming under Class B for disposal.

I desire to express my thanks to Mr. Stump, the inspector in charge, for his hearty cooperation in my work, by which it was possible to render necessary relief promptly to these poor aliens; also to Doctor Primrose, who, by his energy and knowledge of the resources of the town, rendered possible the establishment of a hospital in three hours and whose care and attention to the patients therein was such as to enable us to depart with all but 3 of the 30 sick.

Respectfully,

M. W. GLOVER,  
*Assistant Surgeon.*

Respectfully forwarded.

H. R. CARTER, *Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## UNITED STATES.

BOSTON, MASS.

REPORT ON MEDICAL INSPECTION OF ALIEN IMMIGRANTS AT BOSTON, MASS., BY  
ACTING ASST. SURG. M. V. SAFFORD.

UNITED STATES IMMIGRATION SERVICE,  
OFFICE OF COMMISSIONER,  
*Boston, July 3, 1903.*

SIR: I transmit herewith, duly filled out, the blank referred to in Bureau circular letter of May 14, 1903, and also in compliance with said letter I would beg leave to call attention to the following matters in connection with the medical inspection of aliens at this port:

The figures given under the head "numbers inspected" in the blank above mentioned and as well in the monthly reports of this inspection work conform to the official figures of the Immigration Bureau for "immigration" at the port of Boston. Owing to the large Canadian and transit travel through this port, the number of aliens who arrived here subject in every way to our immigration laws (except in matter of head tax) and covered by our medical inspection was, during the past fiscal year, 89,561. The total number of arriving passengers, among whom the above-mentioned aliens were mixed, was 120,291.

It has been the practice of the medical officer directly engaged in the inspection work to make medical certificates in such cases as are specifically excluded by the immigration laws or mentioned as certifiable in the Bureau regulations, and including any case where the person's physical condition in itself seemed to justify a reference to the board of special inquiry to determine the person's right to land.



In reference to the disparity between the number of cases certified and those deported, it is to be noted that the cases of serious physical disability are not likely to be accepted for passage unless those representing the steamship companies are satisfied, through previous correspondence, that such cases are good business risks and that relatives and friends on this side will be able to sustain the contention that the new arrivals are not likely to become public charges.

In addition to the 308 certificate cases, the attention of the immigrant inspectors was, during the year, brought to about 2,100 less serious defects—defects in which, in the medical examiner's opinion, the question of release or holding for the board of special inquiry might properly be left to the judgment of the immigrant inspector before whom the passenger would come. In accordance with arrangements made during the year, statements of this character are transcribed by the immigrant inspector in column 21 of the manifest sheet, and thus become a part of the permanent records of the office. In this category were included all ordinary instances of poor physique and of physical deterioration incident to age.

By thus leaving the matter of the person's detention in these cases to the discretion of the immigrant inspector, it would appear that the provisions of section 17 of the act of March 3, 1903, requiring the examining medical officers "to certify, for the information of the immigration officers and the boards of special inquiry, any and all physical and mental defects or diseases," was observed, and that at the same time there were avoided an unnecessary multiplication of special inquiry cases and a tendency on the part of immigration officers to look on a formal medical certificate as not necessarily important.

Very often one of these notations of so-called "minor defects" is really the factor which determines an alien's exclusion, but it seems impracticable to attempt to bring out in a formal report the part which this important phase of the medical work plays in the exclusion of aliens.

During the year the medical examiner has turned back to the custody of the steamship companies all passengers whom, by reason of disease, acute illness, or necessity for further medical examination, he could not pass. Whenever the welfare of the passengers or the interests of the medical examination demanded, it has been found possible without formal contracts to make satisfactory arrangements for the transfer of nearly all such cases to hospitals in this vicinity. Bills for maintenance have been rendered by the hospitals directly to the steamship company concerned.

During the year 105 passengers have been so transferred. If the steamship companies had had the opportunity to unload their detained on the immigration office, the number of such hospital cases would easily have been doubled, and as the Immigration Bureau expects in a few months to have at this port a detention station, where we will assume charge of detained passengers, it may soon be found necessary to make some changes in the existing arrangements for the care of hospital cases.

The immigration at this port in physical condition, resources, and self-reliance is superior to the immigration to this country as a whole. The Italian passengers are subjected to an inspection at Naples far more thorough than anything in existence at any other foreign port, and the passengers from British ports are comparable only with those arriving at New York by the White Star or Cunard lines.

The number of immigrants at Boston for 1903 is practically double that for 1902 and three times that for 1901. Even though immigration as a whole is now likely to begin to abate, the indications are that further increases for this port may be expected, accompanied by a deterioration in its present quality. New arrangements in connection with the plans of the International Mercantile Marine and the breaking away of the Cunard Line from the conference agreements will tend to bring the continental type of immigrant more into prominence here.

Furthermore, when the new detention station is completed, it is expected that immigrants will be brought direct from Hamburg and Antwerp. The companies engaged in passenger business from these ports already have freight ships running here and terminal facilities for forwarding passengers.

Respectfully

Surg. R. M. WOODWARD,  
*Public Health and Marine-Hospital Service.*

Respectfully forwarded.

M. VICTOR SAFFORD,  
*Acting Assistant Surgeon.*

R. M. WOODWARD, *Surgeon.*



[Inclosure.]

*Report of inspection of aliens at the port of Boston, Mass., during the year ended June 30, 1903.*

Month.	Number in- spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July.....	5,417	4	1	Prohibited diseases, 1.
August.....	4,545	25	6	Prohibited diseases, 1; likely to be- come public charge, 5.
September.....	6,418	22	6	Do.
October.....	5,332	32	4	Prohibited diseases, 3; likely to be- come public charge, 1.
November.....	5,040	24	10	Prohibited diseases, 7; likely to be- come public charge, 3.
December.....	2,065	15	6	Prohibited diseases, 2; likely to be- come public charge, 4.
1903.				
January.....	2,095	8	3	Prohibited diseases, 1; likely to be- come public charge, 2.
February.....	2,758	14	4	Prohibited diseases, 3; likely to be- come public charge, 1.
March.....	4,929	19	12	Prohibited diseases, 3; likely to be- come public charge, 9.
April.....	9,784	41	9	Prohibited diseases, 2; likely to be- come public charge, 7.
May.....	11,584	59	17	Prohibited diseases, 5; likely to be- come public charge, 12.
June.....	6,192	45	22	Prohibited diseases, 8; likely to be- come public charge, 14.
Total.....	66,159	308	100	

R. M. WOODWARD,  
*Surgeon, Public Health and Marine-Hospital Service.*

## NEW YORK.

*Report of inspection of aliens at the port of New York during the year ended June 30, 1903.*

Month.	Num-ber in-spected.	Num-ber cer-tified.	Num-ber de-ported.	Cause of deportation.							
				Class I.		Class II.			Class III.		Class IV.
				Trachoma.	Tubercle of lung.	Insanity.	Idiocy.	Epilepsy.	Favus.	Syphilis.	
1902.											
July .....	40,992	307	105	71	.....	.....	.....	.....	5	1	28
August .....	40,128	429	152	103	.....	1	.....	.....	1	1	46
September .....	50,999	411	150	100	1	1	.....	.....	.....	2	46
October. ....	54,722	382	104	67	.....	1	.....	.....	3	.....	33
November .....	48,086	353	106	64	1	3	.....	.....	.....	.....	38
December .....	40,868	301	89	25	2	2	.....	.....	.....	.....	60
1903.											
January .....	24,935	142	51	18	.....	.....	1	.....	1	.....	31
February .....	34,655	149	45	8	.....	1	.....	.....	.....	.....	36
March .....	71,984	264	84	35	.....	2	.....	.....	6	1	40
April .....	101,572	317	82	35	.....	2	.....	.....	6	.....	39
May .....	104,158	448	109	41	.....	6	1	.....	9	.....	52
June .....	76,289	618	241	181	2	2	.....	2	4	.....	50
Total ....	689,388	4,121	1,318	748	6	21	2	2	35	5	499



## BUFFALO, N. Y.

*Report of inspection of aliens at the port of Buffalo, N. Y., during the year ended June 30, 1903.*

Month.	Number in-spected.	Number certi-fied.	Number de-ported.	Cause of deportation.
1902.				
July.....	159	0	0	
August.....	46	1	1	Hernia.
September.....	98	4	4	Valvular disease of heart (mitral), 2; double hernia, inguinal, 1; senility, 1.
October.....	88	5	5	Favus (one double hernia), 3; hernia and lame, 1; trachoma, 1.
November.....	105	7	7	Susp. trachoma, 3; hernia and heart disease, 1; poor physique and carbuncle, 1; psoriasis, 1; senility, 1.
December.....	145	5	5	Trachoma, 4; ulcer of both cornea, 1.
1903.				
January.....	39	4	4	Trachoma, 3; dislocation of hip, 1.
February.....	27	10	10	Trachoma, 9; hernia and senility, 1.
March.....	45	5	3	Trachoma, 2; hernia and senility, 1.
April.....	43	8	8	Poor physique, 2; lichen, 1; syphilis, 1; trachoma, 1; enteric, 1; valvular disease of heart, 1; senility, 1.
May.....	96	3	3	Trachoma, 3.
June.....	83	9	9	Trachoma, 6; senility, 2; poor physique, 1.
Total.....	974	59	59	

## PHILADELPHIA, PA.

REPORT OF INSPECTION OF ALIEN IMMIGRANTS AT PHILADELPHIA, PA., BY ASST. SURG. W. A. KORN.

UNITED STATES IMMIGRATION SERVICE,  
OFFICE OF THE COMMISSIONER,  
Philadelphia, Pa., July 7, 1903.

SIR: As directed by Bureau letter of June 13, 1903, I have the honor to forward a report of the transactions at this station for the fiscal year ending June 30, 1903, as follows:

Immigrants inspected.....	28,060
Immigrants certified.....	389
Immigrants deported.....	64

Causes of deportation, and number of cases:

Favus.....	1	Curvature of spine and deformity of chest.....	1
Pregnant.....	4	Hydrocele.....	1
Purulent conjunctivitis.....	1	Blind in one eye, corneal ulcer in other.....	1
Trachoma.....	36	Delirium tremens.....	1
Debility.....	1	Impaired mentality.....	1
Poor physique.....	4	Corneal ulceration.....	1
Hernia.....	9		
Syphilis, secondary.....	1		
Cataracts of both eyes.....	1		

In addition to the above, the following:

Number of landed immigrants examined at office.....	80
Number of landed immigrants examined at hospital.....	303
Total number of times that cases at hospital were visited.....	850

Respectfully,

W. A. KORN,  
Assistant Surgeon.

Respectfully forwarded.

FAIRFAX IRWIN, Surgeon.

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.  
(Through medical officer in command.)



[Inclosure.]

*Report of inspection of aliens at the port of Philadelphia, Pa., during the year ended June 30, 1903.*

Month.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July .....	1,427	25	2	Favus, 1; pregnant, 1.
August .....	1,419	21	2	Purulent conjunctivitis, 1; pregnant, 1.
September .....	1,955	27	3	Trachoma, 3.
October .....	2,253	23	2	Trachoma, 2.
November .....	1,037	7	0	
December .....	1,531	21	4	Trachoma, 3; pregnant, 1.
1903.				
January .....	723	13	2	Trachoma, 2.
February .....	2,281	20	3	Debility, 1; trachoma, 2.
March .....	2,272	24	13	Poor physique, 1; hernia, 2; trachoma, 7; syphilis, secondary, 1; curvature of spine and deformity of chest, 1; cataracts, both eyes, 1.
April .....	5,341	100	21	Poor physique, 3; hernia, 2; hydrocele, 1; trachoma, 12; delirium tremens, 1; pregnant, 1; blind in 1 eye, corneal ulcer in the other, 1.
May .....	3,300	54	5	Trachoma, 3; hernia, 2.
June .....	4,071	54	7	Impaired mentality, 1; corneal ulceration, 1; hernia, 3; trachoma, 2.
Total .....	28,060	389	64	

## BALTIMORE, MD.

## REPORT OF INSPECTION OF ALIEN IMMIGRANTS AT BALTIMORE, MD. BY SURG. H. R. CARTER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Baltimore, Md., July 18, 1903.*

SIR: I have the honor to forward herewith the report of immigrants inspected at this port for the past fiscal year, as called for by Bureau circular letter (H. D. G., C. D.) of May 14, 1903.

It is to be noted that a considerable number of cases of trachoma were found up to February or March, 1903, since which time this disease has been decidedly rare among our immigrants. By inquiry I find that a large number (from 5 to 25) of passengers are now refused tickets at Bremerhaven each trip on account of "trachoma, or suspected trachoma." The winnowing of these cases, then, is now done abroad.

Respectfully,

H. R. CARTER,  
*Surgeon.*

The SURGEON-GENERAL.

[Inclosure.]

*Report of inspection of aliens at the port of Baltimore, Md., during the year ended June 30, 1903.*

Month.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July .....	3,307	7	6	
August .....	2,039	14	0	
September .....	3,149	19	3	
October .....	3,657	17	4	
November .....	2,684	5	2	Class I, 1.
December .....	3,393	31	11	



*Report of inspection of aliens at the port of Baltimore, Md., during the year ended June 30, 1903—Continued.*

Month.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1903.				
January .....	2,077	7	2	
February .....	3,120	13	5	Class I, 5.
March .....	8,094	48	34	Class I, 24; Class IV, 10.
April .....	7,051	47	19	Class I, 7; Class IV, 12.
May .....	9,447	84	13	Class I, 1; Class IV, 12.
June .....	6,996	75	5	Class I, 3; Class IV, 2.
Total .....	54,954	367	94	

#### NORFOLK, VA.

*Report of inspection of aliens at the port of Norfolk, Va., during the year ended June 30, 1903.*

Month.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July .....	0	0	0	
August .....	4	0	0	
September .....	1	0	0	
October .....	0	0	0	
November .....	0	0	0	
December .....	0	0	0	
1903.				
January .....	0	0	0	
February .....	0	0	0	
March .....	0	0	0	
April .....	0	0	0	
May .....	0	0	0	
June .....	0	0	0	
Total .....	5	0	0	

#### KEY WEST, FLA.

*Report of inspection of aliens at the port of Key West, Fla., during the year ended June 30, 1903, by Surg. R. D. Murray.*

Month.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July .....	0	0	0	
August .....	0	0	0	
September .....	0	0	0	
October .....	0	0	0	
November .....	1	0	0	
December .....	0	0	0	
1903.				
January .....	0	0	0	
February .....	0	0	0	
March .....	0	0	0	
April .....	3	0	0	
May .....	0	0	0	
June .....	1	0	0	
Total .....	5	0	0	

At Key West no inspections are made except on call of the immigrant inspector after he has suspicion of dangerous contagious disease.



## NEW ORLEANS, LA.

*Report of inspection of aliens at the port of New Orleans during the year ended June 30, 1903, by Passed Asst. Surg. C. P. Wertenbaker.*

Month.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July.....	12	0	0	
August.....	10	0	0	
September.....	24	0	0	
October.....	2,795	7	0	
November.....	204	1	0	
December.....	105	1	0	
1903.				
January.....	64	4	4	Trachoma, 4.
February.....	418	3	1	Trachoma, 1.
March.....	162	2	1	Trachoma and blindness, 1.
April.....	69	4	2	Tuberculosis of lung, 1; poor physique, 1.
May.....	1,014	10	2	Tuberculosis of lung, 1; insanity, 1.
June.....	97	4	0	
Total.....	4,974	36	10	

## GALVESTON, TEX.

REPORT OF INSPECTION OF IMMIGRANTS AT GALVESTON BY ASST. SURG. C. E. D. LORD.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Galveston, Tex., July 1, 1903.*

SIR: I have the honor to transmit herewith the annual report of inspection of immigrants at the port of Galveston, Tex., and would respectfully state that the discrepancy existing between my figures and those of the immigrant inspector at this port is due to the fact that, with one or two exceptions, I have only been requested to inspect the ships belonging to the North German-Lloyd Steamship Company, whereas immigrants have been brought over in twos and threes in several other lines.

Also, in the month of April, he has reported 186, while we have none, due to the fact that the ship came in late in the evening on April 30, and I did not inspect them until the next morning, which was May 1, making that number returnable under our report for May instead of April.

Respectfully,

C. E. D. LORD, *Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Report of inspection of aliens at the port of Galveston, Tex., during the year ended June 30, 1903.*

Month.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July.....	0	0	0	
August.....	55	1	0	
September.....	312	5	0	
October.....	222	2	0	
November.....	98	0	1	Held from October and deported; tubercle of lungs.
December.....	223	0	0	



*Report of inspection of aliens at the port of Galveston, Tex., during the year ended June 30, 1903—Continued.*

Months.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1903.				
January.....	177	1	0	
February.....	0	0	0	
March.....	332	6	2	Valvular disease of heart (mitral); trachoma.
April.....	0	0	0	
May.....	385	4	3	Trachoma; varicose veins; poor physique; atrophied right arm and shoulder, due to paralysis.
June.....	314	1	0	Held over.
Total.....	2,118	20	5	

EAGLE PASS, TEX.

REPORT OF INSPECTION OF ALIEN IMMIGRANTS, BY ACTING ASST. SURG. LEA HUME.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Eagle Pass, Tex., July 3, 1903.*

SIR: I have the honor to transmit herewith report of inspection of aliens at port of Eagle Pass, Tex., during the year ended June 30, 1903.

Respectfully,

LEA HUME, *Acting Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Report of inspection of aliens at the port of Eagle Pass, Tex., during the year ended June 30, 1903.*

Month.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July.....	112	9	9	Senility, 2; arthritis deformans, 1; insane, 1; syphilis, 4; tuberculosis, 1.
August.....	104	4	4	Idiocy, 2; tuberculosis, 1; senility, 1.
September.....	204	4	4	Cripples, 2; tuberculosis, 1.
October.....				No transactions.
November.....	100	6	6	Pregnancy, 1; senility, 3; idiocy, 1; trachoma, 1.
December.....	125	10	10	Senility, 4; syphilis, 1; tuberculosis, 2; paralysis, 2; cripple, 1.
1903.				
January.....	194	28	28	Trachoma, 24; blindness, 1; insanity, 2; favus, 1.
February.....	125	14	14	Pregnancy, 1; senility, 3; trachoma, 8; blind and cripple, 1; insane, 1.
March.....	50	7	7	Trachoma, 5; senile, 1; juvenile, 1.
April.....	50	3	3	Senility, 3.
May.....	90	2	2	Senility, 1; insane, 1.
June.....	31	6	6	Trachoma, 2; insane, 1; pediculosis, 3.
Total.....	1,185	93	93	



## LAREDO, TEX.

REPORT OF INSPECTION OF ALIEN IMMIGRANTS, BY ACTING ASST. SURG. H. J. HAMILTON

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
Laredo, Tex., July 8, 1903.

SIR: I have the honor to inclose report of aliens inspected at this port during the year ended June 30, 1903. Since the month of November, 1902, quite a large number of Syrians have arrived for inspection; they came via Marseille, France, and Vera Cruz, Mexico. It is possible that route was selected to avoid medical inspection at Marseille for immigrants going to New York or other United States Atlantic ports. I may state there are always some affected with trachoma. I am informed that there are at present a large number still in Mexico. A good idea would be to induce the Mexican Government to have European immigrants inspected at Vera Cruz and Tampico, more so in the future, as I understand there is another line of steamers to be put on between Mediterranean ports and Mexico.

The Immigration Bureau has now a station at this port in which immigrants are inspected more conveniently and with better satisfaction. Formerly inspection was accomplished on railroad car and in the open on foot and tramway bridge. In addition to report inclosed there were 460 immigrants and immigrant children vaccinated upon entry during year ended June 30, 1903. I also note that railroad employees frequently inform immigrants that are deformed, blind, etc., that it is useless for them to try to enter, as they would be returned to Mexico; otherwise there would probably be more certified to than as it is.

There seems to be no means for hospital treatment at this port of immigrants suffering from infectious diseases who would recover with proper treatment in a short time.

Respectfully,

H. J. HAMILTON,  
Acting Assistant Surgeon.

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Report of inspection of aliens at the port of Laredo, Tex., during the year ended June 30, 1903.*

Month.	Number inspected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July.....	134	2	2	Insanity, 1; deaf mute, 1 (Mexican).
August.....	161	2	2	Blind, 1; lupus of face, 1 (Mexican).
September.....	208	None.	None.	
October.....	107	None.	None.	
November.....	161	1	1	Blind (Mexican).
December.....	99	3	3	Trachoma, 3 (Syrian).
1903.				
January.....	172	6	6	Trachoma, 6 (Syrians).
February.....	99			
March.....	60	2	2	Trachoma, 2 (Syrians).
April.....	95			
May.....	172	6	6	Loss of 1 eye, senility, general debility, 1 (Mexican); loss of vision of right eye, loss of 1 finger right hand, 1; 3 fingers right hand atrophied and ankylosed, 1; catarrhal ophthalmia blepharic, 1; loss of right eye, ptosis, 5 fingers right hand contracted from cicatrices, 1; gonorrhea, 1.
June.....	198	8	7	Enlarged right wrist, right hand atrophied, limited motion right hand, valvular heart disease, trachoma, 1 (Mexican); general debility, senility, blind, trachoma, 1 (Mexican); purulent ophthalmia, 1 (Mexican); catarrhal ophthalmia, 1 (Mexican); right arm amputated at elbow, 1 (Mexican); tubercular phthisis, tubercular synovitis of right wrist, 1 (Chinese); trachoma, 2 (Syrian).
Total.....	1,666	30	29	



## EL PASO, TEX.

*Report of inspection of aliens at the port of El Paso, Tex., during the year ended June 30, 1903, by Acting Asst. Surg. E. Alexander.*

Month.	Number in-spected.	Number certi-fied. <sup>a</sup>	Number not eligible.	Cause of deportation.
1902.				
July.....	854		10	Likely to become public charge, 4; chronic rheumatism, 3; man with only 1 arm and no means, 1; man with palsy and no means, 1; man with scrotal hernia and no means, 1.
August.....	968			
September.....	756			
October.....	644		6	Chronic rheumatism, no means, 2; eczema of body, no means, 1; man with 1 leg, 1; tuberculosis, no means, 2.
November.....	457		2	Chronic rheumatism, no means, 1; abdominal dropsy, no means, 1.
December.....	508		6	Fava, no means, 1; chronic rheumatism, no means, 2; tuberculosis, last stage, 1; woman, abdominal dropsy, husband, no means, 2.
1903.				
January.....	569			
February.....	368			
March.....	653		3	Idiocy, no means, 2; chronic rheumatism, 1.
April.....	410		8	Chronic rheumatism, no means, 1; inguinal hernia, 1; gonorrheal ophthalmia, consisting of woman and 4 children, 5; tinea tonsurans, no means, 1.
May.....	449		4	Tuberculosis, no means, 1; scrotal hernia, no means, 1; woman, paralysis, husband, no means, 2.
June.....	257			
Total.....	6,893		39	

<sup>a</sup> No certificates issued because Mexican authorities permit me to make inspection at Juarez, Mex., and such as are ineligible are not permitted to enter the United States.

## SAN FRANCISCO, CAL.

REPORT OF MEDICAL INSPECTION OF ALIEN IMMIGRANTS AT SAN FRANCISCO, CAL., BY  
PASSED ASST. SURG. H. S. CUMMING.

## PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,

## OFFICE OF MEDICAL OFFICER IN COMMAND,

*San Francisco Quarantine Station, Angel Island, Cal., July 20, 1903.*

SIR: In compliance with "Instructions for the medical inspection of immigrants" and Bureau letter of May 14, 1903, I have the honor to transmit the accompanying report of inspection of aliens at this port during the year ending June 30, 1903.

During the year an important ruling was made which vastly increases the work and the efficiency of the Service at this and other Pacific coast ports.

Up to May 6, 1903, under rulings by the Commissioner upon the old law, Chinese arriving at this port were held not to be subject to medical immigration inspection, but in response to a letter from this office April 22, 1903, instructions were received under which Chinese aliens suffering with a loathsome or a dangerous contagious disease are debarred as other aliens. The importance of this ruling is shown by the figures. For the ten months preceding the ruling an average of 7.9 persons per month were certified and 3 deported, while for the two months during which Chinese were examined an average of 38.5 per month were certified and 24 per month were deported.

The immigration conditions at this port are rather peculiar. There is no place provided by the Immigration Service, nor by the transportation companies for the examination of arriving aliens, the medical officer is provided with no office or room for examination, nor is there any arrangement with hospitals for the treatment of detained immigrants needing such treatment.

The quarantine officer is in charge of the medical inspection of aliens, and such inspection is made upon the vessels while in quarantine; consequently, owing to the rigid physical examination for quarantine reasons, the examination is very thorough. Aliens detained for temporary physical ailments, or requiring further observation before certification, are kept upon vessels or in the detention shed of the Pacific Mail dock.



A commissioned medical officer of experience has been detailed under the quarantine officer for this work, and I hope an office will soon be provided and that provisions will be made for hospital facilities.

In addition to the inspection of aliens arriving upon regular passenger vessels during the past year, inspection was made of alien members of crews of sailing vessels, so that should an attempt be made to land them certificates will be held by the immigration authorities.

At the request of the immigration authorities authority was requested by me and given by the Bureau to allow the use of this station for the detention of certain English mechanics pending their trial and use as witnesses for violation of the contract labor laws, the Service having been reimbursed the cost of subsistence for them and their guards.

The relations between this Service and the Immigration Service are pleasant, and every endeavor is made to assist in carrying out the law.

Respectfully,

HUGH S. CUMMING,  
*Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Report of inspection of aliens at port of San Francisco during the year ended June 30, 1903.*

Month.	Number in-spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July.....	690	0	0	
August.....	761	1	1	Gonorrhea.
September.....	668	3	2	Tubercle, syphilis.
October.....	761	9	7	Trachoma, gonorrhea.
November.....	518	1	0	
December.....	622	8	7	Trachoma, varix, hernia, piles, hydrocele, psoriasis.
1903.				
January.....	542	13	1	Trachoma.
February.....	524	11	2	Do.
March.....	869	17	2	Alcoholism, valvular disease of heart.
April.....	824	16	8	Cataract, loss of eye, trachoma, coxitis.
May.....	1,309	33	20	Amputation of hand, blindness, hernia, trachoma, gonorrhea, opacity of cornea, syphilis.
June.....	763	44	28	Trachoma, gonorrhea, syphilis, lucoma, loss of eye, anchylosis, tubercle.
Total.....	8,851	156	78	

#### ASTORIA, OREG.

REPORT OF ALIEN IMMIGRANTS EXAMINED AT THE PORT OF ASTORIA, OREG., BY ASST. SURG. B. H. EARLE.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Columbia River Quarantine Station, Astoria, Oreg., July 8, 1903.*

Immigrants inspected .....	441
Immigrants passed .....	441
Immigrants certified as physically unsound .....	0

Respectfully,

BAYLIS H. EARLE, *Assistant Surgeon.*



## PORT TOWNSEND, WASH.

REPORT OF IMMIGRANTS INSPECTED AT PORT TOWNSEND, WASH., DURING THE FISCAL YEAR ENDING JUNE 30, 1903, BY PASSED ASST. SURG. M. H. FOSTER.

Immigrants inspected ..... 597  
 Immigrants passed ..... 596  
 Immigrants certified on account of dangerous, contagious, or loathsome diseases,  
 or for other physical causes (hernia, oblique inguinal) ..... 1

M. H. FOSTER, *Passed Assistant Surgeon.*

## PORTO RICO.

## SAN JUAN.

REPORT OF INSPECTION OF ALIEN IMMIGRANTS AT PORT OF SAN JUAN, P. R., DURING THE YEAR ENDED JUNE 30, 1903, BY PASSED ASST. SURG. L. L. LUMSDEN.

Month.	Number in- spected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July .....	148			
August .....	125			
September .....	120			
October .....	115			
November .....	183			
December .....	108			
1903.				
January .....	97			
February .....	85			
March .....	94			
April .....	158	3	0	3 certified as likely to become public charges; admitted by special board of inquiry.
May .....	106			
June .....	116	1	0	1 certified as likely to become a public charge; admitted by special board of inquiry.
Total.....	1,455	4	0	

## MAYAGUEZ.

REPORT OF INSPECTION OF IMMIGRANTS AT MAYAGUEZ BY PASSED ASST. SURG. H. S. MATHEWSON.

SAN JUAN, P. R., *September 16, 1902.*

SIR: The following is a statement of the number of immigrants examined at the port of Mayaguez, P. R., from July 1 to September 15, 1902, inclusive:

Immigrants inspected ..... 46  
 Immigrants passed ..... 46  
 Immigrants certified as physically unsound ..... 0

Respectfully,

H. S. MATHEWSON, *Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



## HUMACAO.

REPORT OF MEDICAL INSPECTION OF ALIEN IMMIGRANTS AT HUMACAO, P. R., BY  
P. A. SURG. H. S. MATHEWSON.

SAN JUAN, P. R., *September 16, 1902.*

SIR: The following is a statement of the number of immigrants examined at the port of Humacao, P. R., from July 1 to September 15, 1902, inclusive:

Immigrants inspected.....	4
Immigrants passed.....	4
Immigrants certified as physically unsound.....	0

H. S. MATHEWSON,

*Passed Assistant Surgeon, Chief Quarantine Officer for Porto Rico.*

## PONCE.

REPORT OF MEDICAL INSPECTION OF IMMIGRANTS AT PONCE BY ACTING ASST. SURG.  
J. F. TORRES.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Ponce, P. R., July 2, 1903.*

SIR: In accordance with paragraph 815 of Regulations, Public Health and Marine-Hospital Service, I have the honor to make the following report of medical inspection of immigrants at this port during the fiscal year ended June 30, 1903:

Inspected.....	396
Passed.....	394
Rejected.....	2

Respectfully,

JULIO FERRER TORRES,  
*Acting Assistant Surgeon.*

Respectfully forwarded.

L. L. LUMSDEN,  
*Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## HAWAII.

## HONOLULU.

MEDICAL INSPECTION OF ALIEN IMMIGRANTS AT HONOLULU, H. I., BY PASSED ASST.  
SURG. L. E. COFER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Honolulu, H. I., July 3, 1903.*

SIR: In compliance with Bureau letter (H D G) of May 14, 1903, from the division of foreign and insular quarantine, I have the honor to forward herewith the report of the medical inspection of aliens at this port for the fiscal year ended June 30, 1903. The report is made out on the prescribed blank form. There are no facts of interest in connection with the medical inspection of aliens at this station worthy of mention, save perhaps the fact that I have added to the regular examination the requirement that every immigrant must jump up on a box 15 inches high in order to detect beriberi. Even a slight loss of muscular power in the leg extensors may be detected by this method. Of course pregnant women are not required to make the jump. Our inspection work here has been somewhat hampered by the lack of proper landing facilities. In the near future a regular immigration station will be built, and our officer will be furnished with the proper office and other facilities.

Respectfully,

L. E. COFER,  
*Passed Assistant Surgeon, Chief Quarantine Officer,  
Territory of Hawaii.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[Inclosure.]

*Report of inspection of aliens at port of Honolulu, H. I., during the year ended June 30, 1903.*

Month.	Number inspected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July .....	1,314	2	1	Syphilis.
August .....	374	0	0	
September .....	557	2	1	Trachoma.
October .....	1,205	4	4	Trachoma, 3; tubercle, 1.
November .....	2,081	46	46	Trachoma.
December .....	1,600	203	189	Trachoma, 187; syphilis, 2.
1903.				
January .....	1,361	218	213	Trachoma.
February .....	726	16	15	Do.
March .....	754	4	4	Trachoma, 2; tubercle, 1; tricrophytosis, 1.
April .....	943	29	29	Trachoma.
May .....	1,357	12	15	Do.
June .....	712	3	3	Do.
Total .....	12,984	539	520	Trachoma, 514; syphilis, 3; tubercle, 2; tricrophytosis, 1.

## CANADA.

## QUEBEC, QUEBEC, AND ST. JOHN, NEW BRUNSWICK.

REPORT OF INSPECTION OF IMMIGRANTS AT QUEBEC AND ST. JOHN, BY ASST. SURG.  
W. C. BILLINGS.

## QUEBEC, CANADA.

SIR: The following is a report of the medical inspection of alien immigrants at the ports of Quebec, Quebec, and St. John, New Brunswick, Canada, during the fiscal year 1903, giving the number inspected, the number certified, the number deported, and the cause of deportation, by months, during that period of time:

Month.	Number inspected.	Number certified.	Number deported.	Cause of deportation.
1902.				
July .....	2,827	108	36	Trachoma, 32; varicose veins, 1; valvular disease of heart, 1; pregnancy, 1; tubercular peritonitis, 1.
August .....	2,220	53	16	Trachoma, 13; motor paralysis, partial, 1; broncho-pneumonia, 1; tubercle knee joint, 1.
September .....	2,172	54	39	Trachoma, 37; favus, 1; tubercle knee joint, 1.
October .....	1,736	42	24	Scoliosis, 1; trachoma, 17; hernia, 1; syphilis, 1; emphysema, 1; favus, 1; poor physique, 2.
November .....	1,537	34	17	Trachoma, 14; favus, 2; hernia, 1.
December .....	781	41	24	Trachoma, 17; poor physique, 2; senility and debility, 1; opacity, both corneæ, 1; tubercle of lung, 1; valvular disease of heart, 1; favus, 1.
1903.				
January .....	1,267	51	20	Trachoma, 17; favus, 2; feeble-minded, 1.
February .....	896	39	5	Trachoma, 3; favus, 1; hydrocele of cord, 1.
March .....	1,573	36	10	Trachoma, 8; irregular hearts action, 1; poor physique, 1.
April .....	1,198	15	3	Favus, 2; trachoma, 1.
May .....	2,691	44	7	Deaf and dumb, 1; favus, 1; trachoma, 2; tachycardia, 1; poor physique, 2.
June .....	2,504	55	10	Trachoma, 7; favus, 3.
Total .....	21,402	572	211	

Respectfully,

W. C. BILLINGS, *Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



## ITALY.

## INSPECTION OF ALIENS AT GENOA, NAPLES, AND PALERMO.

The large number of immigrants arriving in the United States from Naples and Palermo necessitated the continuance of the detail of the medical officer of this Service at Naples, Italy, for the purpose of examining the aliens embarking for ports in the United States. He also inspects those sailing from Palermo for the United States.

REPORTS OF INSPECTION OF EMIGRANTS FROM GENOA, NAPLES, AND PALERMO BY  
PASSED ASST. SURG. J. M. EAGER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*United States Consulate, Naples, Italy, September 22, 1902.*

SIR: I have the honor to make the following supplementary report of the transactions of the Service at this port covering the period from July 1 to September 15, 1902, inclusive:

*Statistics of the Service at Naples.*

Month.	Ships.	Number of emigrants.			Baggage.	
		Genoa.	Naples.	Palermo.	In-spected.	Disin-fected.
1902.						
July .....	15	579	6,962	885	1,620	9,580
August .....	14	589	8,740	.....	2,145	10,150
September 1-15 .....	5	370	4,089	553	911	3,697
Total .....	34	1,538	19,791	1,438	4,676	23,427

*Rejections advised.*

Month.	Tra-choma.	Favus.	Her-nia.	Ring-worm.	Small-pox.	Measles.	Fever.	Other causes.	Total.
1902.									
July .....	358	12	24	1	.....	.....	10	10	415
August .....	304	24	25	5	2	1	10	13	384
September 1-15 .....	251	13	10	4	.....	.....	.....	4	282
Total .....	913	49	59	10	2	1	20	27	1,081

Proportion of rejections advised to emigrants inspected 4.75 per cent.

Respectfully,

J. M. EAGER,  
*Passed Assistant Surgeon.*

THE SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*U. S. Consulate, Naples, Italy, July 1, 1903.*

SIR: I have the honor to make the following report of the transactions of the Service at this port covering the period from September 15, 1902, to June 30, 1903, inclusive:

*Statistics of the Service at Naples.*

Month.	Ships.	Number of emigrants.			Baggage.	
		Genoa.	Naples.	Palermo.	In-spected.	Disin-fected.
1902.						
September 16-30 .....	12	401	7,234	2,694	1,913	12,488
October .....	19	1,857	12,961	944	3,424	19,358
November .....	16	765	9,054	733	2,339	13,615
December .....	14	581	6,199	932	1,677	8,097
1903.						
January .....	21	503	8,549	1,365	2,181	12,918
February .....	21	1,278	18,799	1,067	1,447	29,050
March .....	32	1,380	31,738	1,875	2,634	42,966
April .....	32	2,354	29,865	1,995	2,614	40,181
May .....	25	1,454	23,712	1,002	2,817	33,254
June .....	18	987	12,109	855	2,164	19,206
Total .....	210	11,560	160,220	13,462	23,210	231,133

*Rejections advised.*

Month.	Trachoma.	Favus.	Hernia.	Ring-worm.	Measles.	Fever.	Other causes.	Total.
1902.								
September 16-30 .....	556	15	36	9	.....	2	22	640
October .....	1,126	20	25	5	2	3	12	1,193
November .....	1,054	18	15	1	2	5	15	1,110
December .....	535	40	10	1	.....	1	18	605
1903.								
January .....	996	23	13	.....	.....	.....	18	1,050
February .....	1,303	24	20	2	3	1	14	1,367
March .....	1,434	37	12	1	.....	2	20	1,506
April .....	941	55	13	.....	3	4	4	1,020
May .....	852	38	8	2	1	1	11	913
June .....	595	41	9	1	1	5	7	659
Total .....	9,392	311	161	22	12	24	141	10,063

If not already used for another purpose, I suggest that the report on Trachoma as an Epidemic and Maritime Disease, submitted June 15, 1903, be added to the yearly report of the Naples station.

Respectfully,

J. M. EAGER,  
*Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

Respectfully submitted.

J. W. PETTUS,  
*Assistant Surgeon-General.*



For the purpose of this study, the author has selected a group of patients who have been treated by the method described in the preceding paper. The results of the treatment are shown in the following table.

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DIVISION OF DOMESTIC QUARANTINE.

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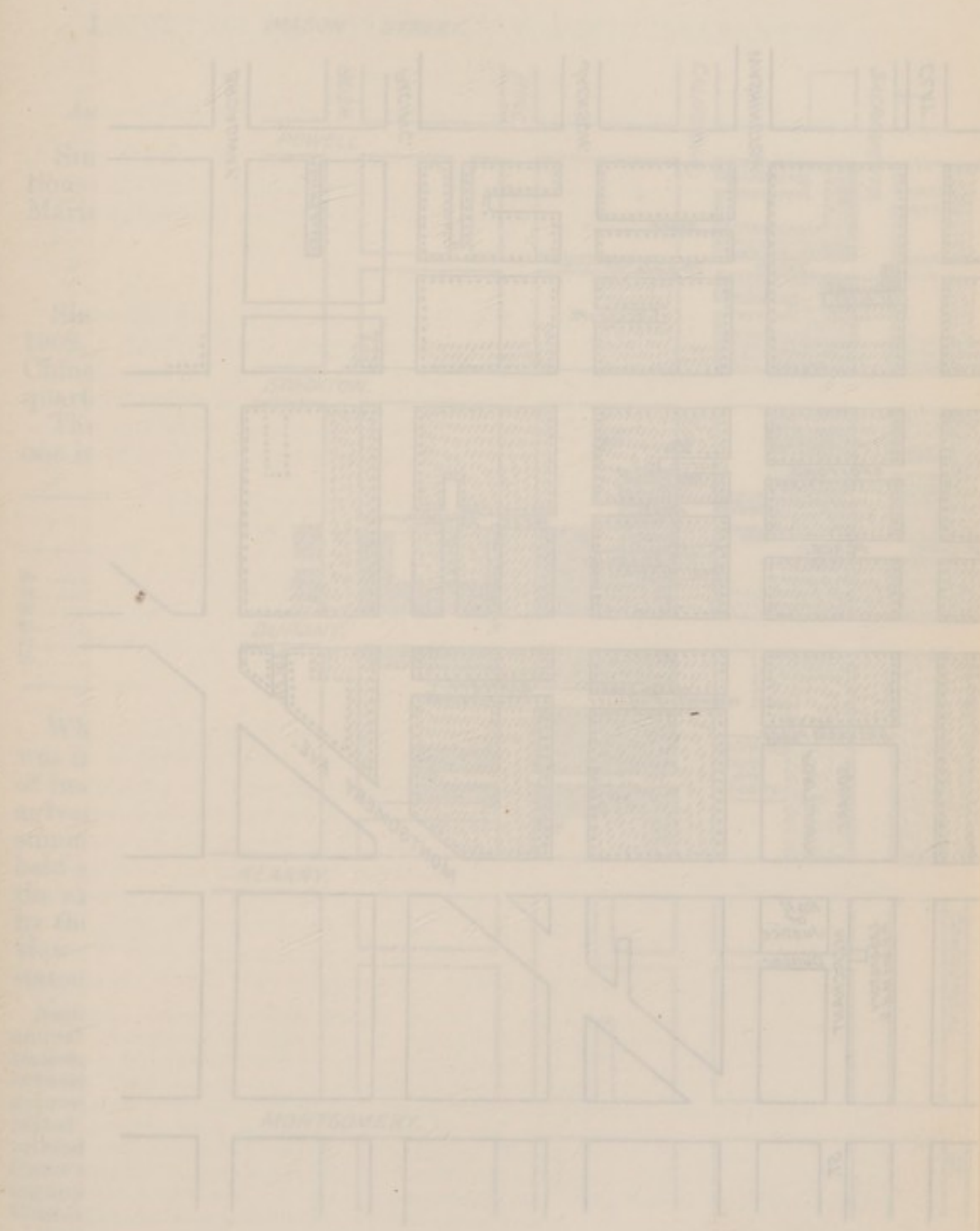
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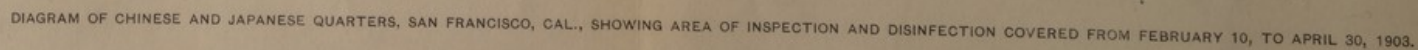
INSTITUTIONAL DOCUMENT



Japanese Quarter  
 Chinese Quarter  
 Districts with streets English names of same  
 Improved by 3% Sol. Carbonic Acid, and 1% Sol.









## REPORT OF THE DIVISION OF DOMESTIC QUARANTINE.

By A. H. GLENNAN,

*Assistant Surgeon-General, Public Health and Marine-Hospital Service, in charge.*

SIR: I have the honor to submit the following report of the operations of the division of domestic quarantine of the Public Health and Marine-Hospital Service for the fiscal year ended June 30, 1903.

### PLAGUE IN SAN FRANCISCO.

Since the date of the last annual report of the Service, November 1, 1902, 6 deaths from plague have occurred in San Francisco, Cal.—5 Chinese and 1 Japanese, the latter a woman who lived in the Japanese quarter, which is located immediately adjoining Chinatown.

Three of these deaths occurred in November, one in December, 1902, one in March, and one in June, 1903.

Number.	Race.	Discovered.	Died.
90.....	Chinese .....	Nov. 15, 1902	Nov. 16, 1902
91.....	.....do .....	Nov. 18, 1902	Nov. 19, 1902
92.....	.....do .....	Nov. 26, 1902	Nov. 26, 1902
93.....	.....do .....	Dec. 11, 1902	Dec. 11, 1902
94.....	Japanese .....	Mar. 16, 1903	Mar. 16, 1903
95.....	Chinese .....	June 5, 1903	June 5, 1903

While the representative of this Service to the State of California was in conference with the governor, in regard to the cooperative work of inspection of Oriental settlements outside of San Francisco, and an agreement to that effect was being favorably considered, a telegraphic summary of the result of the conference of the State boards of health, held at New Haven, Conn., October 28-31, 1902, was communicated to the executive officials of San Francisco, and they were greatly agitated by the fear of quarantine against California by the other States. In view of this unnecessary alarm, the Bureau gave out the following statement, which was telegraphed to the officials at San Francisco:

National conference State boards health at New Haven this week was regular annual conference that organization. Surgeon-General Wyman not member organization, but received invitation be present as an act courtesy in view close relations between State boards and Public Health Service provided for by act of Congress approved July 1, 1902. Resolutions regarding California State board of health originated entirely with members conference, and were prepared by committee and printed and passed without any discussion. No movement to quarantine several States against California was suggested other than suggestion relating to possible calling another conference. No special conferences now being held or have been held in Washington to determine action Federal Government.

The acting mayor of San Francisco, H. U. Brandenstein, wired urgent requests for the presence of Governor Gage and of the members of the State board of health at a conference to be held at the



mayor's office, November 3, and invited representatives of this Service to be present. The governor replied that he was already in communication with the representative of the Government with a view to cooperative action in the State; but after further pressure detailed the secretary of the State board of health to attend.

This conference was held in the mayor's office, November 3, as set forth in the following telegrams:

[Telegrams.]

SAN FRANCISCO, CAL., *November 3, 1902.*

Surgeon-General WYMAN, *Washington:*

Secretary State board health conferred with local board of health, the acting mayor, the senior United States Senator, and others to-day. Secretary of State board of health assured his conferees that Surgeon-General would not quarantine California. Secretary of the State board of health willing to institute throughout California any reasonable recommendations made by Surgeon-General. Have fully informed Glennan. Your November 1 statement to correspondents respecting the New Haven conference known here and relieves excitement.

M. J. WHITE.

SAN FRANCISCO, CAL., *November 4, 1902.*

Surgeon-General WYMAN, *Washington:*

Situation approaching cooperative action. Acting mayor called a meeting to-day to consider the Eastern dispatches threatening quarantine against California. The newspapers here, by request, publish nothing. Invited, but avoided attendance because local authorities not authorized body to take wide action. State authorities pleased with my stand. By previous arrangement and direction of the governor a conference will be held Thursday to frame line of procedure for his and your approval. Reports of New Haven meeting have aroused anxiety. Hope that other States will not take precipitate action against California until outcome of conference is known.

GLENNAN.

On November 6 Surgeon Glennan met the representatives of the governor in San Francisco with a view to outlining a method of procedure in the sanitary inspection of the State upon the lines mentioned in the following correspondence:

[Telegram.]

SAN FRANCISCO, CAL., *November 6, 1902.*

Surgeon-General WYMAN, *Washington:*

In conference to-day with representatives of the governor and submitted following memorandum, which was favorably received, for his and your approval:

(1) By mutual approval governor will appoint a disinterested professional resident of State, who, with representative of Service, may make recurring sanitary surveys of suspected places outside of San Francisco, and, if necessary, bacteriological examinations to aid and confirm diagnosis.

(2) Where continued suspicion exists in any locality house-to-house inspections to be made, recurrent when necessary, by competent persons under supervision proper health authorities, and systematic effort made to exterminate vermin.

(3) As precautionary measure to satisfy national and other State authorities, to essentially adopt plague-preventive measures promulgated by German Government, amended to conform to State laws, legislative action if necessary, and similarly adopted by other Pacific coast States.

(4) Legislative act to be considered prohibit dwelling and sleeping beneath ground in city or town of State, with other general sanitary tenement restrictions. State authorities appreciate and will cooperate with you upon these broad lines without agitation and publicity, but information and action may be furnished by you to other State boards of health.

GLENNAN.



[Letter.]

SAN FRANCISCO, CAL., November 7, 1902.

SIR:

\* \* \* \* \*

I sent you last night a dispatch, condensed as far as possible, giving a digest of a memorandum (copy herewith inclosed), which I submitted to the governor's secretary and the secretary of the State board of health, designated by the governor to meet me with power to give assurance of the governor's action.

The first and second paragraphs were accepted without discussion; the third, relating to the adoption of the plague-preventive measures promulgated by the German Government, as printed in the Public Health Reports, copies of which I handed them, were objected to as possibly tending to create public excitement and would require legislative action to be effective. I stated in reply that the desire was to have the State authorities approve a definite line of procedure for use in case of necessity; that it would strengthen outside confidence in future sanitary work in this State; also that I had no doubt that the Surgeon-General of this Service would recommend and advise similar policy and action to other Pacific coast States, thereby obtaining uniformity without discrimination. This paragraph was thereupon allowed to stand for the governor's consideration.

The last section was a suggestion for future legislative action, and stood for what it might be worth and could be accomplished in the future along that line.

It seems best to start out upon a few broad lines, upon the cooperative plan unreservedly accepted in the first paragraph, and future action be guided by events as they arise. Just at this time I have no reason to believe that the State authorities will not act perfectly fair in the investigation, while at the same time they profess to believe that the bacillus found in these cases is a pseudo one found in all localities where Chinese are collected together, and existent in this State for years. I replied that it would be very interesting to find out if similar cases existed in outside localities where these people were collected, and if the proposition was true it would hold good in Portland, Seattle, and Victoria, which could be demonstrated later. They claim that the prophesies of Kinyoun and others, of a direful epidemic, have not been fulfilled; that ninety-odd cases in thirty-three months establishes no such claim, and does not correspond with the course of plague in places in the world where true plague has obtained a foothold.

My present belief is that they will cooperate fairly—not hide cases—and endeavor to ascertain the truth.

Respectfully,

A. H. GLENNAN, *Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure].

*Memorandum.*

First. By mutual approval, the governor will appoint a discreet, disinterested, professional man, a resident of the State of California, who, together with a representative of the Public Health and Marine-Hospital Service, shall make a sanitary inspection of towns and places outside of San Francisco, to which suspicion is, or has at any time been directed. These inspectors shall be duly authorized by the governor and credited to the local health and other authorities to enable them to make a quiet sanitary investigation and furnish report of the same to the governor, through the State board of health, upon the following lines: (A) Name of place; population, white and foreign. (B) Local board of health or health officer. (C) Causes of death during the past year. (D) Crowded dwelling places of any classes of persons or conditions tending to propagate contagious or quarantinable disease. (E) If any suspicious cases of such disease exist, a full history, clinical and otherwise, shall be obtained, and, if necessary to aid or confirm the diagnosis, a bacteriological examination may be made. These inspections of outside places shall be made at different recurring intervals, if necessary, and after sufficient periods of time to eliminate all suspicion.

Second. In case suspicion of a contagious or quarantinable disease continues to exist in any locality in the State, a systematic house-to-house inspection shall be made by competent persons under the direction of the State and local health authorities. These house inspections shall be recorded upon printed blank forms, giving



the number, location, and sanitary history of the premises, number of residents, occupation, drainage, plumbing, etc., particular attention to be paid to the ground floors.

A systematic and continuous effort should also be made for the extermination of vermin.

Third. As a precautionary measure, and to satisfy the health authorities of other States and Territories, as well as the public health laws and regulations of the United States, the State board of health of California will adopt essentially the plague preventive measures promulgated by the German Government; the phraseology of these regulations to be modified to correspond to the proper health and municipal authorities under the laws of the State of California.

Fourth. It is further recommended that a law be enacted, as a general sanitary measure, that within a reasonable length of time no persons shall thereafter, in any city or town of the State of California, use for dwelling or sleeping purposes any place beneath the surface of the ground.

The questions of overcrowding, ventilation, air space, sunlight, etc., in tenement districts might also be embodied in this act.

As an indication of the tendency of public opinion to exaggerate the seriousness of the plague in San Francisco, the following is given:

[Letters.]

NEW ORLEANS, LA., November 4, 1902.

DEAR DOCTOR: The conference of State boards of health states that there have been about 2,000 deaths from plague in San Francisco since the beginning of the disease. Is that number correct? Kindly state the number of deaths among the Caucasians.

Yours, very truly,

EDMOND SOUCHON, M. D.,  
*President Louisiana State Board of Health.*

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

WASHINGTON, November 7, 1902.

SIR: Referring to your letter of the 4th instant, in which you state that the conference of the State boards of health states that there have been about 2,000 deaths from plague in San Francisco since the beginning of the disease, asking if this number is correct, and desiring to know the number of deaths among Caucasians, I have to inform you that so far as the information in the Bureau extends, since and including March 6, 1900, 90 persons have died of plague in San Francisco. Of this number 5 or 6 were Caucasians, but the exact number of Caucasians is not positively known.

Respectfully,

GEO. PURVIANCE,  
*Acting Surgeon-General.*

Dr. EDMOND SOUCHON,

*President Louisiana State Board of Health, New Orleans, La.*

Following the negotiations for this plan of inspection, Governor Gage met the Service representative at the Palace Hotel, San Francisco, upon November 12, 1902, acquiesced in the plan in general, but felt averse to selecting his inspector outside of the membership of the State board of health, as related in the following telegrams:

[Telegrams.]

SAN FRANCISCO, CAL., November 12, 1902.

Surgeon-General WYMAN, Washington:

In conference with governor here this afternoon he expressed earnest wish to cooperate with you. He hesitates use men outside State health officials, and suggests secretary State board accompany your representative, make quiet preliminary inspection places you wish, calling bacteriologist when necessary. I replied you might possibly desire his agent, one not previously identified prominently with question; that I would wire you his proposition to-night and ask that you telegraph direct to him at Sacramento, where he will be Wednesday.

GLENNAN.



WASHINGTON, November 12, 1902.

Surgeon GLENNAN, *San Francisco, Cal.:*

Referring to your telegram of to-day, prefer to conduct negotiations through you. Any telegrams I would send governor I would also have to send copies to you to keep you posted. Therefore please advise with the governor again and request that he and the State board name some one who has not heretofore been connected with plague situation. This would be in accordance with understanding that disinterested parties would conduct inquiry. If you deem it advisable, visit the governor at Sacramento, or conduct the matter by telegraph, as you deem best. Wire result.

WYMAN.

As a compromise, the selection of Dr. Matthew Gardner, chief surgeon of the Southern Pacific Railroad, was made.

[Telegrams.]

SAN FRANCISCO, CAL., November 14, 1902.

Surgeon-General WYMAN, *Washington:*

The governor agrees to send as a representative of the State board with me to examine health conditions in outside towns Doctor Gardner, chief surgeon Southern Pacific, but wishes name of your representative immediately. I consider proposition fair. Are you willing to accept the governor's proposition? Rush answer; very important. Should have reply at once.

GLENNAN.

WASHINGTON, November 15, 1902.

GLENNAN, *San Francisco, Cal.:*

Referring to your telegram of November 14 received this morning, accept governor's proposition; you to be Service representative unless some reason unknown to Bureau makes it necessary for you to be otherwise engaged.

WYMAN.

SAN FRANCISCO, CAL., November 20, 1902.

Surgeon-General WYMAN, *Washington:*

I have just received telegram from Governor Gage officially confirming Gardner; time and mode of procedure at my disposition. Will begin immediately; everything seemingly very satisfactory; am endeavoring to keep the investigation quiet; fear press notoriety will defeat object.

GLENNAN.

The following correspondence shows the progress of the work:

[Telegram.]

SAN FRANCISCO, CAL., November 24, 1902.

Surgeon-General WYMAN, *Washington:*

Have made preliminary inspections of Oakland, Berkeley, and Alameda. Will next proceed to San Jose, working outward. Report mailed.

GLENNAN.

## INSPECTION OF OAKLAND.

[Letter.]

SAN FRANCISCO, CAL., November 23, 1902.

SIR: Following your letter of instructions to me dated October 4, 1902, handed to me in Washington, to proceed to the State of California, and immediately after attention to some Service business at San Diego to call upon his excellency, Henry T. Gage, governor of California, and express your wish that he designate a representative to cooperate and accompany your representative in making inspections of certain places in this State to which suspicion of the existence of plague has been directed, I have made report to you from time to time, as to the progress of these



negotiations. Progress in this matter has been necessarily a little slow, for reasons already known and anticipated by you, but it is only fair to say that Governor Gage has always expressed the desire to cooperate with you in an impartial investigation of the plague situation in the State of California.

After some casting around for a disinterested State representative, it occurred to both sides, somewhat independently, that Dr. Mat. Gardner, chief surgeon of the Southern Pacific Railroad Company, would be mutually acceptable for the duty—in fact I invited him to accompany me to a conference with the governor, without any reference to his possible selection. I state this to show the disinterested way in which it was brought about. Doctor Gardner is a man of large experience in professional and business affairs, is broad minded, has the courage of his convictions, and will call a spade by its proper name.

Immediately upon the official confirmation of the selection of Doctor Gardner by the governor and your concurrence in the same, I proposed that we make a preliminary investigation of the places adjacent to San Francisco and work out to the more distant points.

In accordance with this plan we proceeded on Saturday morning, November 22, to Oakland, across the bay from San Francisco, connected by ferry, and having the relative business and social connection as Brooklyn to New York. The Twelfth Census of the United States, 1900, gives the population of Oakland as 66,960; Chinese 950, and Japanese 194.

The city board of health consists of seven members: Dr. O. D. Hamlin, president; Dr. Edward von Adelung, health officer; and Daniel W. Doody, secretary. Our first call was made upon Doctor Hamlin, and the nature of our business made known to him. He kindly delayed some professional calls and talked freely upon the plague situation. The board of health employ three sanitary inspectors, who go through their small Chinese district at least twice a month. Over two years ago, during the acute agitation in San Francisco, they employed additional inspectors, and stationed guards at the ferries, but at no time did they detect any suspicious cases of sickness. There was a possibility that a sick person might be concealed amongst these people, but not probable in any number of cases. I then signified a desire to see the death records and he accompanied us to the small frame health-office building adjoining the city hall, where the secretary is on continuous duty. We examined the mortuary records in a large well-kept alphabetical book. During the past twelve months or more there were, by actual count, eight Chinese deaths and one Japanese, as follows:

February 5, 1902—Wong Lung Bene, insufficiency heart valves, bicuspid.

September 19, 1901—Hee Ah, acute dilatation ventricle.

August 29, 1902—Hong Quong Ye, pulmonary tuberculosis.

October 22, 1902—Hung Toy, pneumonia.

April 3, 1902—Kee Sud, inflammation of liver.

September 4, 1902—Malsumota Nooki, Japanese, student, nephritis, treated at the Fabiola (Homeopathic) Hospital.

September 13, 1902—On Wong Bo, cancer of liver.

December 21, 1902—Quon Gee Kee, male, 71, valvular disease of heart.

January 16, 1902—Yon Gee, male, 29, pulmonary tuberculosis.

Three of the Chinese deaths are certified to by the coroner, Dr. H. B. Mehrmann.

This gentleman is confined to his house by illness, so an interview with him was deferred. The Chinese do not employ American physicians, as a general rule; for this reason the coroner examines and certifies to some deaths. I have the names of the other attending physicians, for future use, but do not set much value upon buried history.

Our next interview was with Doctor von Adelung, somewhat recently appointed health officer. He stated that the city has no place to isolate contagious disease, and that he was urging the business men to see that such a place is provided, on the ground that he might be obliged otherwise to quarantine a public building or hotel at any time for smallpox or other disease. He recognizes the existence of plague in San Francisco, accepts the diagnosis, but feels no special apprehension of its obtaining a foothold or spread in Oakland. They have kept watch during the past two years, but have not had a suspicious case. All the Chinese in Oakland are in free communication with San Francisco, going over at night at least twice a week. The Chinaman who sickened there over two months ago in the McPike family was of this class. Their first notice of this case was from the gentleman himself, who wished his house fumigated, which they did, at least the room which the Chinaman occupied. He granted that solitary cases might be concealed in the city, but not very probable, and thought that all deaths were recorded. The Chinese do not own a foot of land in Oakland. For that reason their burials are made in San Francisco, in the San Mateo Cemetery, where they are allowed to



disinter the remains when ready to send them to China—a religious obligation. The privilege to disinter is not granted in Oakland. Their relief societies are located in San Francisco, where they go when sick or out of work. This seems to be confirmed by the small number of deaths recorded in Oakland and the statement of two or three intelligent Chinamen to me to the same effect. It is, of course, possible that a few of the wealthier class might pay well to hide a sick person in Oakland if the inspection became too hot upon the other side, but it would only be done to avoid autopsies and burial in lime. Cremation would greatly injure investigation, on account of their custom of returning the bones of all deceased to China. All these statements are presented for what they may be worth, and in a preliminary way. The general impression given by the medical men in Oakland whom we met is that they have nothing to conceal; that there is little strife, friction, or fear of having the truth known. The point to be observed is their possible lack of training as health officials in the detection of an insidious disease, as well as the lack of acumen of the general practitioner in signing certificates of death.

Dr. J. M. Kane, clinical bacteriologist to the board, appears to be competent, but does not have the time or facilities to carry on experimental work, nor does he see coroners' cases. We suggested to Doctor Hamlin the desirability of his seeing the bodies of all deceased Chinamen—few in number—in conjunction with the coroner, and this will probably be done in future.

One of the inspectors was detailed to conduct us through the Chinese district, which occupies four or five city blocks, mainly frame buildings, and all above ground. The yards are comparatively clean, and will compare favorably with tenement districts in the East. The stairways and rooms are small and close, as in other places, but many rooms are held by Chinamen who are out at work during the day, so that whole floors are vacant at this time. They distrust each other so far as their worldly goods are concerned, and use the latest improved padlocks upon their doors, but many of the rooms we could see into, which contained only a wooden bunk for sleeping purposes. In one place several healthy-looking Chinamen were smoking opium in a dazed condition and coiled up under the care of the proprietor. In several other places we came upon them in dark holes and corners, and I examined them for glandular tenderness or enlargements. A considerable percentage of Chinese are found with glandular enlargement, tubercular and venereal in character, and a large proportion of deaths are due to tuberculosis. I noticed a considerable number of cats, all, with one or two exceptions, in sleek condition. Rats were said to be scarce, and no dead ones found. All the conditions seemed to show that Oakland is a temporary abiding place for those having employment there; that when sick, out of work, or seeking amusement they cross over to San Francisco and return by the ferry the same night when necessary. Their Chinese doctors and hospital are upon the other side, so that it may fairly be considered at the present preliminary stage of this investigation that the endemic focus of infection is located in the San Francisco Chinese quarter, with which there is free communication. Rumors of the sick being taken across to Oakland to avoid discovery may or may not be so, but it is not extensive or probable, from present indications. The Chinese have no great family ties or relations in a foreign country. They seem to congregate in the large San Francisco quarter, radiating from that point and returning when out of work or in distress.

In this investigation the facts will be reported as found, without regard to rumors or theories. In some respects the Chinese are given too much credit for acuteness and duplicity, nor does it seem necessary to advance strained reasons why a greater number of cases of plague are not found. The facts seem to show that the disease propagates slowly in this climate where different conditions prevail and a certain amount of sanitary control has been maintained.

On Monday, November 24, it is intended to make inspections of Berkeley and Alameda; the following day proceed to San Jose.

Respectfully,

A. H. GLENNAN,  
*Surgeon, Inspector.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### INSPECTION OF BERKELEY AND ALAMEDA.

[Letter.]

SAN FRANCISCO, CAL., November 25, 1902.

SIR: The towns of Berkeley and Alameda, situated east across the bay from San Francisco by ferries, are located to the north and south sides of the city of Oakland and connected by trolley cars.



## BERKELEY.

The census of 1900 gives Berkeley a population of 13,214; number of Chinese, 154, and Japanese, 17. The number of Chinese at this time of the year may be more, but it is not an important matter. Dr. F. H. Payne is the health officer. He makes personal inspections of the few Chinese tenements, which are detached frame buildings, without underground quarters of any kind. There has been only one death of a Chinese in the last two years or more, and that caused by railroad accident. They are scattered through the town as domestic help, keep a few small rooms in their tenement houses, and go to San Francisco when sick or out of employment. Doctor Payne states there have been no suspicious cases of sickness at any time, and that he would know. Dr. F. C. McCleave confirms these statements. He was for two years in the army in Cuba and the Philippines and saw some cases of plague in the latter place. He is in practice, the son of an army officer, and his observations are reliable. In company with Doctor McCleave I inspected the few Chinese buildings. The premises are in fair condition; there are a number of cats and few rats; no dead ones have been noticed. I inspected all the rooms, which contained little furniture and the usual wooden bunk for sleeping purposes. We found two Chinamen in different places, stowed away aloft, suffering with colds or other slight indisposition, but a careful examination of these people revealed nothing suspicious.

## ALAMEDA.

The population of Alameda is given at 16,464; number of Chinese 255, and Japanese 110. Dr. L. W. Stidham has been health officer for a number of years and understands his business. Our call upon him was unexpected, and he was a little reticent until assured of our honest inquiry. He feels perfectly sure that if a suspicious case existed at any time they would know it. I asked if a mild case of plague would be recognized by the ordinary practitioner. He stated that the profession in Alameda readily consult with each other and that there would be no hesitation in pronouncing the true cause of the disease. Over two years ago he received a telegraphic dispatch, without any explanation or reason, from Doctor Kinyoun to quarantine, which, after some correspondence with him, he did. He placed guards and inspectors upon the roads and water lines. No suspicious case was found at any time. Dr. E. M. Keys, an intelligent practitioner, confirmed these statements, and said that he accepted the diagnosis at that time, and even visited San Francisco to see a case of plague, but for some reason was not allowed to when he arrived there. The Chinese in both of these towns seem to be under fair observation, and from my personal observation a critical inspection of all of them could be made in a few hours. Communication with San Francisco is quick and easy, so that they naturally go there for medical assistance from their own kind. The issue of death certificates and restrictions upon the transportation of dead bodies and watching of the companies' agents render it improbable that smuggling of corpses is done. These towns are clean, houses detached, and yards tidy. For these reasons it does not seem probable that a focus of infection could be established in either of these towns without its being readily known and quickly eradicated.

Respectfully,

A. H. GLENNAN,  
*Surgeon, Inspector.*

THE SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## INSPECTION OF SAN JOSE.

[Letter.]

SAN FRANCISCO, CAL., November 30, 1902.

SIR: Accompanied by Dr. M. Gardner, I proceeded on the morning of Wednesday, November 26, to San Jose, situated 51 miles by rail, south by east, from San Francisco. Its population, according to the last census, was 21,500, but they claim 4,000 more at the present time. The number of Chinese, by the same census, is given at 553 and Japanese 44. The Chinese Six Companies give their number at San Jose as 1,200, which, however, includes all employed upon the ranches in the surrounding district.

In figuring upon their numbers given by these Chinese societies I find that they claim a total of 35,800 in the State of California. The United States census of 1900



gives the number of 24,435 enumerated in cities and towns having a population of over 2,500. This leaves 11,365 for the ranches and smaller places, which seems to be about correct. The number of Chinese has diminished considerably in the past few years, on account of the exclusion act and returns to China. Those of the worthless class, born in this country (cutthroats and gamblers), live in Chinatown in "the City," as San Francisco is generally called.

The board of health of San Jose consists of Dr. F. C. Gerlash, president; Dr. M. D. McDougall, secretary and health officer; Dr. J. J. Miller, who was formerly health officer; Dr. William Simpson, county health officer, and Dr. H. C. Brown. Mr. Corcoran, assistant secretary, keeps the records at the city hall. The board is not strongly impressed with the importance of its sanitary duties, convening at rare intervals.

There have been 67 cases of smallpox here in the past month, with the prospect of many more, on account of imperfect isolation and disinfection. Last year a large number of vaccinations were made with vaccine virus from Parke, Davis & Co., which was practically a failure and gave a false sense of security to many people. The few who did recognize the superiority of Alexander's product have obtained better results.

There are about 19 Chinese deaths recorded at the city hall during the past eighteen months, besides a few accidental deaths and suicides by hanging, as follows:

November 25, 1901: Ah Toy, 65, male; consumption, certified by M. D. Kell, coroner.

November 12, 1901: Bang Sing, 44; suicide, hanging.

March 7, 1901: Bing Long; tuberculosis; coroner's case.

February 3, 1901: Ching Ding; pneumonic phthisis; C. B. Habletzel, M. D.

January 25, 1901: Hoy Lee; fatty degeneration (?); F. C. Gerlash, president board of health.

May 27, 1901: Jak Lai; asthma and gangrene of leg; coroner's case.

December 27, 1901: Jan Jew Yee, 64; pneumonia and old age; Doctor Habletzel.

February 11, 1901: Key Way, 49; tuberculosis; coroner's case.

September 5, 1901: Onehundi Kahi, Japanese, 29; pericarditis; Dr. J. D. Gussin.

July 3, 1902: On Foo, 54; pulmonary disease (?); J. F. Wallace, acting coroner.

April 19, 1901: See Yet Lai, female; phthisis pulmonalis; Elizabeth Gallimore, M. D.

October 1, 1901: Way Ginn, male, 54; consumption; coroner's case.

November 14, 1901: Way Wing, 48, male; dropsy; coroner's case.

September 11, 1901: Chin Lee, 64, male; consumption; coroner's case.

January 7, 1902: Chew Ling, 46, male; consumption; coroner's case.

February 22, 1901: Yenn Chin Wong, 79, male; old age; endocarditis; Doctor Habletzel.

April 28, 1901: Yong Sing, female, 2 years; dysentery; Doctor Habletzel.

June 7, 1901: Yike Wong Ting, female, 1 year; abscess throat; coroner.

August 4, 1901: Yung Yee, 70, male; paralysis; Doctor Caldwell.

In some certificates the duration of sickness is given, but the coroner is not a physician, and certifies to the cause of death in most cases without other professional examination. We called the attention of the health officer to this fact, and he has instituted an immediate reform in this matter. Thus far in our investigations this town shows the greater degree of disregard to the requirements of municipal health laws, while there is the usual absence of harmony between county and city officials.

San Jose is a winter resort for Eastern people; has about 18 drug stores; between 70 and 80 physicians in the city, and over 100, including all, in and near the town, but all do not devote their whole time to the profession, the bulk of the work being in the hands of some twenty men. There is not a competent bacteriologist in this district. The place will bear watching.

November 29 I returned alone to San Jose and, accompanied by Doctor McDougall, the health officer, visited the Chinese quarters, situated upon the outskirts of the city. It is located upon private property, owned by one person, consists of several fenced-in blocks, and the houses all above the surface of the ground. The health officer is not very familiar with the place. From a white mechanic who spends considerable time at work there I gained what appeared to be some reliable information. The Chinese are superstitious about having a death occur in their houses; for this reason, when possible, they place their sick in an outhouse. We found such an old, one-story, frame building near by, detached from other inhabited houses. There was one old man in the room sick from chronic tubercular disease.

The Chinese in San Jose have purchased a piece of ground in connection with the city cemetery for a burial place and, after some time, are given permits to disinter the bones for shipment to China. I made particular inquiry into this matter because it has been stated that a considerable quantity have been shipped from this point,



and one lot had been held up by the San Francisco board of health. There does not appear to be anything irregular, from the information obtained at the city hall and the health officer.

A conversation with Dr. J. J. Miller, a member of the board, did not develop any further information. He stated that they have had no suspicious case of plague, nor suspicious circumstance to attract their attention. With their loose system it is not probable that they would be aware of a case among the Chinese, if it existed.

It will be noticed that the recorded deaths which occurred in 1901 greatly exceed the number in the present year, and I am trying to obtain a satisfactory explanation of this fact for further report.

Respectfully,

A. H. GLENNAN,  
*Surgeon, Inspector.*

TO THE SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### INFECTED RATS IN SAN FRANCISCO.

The cooperative assistance rendered the city health authorities of San Francisco was continued at the laboratory, 641 Merchant street, where necropsies and bacteriological investigations were made by Service officers upon all dead suspected with plague, upon information furnished by the city authorities.

At the same time examinations of rats were made for pest infection, as set forth in the following telegrams from Asst. Surg. M. J. White:

San Francisco, Cal., November 28, 1902: Five dead rats found in streets to-day, plague provisionally.

December 1: Three dead rats yesterday, plague.

December 3: Pest-infected rat trapped in sewer corner Dupont and Washington streets to-day. Fish-alley rat found November 24, is pest.

December 4: From November 24 to December 4, 16 pest rats have been found in Chinatown and immediate vicinity.

December 4: Local board of health exterminating Chinatown rats, but in view of the recent finding of pest-infected ones have decided to request funds from supervisors for extension of work throughout the city. I consider it very important that coastwise and other vessels docking here guard against infected rats, and I especially commend this matter for your consideration.

The systematic effort to destroy rats seemed to eliminate the infection among those rodents in this limited area, and although the bacteriological examination was continued, and some rodents from other sections of the city and along the wharves were examined, no further infection was found.

#### ADDITIONAL INSPECTORS IN SAN FRANCISCO.

While the inspections of places outside of San Francisco were in progress it was suggested that an additional inspection force, to be paid by the State, but under the direction of this Service, might be of advantage in the infected district in San Francisco, this suggestion coming from Dr. M. Gardner, representative of the State.

The following correspondence will furnish the information upon the progress made in this direction:

[Telegrams.]

SAN FRANCISCO, CAL.,  
November 30, 1902.

Surgeon-General WYMAN, Washington:

Have mailed report San Jose. Sixty-seven smallpox, November. Will start as soon as possible for Sacramento, Davisville, and Stockton. I want blanket authority immediately to use White or Currie at any point in the State, where I may need them



a short time, on telegraphic orders from me. Will arrange if can possibly do so California appoint 3 or 4 sanitary inspectors detectives cooperate in San Francisco and Chinatown under State regulations; also urge governor to designate bacteriologists from two universities of California to cooperate with the Service.

GLENNAN.

WASHINGTON, *December 1, 1902.*

GLENNAN, *San Francisco, Cal.:*

Your suggested arrangement to have California appoint three or four sanitary inspectors detectives to cooperate in San Francisco and Chinatown under the State regulations deemed very wise. Wire me as soon as this is done, that I may notify M. J. White that his operations must be subjected to your own. Your telegram not clear concerning bacteriologists, two universities California. Do you wish me to urge, or will you urge, governor?

WYMAN.

WASHINGTON, *December 1, 1902.*

Surgeon GLENNAN, *San Francisco, Cal.:*

Your letters of November 25 and 29 and your telegram of November 30 all received, and indicate very satisfactory progress. Have wired White to respond immediately to demands for his services or Currie's.

WYMAN.

SAN FRANCISCO, CAL., *December 1, 1902.*

Surgeon-General WYMAN, *Washington:*

Have had a consultation with the governor to-day. Agrees in the matter telegraphed yesterday. Will appoint 4 detectives sanitary inspectors, and can arrange the other proposition suggested by me.

GLENNAN.

SAN FRANCISCO, CAL., *December 6, 1902.*

Surgeon-General WYMAN, *Washington:*

Returned from investigation Sacramento, Davisville, and Stockton. Will mail report Friday night. Accompanied governor to large formal meeting of Six Companies. He told them 4 sanitary inspectors would make careful inspection of Chinatown, San Francisco, under our direction; would treat them fairly; mutual benefit; wished to see all cases sickness; requested their aid and support; they pledged it. William Chickering, their attorney, was present, unexpectedly to the governor and me. He spoke favorably and earnestly. Request strong instructions be sent M. J. White to cooperate and aid in every way. Must have support from every quarter or work is useless. Mayor assures me he will render any assistance. \* \* \*

GLENNAN.

While this inspection of the Chinese district in San Francisco was under consideration the inspections of outside places were continued.

The following are inspection reports of sanitary investigations of Sacramento, Davisville, Stockton, and, later, Fresno and Bakersfield.

#### INSPECTION OF SACRAMENTO, DAVISVILLE, AND STOCKTON.

SAN FRANCISCO, CAL., *December 8, 1902.*

SIR: On Wednesday morning, December 3, accompanied by Doctor Gardner, I commenced a sanitary investigation of Sacramento, three hours by rail from San Francisco, with which the Chinese have free communication.

#### SACRAMENTO.

The last census gives the population as 29,282, Chinese 1,065, Japanese 336. The Chinese themselves estimate their number at 2,600 including the surrounding district.

One of the editors of the Occidental Medical Times, Mr. James H. Parkinson, resident of Sacramento, together with a daily, the Sacramento Bee, has taken an active interest in the plague situation, more upon the ground to establish and proclaim the



diagnosis of the disease, as against the party arrayed for its concealment (mingled with political issues and State pride), than from fear of an epidemic of the disease. All this contention and strife has caused the State capital to be particularly watchful and guarded against the introduction of plague from San Francisco. Sacramento is the home of several of the belligerents upon both sides, yet no case of the dread disease has been detected or the suspicion affirmed or denied by either party. It has been said to me by several high State officials, confidentially, that for anyone to deny that plague exists in San Francisco was foolishness, but that the offensive methods adopted in the beginning of the trouble to proclaim the diagnosis and force harsh, roughshod restrictive measures had roused the State against it, and when once so committed there was no possibility of publicly receding from that position. They would gladly aid and assist in the eradication of the disease without stultifying themselves, while the opposing party would rather compel the public acknowledgment of the diagnosis, even to the development of a widespread epidemic, to establish their side of the question. I mention this condition of affairs, which I have gathered from undoubted and reliable sources in both parties, to show how party feeling has perverted their judgment from the welfare of the Commonwealth.

Dr. H. L. Nichols is the secretary and health officer of the city board of health. I made the usual examination of the mortuary statistics in his office. Mr. George McMullen, the coroner, is not a physician, though Doctor Nichols claims he sees all coroner's cases. The Chinese district covers about six half city blocks, kept in fair condition. This portion of the city was formerly a marsh, built upon, then filled in to the height of 6 feet, making a cellar space which the Chinese occupy as well as the upper floors of the houses. Accompanied by George W. Herr, the sanitary inspector, we went through many of these places, and they seemed to be under good supervision.

In conversing with Doctor Ross, a local physician, I gained no idea of suspicion of the place, nor did Doctor Hatch, a member of the State lunacy commission, give any hint of plague suspected. This district here is a familiar locality to Doctor Gardner, who first practiced medicine in Davisville for several years, then removed to Sacramento, where he commanded a large and lucrative practice at the time of accepting the position he now fills as surgeon of the Southern Pacific Railroad. He was a member of the board of health of Sacramento some years, establishing its efficiency. Whenever he visits the city former patients seek his professional advice, which goes to show the man's influence and known ability. Doctor Gardner was also a classmate of Surgeon Carmichael, of our Service, and Doctor Osler, of Baltimore, in a Canadian school of medicine.

The officials here claim that they record all Chinese deaths, and I am fairly convinced that this is so; also that they make a superficial inspection of the dead; yet there is the chance that the diagnosis of death from plague might be overlooked. Against this is the fact that there has been no group of cases nor special circumstance to attract attention, while the death certificates show duration of sickness, attendance, etc. The following Chinese dead are recorded for the year 1902:

January 2: Yet Choy, 65, male; bronchitis; coroner, George C. McMullen.  
 January 8: Look Hong, 56, male; la grippe, Dr. H. W. Strader.  
 January 12: Wohg Sing, 42, male; sarcoma, Dr. George M. White.  
 February 17: Ah Lack, 26, male; cancer, coroner.  
 February 17: Ah Ying, 50, male; consumption, coroner.  
 February 25: Look Quong Dong, 55, male; consumption, Dr. Strader.  
 February 25: Fong Low, 65, male; valvular disease heart, Dr. F. B. Sutliff.  
 February 27: Ah Goah, 44, male; cystitis, coroner.  
 March 11: Yen Fook, 71, male; marasmus, Doctor Nichols.  
 April 6: Ah Kim, 50, male; consumption, coroner.  
 April 14: Long Sing, 60, male; consumption, coroner.  
 June 17: Wong Wee, 34, male; consumption, coroner.  
 July 4: Ton Tung, 50 male; gunshot wound, coroner.  
 July 9: Mock Wing, 41, male; consumption, coroner.  
 August 4: Whing Wing, 41, male; consumption, coroner.  
 August 14: Lee Chee, 33, male; drowning, accidental.  
 August 22: Dan Ding, 59, male; traumatic bronchitis, Dr. H. H. Look.  
 August 31: Jan Tong, 62, male; typhoid fever, Dr. G. W. Ogden.  
 September 1: Lee Sing, 52, male; heart disease, sick one month, coroner.  
 September 6: Lee Wing Dong, 56, male; phthisis pulmonalis, Dr. J. C. Simmons.  
 October 2: Fon Sue, 50, male; typhoid fever, coroner.  
 October 15: Wong Yung Ching, 63, male; accident, coroner.  
 October 24: Lee King, 55, male; consumption, coroner.  
 November 20: Gee Fong, 57, male; tubercle lung, Dr. F. B. Terrill.  
 November 26: Chin Moy, 52, male; "natural causes," coroner.



## DAVISVILLE.

Fourteen miles from Sacramento is the village of Davisville, at a railroad junction, the station being called Davis on the railroad time schedule. The population is a little over 600, including about 30 Chinese. These few Chinamen collect in one frame building, doing duty also as laundry and agency for hiring the Chinese to the outlying ranches, reinforcing their numbers from San Francisco when the demand requires it. I inspected this building throughout, and found it in fair sanitary condition and the occupants healthy. Dr. Walter E. Bates, the only physician, proprietor of the drug store, and president of the county board of health, was an assistant professor of one of San Francisco's colleges, but resigned on climatic reasons. He knows all the Chinese living in and about Davisville. When Doctor Bates read the report in a Sacramento paper regarding the Chin Suey Kim case, who died in San Francisco of plague, he immediately made inquiries, but could get no trace of him. It is possible that the man went out by the way of Winters and returned sick soon after by way of Davis station. I inclose the written statement of Doctor Bates, which also gives the names of their board of health. I developed the fact that in all these small places having a Chinese laundry they also are agents, and secure batches of laborers for the ranches; know where good pay is, and where it is slow; return to San Francisco when sick or out of employment. Chin Suey Kim went out in one of these labor gangs.

There have been no deaths of Chinese in Davisville or upon the neighboring ranches, and it is fair to conclude that there is no focus of infection in this region. These are the reasons why the territory outside of the Chinatown in San Francisco has not developed the disease, due to the habits of these Mongolians. This may not apply to the more distant points, which will be shown as the investigation progresses.

## STOCKTON.

We arrived at Stockton Thursday morning, December 4, and met there Doctor Ruggles, resident member of the State board of health, a fine, truthful, old gentleman. In private conversation he said that he regretted very much the course pursued by some members of the State board; that plague undoubtedly existed in San Francisco; that he was satisfied as to the diagnosis, from the character of the men who made it, but had been personally powerless to influence a different course from that which they had adopted. The Chinese quarter here is a small one, and the cleanest I have seen. It is inspected regularly, and they claim not to have seen a suspicious case. A little over two years ago there was an epidemic of pneumonia in Bakersfield. Three cases in white persons came from there at about the same time, and died in Stockton, which excited their suspicions, but nothing came of it; no further developments. They understood afterwards that Doctor Ophuls, bacteriologist at the Cooper Medical College, went to Bakersfield to make scientific investigation, and pronounced it pneumonic plague (or pernicious pneumonia). I will trace this accidental information further.

Dr. H. E. Southworth, recently elected coroner, was county physician for the past year; studied in San Francisco; took a course in bacteriology, and saw cases of plague while there. He has his eyes open, and will probably show the older men a case of plague if it develops in Stockton. The census gives the population of this city as 17,506; Chinese 593 and Japanese 39. The Chinese themselves figure 1,000 of their number in the district.

Our next investigation will probably be made in Fresno and Bakersfield. Bouldin Island has only direct communication by freight steamer at irregular intervals. Governor Gage has requested me to go to Los Angeles also. When I expressed a doubt as to its immediate necessity, he replied that it was his home and that he did not want the criticism made that he did not have his own neighborhood investigated.

While the inspections now being made of places outside of San Francisco may not conclusively prove the existence or nonexistence of plague in those places, either now or in the past, nevertheless the personal contact of the Service with the physicians in active practice throughout the State will be valuable in the future. The majority of the profession are truthful and honest in their opinions, and this includes the local health officials. Their Chinese quarters in most instances are connected with the city sewers and water supply; they have flush closets, and even electric lights in the streets; their sanitary inspectors keep up a certain amount of supervision, all of which gives a hopeful outlook.

On the 20th of December, Mr. Daniel Kevane, secretary of the State board of examiners, vacates that office. He has been the leading official in the opposition and disbursing officer of the State health funds.



Doctor Williamson, president of the San Francisco board of health, vacates January 1. If sufficient pressure can be brought for the reorganization of the State board of health, the present condition of affairs will be greatly improved.

Respectfully,

A. H. GLENNAN, *Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE

[Inclosure.]

*Signed statement of Dr. W. E. Bates, of Davisville, Cal., in regard to reported case of plague from that place.*

Chinaman, named Suey Kim, was said to be at work on a ranch near Winters, reported in Sacramento paper that a case had died in San Francisco from the plague, Dr. Bates reported to health officer at Woodland (Dr. H. D. Lawhead) and then to Dr. R. Cadwallader, at Winters, and tried to get trace of said case. No such man to be heard of.

W. E. BATES, *President,*  
H. D. LAWHEAD, *Secretary and Health Officer,*  
R. CADWALLADER, *Winters, Cal.,*  
T. DIXON, *Grafton, Cal.,*  
*County Board of Health.*

#### INSPECTION OF FRESNO AND BAKERSFIELD.

SAN FRANCISCO, CAL.,  
*December 27, 1902.*

SIR: The following report of a sanitary investigation of Fresno, Cal., made December 10, 1902, in company with Dr. M. Gardner, is respectfully submitted:

The last census gives Fresno a population of 12,470; Chinese, 1,104 and Japanese 175. The Chinese Six Companies claim 3,000 in this county, but the number of Japanese are said to be increasing and replacing the Chinese. The city has paved streets, electric lights, trolley cars, water supply, and some sewerage. The streets are wide and clean, but the back premises show scavenger neglect.

Dr. G. H. Aiken is president of the city board of health; Drs. T. M. Hayden, J. L. Maupin, G. A. Hare, and J. D. Davidson, members; Dr. P. N. Russell is secretary and health officer since July, 1901, Doctor Hayden having occupied the office before that time. Mr. L. O. Stephens, the mayor, is also the principal undertaker, and appoints the members of the board of health. Dr. G. L. Long (homeopath) is the present coroner, but Dr. A. B. Cowan has been elected to that office to date from January 1, 1903.

The Chinese own their cemetery, situated about 1 mile north of the city. In the spring of 1901, they were given a permit to ship a lot of bones to China as is their custom, but only the bones of those buried for several years were exhumed. The Chinese quarter is situated to one side of the city, west of the railroad, has sewer system, electric lights, and water supply. Dr. Law Keem, a very intelligent Chinaman, lives in this section, has a good practice, and has been a resident of this country for twenty years. He attended the Adventist College at Healdsburg, Cal., being a member of that faith, afterwards graduating at the California Medical College in 1900. Doctor Keem inspected Chinatown with us, and thinks that he would know plague clinically if he saw it. Our call upon him was entirely unexpected, and he seemed very frank and truthful in his statements. He has lost a number of cases of pneumonia, one a Japanese aged 35 years, who lived at Sanger, came to his sanitarium, and died November 12, after an illness of thirteen days. The Japanese seem to be of more frail constitution and subject to pneumonia and typhoid fever.

Doctor Aiken, president of the city board of health, is of middle life and considerable practice. He has not heard of any sickness suspicious of plague. The Chinese here, as well as in other places, are usually seen by the American physicians only after death, when they are called and paid a fee for the certificate of death. The examination is of a perfunctory character and "natural causes" often given in the certificate, which is legal, but should not be accepted by the health officer. Section 11, Health Regulations, ordinance No. 397, city of Fresno, certificates of death,



undertakers, etc., reads as follows: "If a person die or is found dead, not having had a medical attendant, it shall be the duty of the first physician who shall see the remains to furnish such certificate of death, if he be satisfied that the said person died from natural causes; otherwise he shall notify the coroner, who shall take charge of the body." I inclose copies of their certificate of death and "burial permit," which would seem sufficiently comprehensive if intelligently filled out.

In a private conversation with Doctor Russell, the present health officer, he thought that a year or two ago he saw one or two Chinese dead with buboes, but was not particularly attracted by the fact. No investigation was made, and it seems possible that during the inspection and disinfection in San Francisco some sick may have come to Fresno, died, and were buried without establishing the infection. In nearly all the Chinese quarters they place their sick and dying in an outbuilding for superstitious reasons, which, with prompt burials, has been a sanitary benefit and possibly prevented the spread of the disease.

During the month of December, 1901, out of a total of 35 deaths 14 were Chinese and Japanese, as follows:

December 6: Kataoke, Japanese, 25, male; typhoid fever, certified by Dr. B. Okonaji, Japanese.

December 6: Len Loy, 56, male; pneumonia, Doctor Hopkins.

December 6: Ah See, 42, male; pneumonia, Doctor Adaü.

December 12: Ivasode, 26, male; Japanese, suicide, Doctor Long.

December 12: Lea Kee Day, 65, male; traumatic gangrene, Dr. Law Keem.

December 15: Sing Chung, 47, male; consumption, Doctor Adaü.

December 17: Linn Bock, 61, male; dropsy, Doctor Adaü.

December 19: Lee Kow, 43, male; pneumonia, Doctor Long.

December 21: Wang Wah Noe, 59, male; impaction of bowels, Doctor Thorn.

December 23: Hoe Wah, 73, male; old age, Doctor Cowan.

December 23: Chong Kung, 54, male; tubercle, Doctor Cowan.

December 24: Lon Yen, 52, male; natural causes, Doctor Cowan.

December 28: Ginn Fon, 46, male; natural causes, Doctor Cowan.

December 30: Low Yon, 45, male; congestion of lungs, Doctor Aiken.

#### BAKERSFIELD.

One of the railroad stations is situated at Kern City, 1 mile from Bakersfield, connected by trolley cars. Doctor Kellogg, the health officer at Kern City, stated that there was no special sickness among the Chinese or elsewhere, nor had he seen a suspicion of plague. Two years ago there was a fatal type of pneumonia in this section which excited their suspicions, but bacteriological examination showed only an infectious pneumonia.

The census of 1900 gives the population of Bakersfield as 4,336, Chinese 428, and Japanese 20. The present population, however, is nearer 7,000, on account of the rush to the oil fields two years ago, and during that winter the weather was unusually foggy, accommodations scarce, men slept upon the sidewalks, barroom floors—everywhere. It is a "wide-open" town with a tough name, but is becoming more orderly and settled. The streets are paved, electric lighted, trolley cars, water supply, and some sewerage is in evidence.

Conversations with Doctor Carson and Doctor Schaeffer did not develop any suspicion of plague. The large mortality from pneumonia two years ago excited their apprehension, but bacteriological examination excluded plague. Two experts came to the city about it, one a Federal officer, but they did not remember his name. Afterwards I learned that it was Dr. Hill Hastings of this Service.

A wave of epidemic pneumonia appears to have covered this section of country and the adjoining States. The sickness was of short duration and fatal type. Doctor Schaeffer informed me that he was in despair as to any form of treatment, and finally tried to avoid attending further cases. During the month of January, 1901, there were 48 deaths from pneumonia in Los Angeles, where the disease prevailed considerably the same winter. Franz Buckteus, the coroner of Bakersfield, is an old ex-army steward, a trained, methodical man. He informed me that Chinese who sickened upon the neighboring ranches were taken to the county hospital, and that he had not seen any with buboes or suspicion of plague.

The city marshal, who has held the office for eight years, accompanied us upon the inspection of the Chinese quarter. He is a keen, alert man, and holds full sway over the Chinese and turbulent element of the town by force of character backed up with his gun. The Chinese houses, few in number, are in an open section, nearly all above ground, and easy of inspection and quarantine, if necessary.



They have an intelligent Chinese physician who keeps a drug store, and has lived here twenty-six years, making occasional trips to his native country. He claims to have seen plague there, but none like it here.

I inclose lists of Chinese deaths in Fresno and Bakersfield for the year 1902.

#### SUMMARY.

The sanitary reports made to you of the investigations made of places outside of San Francisco fairly establish the fact that no groups of plague cases seem to have existed; there is the possibility, however, that single cases of the disease may have left San Francisco, died and were buried from these more open and sanitary Chinese quarters without recognition, no infection seeming to follow.

A perfect investigation would require that a bacteriologist quietly remain in these places for some time, and keep in touch with the health officer and coroner. Such a man at Fresno could cover Bakersfield at the same time. These two places, together with San Jose, would be the most likely trend of the disease to the southward.

Respectfully,

A. H. GLENNAN,  
*Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### [Inclosure.]

*List of Chinese and Japanese deaths recorded at the health office, Fresno, Cal., during the year 1902.*

February 5, 1902: Ah Toy, 59, male; natural causes, certified to by Dr. A. B. Cowan.  
February 15, 1902: San Yen, male, 75; natural causes, certified to by Dr. G. L. Long, coroner.

February 16, 1902: See Kow, 62, male; impaction bowels, Dr. J. D.  
March 10, 1902: Jeu Duck, 60, male; natural causes, Dr. J. J. Spattswood.  
March 16, 1902: Lew Ching Hoy, 64, male; tubercular peritonitis, Dr. Law Keem.  
April 14, 1902: Chew Duck Yan, 42, male; natural causes, Doctor Spattswood.  
April 25, 1902: Ah Wing, 10 months; cap. bronchitis, Doctor Spattswood.  
June 28, 1902: Ny Fe Kowen, 64, male; natural causes, Doctor Spattswood.  
July 3, 1902: Yung Tun, 55, male; natural causes, Doctor Spattswood.  
July 6, 1902: Lung Wing Hoy, 64, male; natural causes, Doctor Long, coroner.  
July 19, 1902: Chung Hoo, lobar pneumonia, 4 months old, Doctor Russell.  
August 11, 1902: Yong Ying, 57, male; natural causes, Dr. T. M. Sample.  
August 18, 1902: Lung Lei, 54, male; apoplexy, Doctor Long, coroner.  
September 3, 1902: Wong Eh Hing, 50, male; pneumonia, Dr. C. H. Adair, eclectic.  
September 29, 1902: Chen Ping Yet, 42, male; strangulated hernia, Doctor Long, coroner.

October 23, 1902: Ah Tong; natural causes, Dr. W. M. Thorn.  
October 10, 1902: Y. Lenga, Japanese; typhoid fever, Dr. B. Okonage, Japanese.  
October 14, 1902: F. Doi, Japanese; malarial fever, Doctor Masuki, Japanese.  
October 15, 1902: One June Yami; typhoid fever, Doctor Masuki, Japanese.  
October 16, 1902: F. Wahayama, 34, male; typhoid fever, Doctor Okonage.  
October 16, 1902: F. Wah; typhoid fever, Doctor Okonage.  
November 12, 1902: Kitaio Ishyama, Japanese, 35; pneumonia, Dr. Law Keem.  
November 16, 1902: Chun Yung, 54, male; natural causes, Doctor Thorn.  
November 27, 1902: Jue Hay, 60, male; old age, Doctor Adair.  
December 8, 1902: Shiobashi Takora, Japanese, 40; malarial fever and diarrhea, Doctor Keem.

#### [Inclosure.]

*List of Chinese deaths recorded at the health office, Bakersfield, Cal., for the year 1902.*

January 5: Ah How, 50, male; Bright's disease, Dr. J. L. Carson.  
January 8: Ah Tock Chew, 52, male; consumption, coroner.  
March 9: Fung Hee, 55, male; pneumonia, Franz Buckreus, coroner.  
May 31: Fat Sun Tung, 52, male; heart disease, Doctor Carson.  
March 28: Git Chin Yen, 59, male; gunshot wound, coroner.



March 9: Hie Fung, 55, male; pneumonia, coroner.  
February 19: Kubo (Japanese), 26, male; typhoid pneumonia, Doctor Schaeffer.  
August 11: Frank McKenzie, 34; natural causes, coroner.  
July 19: Gee Noon, 59, male; heart disease, coroner's jury.  
September 9: Ying Chung, 53, male; natural causes, no certificate.  
November 6: Fook Tong, 50, male; consumption, Dr. A. F. Schaeffer.  
October 11: Shin Bow, 62, male; consumption, coroner.

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#### VISIT OF THE SURGEON-GENERAL TO SAN FRANCISCO.

In December Surgeon-General Wyman visited the State and arrived in San Francisco on Wednesday, December 17, and Governor Gage being in the city, called first upon him as the chief officer of the State board of health. The same afternoon he called upon Doctor Williamson, the president of the city board of health, at his office, and met there, by his call, Doctor O'Brien, the city health officer, and Doctor Buckley, a member of the city board.

The same afternoon, accompanied by Doctor Glennan and Doctor Currie, inspected the laboratory of the Service, and at night paid a visit to Chinatown with a representative of Governor Gage, the governor having offered this courtesy, which was accepted.

The following morning, December 18, with Doctor Tabor, State health officer of Texas, and Doctor Glennan he again visited the laboratory of the Service, and after another inspection thereof went with Doctor Currie, who had been making the bacteriological examinations, and Mr. Wong, the Chinese interpreter of the Service, and made a still closer inspection of Chinatown, visiting the worst places.

On Friday afternoon the Surgeon-General, accompanied by Doctor Glennan and Mr. Chickering, attorney for the Chinese Six Companies, visited the governor-elect, Doctor Pardee, in Oakland, and in the afternoon called upon Mayor Schmitz at his office, but was unable to see him, and made an appointment for the following morning; had an interview with Mayor Schmitz on Saturday morning, and in the afternoon called upon Doctor Williamson, president of the city board of health, who sent for members of the board, with whom the situation was discussed.

The same afternoon visited the Chinese Six Companies; had an interview with them concerning the situation, and at night received calls from Doctor Williamson and members of the city board of health, and one or two other members of the profession.

The Surgeon-General left San Francisco on Monday, December 22. His personal observation confirmed the fact that the efforts of the city health officials of San Francisco in the eradication of plague infection had been carried on under unusual difficulty and lack of support of the then existing State health authorities.

As a result of this visit a cordial understanding was reached and the way prepared for future cooperative action, after the inauguration of the new State officials in January of the following year.

#### CORRESPONDENCE RELATIVE TO REPRESENTATION OF CALIFORNIA AT PROPOSED CONFERENCE IN WASHINGTON, ETC.

The following correspondence relates to the inauguration of the new State officials of California and the selection of a State representative



to the conference of State boards of health to be held at Washington, D. C., January 19, 1903:

[Telegrams.]

SAN FRANCISCO, CAL., January 6, 1903.

Surgeon-General WYMAN, Washington:

Governor Gage's final message to legislature to-day reiterates his position. Attacks Kinyoun and press publishing false epidemic predictions. Holds out the hope that no unnecessary quarantine against the State will be imposed, but after wordy denial plague situation, finally recommends city and State take measures for removal Chinatown.

GLENNAN.

SAN FRANCISCO, CAL., January 6, 1903.

Surgeon-General WYMAN, Washington:

City supervisors appropriated \$1,000 for further destruction of rats.

GLENNAN.

SAN FRANCISCO, CAL., January 7, 1903.

Surgeon-General WYMAN, Washington:

Gage's appointments past two years, including members State board health, failed, confirmation now pending Pardee's action possible reorganization State board. Pardee's inaugural address avoids reference to health matters. Mayor names Stinson to succeed Williamson. Request quick confidential information if governor appoints suitable representative, whether member State board health or otherwise, would he be recognized at meeting the 19th?

GLENNAN.

WASHINGTON, January 8, 1903.

GLENNAN, San Francisco, Cal.:

Law requires me to invite one representative of each State board making request. If State board, through governor or otherwise, makes request I hereby extend invitation, which you will please forward.

WYMAN.

[Letter.]

OCCIDENTAL HOTEL,  
San Francisco, Cal., January 8, 1903.

DEAR GOVERNOR: As suggested by Surgeon-General Wyman at our recent visit to you in Oakland, I inclose a copy of his letter of instructions, delivered to me in Washington when I was ordered to proceed to this State.

The act of Congress, approved July 1, 1902, provides: "That it shall be the duty of the surgeon-general to call a conference upon the application of not less than five State or Territorial boards of health, quarantine authorities, or State health officers, each of said States and Territories joining in such request to be represented by one delegate."

Eleven or more of the States have made such a request—to consider the plague situation in California—and the date of conference has been fixed for January 19, 1903. Not understanding that California has requested representation at this conference, I wired an inquiry to the surgeon-general and received the inclosed reply to-day.

This conference will be of vital importance to the State of California, and it seems to me personally that as the officers of the present State board of health have taken such a radical stand against the welfare of their State their statements regarding health matters have lost value for presentation at this conference.

Therefore, seeing that the time is short in which to consider this matter and take action, pardon me if I suggest that you wire Surgeon-General Wyman at Washington to the end that this State have suitable representation at this conference of the State health authorities.

If you should so desire, I shall be glad at any time to come to Sacramento to see you.

Respectfully,

A. H. GLENNAN,  
Surgeon, Public Health and Marine-Hospital Service.

His Excellency GEORGE C. PARDEE,  
State Capital, Sacramento, Cal.



[Telegram.]

SAN FRANCISCO, CAL., *January 9, 1903.*Surgeon-General WYMAN, *Washington:*

Have advised and have assurance that present secretary of the California board of health will not be represented at conference. Have an appointment with the governor at Sacramento to-night in regard to the matter. Will wire particulars. Hope no member present State board will be selected.

GLENNAN.

In response to a telephone message January 9, 1903, from Governor Pardee, Surgeon Glennan visited Sacramento the same evening, for conference with the governor. As a result of this, Dr. Matthew Gardner was selected to represent the State of California at the conference of State boards of health to be held at Washington, D. C., January 19, 1903, and Doctor Gardner's name was sent to the legislative assembly to fill a vacancy in the State board of health.

[Letter.]

SACRAMENTO, CAL., *January 9, 1903.*Dr. A. H. GLENNAN, *San Francisco, Cal.*

DEAR DOCTOR: Our interview of this date has, of course, rendered unnecessary any reply to yours of yesterday, except to thank you for your kindness and to assure you of my desire to continue the cordial relations you have kindly permitted me to establish.

I inclose herewith the telegram to you from General Wyman.

Very truly, yours,

GEO. C. PARDEE.

[Telegram.]

WASHINGTON, *January 12, 1903.*

HON. GEORGE C. PARDEE, *Governor,*  
*Sacramento, Cal.*

Will be pleased to have State of California represented January 19.

WYMAN.

## DATA FOR CONFERENCE.

The following telegraphic request for information to be presented to the conference was sent to the Service representative in San Francisco, and his reply appears in the report of the conference. The memorandum following gives full information on this point.

[Telegram.]

WASHINGTON, *January 17, 1903.*GLENNAN OF CURRIE, *San Francisco, Cal.:*

Wire immediately how many cases occurred in Chinatown and how many in other parts of city or county, how many white cases and how many Chinese. All data to cover from March, 1900, to present time. Give also date of last case outside of Chinatown, stating whether it was traceable to Chinatown.

WYMAN.

The telegraphic answer appears in the report of the conference. Following is a memorandum, giving the information in full:

(MEMORANDUM PREPARED BY ASST. SURG. D. M. CURRIE.)

Ninety-three cases of plague have occurred within the city of San Francisco between the dates of March 6, 1900, and December 11, 1902. Six of these were whites, 4 Japanese, and the remainder Chinese. Six have been pneumonic, of which 2 were purely pneumonic; the others probably secondarily pneumonic; that is, secondary to bubonic. Two have been purely tonsillar. Four have recovered; 89 proved fatal.



In 8 cases the claim was made that they had come from other parts of the State. All were taken sick in the Chinese quarter with the exception of 5 (1 Japanese and 4 whites), the former almost certainly being infected in the Chinese quarter. One of these whites was a woman whose husband was a teamster for the Chinese, and she herself lived within a block of the Chinese quarter. Another, a trained nurse, was infected from a Chinese patient. Another, a white sailor, who denied having been in Chinatown for a year and a half, and the last a white clerk, who was known to have gone on sprees, and therefore whose movements were doubtful, to say the least. The longest lapse that has occurred between cases is ninety-two days, during which time Chinatown was being cleansed by the State board of health; the next longest seventy-two days, which ended February 22, 1902. There have been three lapses of fifty days. All the cases occurring in the Chinese quarter beginning March 6, 1900, up to date have been about equally distributed throughout, although, taking a given month, they are frequently found to have occurred in a comparatively localized area. So far as is known, there have not been over 5 cases that are even probably contacts, and as to one or two of these the connection is doubtful as to whether it was contagion from one to the other or from a common source. It is probable that all the dead in Chinatown are seen. We have had some evidence from Chinese sources in several cases that sick have been removed in order to avoid autopsy. In these particular cases we have been unable to find out whether it was true. If cases were removed from the city, from what we have observed here, namely, that few or no contacts contract the disease, it is probable that no spread of the disease would take place.

Except from the certificates of the attending physicians, we have no means of ascertaining whether the whites dying in different parts of the city are infected with plague.

The city board of health says that after the population of Chinatown is taken, exclusive of Japanese, the mortality runs 30 per 1,000, which is high, considering there are very few children. But these statistics are based on the dead we see, the great majority of which are not plague.

The Chinese object to autopsy to a moderate extent, but not seriously as a rule; not as much so as the whites. We autopsy all cases (1) that have been seen by us during life and are regarded as suspicious of plague, such as acute buboes, pneumonia, and acute febrile diseases, the causes of which are doubtful or can not be ascertained; (2) all cases which have not been seen by us and which, on an inspection of the body, the cause of the death is not evident, such as a fracture of the skull, chronic tuberculosis, ascites, etc. The only exceptions that have been made to this rule have been in two cases of pneumonia and one, a well-nourished man dying suddenly, in which legal action was threatened by the Chinese, and these bodies were passed by the city board of health against our recommendations. All cases of plague and all cases suspicious of plague that have been autopsied have been carried through all the usual and ordinary bacteriological tests before diagnosis has been made. If a case is regarded as suspicious of plague, the city bacteriologist is notified and is present at the autopsy. In addition to this, the city board of health is notified that the provisional diagnosis of this office is "bubonic plague."

The contacts (except in pneumonia cases) are not quarantined as a rule. By "contacts" in pneumonic cases are meant those men who are found in the room when the policeman arrives to institute the quarantine. After the body is limed it is hermetically sealed in a zinc coffin and buried by the Chinese undertaker. There is no reasonable doubt about the disposition of the bodies. The clothes are buried with them.

No person attending the autopsies has contracted the disease, nor, so far as we know, did any case of plague develop among the 135 white men employed in cleansing Chinatown.

It would appear that the months of July, August, September, and early October are the months of maximum plague mortality and those of November, December, and January the minimum.

The population of Chinatown is roughly 15,000 during the winter months, namely, from November to March, inclusive, and smallest between March and November, as about 5,000 Chinese leave the city for the ranches in the State and the Alaskan canneries. The greatest number of cases of plague is in the seasons when there is the smallest population. Up to the last few weeks, most weeks showed a larger number of dead than sick. In other words, while I believe we see all the dead, there are a great number of sick, even from ordinary chronic diseases, which are not seen during life. Every effort has been made to see all the sick, but, owing to lack of cooperation of the Chinese and their fear of quarantine, such has been impossible; but during the last few weeks there has been a very marked and favorable increase in the number of sick seen by this office.



The method by which we see the sick is as follows: It is known to the Chinese that all cases which have been seen by us during life and found not to be plague will be passed without autopsy. Therefore a certain per cent of the population report their sick to us for the sole purpose of avoiding autopsy in case of death. This, as will be readily seen, permits us to visit only those sick whom the Chinese believe are going to die. We have repeatedly, through the Six Companies and directly, urged the Chinese to report even trivial cases to us, assuring them that their interests would not be injured thereby, but up to the present time, possibly owing to contrary influences brought to bear against us by the agents of the State board of health, we have been unable to secure their full confidence and cooperation.

As a rule the Chinese laymen and physicians strongly suspect plague even at an early stage of the disease; but, on the other hand, any acute febrile illness they regard in about the same light. In short, they are not able to make a very accurate differentiation between acute febrile cases. The cases which occur with well-marked buboes they recognize as readily as do the trained white physicians. If the Chinese believe the case to be one of plague they rarely report it to this office, because their whole fear is the quarantine and the autopsy of the body. All they can hope to gain by reporting is the prevention of the autopsy of the body, and therefore they have no inducement in this case to report.

There were examined previous to November 8, 1902, some 50 or 60 rats (estimated), which were obtained at irregular intervals by offering small rewards. The examination of these showed none to be infected with plague. On November 8 the city board of health began to systematically trap rats in Chinatown, employing 3 men and 50 traps. The traps were set entirely in the sewers. These men were also instructed to look for dead rats in Chinatown and bring them with the live to this laboratory. The live rats were chloroformed on arrival here and with the dead rats autopsied and examined bacteriologically. Of the 481 rats examined so far, 15 were found to be infected with plague. Of the 15, 13 were caught or found dead (mostly the latter) within a radius of 100 feet from 629 Merchant street, which is one-half block to the east of Chinatown. The other 2 were caught in various parts of Chinatown. The rats in this city other than the district known as Chinatown, and possibly a block or two beyond its borders, have not been examined.

Respectfully forwarded.

A. H. GLENNAN, *Surgeon.*

#### PLAGUE CONFERENCE.

In accordance with request from a number of State boards of health, and under authority of section 7 of the act of Congress approved July 1, 1902, a conference with regard to the plague situation was held in the office of the Surgeon-General of the Public Health and Marine-Hospital Service, January 19, 1903.

The conference held two sessions, one in the forenoon and the other in the afternoon of January 19, adjourning on the same date.

At 10.25 a. m. the conference was called to order by its chairman, Surgeon-General Walter Wyman, of the Public Health and Marine-Hospital Service. The roll was called and the following answered to their names: California, Dr. Mathew Gardner; Connecticut, Dr. C. A. Lindsley; Colorado, Dr. H. R. Bull; Delaware, Drs. C. W. Cooper and Alex. Lowber; District of Columbia, Dr. William C. Woodward; Indian Territory, Dr. M. K. Thompson; Iowa, Dr. T. L. Kennedy; Indiana, Dr. J. N. Hurty; Louisiana, Dr. Arthur Nolte; Maine, Dr. Charles D. Smith; Maryland, Dr. John S. Fulton; Minnesota, Dr. H. M. Bracken; North Carolina, Dr. R. H. Lewis; New Jersey, Dr. Henry Mitchell; New York, Dr. Daniel Lewis; Pennsylvania, Dr. Benjamin Lee; Rhode Island, Dr. Gardner T. Swarts; South Carolina, Dr. T. Grange Simons; Tennessee, Dr. J. A. Albright; Vermont, Dr. H. D. Holton, and Virginia, Dr. P. A. Irving.



## RESOLUTIONS PASSED BY THE CONFERENCE.

## I.

The presence of plague in California is established beyond debate by—

1. The investigations of Kellogg, of the San Francisco board of health; Ryfkogel, for the California State board of health, and Kinyoun, for the United States Marine-Hospital Service.

2. By the later investigations of Pillsbury, for the State board of health, and by those of J. White, M. White, Flint, Currie, Carmichael, Blue, and Glennan, for the United States Marine-Hospital Service.

3. By the findings of Flexner, Barker, and Novy, composing a special committee acting under Federal authority.

4. By the findings of independent and disinterested investigators (supplied with materials from autopsies made at San Francisco, and working in San Francisco, Chicago, Boston, New York, Washington, Baltimore, Philadelphia, and Ann Arbor).

5. By the occurrence of a case of human plague in Ann Arbor due to an accident in the manufacture of Haffkine's prophylactic fluid with a culture of plague bacillus obtained in California.

6. By the autopsy records of 90 cases of plague, now in the possession of the United States Marine-Hospital Service and of the San Francisco board of health, and published in part in the Occidental-Medical Times, of San Francisco.

## II.

The presence of plague in any community where proper restrictions are not taken to prevent its spread is an injury to the best interests of that community. Such injury is in any case avoidable by the proper cooperation of all interest involved—commercial, professional, and governmental. This conference regards the habitual publication of the actual facts relative to infectious disease and preventive procedures as the surest route to popular confidence, and is one of the means best adapted to minimize the injury liable to result from the presence of such diseases.

## III.

The present danger to California and to the United States lies primarily in the persistence, during nearly three years, of a definite nidus of plague infection in that part of San Francisco known as Chinatown; but the gravity of this circumstance is greatly increased by the gross neglect of official duty by the State board of health of California and the obstructive influence of the recent governor of California, by the failure of the city government of San Francisco to support its city board of health, and by the obstacles opposed to the operations of the United States Public Health Service.

## IV.

The conference will consider the safety of the country sufficiently assured as soon as satisfied that a competent city board of health of San Francisco and a competent State board of health, in cooperation with the United States Public Health Service, will proceed under definite, harmonious, and effective laws and ordinances; that they are provided with ample funds, and that they are jointly and severally in the free exercise of their lawful powers.

## V.

The conference expresses its conviction that the United States Public Health Service has deserved well of the State of California and of the country, and that it would go far toward the restoration of popular confidence if the United States Public Health officials were admitted to the same relations with the State board of health as have been steadily maintained with the city board of health of San Francisco.

The praise of this conference and the gratitude of the city of San Francisco are due to Drs. John M. Williamson, Vincent P. Buckley, W. B. Lewitt, Rudolph W. Baum, Louis Bazett, and Dr. McCarthy, of the city board of health of San Francisco. These men possess the unreserved confidence of the executive health officers of the country.

## VI.

*Resolved*, That the Surgeon-General of the Public Health and Marine-Hospital Service be requested to inform the various State boards of health at least two weeks before the annual meeting of the Public Health and Marine-Hospital Service and the



State boards of health to what extent the sanitary recommendations this day made to control and prevent the existence of plague in California have been carried out, to the end that they may then be prepared to take further action that may be necessary to accomplish the end desired.

A detailed report of this conference was published in supplements to Public Health Reports of January 23 and February 6, 1903.

Following the conference of State boards of health, the following correspondence in regard to the same was had:

[Telegrams.]

SAN FRANCISCO, CAL., *January 20, 1903.*

Surgeon-General WYMAN, *Washington:*

Referring to telegraphic report proceedings State boards health, yesterday morning, papers publish following statement from Governor Pardee: "Whatever the Marine-Hospital Service desires me to do in the way of public health preservation shall be done. If Surgeon-General Wyman and his conferees decide that the safety of the country or any part of it would be enhanced by a more stringent adherence to the laws of sanitation in California, their decision will be respected by me and carried out in accordance therewith to the best of my ability and the State's available resources."

GLENNAN.

WASHINGTON, *January 21, 1903.*

Surgeon GLENNAN, *San Francisco, Cal.:*

The resolutions passed by the conference but feebly express the very strong and determined feeling which prevailed. Other resolutions, not published, calling upon Secretary of War to remove transport service from San Francisco and calling upon Surgeon-General to place inspectors on trains out of California were postponed for consideration until general conference of all the States, to be held in April. It is absolutely necessary that confidence on the part of the health officers toward California authorities should be restored, and I am convinced this can not be done unless the governor in some manner acknowledges the presence of plague in Chinatown, San Francisco. Your telegram quoting Governor Pardee's statement in morning's paper, while encouraging and much appreciated, will not, if published in the Public Health Reports, inspire entire confidence in the minds of the health officers, inasmuch as it contains no acknowledgment that plague exists. You are authorized, within your discretion, to show this telegram to the governor and to urge that both he and the mayor in some manner admit the presence of plague. It would clear the situation more than any other one thing, and would promptly turn the feeling of resentment into one of confidence. One resolution passed by the conference summarizes the proofs of plague as follows: "By investigations of Kellogg, of city board, Ryfkoegel, of State board, Kinyoun, of Marine-Hospital Service; later, Pillsbury, of State board, J. White, M. White, Flint, Currie, Carmichael, Blue, and Glennan, of Marine-Hospital Service; by the findings of Flexner, Barker and Novy, special commission; by findings of independent investigators, supplied with material from San Francisco, working in San Francisco, Chicago, Boston, New York, Washington, Baltimore, Philadelphia, and Ann Arbor; by occurrence of human case at Ann Arbor, due to accident in use of culture of plague bacillus received from California, and by autopsies of 90 cases of plague." It would seem that this accumulated evidence would give Governor Pardee sufficient ground on which in some manner to acknowledge the presence of plague. It might be done by the use in any telegram or letter to me of the expression, "elimination of plague." The situation is now entirely changed, and absolute frankness on the part of authorities of city and State is necessary to prevent pronounced hostile action, particularly when the conference of all the States meets in April.

WYMAN.

WASHINGTON, *January 21, 1903.*

GLENNAN, *San Francisco, Cal.:*

Doctor Gardner has just sent the following telegram to Governor Pardee: "Would advise you confer with Mayor Schmitz and turn over entire management of plague situation to Public Health and Marine-Hospital Service. General Wyman assures



me, if asked by proper authorities, he will, if it meets the approval of the Secretary of the Treasury, as he believes will be the case, take control at once, all employees to be selected by and be under absolute control of his officers, the State or city, as the case may be, to bear general expenses other than the pay and allowances of service officers so employed. At present it is believed there is no necessity for any radical change in the method of work. Advise prompt action in this matter. Wire me soon as possible, so that I can confer further with Surgeon-General Wyman before leaving." On consultation with the Secretary he insists that the assumption of control must be upon voluntary request of the State and city authorities.

WYMAN.

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SAN FRANCISCO, CAL., *January 21, 1903.*

Surgeon-General WYMAN, *Washington:*

The following delegation are in Sacramento this afternoon to confer with Governor Pardee presumably favorable to matter in your telegram just received. Mayor Schmitz, W. P. Herrin, Henry T. Scott, W. J. Martin, Fremont Older, and T. T. Williams.

GLENNAN.

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SAN FRANCISCO, CAL., *January 22, 1903.*

Surgeon-General WYMAN, *Washington:*

The Sacramento Bee, in an interview with Governor Pardee, gives the following statement from him: "I want to say that I propose to act in complete harmony with the federal authorities. They must be satisfied so as to restore public confidence, and my plans therefore will be made to fit in with theirs. The medical authorities have emphatically declared that plague has existed and does exist in San Francisco, and that settles it as far as I am concerned. It matters not what one's belief may be as to the existence or nonexistence of this disease—medical men say it exists and there is no going behind the returns. Consequently, I stand ready to do what the Federal authorities desire. What we want to do is to put an end to the suspicion with which California is regarded outside the State's limits."

GLENNAN.

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SAN FRANCISCO, CAL., *January 27, 1903.*

Surgeon-General WYMAN, *Washington:*

Accompanied by Cumming, I attended meeting to-day of a committee representing all the commercial bodies this city for consideration plague situation. They fear official acknowledgment existence plague will cause quarantine and removal transport service. I assured the contrary, showed your telegram to me January 21. Wire me some assurance upon this point. They will support the service, secure State and city official cooperation in the eradication of plague in Chinatown, if thereby they obtain outside confidence without damage to the State. They will wait Gardner's return and invited me to join them in conference with the governor at Sacramento. They wish 50 copies your plague pamphlet and other printed matter. Please mail same to me quickly.

GLENNAN.

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WASHINGTON, *January 28, 1903.*

GLENNAN, *San Francisco, Cal.:*

The acknowledgment of the existence of plague would not affect the transport service in San Francisco, nor the matter of quarantining the State, for the Bureau and the conference both know the disease is there as well as if the State admitted it; but if acknowledgment is not made by California authorities the work of elimination is necessarily embarrassed and when conference meets again emphasis will be laid on this fact and suspicion thrown on the work as undertaken and may occasion the passing of the transport and train-inspection resolutions which were postponed.

WYMAN.



WASHINGTON, *January 29, 1903.*GLENNAN, *San Francisco, Cal.:*

Following is copy of telegram sent by Doctor Gardner to W. F. Herrin, January 21:

"Wired Governor Pardee what I think necessary in the plague situation. In order to avert quarantine by the twenty-one States represented at the conference prompt action must be taken on the lines I have indicated in my telegram to Pardee. Recognition of plague, in which I concur, is necessary. No reply from Pardee. Answer."

Also, the following:

"J. J. O'Connor, Hospital Department S. P. Co., San Francisco: Wired Herrin as to situation here; plague must be recognized as existing in order obviate hostile action of State boards. Show this to heads of departments quick. Answer."

WYMAN.

## CORRESPONDENCE RELATIVE TO WORK IN CHINATOWN, SAN FRANCISCO.

The following telegrams indicate the status of the work in Chinatown at that date.

[Telegrams.]

WASHINGTON, *January 29, 1903.*GLENNAN, *San Francisco, Cal.:*

Wire complete statement showing work now being done in Chinatown, including our own service organization, the attitude and personnel of the agents of the city board of health and just how they are operating; and also whether the State board of health has any inspectors at work in Chinatown, and if so who they are and how they operate. Your weekly report should also include statement of all work done by any persons in Chinatown. Unless you wire me not needed will send Blue.

WYMAN.

SAN FRANCISCO, CAL., *January 29, 1903.*Surgeon-General WYMAN, *Washington:*

Present work in Chinatown is as follows: Currie visits all sick reported by Wong (Chinese interpreter), and inspects dead, making necropsies when necessary. Lloyd, with his interpreter, locates and inspects sick who will not report; assists in laboratory and autopsies. Doctor Wilson, inspector city board, visits sick and dead upon information from Currie only. Morrow, city bacteriologist, cooperates. No change in attitude city board. Inspectors of the State board health are Lawlor and Read, who visit sick reported by their interpreter and attend necropsies. No friction in any quarter present time. Probably all sick not yet seen. Please send Blue soon as possible.

GLENNAN.

Some apprehension was felt as to the effect of poison to be used in flushing sewers upon the fish in the bay of San Francisco, and in order to have an authoritative opinion on the matter, the opinion of the Commissioner of Fish and Fisheries of the United States was obtained, as shown by the following:

[Letters.]

SAN FRANCISCO, CAL., *January 24, 1903.*

SIR: At the request of the chemist and also the city health officer of San Francisco, I have to request that the Bureau obtain from the United States Fish Commissioner, Washington, D. C., an expression of opinion as to whether the use of poison in the sewers of the Chinese quarter in this city to kill rats, would ultimately affect the food fish in the bay. Nearly three years ago phosphorized oil, and also arsenic, were separately used in these sewers, killing many rats without causing any damage to the fish in the harbor. But the city board of health desire to be fortified with an official opinion, to ward off any unreasonable complaint.

I am urging the wholesale destruction of rats as an aid to the eradication of plague in this district, and the city board of health have promised me to proceed in this



matter as soon as a favorable opinion is received. I would like a telegraphic reply, in advance of the mail, as the matter is of great importance.

Respectfully,

A. H. GLENNAN, *Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

UNITED STATES COMMISSION OF FISH AND FISHERIES,  
Washington, D. C., January 30, 1903.

SIR: The Commission acknowledges the receipt of a communication from Surg. A. H. Glennan, of San Francisco, with your indorsement thereon, in regard to the use of poisons for killing rats in the sewers of San Francisco, and its probable effect on the food fish of San Francisco Bay.

In the opinion of this Commission, the poisons mentioned would be so much diluted by the time they reached the waters of the bay or shortly thereafter that little, if any, damage would be caused to the fish life, especially as no fishes of any great importance commercially would probably resort to the vicinity of the sewers. It is suggested, however, that when the use of poison is begun, its possible effects on the fish life be borne in mind and a watch set, so that the proposed line of procedure may be modified if found necessary. The Fish Commission steamer *Albatross* is now at San Francisco, and if desired by your bureau, an assistant could be detailed to look into the matter of the effect of the poisons on fishes of the bay.

Very respectfully,

GEO. M. BOWERS, *Commissioner.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

A request being made for the detail of the officer from the *Albatross*, as referred to in above letter, the commanding officer of the *Albatross* was instructed by letter of the Fish Commissioner, dated February 7, 1903, to make said detail.

The commercial bodies of San Francisco, recognizing the necessity for unity of action and cooperation of the city and State authorities in the joint work of sanitation and eradication of plague from Chinatown, called a meeting of all these commercial bodies. A subcommittee of each was formed to act as a standing joint committee for the purpose, a list of which subcommittees follows, and the correspondence shows the favorable action which ensued.

MEMBERSHIP OF THE JOINT COMMITTEE OF COMMERCIAL ORGANIZATIONS OF SAN FRANCISCO, CAL.

*Chamber of Commerce.*—George H. Newhall, 309 Sansome street; E. Scott, 433 California street; W. J. Dutton, 401 California street.

*Merchants' Exchange.*—R. P. Schwerin, Wells-Fargo Building, Second street; T. C. Friedlander, 320 Sansome street; George W. McNear, 326 California street.

*Board of Trade.*—A. A. Watkins, 311 Market street; H. L. Smith, 202 Market street; Lippman Sachs, Bush and Sansome streets.

*Manufacturers and Producers' Association.*—A. Sbarboro, 518 Montgomery street; C. E. Bancroft, Mills Building; J. P. Currier, 8 Sutter street.

*Merchants' Association.*—Frank J. Symmes, 725 Mission street; L. M. King, Mills Building; Andrew M. Davis, The Emporium.

*State Board of Trade.*—N. P. Chipman, Parrott Building; J. A. Filcher, Ferry Building; Arthur R. Briggs, 1001 Pine street (Bella Vista Hotel).

*California Promotion Committee.*—Rufus P. Jennings, 25 New Montgomery street; Frank J. Symmes, chairman joint committee; L. M. King, secretary joint committee.

[Telegrams.]

SAN FRANCISCO, CAL., February 3, 1903.

Surgeon-General WYMAN, Washington:

Following confidential until official papers reach you. Commercial associations met to-day, adopted strong resolutions calling upon mayor and governor to recog-



nize and take hold plague situation immediately under supervision this Service. I drew up and suggested following supplementary statement be attached, to be signed by these associations, the mayor, city health officer, representative State board, governor, and sent you as assurance of good faith. It was adopted. "Whereas competent medical authority having declared that bubonic pest has existed to a limited extent in the restricted area known as Chinatown in San Francisco, the last case having been reported December 11, 1902, and although the health authorities have exercised sanitary supervision over this section in the past, nevertheless this undersigned joint official statement is promulgated in accordance with the resolutions adopted at the conference of State health officers, held at Washington, D. C., January 19, 1903, as an assurance that there is no present or future danger from that disease, inasmuch as complete and harmonious action by all the health authorities concerned is hereby assured and will be maintained."

I accompanied committee of fifteen to mayor's office; resolutions read, all signatures obtained except governor's, whom same committee and myself will see in Sacramento Tuesday. The desired recognition is secured; unanimity of opposition interests is obtained.

GLENNAN.

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SAN FRANCISCO, CAL., *February 5, 1903.*

WYMAN, *Washington:*

Have forwarded in registered mail resolutions adopted by committee commercial organizations San Francisco, also joint official statement, acknowledgement, and assurance harmonious and immediate action. Some signatures obtained with difficulty on account fear injury to State, but you may publish in daily and medical press and public-health reports with the confidence that you will restrain any unnecessary quarantine or damage to the State.

GLENNAN.

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[Letter.]

SAN FRANCISCO, CAL., *February 4, 1903.*

SIR: I have the honor to report that on January 26, 1903, an organization was effected composed of representatives of all commercial organizations of San Francisco for the purpose of taking action in regard to the sanitary condition of Chinatown and to render every aid possible to eradicate the infection of pest in that district. At a meeting of the joint committee of these commercial organizations Mr. Frank J. Symmes was elected chairman and Mr. L. M. King, secretary. A list of the members of this joint committee is herewith inclosed.

The inclosed resolutions (inclosure No. 1) were adopted by this body, addressed to the mayor of San Francisco and the governor of the State, urging the governor of the State and the mayor and supervisors of San Francisco to take immediate cooperative action for the eradication of the disease. I suggested that a supplementary official statement be prepared, to be signed by the State and city officials and the representatives of these commercial organizations, to be sent you as an assurance that complete and harmonious action will be taken in accordance with the resolutions adopted at the recent conference of State health officers at Washington. This signed statement is inclosed (inclosure No. 2) with the understanding that you may publish it when and in what manner you may deem best.

On Monday morning, February 2, I accompanied this committee, which went in a body to the mayor's office where the chairman read these resolutions to the mayor and received his signature to the statement and assurances of harmonious cooperation. On the following morning I accompanied this same committee to Sacramento, where these resolutions were read to the governor, and he repeated his former assurances of every cooperation in the work.

The resolutions themselves may possibly be given out by the committee here. A great deal of credit for the result attained is due to the members of this joint committee of commercial organizations, and especially to Mr. Frank J. Symmes, president of the Merchants' Association and chairman of the joint committee, and also to Mr. L. M. King, secretary.

Respectfully,

A. H. GLENNAN, *Surgeon.*



[Inclosure No. 1.]

## RESOLUTIONS OF MERCANTILE JOINT COMMITTEE.

SAN FRANCISCO, CAL., *February 2, 1903.*

Whereas the boards of health of other States and Territories have become alarmed at the reports of bubonic plague in San Francisco during the past three years; and

Whereas but 93 cases have been reported by all health authorities during a period of these thirty-five months, and that the last case reported was December 11, 1902; and

Whereas the health authorities of 21 States and Territories, in a conference called for that purpose at Washington, January 19, declared that the presence of plague had "been established beyond debate by the investigations of Kellogg, of the city board; by Pillsbury and Ryfkogel, of the State board; by J. White, M. White, Flint, Currie, Carmichael, Blue, and Glennan, of the Public Health and Marine-Hospital Service; by Flexner, Barker, and Novy, a special commission acting under Federal authority; by independent and disinterested investigators in Chicago, Boston, New York, Washington, Baltimore, Philadelphia, and Ann Arbor, working from material obtained in San Francisco; by a case of human plague in Ann Arbor due to an accident in the handling of a culture of plague bacillus obtained in California," and said plague conference did attempt to declare a quarantine against California, to cause the transport service to be removed from San Francisco, and to place medical inspectors upon all the trains going out of the State, and but for the most strenuous efforts of Doctor Gardner, representative of the State board of health, could have succeeded in so doing; and

Whereas said conference did demand that the city and State health authorities act in harmony with the Public Health and Marine-Hospital Service to carry out any sanitary regulations which that Service may deem necessary, or quarantine would be established against California at its next meeting, to be held in April; and

Whereas the great interests of California and especially those of San Francisco, demand that no neglect of our citizens should hinder the march of progress which has now been so happily begun; it is, therefore

*Resolved*, That this mercantile joint committee, consisting of the officers and other representatives of the State Board of Trade, the San Francisco Board of Trade, the San Francisco Chamber of Commerce, the Merchants' Association of San Francisco, the Merchants' Exchange of San Francisco, the Manufacturers and Producers' Association of California, and the California Promotion Committee, hereby strongly urges the governor of the State and the mayor and supervisors of San Francisco to take such steps at once as shall secure a prompt cooperation of the boards of health of the city and the State, under the supervision of the Public Health and Marine-Hospital Service to the end that all danger from the bubonic plague may be eradicated; that all fears of infection may be removed; that the confidence of the boards of health of the other States and Territories may be restored, and that no injury, however remote, may result to the foreign and interstate commerce, and to this end we hereby pledge to the officials of the State and city every aid and support of the various commercial bodies which we represent; and we also ask that the governor of the State and the mayor of the city join in the signing of the following statement:

Whereas competent medical authority has declared that bubonic pest has existed to a limited extent in the restricted area known as Chinatown in San Francisco, the last case having been reported December 11, 1902, and although the health authorities have exercised sanitary supervision over this section in the past, nevertheless this undersigned joint official statement is promulgated in accordance with the resolutions adopted at the conference of State health officers, held at Washington, D. C., January 19, 1903, as an assurance that there is no present or future danger from that disease, inasmuch as complete and harmonious action by all the health authorities concerned is hereby assured and will be maintained.

MERCANTILE JOINT COMMITTEE.  
FRANK J. SYMMES, *Chairman.*  
L. M. KING, *Secretary.*

Representing California State Board of Trade, San Francisco Board of Trade, San Francisco Chamber of Commerce, Merchants' Association of San Francisco, Merchants' Exchange of San Francisco, Manufacturers and Producers' Association of California, California Promotion Committee.



[Inclosure No. 2.]

## SUPPLEMENTARY OFFICIAL STATEMENT.

SAN FRANCISCO, CAL., *February 2, 1903.*

Whereas competent medical authority has declared that bubonic pest has existed to a limited extent in the restricted area known as Chinatown in San Francisco, the last case having been reported December 11, 1902, and although the health authorities have exercised sanitary supervision over this section in the past, nevertheless this undersigned joint official statement is promulgated in accordance with the resolutions adopted at the conference of State health officers, held at Washington, D. C., January 19, 1903, as an assurance that there is no present or future danger from that disease, inasmuch as complete and harmonious action by all the health authorities concerned is hereby assured and will be maintained.

GEO. C. PARDEE, *Governor.*  
 M. GARDNER, M. D.,  
*Representative State Board of Health.*  
 E. E. SCHMITZ,  
*Mayor, San Francisco.*  
 A. P. O'BRIEN, M. D.,  
*Health Officer, San Francisco.*  
 A. H. GLENNAN,  
*Surgeon, Public Health and Marine Hospital Service.*  
 ARTHUR R. BRIGGS,  
*Vice-President California State Board of Trade.*  
 A. A. WATKINS,  
*President San Francisco Board of Trade.*  
 GEORGE A. NEWHALL,  
*President San Francisco Chamber of Commerce.*  
 FRANK J. SYMMES,  
*President Merchants' Association of San Francisco.*  
 GEORGE W. MCNEAR,  
*President Merchants' Exchange of San Francisco.*  
 A. SBARBORO,  
*Manufacturers and Producers' Association of California.*  
 RUFUS P. JENNINGS,  
*California Promotion Committee.*

Following the action of this joint commercial committee, Dr. M. Gardner was designated by the governor to represent the State; Dr. A. P. O'Brien, city health officer, to represent the city, and with the Service representative plans were formulated for the increased work of supervision and sanitation of the Chinese district, as shown.

[Letters.]

SAN FRANCISCO, CAL., *February 12, 1903.*

SIR: I have the honor to inclose herewith copies of correspondence in relation to bringing about joint action for the elimination of plague infection in San Francisco.

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It is impossible for me to report in detail all the preliminary work leading up to the present harmonious state of affairs. The old members of the city board of health are pleased with the turn of affairs, and attribute the break in the deadlock in the election of their president to these events. The new president of the board, Mr. Casey, in company with Health Officer O'Brien, visited the laboratory February 10, when we started the reenforced work of inspection of Chinatown, and pledged his undivided support. All opposing interests have withdrawn and the contentions of the past few years are dissipated, so far as a clear field for the elimination of plague is concerned. The problem now is simply to carry on effective inspection service, with measures to eradicate the infection. The city chemist is preparing poison for the wholesale destruction of rats. This poison will be introduced in the Chinatown sewers in a few days. This will be followed by the use of traps in the Chinese quarters and areas and, if necessary, by a per capita tax on rats. The cubic air space regulation is being enforced by the chief of police, and he assures me that



his whole force is at our command, if necessary. The board of public works and supervisors is controlled in our interests by the citizens' committee, who stand ready to back us in any reasonable request.

The detail work is harmoniously organized and reenforced, to be carried on for an indefinite length of time. Cases of plague will probably be found in due season, but the situation is well in hand. On account of the continued heavy rains no sickness will probably develop just at the present time. It is proposed to inspect all the Chinese washhouses in the city outside of Chinatown and also to have an eye upon the so-called Latin quarter. The two sanitary inspectors are also observing the outlets to the city.

\* \* \* \* \*

Respectfully,

A. H. GLENNAN, *Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

SAN FRANCISCO, *February 4, 1903.*

HON. GEORGE C. PARDEE,  
*Governor State of California, Sacramento, Cal.:*

Doctor Gardner says he has no authority from you to act in conjunction with Doctor Glennan and city health officer on work in Chinatown. Will you send him proper instructions and also replace present inspectors and increase number to seven?

FRANK J. SYMMES,  
*Chairman Mercantile Joint Committee.*

NOTE.—Telegram was also sent the governor February 7, 1903, requesting him to notify the mayor and city board of health, officially, of his direction for cooperative action, which he did the same day.

GLENNAN.

EXECUTIVE DEPARTMENT, STATE OF CALIFORNIA,  
*Sacramento, February 7, 1903.*

DR. MATTHEW GARDNER,  
*Member State Board of Health, San Francisco, Cal.*

DEAR SIR: This is to inform you that I have authorized and do hereby authorize you to act for the State and represent its interests by cooperating with the San Francisco board of health and with the Public Health and Marine-Hospital Service of the United States Government in the adoption and execution of such measures as may be necessary for the elimination of contagious disease in San Francisco.

Very respectfully,

GEO. C. PARDEE,  
*Governor of the State of California.*

EXECUTIVE DEPARTMENT, STATE OF CALIFORNIA,  
*Sacramento, February 7, 1903.*

DR. A. H. GLENNAN,  
*Occidental Hotel, San Francisco, Cal.*

DEAR SIR: Inclosed please find a copy of a notification which Governor Pardee has sent to the president of the San Francisco board of health.

Very respectfully,

A. B. NYE,  
*Private Secretary to Governor.*

FEBRUARY 7, 1903.

DR. J. W. WARD (Acting President),  
*President San Francisco Board of Health, City Hall, San Francisco, Cal.*

DEAR SIR: I hereby inform you officially that I have authorized Dr. Matthew Gardner to cooperate, as the State's representative, with the department of public health of the city and county of San Francisco and with the Public Health and Marine-Hospital Service of the United States Government in all measures which it may be found necessary to adopt for the elimination of contagious disease in San Francisco. I respectfully request you, as president of the San Francisco board of



health, to inform such board of the fact when you have received this notification, and I trust that all due credit and authority will be accorded Doctor Gardner as the State's representative in this matter.

Very respectfully,

GEO. C. PARDEE,  
*Governor of the State of California.*

NOTE.—At special meeting of the city board of health Monday morning, February 9, 1903, Mr. Michael Casey was elected president, and the above letter read and accepted. Mr. Casey is also a member of the board of public works.

SAN FRANCISCO, February 7, 1903.

Dr. A. H. GLENNAN,  
*United States Marine-Hospital Service, Occidental Hotel.*

DEAR SIR: In accordance with the verbal understanding which was reached at a conference between the representatives of the various mercantile bodies of this city and our representatives on Wednesday last, we beg to state that this association desires to aid you and any other authorities representing the health boards in any investigation which you may desire to make of the health conditions in Chinatown. For that purpose we shall be pleased to send a representative with you at any time to any quarters which you may desire to investigate. You may secure such representative by either telephoning or personally calling at our headquarters, No. 738 Commercial street. If at any time you find that you can not get access to sick people of the Chinese race in this city, we shall be pleased to exert in your behalf such influence as we may possess to allow you to visit such sick room. We have no power to compel the patient to employ a white physician, but we think that we can give you an opportunity of examining the patient.

Awaiting your pleasure, we beg to remain, very truly, yours,

CHINESE CONSOLIDATED BENEVOLENT ASSOCIATION,  
By YEE FUN, *Secretary.*

#### DAILY SANITARY REPORT TO PUBLIC HEALTH COMMISSION.

Inspector's report for.....190..  
Street..... Building No..... Room No.....  
Name of occupant.....  
No. persons occupying premises..... No. rooms.....  
Building used as (dwelling or store).....  
Sanitary condition of building.....  
Sanitary condition of rear areas.....  
Condition of plumbing.....  
Are there flush closets?.....  
How is building lighted?.....

#### SICK REPORT.

Name..... Age.....  
Nativity..... Last residence.....  
Occupation..... How long sick.....  
Attending physician.....  
Probable nature of illness.....  
Remarks.....  
....., *Inspector.*

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, CITY BOARD OF HEALTH, AND DRS. GLENNAN AND BLUE FOR THE UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

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

2. The city board of health will begin immediately the extermination of rats by means of traps and poison, employing three sewer men for the purpose. Fifty additional traps will be supplied for this work. The city agrees also to disinfect immediately all infected places, and will cause the renovation of such habitations in a satisfactory manner to the health authorities.



3. 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.

4. 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 if 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, United States 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 street.

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.

DEPARTMENT OF PUBLIC HEALTH,  
OFFICE OF BOARD OF HEALTH, CITY HALL,  
San Francisco, Cal., February 10, 1903.

Dr. A. H. GLENNAN,  
*Surgeon, Public Health and Marine-Hospital Service, 641 Merchant Street, City.*

DEAR SIR: At a special meeting of the board of health held Monday, February 9, 1903, the preliminary plan for the eradication of contagious disease in Chinatown agreed upon by the representatives of the State, Marine-Hospital Service, and the city board of health was presented by Dr. A. P. O'Brien, health officer, and adopted by resolution of the board, with certain additions in amendments which do not substantially alter the plan of action, but are assumptions of certain obligations of detail by this board.

I am, respectfully, yours,

JAMES A. EMERY, *Secretary.*

*Letter sent to health officers at Oakland, Berkeley, Alameda, Sacramento, Davisville, Stockton, Fresno, Bakersfield, Watsonville, Los Angeles, etc.*

641 MERCHANT STREET,  
San Francisco, Cal., February 10, 1903.

Dr. ————,  
*Health Officer, ————, Cal.*

DEAR DOCTOR: The Federal, State, and city health authorities, working in complete harmony, commence a careful medical and sanitary inspection of Chinatown, in this city, to-day, to continue over a considerable period of time.

It has been claimed that in past investigations in this district, when the inspection is followed up closely, that some sick Chinese have left or been sent away for other Chinese quarters in the State, with the liability of spreading infectious disease. Pardon us, Doctor, if we suggest that from this time you cause the Chinese quarter in your city to be kept under close surveillance, especially for Chinese arriving from San Francisco. The inspection in this city will be systematic and thorough, and in case we detect the departure of sick Chinese for your locality we will promptly wire you the fact. We also wish to say that we will be glad to quickly give you the temporary services of an expert, upon telegraphic request, in case you detect any suspicious sickness.

Yours, very truly,

M. GARDNER,  
*Representative State Board Health.*

A. P. O'BRIEN,  
*Health Officer San Francisco.*

A. H. GLENNAN,  
*Surgeon, P. H. and M. H. S.*



[Telegrams.]

SAN FRANCISCO, CAL., *February 9, 1903.*SURGEON-GENERAL, *Washington:*

At our request the governor has officially notified the city health authorities that he has designated Gardner as his personal representative for cooperative work in Chinatown. City board of health held special meeting this morning. Gave Health Officer O'Brien full authority to cooperate with Federal and State forces, adopted our preliminary plan inspection of sick and destruction of rats; also elected Michael Casey president of the board, which seems satisfactory. We have selected Doctors Dickie, Matthewson, and Woolsey, and two sanitary detectives, all paid by the State, and absolutely under the supervision of Blue. This additional force commence work Tuesday. Chief of police assures me will aid us every way possible. Expert from Fish Commission steamer *Albatross* reported to-day.

GLENNAN.

SAN FRANCISCO, CAL., *February 11, 1903.*SURGEON-GENERAL, *Washington:*

City health officer and myself named the 3 new medical inspectors, 2 Chinese interpreters, 2 sanitary detectives; total 7, paid by State. This additional force is considered sufficient at the present time. They report daily to Blue at laboratory for instructions. The inspection work is organized and under way.

GLENNAN.

## REINSPECTION OF SAN JOSE, CAL.

A report of a reinspection of San Jose, Cal., follows:

SAN FRANCISCO, CAL., *February 23, 1903.*

SIR: I have the honor to report that I revisited San Jose, Cal., and called upon Dr. William Simpson, county health officer and member of the city board of health. We visited the city hall and inspected the death records for the past two months. Since my last inspection, some important corrections have been made by the health authorities in their methods. Certificates of death in coroner's cases are now required to be certified to by a physician, and the term "natural causes" is not accepted in any certificate.

I made inquiry in regard to a Chinese child which was taken from Chinatown, San Francisco, about December 6, 1902, to avoid inspection. This child died upon arrival at San Jose, was detected by the authorities, an autopsy made, and the cause of death ascertained to have been from pneumonia.

The chief of police informed me that he has a man stationed at the depot to observe all arriving and departing Chinese; that the week previous he had detected two Chinese coming from San Francisco, who seemed sick, had them examined and found them to be suffering from chronic troubles. Doctor Simpson expressed himself as pleased at the present attitude of the State officials, and the solution of the plague problem in San Francisco. There had never been a doubt in his mind as to the diagnosis, and he gave strong assurances that San Jose would be guarded against the infection. He is a man of capacity and considerable practice and standing in his community.

I am now satisfied, from different sources of information, that all the cities and towns in California having Chinese settlements are watching their foreign quarters and enforcing sanitation.

At Fresno, necropsies are now made upon Chinese where the exact cause of death is unknown. As one health officer expressed it to me, "they have the interests of their homes and communities at heart and would use every endeavor to protect them from quarantinable disease; that the course which had been pursued in San Francisco in the past had been unjustifiable and a damage to the State in denying the diagnosis of plague by competent authority, and using every effort to eradicate it."

There is a strong reaction throughout the State working for good.

Respectfully,

A. H. GLENNAN, *Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## COLORADO REIMPOSES QUARANTINE.

As a result of the joint action taken in San Francisco for the eradication of plague infection, and its limited extent not being fully understood in some of the other States, the health board of the State of



Colorado reimposed their original quarantine order of May 28, 1900, against infected places in California, which the correspondence following will show, but as the conditions were more fully understood its enforcement was not prosecuted.

[Telegram.]

SAN FRANCISCO, CAL., *February 18, 1903.*

Surgeon-General WYMAN, *Washington:*

State board of health of Colorado have reimposed their quarantine order of May 29, 1900, requiring every Chinaman entering the State to have a health officer's certificate from city of departure of nonexposure to plague during previous six weeks. It is suggested that a statement from you to that might suspend this action at the present time.

GLENNAN.

[Letter.]

SAN FRANCISCO, CAL., *February 18, 1903.*

SIR: Referring to the telegram sent you this date in regard to the action of the Colorado State board of health quarantining Chinese traveling from this State, I inclose copies of correspondence in regard to the matter. It would seem that just at this time the reimposition of this original quarantine order of May 28, 1900, is unnecessary and liable to embarrass our present work in California. For this reason I have wired you in regard to this action with the idea that possibly a statement of the fact of the present condition and work in San Francisco might cause a suspension of this quarantine order.

Respectfully,

A. H. GLENNAN,  
*Surgeon.*

SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosures.]

UNION PACIFIC RAILROAD COMPANY,  
*Omaha, Nebr., February 10, 1903.*

DEAR SIR: For your information inclose copy of letter from J. N. Hall, secretary Colorado State board of health, relative to their notice of quarantine on Chinamen.

Our general agent advises us that owing to the large number of bubonic plague cases in San Francisco and Mexico City the Colorado State board of health has been very active, and we further understand that they desire regulations as to Chinese to be carefully observed, in order that they will not be called upon to take further and more stringent measures against California.

Yours, truly,

E. L. LOMAX.

MR. T. H. GOODMAN,  
*General Passenger Agent Southern Pacific Co., San Francisco, Cal.*

COLORADO STATE BOARD OF HEALTH,  
*Denver, Colo., February 4, 1903.*

DEAR SIR: We beg again to call your attention to the bubonic plague quarantine established by the Colorado State board of health May 28, 1900, reading as follows:

*"To whom it may concern:*

*"In accordance with the powers conferred by law upon the State board of health, and for the purpose of preventing the introduction of bubonic plague into the State of Colorado, it is hereby ordered that until further notice no Chinaman will be allowed to enter the State of Colorado without a certificate signed by the health officer of the city from which he has come, to the effect that he has not been exposed to bubonic plague during the six weeks immediately preceding his departure.*

*"By order of the State board of health.*

*"G. E. TYLER, Secretary.*

*"DENVER, COLO., May 28, 1900."*



There is no possible question of plague being in California, as more than 90 autopsies have been performed upon those who died of plague. The pressure brought to bear by 21 States and Territories represented at the recent conference at Washington has placed California in such a position that she is about to admit openly the existence of plague. We feel that this is the first step toward its suppression.

It is the earnest request of the State board of health that the accompanying order of quarantine be again placed in the hands of every agent in the State of Colorado, and that they be enjoined to rigidly enforce the order.

Kindly let us hear from you at your earliest convenience, and oblige.

Yours, truly,

J. N. HALL, *Secretary.*

The GENERAL PASSENGER AGENT,  
*Union Pacific Railroad, City.*

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THE DENVER AND RIO GRANDE RAILROAD COMPANY,  
*Denver, Colo., February 6, 1903.*

DEAR SIR: I am in receipt of your favor, February 4, inclosing copy of resolution passed by the State board of health in regard to the transportation of Chinamen, with the view of preventing the introduction of the bubonic plague into the State of Colorado.

It is the desire of the Denver and Rio Grande Railroad Company to aid in this matter to the fullest extent necessary to prevent the introduction of the disease, but I hardly feel that the requirements set forth in your letter, that the order be placed in the hands of every agent of the Denver and Rio Grande Railroad in the State of Colorado, is necessary to accomplish this end.

As I understand the situation the bubonic plague exists only in the State of California, and under Mr. Tyler's former order, dated May 28, 1900, of which you inclosed copy, we arranged with him that we would instruct the general passenger agent of the Southern Pacific Company, which company alone sells tickets from California via our line, not to sell any tickets into the State of Colorado to Chinamen unless every requirement of the Colorado State board of health was complied with, and not to sell any tickets whatever with destination in the State of Colorado where there was any doubt whatever existing.

This arrangement was accepted by Mr. Tyler as perfectly satisfactory, in view of the fact that there is some Chinese travel (very little) from territory where the plague does not exist, and there is no danger whatever, for instance, on west-bound business.

If this method is adopted and the Southern Pacific carry it out, which they formerly did most rigidly, I think all danger will be averted.

I would be glad to have your reply, consenting if possible to this suggestion.

Yours, truly,

S. K. HOOPER,  
*General Passenger Agent.*

Mr. J. N. HALL,  
*Vice-President and Secretary Colorado State Board of Health,  
Capitol Building, Denver.*

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#### QUARANTINE BY MEXICO AND ECUADOR.

[Telegrams.]

SAN FRANCISCO, CAL., *February 21, 1903.*

Surgeon-General WYMAN, *Washington:*

Work of joint committee resulting in harmonious cooperation of city and State health authorities with Federal health service considered here satisfactory. If possible please telegraph a statement of present conditions which can be published and show that quarantine by Ecuador and Mexico not necessary now. This committee will see to publication here. Also please advise what action taken by you at Washington regarding Guayaquil and Mexico quarantine now existing. Surgeon Glennan has seen this telegram and indorses this request.

FRANK J. SYMMES,  
*Chairman Mercantile Joint Committee.*



SAN FRANCISCO, CAL., *February 21, 1903.*

Surgeon-General WYMAN, *Washington, D. C.:*

Please send statement referred to in previous telegram either through Governor Pardee or send him similar statement for benefit of entire State.

FRANK J. SYMMES,  
*Chairman Mercantile Joint Committee.*

WASHINGTON, *February 22, 1903.*

FRANK J. SYMMES, *Chairman Mercantile Joint Committee,*  
*San Francisco, Cal.*

Governor PARDEE, *Sacramento, Cal.:*

Replying to inquiry, I have to say that no case of plague has been discovered in San Francisco since December 11, nearly two and one-half months ago, and then only one case. Official reports show that the national, State, and city authorities are now working in thorough harmony under the leadership of the Federal officers; that searching inspections are being made daily in Chinatown, and proper sanitary measures are being rigidly enforced, including radical measures for the destruction of rats. Bacteriological examinations of captured rats are being made daily, and the last infected rat was found on December 8, since which time bacteriological examinations have been made of 324 dead rats and none found infected. The State Department was requested last week to notify the Governments of Mexico and Ecuador of the satisfactory conditions now prevailing and which have prevailed for some time at San Francisco, and doubtless this has been done, and the above facts have been more-over communicated to the International Union of American Republics.

WYMAN.

WASHINGTON, *February 22, 1903.*

Governor PARDEE, *Sacramento, Cal.:*

Telegram of to-day was sent at request of Frank J. Symmes, to whom I sent the same. Doubtless the State Department has wired Mexico and Ecuador as requested; but to-day and to-morrow being holidays, I can not so positively assert until Wednesday. I thank you for the cooperation which you have given, which I am sure is gratifying to the whole medical profession.

WYMAN.

WASHINGTON, *February 22, 1903.*

FRANK J. SYMMES, *San Francisco, Cal.:*

Your first telegram came too late for action last evening. Have no doubt Secretary of State has wired Governments of Mexico and Ecuador as requested by Treasury Department; but to-day and to-morrow being holidays, can not say so positively. If anything further desired added to my telegram, wire me. Have sent same to governor. Please show Glennan.

WYMAN.

[Letter.]

WASHINGTON, *February 22, 1903.*

SIR: In accordance with Resolution VII, passed by the First General International Sanitary Convention of American Republics, held in Washington December 2 to 4, 1902, I beg to notify you, and through you the several Republics of America, that no case of plague has been discovered in San Francisco since December 11, nearly two and one-half months ago, and then only one case. Official reports show that the national, State, and city authorities are now working in thorough harmony under the leadership of Federal officers; that searching inspections are being made daily in Chinatown and proper sanitary measures are being enforced, including radical measures for the destruction of rats. Bacteriological examinations of captured rats are being made daily, and the last infected rat was found on December 8, since which time bacteriological examinations have been made of 324 dead rats and none found infected.

Respectfully,

WALTER WYMAN,  
*Surgeon-General.*

SECRETARY BUREAU OF THE AMERICAN REPUBLICS,  
*Washington, D. C.*



[Telegrams.]

SACRAMENTO, CAL., *February 22, 1903.*Surgeon-General WYMAN, *Washington:*

Your dispatch announcing the satisfactory conditions as to public health existing in San Francisco, and showing that State and Federal authorities are working in thorough cooperation to maintain this gratifying state of affairs, has been received with much pleasure. I trust that no effort will be spared by the State Department to give authorities in all Pacific Ocean and other ports correct information of conditions in San Francisco, and to secure revocation of quarantines established under mistaken impression as to situation.

GEO. C. PARDEE, *Governor California.*SAN FRANCISCO, CAL., *February 23, 1903.*Surgeon-General WYMAN, *Washington:*

Governor Pardee transmitted your dispatch to the legislature with the following message to-day: "I have the honor herewith to transmit for your information a copy of dispatch which has been received from Surgeon-General Wyman, of the Public Health and Marine-Hospital Service of the United States Government. If you will observe this dispatch shows that the United States authorities believe the health conditions in San Francisco are now satisfactory, and they have proceeded to communicate a knowledge of the actual situation to the government of countries which under a misapprehension had established quarantines against ships sailing from that port. The showing thus made is one which the people of California can regard with considerable satisfaction, and I believe that the policy of cooperation between the Federal, State, and municipal governments is being justified by results."

GLENNAN.

SAN FRANCISCO, CAL., *February 24, 1903.*Surgeon-General WYMAN, *Washington:*

Your statement has had general publication, but full cooperation of the press is difficult to obtain. I have nothing further to suggest, but anxious for positive information on the requested action of Secretary of State.

FRANK J. SYMMES,  
*Chairman Mercantile Joint Committee.*WASHINGTON, *February 25, 1903.*FRANK J. SYMMES, *San Francisco, Cal.:*

Am informed at the State Department that telegrams were sent to Mexico and Guayaquil February 20.

WYMAN.

[Letter.]

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,  
*Washington, March 10, 1903.*

SIR: I have the honor to inform you that this Department is in receipt of a request from the commercial bodies of San Francisco, Cal., that steps be taken looking to a removal of restrictions placed by Sidney, Australia, on vessels from San Francisco for that port on account of bubonic plague.

The Surgeon-General of the Public Health and Marine-Hospital Service states that while it is impossible to make absolute statement to the effect that no infection may yet be found in Chinatown, San Francisco, none has been found for three months. No infected person has been found since December 11, although an inspection has just been completed of the whole district, and no infected rat has been found since December 8, although all obtainable specimens have been examined.

He further states that the national, State, and city authorities are working in harmony; that sewers are being flushed and streets swept frequently and sprinkled with



bichloride of mercury solution, and that rat poison has been placed in all the sewers, and believes therefore that an inspection of vessels on arrival should be sufficient.

In view of the above statement of the Surgeon-General, I have to request that telegraphic information of these facts may be sent to the consular officer at Sidney.

Respectfully,

L. M. SHAW, *Secretary*.

The SECRETARY OF STATE.

#### ANOTHER CASE OF PLAGUE.

From February 10, 1903, the joint work of inspection and disinfection continued effectively and uninterruptedly.

Upon March 17 a Japanese woman died at 520 Dupont street in the Japanese district adjacent to Chinatown. The bacteriological examination confirmed the cause of death as plague. This was the first case found from December 11, 1902—an interval of ninety-six days. This small Japanese district was immediately included in a house to house inspection and disinfection where required. No more cases were found.

The necropsy report in this Japanese case was as follows:

[Letter.]

SAN FRANCISCO, CAL., March 19, 1903.

SIR: Referring to my telegram "Provisional diagnosis of plague in case necropsied, bubo-septicæmic, Japanese female. Originated in San Francisco. Present: Doctors O'Brien, Gardner, Morrow, Woolsey, Mathewson, Wilson, Yost, Blue, Currie, and myself," dated March 17. I have the honor to further report as follows: Mrs. Ai Minegishi died at 520 Dupont street; was necropsied March 17. This case was not seen clinically by this office.

This case developed in the Japanese district upon Dupont street between California and Pine, immediately adjoining Chinatown. Our corps of inspectors and disinfectors are now covering this Japanese territory.

Respectfully,

A. H. GLENNAN, *Surgeon*.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

MARCH 17, 1903.

Mrs. Ai Minegishi, aged 20 years; died at 520 Dupont street; cause of death, plague.

Necropsy by Asst. Surg. Donald H. Currie.

Woman died March 16, 1903; autopsied March 17. Present: Surg. A. H. Glennan, Passed Asst. Surg. Rupert Blue, Drs. Chester H. Woolsey, L. S. Schmitt, F. P. Wilson, Matthew Gardner, A. P. O'Brien, Howard Morrow, and Carleton Mathewson. Body that of a well-nourished Japanese female, about 20 years of age. Rigor mortis fairly well marked. Slight post-mortem lividity. Sclera very slightly injected. Pupils moderately contracted. No glandular enlargement noted in either axilla or in cervical region. No glandular enlargement noted on palpation in the right inguino-femoral region. In the left inguino-femoral region inspection shows an area about as large as the hand, of a light-yellow color, due to oedema, as is shown by pressure causing pitting in this region. There is a feeling of resistance in the tissues of this area, but no glandular enlargement can be noted on palpation. Incision carried through this and an enlarged hemorrhagic gland found. While attempting to enucleate this a large, broken-down gland discharges its contents into the incision. Just above this another similar necrotic, very much congested gland, is found and smears made from it. Smears from this gland show a number of doughnut-shaped bacteria, together with a great number of other disintegrated bacilli. Autopsy postponed for half an hour to notify Doctor Gardner and Doctor O'Brien. These gentlemen being present, it is resumed. Long median incision made. Subcutaneous fat very well preserved. Muscles dark red in color, fairly moist. Peritoneal cavity opened. Intestines slightly distended and bulging to the level of the abdominal opening. Spleen removed without difficulty; enlarged to about twice its normal size. Capsule very tense, of a uniform reddish color, showing



no subcapsular nodules. The consistency of the organ is soft, cuts easily; cut surface fairly rich in blood, showing slight bulging of the pulp and engorgement of the vessels, some probably representing hemorrhages. No connective tissue increase. Liver visible two finger breadths below the costal border, barely visible in the mammary-umbilical line. Glands back of the peritoneum enlarged, hemorrhagic and necrotic. These glands are removed in part. Thorax opened by removal of sternum. Costal cartilages slightly ossified. Right lung retracted; cut border of the left lung extends slightly beyond and toward the median line. Left lung does not completely collapse, anteriorly is adherent at the apex, adhesions being soft and fresh in character. Organ removed from the thorax. Somewhat enlarged, does not collapse completely, pits slightly on pressure, deficient in crepitation, moderately firm in consistency. Cuts easily; cut surface of lower lobe, pressure causes blood, serum, and air to exude in the usual proportions, condition being terminal oedema. There is no evidence of pneumonia. Pericardial sac opened. Contains only a small amount, possibly 15 c. c. of clear serum. Heart surface moderately rich in fat, shows one milk spot. Apex formed chiefly by left ventricle. Right ventricle soft and flabby. Left ventricle shows a less consistency than usual. Pericardial surface shows a slight diffuse dilatation of its vessels, but no hemorrhages. Cultures taken from the heart. Left ventricle opened, contains a large quantity of post-mortem clots. Right ventricle contains post-mortem clots and fluid blood. Left auricle contains post-mortem clots. Right auricle, fluid blood and post-mortem clots. Left auriculo-ventricular opening admits six gloved fingers easily. Right auriculo-ventricular opening, same number. Heart removed by severing the vessels. Left heart opened. Aorta smooth, slightly stained; aortic valves normal; coronary openings patulous. Under the endocardium, left heart, are several hemorrhages. Otherwise the muscle appears normal, showing no fatty or fibroid change or acute febrile degeneration. Left lung adherent to pleura on all sides. Adhesions quite firm in character. With difficulty the organ is removed from its cavity. The other lung has terminal oedema. There is a large, broken-down, semi-calcareous gland posterior to the mediastinum, evidently tubercular. The pleura of the right lung is thickened and corrugated through its whole surface. Organ is firm, especially in nodules, these nodules being most numerous about the apices of the upper and lower lobes. Cuts with considerable resistance; cut surface shows numerous miliary tubercles, especially of the upper lobe, also connective tissue increase, the condition being fibroid phthisis. There are several calcareous deposits. Left kidney removed. Fatty capsule fairly well preserved. Immense hemorrhage between the fatty and fibrous capsules. Fibrous capsule strips off readily, leaving a smooth, pinkish yellow surface in which the stellate veins show up prominently, giving the organ a general bluish-red color. Organ increased in size. Cuts easily; cut surface rich in blood. Contrast between cortex and pyramids well retained. Cortical border normal in breadth. Organ has a general light-creamy color, mixed with the normal red, probably an early stage of cloudy swelling. Liver removed without difficulty. About normal in size for the individual, of a mottled light-yellow and reddish-brown color; rather soft in consistency; lower border not thickened. Cuts easily, without grate. Cut surface fairly rich in blood, presenting two appearances, one being roughly confined to the upper portion of the left lobe and the other to the lower. The upper is boiled, light yellow, structureless in appearance—cloudy change. The lower differs from the upper in showing marked venous congestion, the difference in position probably making a difference in appearance. Right kidney removed. Same hemorrhage between the fibrous and fatty capsules and under the fibrous capsule exists in this and especially the former. Fibrous capsule strips off readily and leaves the same surface, with the possible difference that the stellate veins are not as prominent as in its fellow of the opposite side. The cut surface presents the same picture as its fellow of the opposite side. Smear from the spleen shows large numbers of *cocco bacilli*, taking a bipolar stain when stained with thionin, occurring singly. Stomach opened. Dark-brown fluid flows; odorless. Mucosa shows nothing abnormal except vascular dilatation and possibly some hemorrhages. There are numerous signs of beginning digestive destruction of the mucosa. Intestines not injected; very slightly distended. The glands in the mesentery show slight enlargement and injection, but so slight that the possibility of its being the primary bubo can be excluded. Incision made over the right inguino-femoral region; found to be dry and shows neither oedema nor enlarged glands. Incision carried over the right axillary region; nothing abnormal noted. Left axillary region, nothing abnormal noted. Anatomical conditions met with: Dilatation of the heart; tubercular infiltration of right lung; pulpitis of spleen; cloudy swelling of liver and kidneys; hemorrhage into the capsule of the kidneys; polyadenitis, especially of the left inguino-femoral region. Cause of death was confirmed by bacteriological examination.



## MEXICO AGAIN QUARANTINES.

Early in March, 1903, Mexico again instituted quarantine against San Francisco at her Pacific ports.

The following correspondence indicates the conditions and the action taken by the Service in the matter:

[Letters.]

UNITED STATES SENATE,  
Washington, D. C., March 18, 1903

MY DEAR GENERAL: Last week you kindly informed me that you had the State Department wire to Mexican authorities that no plague or other infectious disease prevailed in San Francisco. I so advised our people in San Francisco, for which they expressed high appreciation of your efforts to remove this stigma from the commerce of their port. It seems, however, that the Mexican authorities of the west coast ports have not been advised by their superior officers in the City of Mexico, or, if so, they have failed to act, as you will see from the inclosed copy of telegram received this morning.

Kindly inform me by bearer if you have any further advices relative to the matter, that I may wire to San Francisco, and oblige,

Yours, very truly,

GEO. C. PERKINS, U. S. S.

Surgeon-General WALTER WYMAN,  
*Public Health and Marine-Hospital Service.*

[Inclosure—Telegram.]

SAN FRANCISCO, CAL., March 17, 1903.

TO HON. GEO. C. PERKINS,  
*United States Senate:*

*Curacao* idle since December. Have almost daily informed Mexican authorities health conditions San Francisco do not warrant quarantine against this port. March 14 received telegram from Mexico reading: "As San Francisco has plague, impossible remove quarantine." Rear-Admiral Glass telegraphed from Acapulco to-day asking if *Curacao* would sail Magdalena Bay. Answer: "Mexican authorities will not permit *Curacao* call at scheduled ports without intolerable restrictions, which health conditions San Francisco do not warrant. Unable obtain redress. Can not, therefore, say when vessel will sail." We earnestly appeal to you endeavor remove this serious embargo on our commerce and unwarranted aspersion on our healths.

J. F. LAWLESS,  
*Manager Pacific Coast Steamship Company.*

WASHINGTON, March 19, 1903.

DEAR SENATOR PERKINS: I have this morning received a dispatch from our officer in Mexico City, dated March 18, in which he says Doctor Liceaga, president of the superior board of health of Mexico, has recommended the raising of quarantine against San Francisco. Favorable action will be taken shortly.

Very sincerely, yours,

WALTER WYMAN,  
*Surgeon-General.*

HON. GEORGE C. PERKINS,  
*United States Senate.*

#### CONTINUATION OF INSPECTION AND DISINFECTION WORK IN CHINESE AND JAPANESE QUARTER, SAN FRANCISCO, CAL.

The inspection and disinfection work was prosecuted in the Chinese and Japanese districts without further incident or opposition, and in a very satisfactory manner.

A summary of this work from February 10, 1903, until June 30, 1903, is appended, as is also the report of Passed Asst. Surg. Rupert Blue for the fiscal year ended June 30, 1903.



[Telegram.]

BAKERSFIELD, CAL., April 26, 1903.

Surgeon-General WYMAN, *Washington*:

Reinspected Fresno Saturday with Foster, secretary State board health; Bakersfield Sunday. Returned San Francisco to-night.

GLENNAN.

[Letter.]

SAN FRANCISCO, CAL., May 4, 1903.

SIR: I have to report that with the commencement of the joint inspection and disinfection work in this city I devised a plan by means of rough diagrams to show the daily progress of the work in the infected districts by means of colored pencils. The first solid shading showed the daily work of inspection from block to block until the Chinese and Japanese districts were entirely covered. Following this came the work of disinfection, which was extended to wider limits. I inclose a copy of the completed diagram, showing the work from February 10 to April 30, 1903. Two complete house-to-house inspections of this district have been made in that time, besides irregular night and day inspections to any points where suspicion was directed. Valuable information has been furnished by our night sanitary inspector. The first disinfection consisted of strong English chloride of lime, which has been used twice over the whole district in the basements, area ways, alleys, and even up in the third and fourth floors. This was followed by 5 per cent solution of strong carbolic acid, used with a hand force pump, hose, and sprinkler. The rat poison, consisting of phosphorus paste, has been used in large quantities in all the sewers from Powell street on the west to Montgomery on the east and from Broadway to Bush street. In addition, a number of traps are also used. It is a fact, noticed by the inhabitants themselves, that rats, flies, and fleas have been remarkably decreased in this district, more so than ever before in the memory of the place. The board of public works and the city board of health are continuing the destruction of the old wooden rookeries, which obstruct the rear areas and alleys, and this is being followed up with whitewashing, plumbing, and concreting. It is generally believed that all this work is now showing results, and it will be continued indefinitely upon the same lines.

Respectfully,

A. H. GLENNAN,  
*Surgeon.*

To the SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Telegrams.]

SAN FRANCISCO, CAL., April 4, 1903.

Surgeon-General WYMAN, *Washington*:

New State board of health, organized at Sacramento April 1, elected M. Gardner president, and N. K. Foster secretary. Adjourned so meet at San Francisco April 2. Visited Service laboratory, on Merchant street, in a body.

Inspected Chinatown and passed vigorous resolutions indorsing the present joint work of Federal, State, and municipal authorities under direction of the Service.

GLENNAN.

SAN FRANCISCO, CAL., April 18, 1903.

Surgeon-General WYMAN, *Washington*:

Dr. Matthew Gardner, president of the new State board of health, died this morning after an operation for appendicitis.

## REINSPECTION OF STOCKTON, CAL.

[Telegram.]

SAN FRANCISCO, CAL., May 8, 1903.

Surgeon-General WYMAN, *Washington*:

I reinspected Chinese quarters in Stockton, Thursday, accompanied by Foster, secretary State board, and City Health Officer Davis.

GLENNAN.



## INSPECTION OF CHINESE SHRIMP CAMPS AT SAN PABLO BAY, CALIFORNIA.

SAN FRANCISCO, CAL., May 11, 1903.

SIR: I have the honor to inclose herewith report of Asst. Surg. Donald H. Currie of an inspection of the Chinese shrimp camps situated on San Pablo Bay, these camps being located near Ross Station, where Doctor Currie was temporarily residing. I directed him to take one of our Chinese interpreters and make this investigation of these shrimp camps. The report shows that these places are in fair sanitary condition and that no danger is to be apprehended from them.

Respectfully,

A. H. GLENNAN, *Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

SAN FRANCISCO, CAL., May 5, 1903.

SIR: I have the honor to make the following report on my trip of inspection to the Chinese shrimp camps situated on San Pablo Bay. In compliance with your instructions, I, together with Chinese Interpreter Fong Dont, on April 20 procured two saddle horses at San Rafael and visited these camps. They are situated about 5 miles due east of San Rafael, on the beach, at a point 2 miles above where the main county road strikes the bay. The first shrimp camp we reached is situated on a narrow, sandy, gently sloping beach, just at the foot of a bluff some 50 or 60 feet in height. The inhabitants appeared to be somewhat alarmed at first at our sudden arrival, probably taking us for their natural enemies, the Fish Commission men, but upon the interpreter explaining they became extremely friendly, showing us through all the buildings and rooms, answering questions, and even volunteering the information that another camp was located about 1 mile south of them, a fact I had not previously heard. Without going into unnecessary details, this camp is composed of two buildings used as living quarters and five buildings used as storehouses, a wharf consisting of a few piles across which rough boards had been nailed (a poor structure, but one incapable of harboring rats), and a Chinese junk tied to this wharf, the latter for use during the fishing season, which begins May 1.

The buildings and grounds about this camp were in a surprisingly cleanly condition, and with the exception of the occasional smell of opium smoke there were no disagreeable odors anywhere noticed. The sewage is deposited directly into the bay, where evidently the combination of the tide and the outgoing current of the Sacramento River remove it completely, for I saw no evidence of filth of any kind having been washed ashore. During the active season, however, I have no doubt that owing to the large quantities of shrimp that are dried on the bank preparatory to being ground and shipped to China, the lack of odors would not be so noticeable. At the time of my visit there were 6 men and 1 woman living at this camp, and these informed me that this was the regular working force engaged here, and that the only increase that occurred during the active season was a few professional gamblers that operated in the larger camp to the north of them. This statement I do not vouch for, but it was confirmed at all the other camps visited.

From there we walked south for a mile along the coast (the trail being inaccessible for horses), and reached the camp farther south, of which the inhabitants of the first camp visited had informed us. This camp was found to consist of 32 buildings, mostly used for storing nets and shrimp, and employing a force of 17 men. Except for size the conditions were identical with those met with in the camp just described, namely, an irregular group of rough, board, one-story buildings, having no cellar, and slightly raised from the ground. From there we turned north, walking up the coast past the first camp visited, and soon reached camp No. 3. The third camp we found to consist of 27 of the same kind of board shanties, and three or four wharves and junks identical in appearance with those already described. Most of the shanties were used as storehouses, probably 80 per cent, the rest as living quarters, common kitchens, etc. This camp employs 32 males and 2 females. In addition to the other structures mentioned, this camp has a joss-house and a fan-tan joint.

While inspecting this place, I endeavored to ascertain what was done with the sick and dead. This is a delicate question from the Chinese standpoint and one that they are not fond of discussing, but finally one old man was persuaded to inform us that for the past two years (the time he had been a resident of the camp) no death had occurred, owing to the fact that all sick were sent to San Francisco, where they remained until death or recovery took place. While visiting this camp I found one living house closed, and was informed that the owner had gone to San Francisco a



few days before and that he was unwell. About a week later we necropsied this same individual at the morgue at 641 Merchant street, he having died in the Chinese quarter of San Francisco. This incident would appear to bear out the old man's statement. From there we visited the fourth camp, distant about two miles from the camp farthest south, and found 22 buildings, with a population of 23 men, 2 women, and 1 boy about 10 years of age. The hygienic conditions met with here, as well as its arrangement and structure, were the same as the others. I did not find a case of sickness of any description during this inspection and only one man in bed. I examined him and found his statement, that he "had been smoking and was asleep," to be correct.

The water used in these camps, I was told, is obtained from wells. This statement I did not investigate, as the Chinaman boils all of his water that he uses for drinking, and even if he did not, it was of no importance from a plague standpoint.

I would conclude from what I saw at these camps that at present there is no infectious disease among them; that the only probable way by which plague could ever be introduced there from San Francisco is by means of rats carried in goods from Chinatown on the before-mentioned Chinese junks, but from the nature of the surrounding locality I think it would be a very difficult matter to infect these settlements with plague.

Respectfully,

DONALD H. CURRIE,  
*Assistant Surgeon.*

Surg. A. H. GLENNAN,

*Public Health and Marine-Hospital Service, San Francisco, Cal.*

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DR. N. K. FOSTER DELEGATED TO ATTEND CONFERENCE OF STATE BOARDS  
OF HEALTH WITH THE PUBLIC HEALTH AND MARINE-HOSPITAL  
SERVICE.

[Letter.]

SAN FRANCISCO, CAL., May 15, 1903.

SIR: At a meeting of the California State board of health held in Sacramento, May 11, 1903, Dr. N. K. Foster, secretary to the board, was delegated to attend the annual conference of State boards of health [with the Public Health and Marine-Hospital Service] to be held in Washington, June 3, 1903, with suitable instructions and assurances from the board. I inclose official copy of resolutions adopted at the same meeting of the board in regard to the strict enforcement of sanitary regulations in the Chinese quarter of San Francisco, Cal., and the ultimate disposition of this alien district.

Respectfully,

A. H. GLENNAN,  
*Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

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[Inclosure.]

At the meeting of the State board of health held in Sacramento May 11, 1903, the following resolutions were unanimously adopted:

Whereas the presence in the heart of a great city of a large alien and unassimilable population is a constant and serious menace to the health, commerce, and industries, not only to the city itself but also of the State and even the nation at large: Therefore be it

*Resolved*, That this board unqualifiedly approves and urges the removal of Chinatown from its present site in San Francisco to some outlying and isolated district, where under new conditions strict sanitary regulations may be enforced, both in regard to erection of buildings and their occupancy, and where if necessary strict quarantine may be enforced without prejudice to local interests.

*Resolved*, That pending such removal, in addition to the measures at present employed, the inhabitants of Chinatown, if legally possible, be removed from all underground and other tenements not freely accessible to light and air.

*Resolved*, That the attorney of this board be, and is hereby, instructed to inform us fully, and as early as possible, what procedures would be necessary to accomplish these purposes with the greatest certainty and the least delay.



*Resolved*, That the secretary be instructed to furnish copies of these resolutions to the board of health of the city of San Francisco, the United States Marine-Hospital Service, such public bodies as may interest themselves in the sanitary conditions of San Francisco, and to the public press.

M. REGENSBURGER, *President*.  
N. K. FOSTER, *Secretary*.

#### ECUADOR AGAIN QUARANTINES.

[Telegram.]

SAN FRANCISCO, May 12, 1903.

Surgeon-General WYMAN, *Washington*:

Ecuador again quarantined against California. Important to remove same at once. Please take necessary steps and wire us results.

FRANK J. SYMMES,  
*Chairman Mercantile Joint Committee*.

WASHINGTON, May 16, 1903.

FRANK J. SYMMES,

*Chairman Mercantile Joint Committee, San Francisco, Cal.:*

Have taken up matter of your telegram with State Department. Favorable results expected.

WYMAN, *Surgeon-General*.

WASHINGTON, May 25, 1903.

FRANK J. SYMMES,

*Chairman Mercantile Joint Committee, San Francisco, Cal.:*

State Department wired legation at Guayaquil a week ago to protest against quarantine, and Secretary of Treasury has requested Secretary of State to wire again a further protest.

GEO. PURVIANCE, *Acting Surgeon-General*.

DEPARTMENT OF STATE,  
*Washington, June 2, 1903.*

MERCANTILE JOINT COMMITTEE, *San Francisco, Cal.:*

Our minister to Ecuador cables that quarantine now in force will be abolished to vessels leaving San Francisco on or after June 16.

FRANK B. LOOMIS,  
*Assistant Secretary*.

#### SATISFACTORY ATTITUDE OF GOVERNOR AND STATE BOARD OF HEALTH.

[Letter.]

SAN FRANCISCO, CAL., May 26, 1903.

SIR: I have the honor to report that, accompanied by Doctor Blue, I had a conference yesterday, May 25, with Governor Pardee, at the capitol, Sacramento, in order to introduce Doctor Blue to the governor and have him in thorough touch with the situation. Governor Pardee stated emphatically that the State of California owes us a debt of gratitude for the present condition of affairs, and gave strong assurances that he would support Doctor Blue in anything which he desired and that the present work would be continued throughout the year, and additions made if necessary. He also stated that the case of plague reported March 17 was acknowledged and recorded in the printed monthly circular of the California State board of health, for the month of March, 1903, and if any future cases were discovered they would be printed in the monthly circulars of the State board. It seems to me that the present attitude of all the State authorities is everything that could be desired.

On this same day he appointed Dr. F. G. Ainsworth as a member of the State board of health, to fill the vacancy caused by the death of Dr. Matthew Gardner. I personally knew Doctor Ainsworth at Los Angeles, where he was the local surgeon of the Southern Pacific Railroad. He is now chief surgeon of the Southern Pacific Railroad.



at San Francisco. He is a brother of Brigadier-General Ainsworth, U. S. Army, Chief of the Record and Pension Bureau at Washington, D. C. He stands all right on the diagnosis of plague, and I believe his appointment as a member of the State board of health a good selection.

Respectfully,

A. H. GLENNAN, *Surgeon.*

[Inclosure.]

EXTRACT FROM MONTHLY CIRCULAR OF THE CALIFORNIA STATE BOARD OF HEALTH FOR MONTH OF MARCH, 1903.

Reports for March from 28 cities and towns, aggregating a population of 881,235, show a mortality of 1,454 or a monthly death rate of 1.65 per thousand.

The general health conditions are favorable. Consumption, pneumonia, and heart disease are still the most prevalent causes of death. Smallpox has been quite prevalent, but is responsible for but one death.

The work of cleaning up and disinfecting the Chinese and Japanese quarters of San Francisco is still going on. The local and State boards of health are working in conjunction with the United States Public Health and Marine-Hospital Service, under the general direction of Dr. A. H. Glennan of the latter Service. The wooden structures which obstructed the light and air entering the main buildings are being torn down. The doctors daily make a tour of inspection, visiting the sick. The buildings and cellars are being disinfected with lime and carbolic acid, the streets and alleys washed with bichloride solutions. Sewers are frequently flushed, and the rats are being exterminated. Everything that sanitary science can suggest and money can do, is being done to put Chinatown in a healthful condition.

On the 16th of March, a Japanese woman was discovered sick on the edge of Chinatown with suspicious symptoms. The place was thoroughly disinfected and quarantined and all clothing destroyed, and a partial diagnosis made of plague. The autopsy and bacteriological examination proved it to be such. Forty-three days have passed since its discovery, with no more cases appearing.

#### SURGEON GLENNAN RELIEVED BY PASSED ASSISTANT SURGEON BLUE.

Surgeon Glennan having been relieved from further duty in the State of California in connection with the plague situation, turned over the management of affairs to Passed Asst. Surg. Rupert Blue, Public Health and Marine-Hospital Service, and departed May 30, 1903, under orders to report for duty at the Bureau.

Nothing of particular importance occurred during the balance of the fiscal year, and the inspection and disinfection work has been uninterruptedly prosecuted, both in the Japanese and Chinese quarters, and later the work was extended to the so-called Latin quarter, which immediately adjoins the Chinese district. Following is the report of Passed Asst. Surg. Rupert Blue, of the transactions of the Service during the fiscal year:

#### REPORT OF PASSED ASST. SURG. RUPERT BLUE.

U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
LABORATORY 641 MERCHANT STREET,  
*San Francisco, Cal., August 7, 1903.*

SIR: I have the honor to submit the following report of the work of this station for the fiscal year ended June 30, 1903:

There were 454 deaths among the Chinese of San Francisco during the year. Deducting from this number 26 deaths classed under the head of "violent" would give a mortality of 428 due to natural causes. An estimate based on an average population of 13,500, would show an



annual death rate of 31.70 per thousand, a mortality that does not appear excessive when it is remembered that many of these deaths occurred among invalids sent in from other towns and cities for treatment, and among others while temporarily sojourning in San Francisco for various purposes. Following is a transcript of the registered deaths among the Chinese since 1897, taken from the reports of the city statistician:

Year.	Deaths.	Year.	Deaths.
1896-97 .....	462	1899-1900 .....	562
1897-98 .....	454	1900-1901 .....	418
1898-99 .....	548	1901-1902 .....	430

#### MORTUARY STATISTICS.

The number of deaths due to infectious and contagious diseases for the year under review was as follows: Tubercular disease, 178; diphtheria, 1; influenza, 1; typhoid fever, 5; bubonic plague, 36.

#### NECROPSY REPORT.

Number of dead examined, 462; number of necropsies, 175; number passed, not requiring necropsy, 289; number of bodies showing plague infection (Chinese 36, Japanese 1, white 1), 38. (See List of cases, Exhibit C.)

Taking into consideration the general conditions under which the early part of the work was conducted the situation with regard to plague would appear favorable. While there has been an increase of cases from 24 in 1901-2 to 38 in 1902-3, no extension of the disease to other sections of the city has occurred. The lateness and mildness of the rainy season in the fall of 1902 may account in part for this increase in the number of cases. But two deaths occurred between December 11 and June 30, namely, in a Japanese woman, March 16, and a Chinaman, June 5. It will be seen that an interval of ninety-five days elapsed between the case of December and that of March. This, I believe, is the longest intermission yet to occur between cases. Our experience and the experience of others in similar work in other places lead us, however, to be conservative, and we do not know how much importance to attach to the seeming favorable conditions.

Plague mortality among rats, which began in November, ceased early in December and did not again appear during the year. No doubt the disappearance was due largely to the energetic measures pursued for their extermination. These measures consist in trapping and in wholesale poisoning, the poison (phosphorus bane, as a rule) being placed in the sewers in and surrounding the infected district. Later, when large quantities of chloride of lime and carbolic acid were used in disinfecting, the rats and other vermin were probably driven off to adjacent districts.

#### THE COOPERATIVE PLAN.

With the inauguration of Governor Pardee in January began the present cooperative régime in regard to the eradication of plague in California. A new State board of health was appointed in March, whose members, without exception, recognized the existence of infection in Chinatown, and who joined in the cooperative work which



involved the adoption of more radical measures than had hitherto been practicable. Early in February, all discordant elements having been harmonized, a preliminary plan was drawn up and signed by the late Dr. M. Gardner for the State, Health Officer A. P. O'Brien for the city, and Surg. A. H. Glennan for the Marine-Hospital Service. This plan (see appended copy) provided for the appointment of a force of medical and sanitary inspectors and a corps of disinfectors who were to devote their entire time to the work under the supervision and direction of the Service. From time to time, as occasion demanded, new and important features have been added, and the force increased by the addition of one medical and two plumbing inspectors.

On April 2 the State board of health, in a body, inspected the United States Public Health and Marine-Hospital Service Laboratory at 641 Merchant street, and the joint work then in progress in Chinatown. A resolution indorsing these sanitary measures and advising a continuance of the same was adopted. (Exhibit B.)

Probably the most important feature added to the original plan was the work of condemning and destroying insanitary wooden additions erected by Chinese tenants on the sides and roofs of the original buildings. In this way, areas, courts, and blind alleys intended originally to supply sunlight and air, have been filled in by wooden structures which have become, after decades of improper ventilation and drainage, a menace to the public health. With a strong determination to effect the thorough cleaning of Chinatown, the city board of health, working with the board of public works, began operations about the latter part of March. Many of these areas have since then been cleaned out from roof to cellar, the dirt and filthy débris hauled out and burned, the ground cemented, and the walls lime washed. As stated, the work has progressed satisfactorily, and it is hoped that by the end of summer all such structures in the 14 blocks comprising Chinatown will have been condemned and destroyed. Moreover, many insanitary dwellings have been vacated by order of the board of health until renovated and repaired. Following is the record of this work in Chinatown: Number of buildings vacated, 35; number of structures condemned and destroyed, 49; number of plumbing nuisances actually abated, 109. During the last six months special attention has been given the tributary sewers of side streets and alleys in which, owing to the gradient, retardation or stagnation of contents is liable to occur in the dry season. Frequent flushings from the city hydrants have been in order and in a few of them work has begun for the correction of such faults of construction as could be reached.

#### INSPECTION AND DISINFECTION.

Active operations for the systematic inspection and disinfection of Chinatown began February 10 with an organization consisting of 5 medical inspectors and their interpreters, 2 sanitary inspectors, a doctor in charge of the disinfecting crew, and 3 sewer men. In the early part of the work the medical inspectors covered as much of the territory as their several abilities and inclinations dictated, but later it was thought best to divide the territory into districts, and to make an inspector responsible for but one district. This plan has worked well. It affords an opportunity for the inspector to know personally many of the people in his district, and by kind treatment and attention to their needs to come in closer touch with them. Daily reports on blank



forms prepared for the purpose have been required. This report shows, among other things, the number of buildings and rooms, their sanitary condition, and the number of persons inspected during the day, a portion of the sheet being reserved for a separate report of the sick. In this routine way the whole district has been inspected six or seven times since the beginning of the work. From the reports of these inspections it has been ascertained that there are 1,200 street numbers or entrances, 9,370 rooms, and 450 buildings in the district known as Chinatown. Counting the Chinese laundries and cigar factories scattered throughout the city, would place the number of buildings actually occupied by Chinese at 650.

The disinfecting crew, under the direction of a competent physician, operated from house to house, beginning on the northwestern side of the district, in the direction of the prevailing winds. Carbolic acid solution (1-20) and English chloride of lime have been used rather liberally in toilets, on stairs and halls, cellars, and the soil of basements and back areas, the solution being applied by means of a force pump and hose. In some of the more insanitary places the wooden flooring was removed in order to reach the soil with the acid solution. The crew has been assisted, throughout the six rounds of the district by a policeman and a Chinese interpreter, who were detailed for that purpose. In the four months they have been working over 28,000 pounds of chloride of lime, 600 pounds bichloride of mercury, and 1,644 gallons of carbolic acid have been used.

#### PLAGUE IN OTHER PARTS OF THE STATE.

In no case has the infection been traced to an outside origin with any degree of probability. Reports that certain cases may have originated outside of San Francisco were based solely on statements made by the Chinese, and such assertions, when carefully investigated by officers of this laboratory, have been found to be mere fabrications born of the erroneous belief that if suspicion were thrown on some other locality the home of the man and his friends in San Francisco would escape disinfection. There are, no doubt, other motives of a superstitious or mercenary nature behind these attempts at concealment of facts in connection with the place of infection. With regard to other possible foci, it should be stated that several inspections have been made by Surg. A. H. Glennan, of all other cities in the State having a considerable Chinese population, but with negative results.

The report of Asst. Surg. Donald H. Currie, the bacteriologist of this station, is herewith inclosed. (Exhibit D.)

Respectfully,

RUPERT BLUE,  
*Passed Assistant Surgeon.*

SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### EXHIBIT A.

*A preliminary plan for the eradication of plague in Chinatown, as agreed upon by Doctor Gardner, personal representative of the governor, Dr. A. P. O'Brien, city board of health, and Doctors Glennan and Blue for the United States Public Health and Marine-Hospital Service.*

First. Dr. Matthew Gardner, representing the State, will pay 3 medical inspectors, 2 sanitary inspectors, and 2 Chinese interpreters.

Second. The city board of health will begin immediately the extermination of rats by means of traps and poison, employing three sewer men for the purpose. Fifty



additional traps will be supplied for this work. The city agrees also to disinfect immediately all infected places, and will cause the renovation of such habitations in a satisfactory manner 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, 3 medical officers (more as needed), and 2 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, United States Plague Laboratory, for instructions; that inspectors shall be required to make daily reports of their observations and the number of the 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 street.

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.

#### EXHIBIT B.

Whereas the State board of health organized in Sacramento, Cal., April 1, 1903, adjourned to meet in San Francisco, Cal., April 2, 1903, and in a body visited the United States Public Health and Marine-Hospital laboratory at 641 Merchant street and inspected the same; and from there proceeded to certain points in Chinatown to view its extremely bad sanitary condition. Also inspected places and work of renovation now being conducted by the city board of health of San Francisco.

*Resolved*, That this board heartily approves the work of renovation in Chinatown now being prosecuted by the city board of health of San Francisco, and the restoration of the buildings in Chinatown to their normal condition, for the admission of sunlight and air between these buildings.

And we further indorse the general work of inspection and disinfection now being conducted by the Federal, State, and municipal authorities in that district.

#### EXHIBIT C.

##### *List of plague cases for the year ended June 30, 1903.*

58. Chin Guie, 32; July 13, 1902; 737 Jackson street; male.
59. Leong Ngan, 27; July 18, 1902; 632½ Jackson street; male.
60. Yee Woon Chun, 56; July 19, 1902; 735 Jackson street; male.
61. Chew Hork, 45; July 20, 1902; 737 Jackson street; male; pneumonic.
62. Fung Chin, 26; August 6, 1902; 16 Ross alley; female.
63. Gee Ha Yen, 25; August 17, 1902; 116 Waverly place; male.
64. Yam Ching, 45; August 19, 1902; 742 Washington street; male.
65. Leong Toy, 45; August 19; 722 Jackson street; male.
66. Soo Wing, 35; August 20; 636 Pacific street; male.
67. Quong Kum, 29; August 22; 918½ Dupont street; male.
68. Lee Yin Ming, 57; August 23; 909 Dupont street; male.
69. Tang Hung Fong, 35; August 26; 1025 Dupont street; male; tonsilar; found August 25.
70. Dong Hip, 42; August 30, 1902; 605 Jackson; male; tonsilar.
71. Lin Hea, 35; September 1, 1902; 827 Sacramento street; female; found August 31.
72. Leong Chong, 54; September 2, 1902; 810 Jackson street; male.
73. Chin Mon Yung Shee, 33; September 9, 1902; 40 Fish alley; female.



74. Ng. Chew Ho, 25; September 11, 1902; 730 Washington street; male.
75. Lau Hock Ching, 58; September 16, 1902; 742 Washington; male.
76. Chin Hong Mon, 47; September 16, 1902; 800 Washington; male.
77. Lee Gong, 48; September 20, 1902; 10 Waverly place; male.
78. Huie Chong Bow, 36; September 23, 1902; 808½ Sacramento street; male.
79. Mrs. Gam Fong, 51; September 25, 1902; 904 Dupont; female; found September 23.
80. Chin Kung Poo, 38; September 26, 1902; 19 Prospect place; male.
81. Hoo Chung, 38; September 26, 1902; 1018 Stockton street; male.
82. Yee Foo Lai, 52; October 4, 1902; 724 Commercial street; male.
83. Chew Led, 28; October 5, 1902; 811 Clay street; male.
84. Chew Mon Keock Shee, 27; October 5, 1902; 838 Dupont street; female.
85. Wong Chew Chong, 54; October 8, 1902; 753 Clay street; male; found October 7.
86. Yee Pang Wo, 36; October 11, 1902; 767 Clay street; male.
87. One Yue Nom, 48; October 16, 1902; 615 Jackson; male.
88. Hoo Hing Bong, 47; October 16, 1902; 743 Clay street; male.
89. Arthur W. Caswell, 33; October 31, 1902; 409 Turk street; found October 28.
90. Wong Ngan, 30; November 16, 1902; 37½ Brenham place; male; found November 19; bubo-pneumonic.
91. Wong Hoi, 36; November 19, 1902; 7 Brenham place; found November 18; tonsilo-bubo-pneumonic.
92. Leong Sen, 50; November 26, 1902; 838½ Washington street; male; bubo-pneumonic.
93. Deong Yuen Yum, 38; December 11, 1902; 726½ Pacific street; male.
94. Mrs. Ai Minegishi, 20; March 16, 1903; 520 Dupont street; female; bubo-septicæmic.
95. Wong Tzse Hop, 45; June 5, 1903; 27 Brenham place; male.

#### EXHIBIT D.

#### *Pathological and bacteriological report.*

SAN FRANCISCO, CAL.,

August 7, 1903.

SIR: I have the honor to make the following report of the pathological and bacteriological work performed in this laboratory during the fiscal year ended June 30, 1903. During this period 175 bodies were necropsied, including all doubtful or suspicious cases and all cases not seen by us during life. All cases which appeared suspicious at necropsy have been followed by a complete bacteriological examination. Of the 175 cases thus necropsied, 38 have been proven to have died of plague. During the same period, of the 2,060 rats caught or found dead in the various parts of the city and examined bacteriologically, 15 have shown pest infection. These latter were discovered during the period extending from November 8 to December 8, inclusive. Of these, 3 were found in the Chinese quarter proper, the other 12 one-half block east of this district in the vicinity of Merchant street and Dunbar alley.

The above has constituted by far the greater part of the work performed in this laboratory, but a number of minor experiments having a practical bearing on the work of eradication of plague have been performed from time to time, such as the testing of Danyecz's virus and several chemical poisons as to their relative efficiency in the extermination of rats, the examination of cultures and specimens obtained from more or less suspicious cases occurring in this and other States, etc. The more important of these experiments have been made the subject of special reports.

We regret that no experiments having in view the discovery of the means by which plague is naturally spread from animal to animal have been attempted. Owing to the location and structure of this laboratory such experiments would have been accompanied by an unusual amount of danger to the occupants of this building.

The importance of such a series of experiments, however, if successful in demonstrating by what means the disease is spread from animal to animal, and other phases of its natural life history, can hardly be overestimated. In view of the fact that this disease is slowly but certainly spreading to or threatening almost the whole seacoast of the world, and that our present knowledge of its life history is extremely limited, without which knowledge all measures against it must be based upon doubtful theories, it is not too much to say that this is one of the most important bacteriological problems of the day.



The methods generally employed in this laboratory are as follows: All cases dying in the infected district which have not been seen during life by one of our inspectors are necropsied, as well as all suspicious or doubtful cases, whether they have been seen during life or not. The necropsies are performed in the presence of representatives of the city and State boards of health, and smears are made from the lymph nodes and viscera and stained with carbol-thionin. If on account of the gross pathological findings or microscopical examinations, or both, the case appears to be suspicious of plague, agar cultures are taken from the various organs and animals inoculated by the dermic method with a portion of the spleen or gland. Pending the death of the inoculated animal, an attempt is made to isolate *B. pestis* from the agar culture taken directly from the human subject. This can usually be done without much difficulty, but sometimes it requires so long to accomplish this isolation that the inoculated animal dies before it has been completed, in which case we take cultures from the heart blood of the animal, and in 90 per cent of the cases these cultures show pure pest, even though the tissues used for inoculation contain relatively few pest bacilli and a large number of other organisms. The dermic method is especially useful when the pest infection is accompanied by a mixture of virulent diplococci and streptococci.

These two organisms frequently grow as fast or faster than *B. pestis* when inoculated into an animal by the subdermic or intraperitoneal methods and on this account frequently cause considerable annoyance, but since the discovery of the dermic method no difficulty of this kind has been experienced. The latter method, while now generally known, might be worth again describing. It was discovered by Professor Kolle, of Berlin, and was first published in this country in one of the United States Public Health Reports of August, 1902, in the form of a letter from Acting Assistant Surgeon Havelburg, of this Service. The method is as simple as it is effective. The belly of the guinea pig is shaved, care being taken not to break the skin. After washing and drying the latter a few drops of blood containing the bacilli are rubbed on the skin, using the back of the scalpel, and continuing this rubbing process until the blood is perfectly dry. A variation frequently made in this laboratory, when speed is desired, is to scarify down to the lymphatic layer of the skin and then proceed as described. It is found that when the modified method is used the animal dies more promptly, and apparently the process of elimination of contaminating organisms is almost, if not quite, as effective as when the original method is employed. In the original method death takes place in from three to twelve days, with typical buboes and white subcapsular nodules of the spleen.

In my experience, when this method is employed with agar cultures instead of tissue, the animal sometimes fails to sicken, probably owing to the greater difficulty of rubbing the drier agar culture into the hair follicles. When a pure culture has been obtained by one of these methods it is carried through the ordinary media and finally into a guinea pig and a pigeon. Bacteriological tests should be and are made in each case of plague or suspected plague; nevertheless it is a fact that 80 per cent of bubonic cases which we have seen here are as typical in their gross anatomical appearances as are cases of chronic ulcerated pulmonary tuberculosis, and could be diagnosed had the bacilli never been discovered.

I mention this fact because it is important to the general practitioner and health officer in places removed from bacteriological knowledge and appliances. If this fact was more thoroughly known by the general medical public the chances of a case going unrecognized would be very much decreased. The microscopical study of one or two slides that some one has given him is far more apt to lead into error than those untrained in microscopical examination than the relying upon the gross anatomical appearances, and I believe that a good description of the latter sent to the health officers in localities where cases might occur would enable them as a rule to recognize the first case coming under their observation. This, of course, does not apply to purely pneumonic cases, but they are rare at the beginning of an outbreak, none of this type having been observed in this city up to the time of the present writing.

All rats found dead in any of the districts before mentioned are brought to this laboratory, where they are autopsied and examined bacteriologically and their bodies burned.

All rats caught alive are either chloroformed and examined bacteriologically, or are placed in detention cages and observed for incubation period of pest; and, if healthy at the end of this time, they are chloroformed and autopsied; if sick or dead they are examined bacteriologically, and by this last means we discovered two of the before-mentioned 15 rats showing pest infection. Both of these animals when brought to this laboratory appeared to be in perfect health. They died on the third day of observation, and examination showed typical pest infection.



One of the pest rats examined last November showed a condition which is interesting, and may play a part in the carrying on of live cultures during periods of quiescence. The rat was brought to this laboratory apparently in perfect health; was immediately chloroformed and autopsied; it showed a broken-down suppurating gland which had become completely "walled off" from the general circulation; cultures and smears taken from the pus showed a pure culture of *B. pestis*, while cultures from the spleen were entirely sterile. The animal's nutrition was apparently undisturbed.

An interesting observation made by Asst. Surg. M. J. White, while performing necropsies in this morgue, was that quite a large per centum of the Chinese of this city are infected with the oriental liver fluke *Distoma Sinense*.

Respectfully,

DONALD H. CURRIE,  
*Assistant Surgeon.*

Passed Asst. Surg. RUPERT BLUE,  
*Public Health and Marine-Hospital Service, San Francisco, Cal.*

Respectfully forwarded.

RUPERT BLUE,  
*Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

*Summary of work of inspection and disinfection in the Chinese, Japanese, and Latin quarters in San Francisco, Cal., from February 10, 1903, to June 30, 1903.*

	Febru- ary.	March.	April.	May.	June.	Total.
Buildings inspected and reinspected .....	962	509	1,126	904	724	4,225
Rooms inspected and reinspected .....	7,310	3,094	8,050	6,819	5,941	31,214
Persons inspected.....	9,498	3,380	8,115	6,509	5,686	33,188
MORBIDITY REPORTS.						
Sick inspected .....	143	162	222	156	124	807
Sick seen and prescribed for at Oriental Dispensary.....		40	40	41	54	175
REPORT OF THE BACTERIOLOGICAL EXAMINATION OF RATS.						
Rats delivered alive at the laboratory.....	71	142	209	277	250	949
Rats found dead delivered at the laboratory .....	34	31	60	25	9	159
Plague-infected rats .....	0	0	0	0	0	0
Total.....	105	173	269	302	259	1,108
Rats showing phosphorous poisoning.....		21	25	10	0	56
NECROPSY REPORT.						
Bodies necropsied.....	11	17	17	5	12	62
Plague-infected bodies .....		1			1	2
Bodies not requiring necropsy.....	26	31	31	22	19	129
DISINFECTION.						
Places disinfected with carbolic solution and with chloride of lime .....		1,753	3,034	3,378	3,131	11,296

#### MEASURES ON UNITED STATES-MEXICAN BORDER AGAINST INTRODUCTION OF PLAGUE FROM MEXICO.

The inspection service upon the Mexican border has been continued against the introduction of smallpox, yellow fever, and later the plague, which last-named disease made its appearance in December at Ensenada, Lower California, and Mazatlan, upon the west coast of Mexico. Officers experienced in bacteriological diagnosis and the work of inspection were immediately detailed along this threatened border, and not an officially reported or authentic case of plague gained entrance to the United States.



The following correspondence outlines the measures taken at the California, Arizona, and Texas borders to prevent the threatened introduction of plague:

[NOTE.—Service measures at infected points in Mexico are reported under Division of Foreign and Insular Quarantine.]

[Telegrams.]

WASHINGTON, January 3, 1903.

Dr. EDMOND SOUCHON,

*President Louisiana State Board of Health, New Orleans, La.:*

Your telegram of the third received. Our inspectors are acting for the best interests of Louisiana as well as Texas and other States.

WYMAN.

WASHINGTON, January 5, 1903.

Dr. J. A. ALBRIGHT,

*Secretary State Board of Health, Nashville, Tenn.:*

Have official information that precautions are taken at Mazatlan, which is without railroad connection, and Pacific mail steamships have withdrawn from that port. Have a man at Ensenada, Lower California, with instructions, and expect a report from him daily. With regard to San Francisco, precautions are being taken by constant examination of Chinatown and other ordinary means of dealing with the disease. Matters there are progressing favorably.

WYMAN.

WASHINGTON, January 3, 1903.

GRUBBS,

*(Care Decker), San Diego, Cal.:*

Wire full report concerning situation at Ensenada, supplemental to your letters of December 18 and 22. Are the local authorities managing the situation well? Make recommendation as to what the Bureau should do to protect California from Ensenada. Also wire your opinion how long disease has been in Ensenada and whether it is probably traceable to San Francisco or China direct, or possibly to Mazatlan. After wiring await orders in San Diego.

WYMAN.

WASHINGTON, January 7, 1903.

GRUBBS, *Los Angeles, Cal.:*

Nominate Alexander and place him on duty. Direct him to report frequently to Decker. Inform Decker names of cases, enabling him to determine if two recent deaths were in same family.

PURVIANCE,

*Acting Surgeon-General.*

WASHINGTON, January 7, 1903..

DECKER, *San Diego, Cal.:*

Grubbs instructed to place Dr. Alexander on duty Ensenada, with orders to report frequently to you. Advises that customs inspectors have all parties from Ensenada to San Diego report to you. Will endeavor to have this done. Meanwhile advise me as to practicability of customs inspection.

PURVIANCE,

*Acting Surgeon-General.*

WASHINGTON, January 7, 1903.

CHAMBER OF COMMERCE, *Tucson, Ariz.:*

Have officer en route to Guaymas. Understand Mexican Government has quarantined Mazatlan, but will investigate whole situation.

WYMAN.



WASHINGTON, January 15, 1903.

COLLECTOR CUSTOMS, *San Diego, Cal.:*

Telegram January 14 received. Surgeon-General informs me that vessels from St. Denis will be carefully examined at San Diego quarantine, and must have certificate of medical officer stationed in Ensenada as to safety. With regard to land quarantine, telegram yesterday establishes same and requirements. Yesterday's telegram will be enforced till further orders from Department.

H. A. TAYLOR,  
*Acting Secretary.*

WASHINGTON, January 15, 1903.

DECKER, *San Diego Cal.:*

Can you nominate a good physician for duty at Tiajuana? Be prepared to give him copy of article 12, Canadian and Mexican frontier regulations. Proposed now to have Alexander issue certificates to all seeking to come overland and give bills of health to vessels leaving Ensenada, which would include an inspection of personnel going aboard.

WYMAN.

WASHINGTON, January 15, 1903.

Dr. GEORGE R. TABOR,  
*State Health Officer, Austin, Tex.:*

Ensenada, Lower California, is infected, though but two cases reported since Christmas. I have an officer there and have established inspection on the border. Guaymas, Mexico, is reported as not infected. Doctor Grubbs is there now. Mazatlan is reported officially as infected.

WYMAN.

WASHINGTON, January 14, 1903.

DECKER, *San Diego, Cal.:*

Grubbs recommends customs inspectors at Tiajuana make careful inspection and make everyone from Ensenada report to you. Is this practicable? The Secretary has wired collector of customs to have his inspectors at Tiajuana inspect all people from Mexico, and if any suspicious cases report to you immediately. Keep in touch with the collector and keep me advised of the situation, and wire opinion whether medical officer should be sent to Tiajuana.

WYMAN.

WASHINGTON, January 14, 1903.

COLLECTOR OF CUSTOMS, *San Diego, Cal.:*

Instruct your two inspectors at Tiajuana to carefully inspect all passengers overland in that vicinity from Mexico, with special reference to detecting any possible cases of infection from plague from Ensenada, and to report by every available mail or messenger all passengers inspected to Assistant Surgeon Decker at San Diego, and if any suspicious cases are found to hold the same until Doctor Decker can be communicated with.

H. A. TAYLOR, *Acting Secretary.*

WASHINGTON, January 22, 1903.

POWER (through Decker), *San Diego, Cal.:*

Proceed to Tiajuana, where your duty will be to pass upon suspicious cases. The customs officers, with whom you will cooperate and who have been directed by the Secretary to assist in quarantine, will stop at frontier all persons not certified as safe, and any such person whom you can not acquit by careful examination of suspicion should be turned back to Mexico. You will report to Decker by letter (or other means) your actions in order that Bureau may be fully posted. Be diligent to prevent anyone escaping careful inspection on entry to United States. When you admit anyone not certified by Alexander certify him yourself.

WYMAN.



WASHINGTON, *January 22, 1903.*DECKER, *San Diego, Cal.:*

Furnish copy of telegram sent Power through you to-day to collector of customs for his information. Obtain assistance of local health authorities in seeing that none enter San Diego from lower California without certificate from Alexander or Power.

WYMAN.

WASHINGTON, *February 28, 1903.*HAMILTON, *Laredo, Tex.:*

Confidential at present. Assistant Surgeon Francis, recently sent to City of Mexico, wires Bureau that Liceaga reports disease suspicious of plague at Torreon, to which place he goes to-day. So far as known to Liceaga only five cases outside of Mazatlan, at Oso, near Quila. Be on your guard.

WYMAN.

Same to Hune, Eagle, Pass, Tex.

WASHINGTON, *February 28, 1903.*WERTENBAKER, *New Orleans, La.:*

Turn station over to Kerr, who arrives to-morrow morning, St. Charles Hotel. Confer with him, then proceed immediately to El Paso and confer with but do not supersede Alexander. You will supervise matters at El Paso with reference to protection from plague, particularly if Francis wires Torreon infected. Grubbs at Guaymas. Lumsden ordered to Nogales as inspector of line between Yuma and El Paso. Important to take train to-morrow forenoon if possible. Wire arrival.

WYMAN.

WASHINGTON, *February 28, 1903.*LUMSDEN, *Angel Island, Cal.:*

(Through Commanding Officer.)

Relieved from duty at Angel Island. Proceed to Los Angeles, ascertain name and other facts concerning suspected case from Cobb, then proceed to Phoenix to trace case. Consult with local board, informing them confidentially of situation. Wire Bureau essential facts. Intention then to order you to Nogales and other Mexican frontier ports, particularly rail and wagon road crossings between Yuma and El Paso, including both. Your duty to keep Bureau well informed upon danger from plague over Mexican border, making recommendations and submitting names if local inspectors are necessary, but not employing until authorized. Wire Bureau your intended departure from each place and arrival at next place. Must keep in telegraphic touch. Francis, special agent of Bureau in Mexico, wires only five cases known to Liceaga outside of Mazatlan, at Oso, near Quila; but suspicious disease at Torreon railroad center. He goes there to-day. Grubbs still at Guaymas. Have appointed inspector at Nogales. Inform Glennan your orders. Acknowledge.

WYMAN.

WASHINGTON, *February 28, 1903.*State Health Officer TABOR, *Austin, Tex.:*

For your information, and recommend that you consider it confidential at present, Assistant Surgeon Francis, an expert recently detailed to confer with authorities in City of Mexico, wires Liceaga states there are only 5 cases of plague outside of Mazatlan or at Oso, near Quila, but also wires information of suspicious disease at Torreon, to which place he goes to-day. Have notified inspectors on border.

WYMAN.

WASHINGTON, *March 1, 1903.*Dr. A. L. GUSTETTER, *Nogales, Ariz.:*

Employment begins to-day. Full instructions by wire to-morrow. In meantime wire Bureau any information or rumors concerning plague in Mexico and state how many trains a day cross the border into Nogales and average number of passengers per day.

WYMAN.



DETAIL OF SURG. G. M. GUITERAS, TO INSPECT MEXICAN TOWNS ALONG  
THE RIO GRANDE RIVER.

[Letter.]

WASHINGTON, March 2, 1903.

SIR: When you have arrived at Eagle Pass, Tex., pursuant to travel orders of this date, you are directed to inspect the station and work of Acting Asst. Surg. Lea Hume, and to confer with him regarding the possible routes of entry from Mexico into the United States at or near Eagle Pass, and any methods by which plague might gain entry into the United States from Mexico over said routes.

You will advise with and instruct him in such quarantine details and methods as are applicable to this work.

You should visit the Mexican town on the opposite side of the Rio Grande River, and post yourself fully as to its sanitary condition, so as to be in a position to meet any problems which may arise in the future in connection therewith.

It is possible that you may be ordered to proceed to other towns on the border, and should this be done, the work desired at these points is of the character above stated.

It is the wish of the Bureau to obtain the fullest possible information as to communication between points, sanitary condition of these points, the possibility or probability of infected persons, baggage, or merchandise being conveyed over the lines of communication between them, and any other information which may occur to you as pertaining to the prevention of the introduction of plague into the United States. It is to the end that the Bureau may obtain this information that your present orders have been issued.

You will, therefore, pursue research of this character at every place to which you are sent while on this detail, unless specifically ordered to the contrary.

You will keep the Bureau as fully posted as possible by frequent letters, and wherever the information is of such a character as in your opinion to justify haste, you will use the telegraph. Wire arrivals and departures in all cases.

Respectfully,

WALTER WYMAN, *Surgeon-General.*

Surg. G. M. GUITERAS,  
*Public Health and Marine-Hospital Service, Philadelphia, Pa.*  
(Through medical officer in command.)

[Telegrams.]

WASHINGTON, March 3, 1903.

LUMSDEN (care Cobb), *Los Angeles, Cal.:*

Upon arrival Phoenix carefully inspect sanitary conditions throughout, and do same at Tucson en route to Nogales, wiring summary of conditions to Bureau and needs at both points.

By direction Surgeon-General:

WHITE, *Assistant Surgeon-General.*

WASHINGTON, March 3, 1903.

GUSTETTER, *Nogales, Ariz.:*

Telegram received. Carefully inspect all arriving persons, holding any from infected localities. Fuller instructions by mail.

By direction of the Surgeon-General:

WHITE, *Assistant Surgeon-General.*

SUMMARY OF PRECAUTIONARY MEASURES ON THE MEXICAN FRONTIER  
TO PREVENT THE INTRODUCTION OF PLAGUE ACROSS THE BORDER  
INTO THE UNITED STATES.

Following is a summary of the precautionary measures which were adopted with a view to preventing entrance of persons from infected districts without careful examination; also for the investigation of rumors which frequently prevail under these circumstances, and the



tracing down of which, with negative results, renews confidence. These measures, therefore, were chiefly precautionary.

The latest official and reliable information from Mexico showed that the Mexican authorities had the situation well in hand and that their efforts were meeting with success.

## DETAIL OF OFFICERS.

Asst. Surg. L. L. Lumsden, ordered from San Francisco, left on March 3 for Los Angeles, where he remained one day to obtain facts concerning Chinaman suspected of plague and supposed to have come from Phoenix; thence he went to Phoenix, investigating this matter and reporting that circumstantial evidence rendered the diagnosis of plague in this case highly improbable; thence to Tucson, Nogales, and Douglas. He had charge of a continuous line inspection of points on the border of the United States and Mexico from Yuma to El Paso, both places inclusive.

Acting Asst. Surg. A. L. Gustetter was on duty at Nogales.

Acting Asst. Surg. E. Alexander was on duty at El Paso.

Acting Asst. Surg. Lea Hume was on duty at Eagle Pass.

Acting Asst. Surg. H. J. Hamilton was on duty at Laredo.

Acting Asst. Surg. F. T. Wright was on duty at Douglas.

At Naco, which, like Douglas, is in the general vicinity of Nogales at a short line railroad crossing into Sonora, Mexico, measures were taken to establish an inspection station.

Passed Assistant Surgeon Wertenbaker was sent to El Paso as supervisor to temporarily strengthen the inspection service at that point. He arrived March 4, reported conditions and inspection good, and was ordered to rejoin his station.

Passed Asst. Surg. S. B. Grubbs was at Guaymas, Mexico, where he was able to obtain considerable information from Mazatlan, and keeps the Bureau informed as to the situation on the coast, outlets from Sinaloa, etc. Doctor Grubbs is, moreover, a competent bacteriologist.

Asst. Surg. Edward Francis, also a competent bacteriologist, arrived in the City of Mexico on February 24 to confer with Dr. Eduardo Liceaga, president of the Superior Board of Health, and keep the Bureau informed of Mexican measures. He took with him a complete bacteriological outfit.

Surg. G. M. Guiteras left March 4 for Eagle Pass to strengthen the inspection service at that point and the vicinity. His knowledge of the Spanish language made him valuable for duty in Mexico. After completing a thorough inspection of Eagle Pass and vicinity he was ordered to the City of Mexico to confer with Doctor Liceaga.

[Telegrams.]

WASHINGTON, March 5, 1903.

WRIGHT, Douglas, Ariz.:

Wire confidentially if you have had any suspicious cases or any rumors you have heard elsewhere. Should expert bacteriologist be needed at any time wire Bureau.

WYMAN.

WASHINGTON, March 6, 1903.

GUSTETTER, Nogales, Ariz.:

Have wired Passed Assistant Surgeon Grubbs, Guaymas, to certify cargo if it can be safely done, and if arriving with Grubb's certificate, you can pass it.

By direction Surgeon-General:

WHITE, Assistant Surgeon-General.



WASHINGTON, March 6, 1903.

WERTENBAKER (care Alexander), *El Paso, Tex.*:

Have just wired Liccaga, "No quarantine against Sonora at Nogales or other border points. Am only inspecting at those points in order to apprehend any possible travel from infected localities, and it is understood Mazatlan and Oso are the only infected localities," in answer to his telegram protesting against a quarantine against Sonora.

By direction Surgeon-General:

WHITE, *Assistant Surgeon-General.*

Same to Hume, Eagle Pass, Tex.; Hamilton, Laredo, Tex.; Wright, Douglas, Ariz.; Gustetter, Nogales, Ariz.

WASHINGTON, March 6, 1903.

WERTENBAKER,

(Care Alexander), *El Paso, Tex.*:

Nothing wrong at Torreon. Francis gone to Durango for short time. No known infection anywhere outside Mazatlan and Oso, but keep alive to any rumors.

By direction Surgeon-General:

WHITE,  
*Assistant Surgeon-General.*

March 8, 1903: Wertenbaker at El Paso ordered to rejoin station at New Orleans.

March 13: Assistant Surgeon Lumsden at Nogales, Ariz., ordered to proceed immediately to Douglas, confer with Acting Assistant Surgeon Wright, and wire Bureau his opinion.

March 18: Lumsden, Douglas, Ariz., ordered to visit Bisbee and Morenci.

March 21: Acting Assistant Surgeon Hume, Eagle Pass, Tex., ordered to proceed to crossing opposite Moral and report necessities.

[Letter.]

WASHINGTON, May 16, 1903.

SIR: Referring to your letter of 9th instant, stating the possibility that infection may be brought across the border from Mexicans engaged in the construction of an extension of the Nacozari Railroad, and asking instruction in the premises, you are informed that the Bureau does not contemplate any permanent provision for detention at Naco, and therefore deems it advisable for you, as suggested by yourself, to communicate by telegraph in the event of any necessity arising, taking such action as may be absolutely necessary pending answer to your telegram.

By direction of the Surgeon-General:

Respectfully,

J. H. WHITE,  
*Assistant Surgeon-General.*

Acting Asst. Surg. F. T. WRIGHT,

*Public Health and Marine-Hospital Service, Douglas, Ariz.*

[Telegram.]

WASHINGTON, May 27, 1903.

GUSTETTER, *Nogales, Ariz.*:

Referring your telegram 23d, passengers known to be from Mazatlan should be kept out of the United States until seven days have elapsed since leaving Mazatlan.

By direction of Surgeon-General:

WHITE,  
*Assistant Surgeon-General.*

At the close of the fiscal year, the plague having died out in Mexico, all special inspectors were withdrawn with the exception of Doctor Gustetter at Nogales, Ariz., who is still on duty at that point.



## YELLOW FEVER.

## NO YELLOW FEVER IN THE UNITED STATES.

Fortunately no cases of this still dreaded disease have been officially reported in the United States during the fiscal year, although it is now epidemic in our southern neighborhood. This fortunate state of affairs has been effected not only by the alertness maintained at the quarantine stations, both State and national, but also by the continued satisfactory state of sanitary affairs in the island of Cuba, in marked contrast to the constant menace to our Gulf States in past years from that source.

## MODIFICATIONS IN QUARANTINE REGULATIONS.

Modifications were made, consistent with safety, in the treatment of vessels and their personnel.

Under the provisions of the Quarantine Laws and Regulations of the United States, revised edition, Treasury Department, 1903, practical recognition, in the interests of commerce, was given to the recent advances made in the knowledge of the origin and propagation of yellow fever.

## PATROL OF THE MISSISSIPPI GULF COAST AGAINST YELLOW FEVER.

Early in April it was deemed advisable to maintain a constant surveillance of this portion of the Gulf coast to prevent the introduction of yellow-fever infection and to detect first cases, should any arise. For this duty the following-named temporary acting assistant surgeons were appointed at the places noted: W. T. Bolton, Biloxi; W. R. Kell, Scranton; R. J. Turner, Bay St. Louis; J. J. Washington, Pass Christian; O. L. Bailey, Ocean Springs; A. R. Robertson, Longbeach; E. M. Fahnestock, Delisle; C. A. Sheely, Gulfport; J. J. Harry, Handsboro.

The following general letter of instructions was issued to each inspector, setting forth his duties during the summer season:

[Letter of instructions.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, April 10, 1903.*

SIR: Referring to your previous service as acting assisting surgeon for temporary duty during the summer of the year 1900, the Bureau desires to know if you will accept a similar appointment at the present time and perform service identical with that rendered at that time. On account of the continued prevalence during the past winter of yellow fever on the Mexican littoral it is deemed of the utmost importance to keep a watch upon our own coast and be assured that the disease does not obtain a foothold at any point; and the Bureau desires to be apprised, if possible, of the very first case occurring in any community in order that all necessary measures incumbent upon both national and State authority may be taken promptly to eradicate the disease.

Should you accept this appointment you are informed that a medical officer of the Public Health and Marine-Hospital Service will be placed on duty along the coast, and that his instructions will be to visit each of the coast towns and confer with the acting assistant surgeons upon temporary duty, receiving as confidential communications any information which they may be able to impart, and to this officer you should report anything of interest occurring. If a case of yellow fever should unfortunately supervene it should be reported to the Bureau directly by wire, using the



code word which will later be sent you for this purpose. These measures are not taken because the Bureau entertains any idea that there is any yellow fever on the coast at the present time, but simply out of the abundance of caution necessitated by the conditions on the Mexican littoral, as aforesaid.

I have to request that you will reply by telegraph as to whether or not you will accept the position offered at the same salary as was given you in 1900, viz, \$50 per month, for duty at ———.

Respectfully,

WALTER WYMAN, *Surgeon-General*.

In addition to these safeguards, Asst. Surg. T. F. Richardson was directed to make an inspection of all the above-named points and confer with the temporary inspectors above enumerated. The following telegraphic instructions were given Doctor Richardson, and his reports upon his work in this section are printed below:

[Telegram.]

WASHINGTON, *April 20, 1903.*

RICHARDSON, *New Orleans, La.:*

(Through Commanding Officer Marine Hospital.)

Proceed at once, inspect towns on Gulf coast from Bay St. Louis to Pascagoula, inclusive. Bureau has acting assistants for duty at these points as follows: Bay St. Louis, Turner; Pass Christian, Washington; Long Beach, Robertson; Handsboro, Harry; Gulfport, Rohmer; Biloxi, Bolton; Ocean Springs, Bailey; Scranton, Kell; Pascagoula, Duke. Object of inspection to make sure of absence yellow fever present time, and impress on acting assistants necessity of constant watchfulness and proper handling of first cases. You may communicate direct by wire to Bureau, instead of through commanding officer, while on this detail. After completion, wire Bureau and await orders. Contemplated to return you to New Orleans and start you out again at frequent intervals. En route make informal inspection Ship Island and Pascagoula quarantines. Wire arrival and departure each point.

PURVIANCE,  
*Acting Surgeon-General.*

#### REPORTS OF ASSISTANT SURGEON RICHARDSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*New Orleans La., May 4, 1903.*

SIR: I have the honor to report as follows on the inspection of the Gulf-coast towns of Mississippi, made by me in obedience to Bureau telegraphic orders of 20th ultimo.

*Bay St. Louis.*—I arrived at Bay St. Louis on the night of 21st ultimo and called upon Acting Assistant Surgeon Turner the following morning. Doctor Turner reported the health of the city of Bay St. Louis and vicinity as excellent. He had in his practice only a few cases of gripe and one case of typho-malarial fever, and no cases of fever with gastric symptoms.

There are two other practicing physicians in Bay St. Louis, Doctors Von Gohren and Rohmer, but Doctor Turner, I understand, has most of the practice of the place.

Doctor Turner seemed thoroughly impressed with the necessity for a careful look-out and prompt isolation and screening of first suspicious cases, should any occur.

*Pass Christian.*—Acting Asst. Surg. J. J. Washington was visited at noon of the 22d ultimo. He reported the general health of Pass Christian and surrounding country as very good, and had in his practice only maternity cases; no fever cases whatever.

Two other physicians practice in Pass Christian, Acting Assistant Surgeon Robertson, of this Service, and Dr. M. W. Rainold. Neither of these had any febrile cases under treatment.

Pass Christian has no industries to speak of, and is mainly dependent on the summer and winter tourists who visit the place.

There is no commerce save by rail and with the adjacent coast towns by schooner; so infection, unless it were a recrudescence, would not be expected to become manifest here, except secondarily to some other place along the coast.

*Long Beach.*—Acting Assistant Surgeon Robertson, who holds the appointment for Long Beach, is a resident of Pass Christian and practices in both places. At present he reports there is no one ill in Long Beach, to his knowledge.

In company with Doctor Robertson I visited, on the afternoon of the 22d ultimo,



some of the country along the shores of Bay St. Louis, and found a condition of affairs which I have already reported to the Bureau under date of April 22 in a letter from Pass Christian, in which I recommended the appointment of Doctor Fahnestock, of De Lisle, as an acting assistant surgeon for duty in the region around Bay St. Louis.

*Gulfport.*—I arrived at Gulfport on the morning of the 23d ultimo, and upon inquiring for Doctor Rohmer, the acting assistant surgeon accredited to that place, I learned that he had been a resident of Bay St. Louis for at least two years, and had no practice whatever in Gulfport, nor did he ever visit the place.

The physicians practicing in Gulfport are four in number, including the county health officer, Dr. C. A. Sheely, who holds the largest practice of the town. Doctor Sheely informed me that the population of the city was about 4,000, and that the prevailing diseases were malaria and variola. The latter is among the negroes (there have been only 2 cases among whites), has existed for about two months, and is now apparently abating.

I saw in company with Doctor Sheely some 20 cases of this disease in negroes in the isolation camp established by the county. I also saw 2 cases among the better class of whites, and these were not isolated nor guarded in any way, nor was the house in which they were sick placarded.

Smallpox, judging from the number of recently pitted faces seen in the streets, has been epidemic among the negroes of Gulfport for some time, but I understand its mortality has been nil.

The disease has not been properly taken in hand, owing, I was informed by Doctor Sheely, to lack of funds in the county treasury.

An attempt to disinfect all negro premises known to have harbored a case was made (though I do not think the disinfection was efficient), and recently the isolation camp above mentioned, in the woods back of the town, was opened.

Vaccination has probably been quite general in the last week or so, and most of the unpitted blacks met on the streets showed sore arms.

There seems almost complete indifference to the presence of the disease in Gulfport itself, all the apprehension and fear being felt in the other coast towns, notably Biloxi.

I advised Doctor Sheely, in view of the manifest impossibility of doing proper disinfection and isolating all cases with the means which he said were available, to bend all his energies to thorough vaccination of the community. This, he stated, he would do and would appoint the other physicians of the town as vaccinators.

Gulfport has an important and growing maritime and inland commerce, and is, in my opinion, one of the most exposed towns to infection along the Gulf coast.

The acting assistant surgeon stationed here should be a constant resident and a man in practice in the town. It is manifestly impossible for a nonresident physician to keep in touch with the health conditions of the place, and for that reason I telegraphed the Bureau recommending that Doctor Rohmer's services be dispensed with and that Doctor Sheely be appointed in his stead.

While in Gulfport I visited President Jones, of the Gulf and Ship Island Railroad, and discussed with him the maritime quarantine protection of Gulfport and the national quarantine laws and regulations.

*Handsborough.*—Acting Assistant Surgeon Harry, of Handsborough, was found in Gulfport, where I understand his business as manager of a canning factory keeps him most of the time. He reported the health of Handsborough and Mississippi City as excellent; no febrile or gastric case in either place.

Doctor Harry informed me that last season he isolated, treated, and buried within two hours after death an undoubted case of yellow fever, which had come from New Orleans on an excursion train. This information was volunteered by the doctor in response to my mentioning to him the necessity for prompt and proper measures with first cases.

*Biloxi.*—I arrived in Biloxi at 7 p. m. of the 23d ultimo, and visited Acting Assistant Surgeon Bolton the following morning. Doctor Bolton reports the health of his district as good, with only a few cases of malarial fever prevailing. His principal fear for Biloxi at this time is smallpox from Gulfport. There is no school vaccination law extant in the city of Biloxi or its county, though Doctor Bolton informed me there would be one passed at the next meeting of the county supervisors, and that he would endeavor to go further even and have a compulsory law for all classes of inhabitants enacted.

Doctor Bolton is the only officer on the coast who is provided with blanks for reporting mortality statistics and he stated he expected to forward the Bureau a weekly report.



I visited the Ship Island Quarantine Station on the 24th and 25th ultimo, and shall make the report of this inspection the subject of another communication.

*Ocean Springs.*—Acting Assistant Surgeon Bailey was seen at his residence during the afternoon of the 24th ultimo. The doctor stated the population of Ocean Springs was 1,200 to 1,500; that there was no floating population to speak of, and that the prevailing diseases were malarial and grippal. He was impressed with the necessity for a careful lookout for possible first cases and their proper isolation.

*Scranton.*—Acting Assistant Surgeon Kell stated that the population of Scranton was about 3,000, with a large floating element. The prevailing diseases were malarial and diarrheal. The former were always present, he said. There had been no disease of a suspicious nature in the locality.

*Pascagoula.*—The appointee for Pascagoula, Doctor Duke, is also in charge of the quarantine boarding station at that place.

Doctor Duke informed me that the population of Pascagoula was about 750, with no floating population, and that the place was healthy, with no sickness at the present time.

Pascagoula is practically one with Scranton, though I was informed that malaria does not prevail here to anything like the extent that it does in Scranton.

At Moss Point, an adjacent town to Scranton-Pascagoula, Doctor Duke informed me that malaria prevailed extensively during the summer.

The inspection of the Pascagoula quarantine will form the subject of a separate communication.

I rejoined my station on the night of the 27th ultimo.

Respectfully,

T. F. RICHARDSON,  
*Assistant Surgeon.*

(Through medical officer in command.)

Respectfully forwarded.

C. P. WERTENBAKER,  
*Passed Assistant Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*New Orleans, La., July 13, 1903.*

SIR: Replying to Bureau letter of 10th instant, I have the honor to give herewith a summary of the work done by me up to and including June 30, 1903, along the Mississippi coast in connection with my special detail.

One inspection only had been made to the date above mentioned. This included the towns of Bay St. Louis, Pass Christian, Delisle, Longbeach, Gulfport, Hanksboro, Biloxi, Ocean Springs, Scranton, Pascagoula, and the national quarantines at Ship Island and Pascagoula.

Acting assistant surgeons were found on duty at all of the towns mentioned except Delisle and Gulfport. The name of a local physician at each of these places was submitted by me to the Bureau with the recommendation that they be appointed for duty in their respective towns.

No disease of a suspicious character was seen by me or reported to me by the local appointee or practitioners. The general health of the entire coast was considered excellent.

The necessity for constant vigilance and the early recognition and prompt and proper treatment of possible first cases was impressed upon each of the acting assistants.

The inspections of Ship Island and Pascagoula quarantines were informal in character. At the first-named station a large amount of unserviceable property was inspected and condemned by me.

Respectfully,

T. F. RICHARDSON,  
*Assistant Surgeon.*

(Through medical officer in command.)

Respectfully forwarded.

C. P. WERTENBAKER,  
*Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



STATE HEALTH AND QUARANTINE OFFICERS NOTIFIED OF YELLOW FEVER  
IN FOREIGN PORTS.

During the active quarantine season all important information received as to the prevalence of yellow fever in foreign ports and liable to become a source of danger to ports along our coast was immediately repeated to State health officers and quarantine officers concerned.

## SMALLPOX IN THE UNITED STATES.

Reports to this Bureau, published weekly in the Public Health Reports, in accordance with the act of Congress approved February 15, 1893, show the continued prevalence of this disease in a very mild form in nearly every State and Territory of the Union. These weekly health reports are mailed to every State and local health officer as a valuable source of information and help in their sanitary work.

In a previous portion of this report, under the heading "Division of sanitary reports and statistics," has been shown the number of States and Territories in which smallpox prevailed, giving the number of cases and deaths in each, so far as the same have been reported to the Bureau.

## ASSISTANCE RENDERED STATE HEALTH AUTHORITIES.

In accordance with the established custom of the Service aid has been rendered during the past year to various State and local boards upon their request, both in the diagnosing and in the suppression of smallpox in several States.

Besides the entry by waterways, the land approaches to the border States have been guarded against the admission of this disease.

## MAINE.

In October, 1902, the health authorities of the State of Maine received notice that smallpox was quite prevalent in the province bordering the northwest boundary of the State; that this disease was propagated in the lumbering camps, practically without restraint by isolation or vaccination.

The State authorities immediately placed inspectors at exposed points, but on account of the difficulties encountered, smallpox was introduced into a considerable number of camps in the Jackman region by men coming across unguarded trails. The disease spread to lumber camps upon the North Penobscot, the Seven Islands, and the upper St. John's region. In January of this year the disease appeared at Van Buren and Presque Isle and the so-called Madawaska region above Fort Kent. In February an experienced officer of this Service was detailed to confer with the officials of the State board of health as to what aid was desired in the way of assistance from this Service under its regulations. This officer made an inspection at necessary points, including roadways across the ice upon Glazier Lake, where a vaccination and disinfection camp was established. From this period until June about 300 returning lumbermen were intercepted and 200 vaccinated. Preventive measures were also instituted in the vicinity of Lowelltown, Me., and other places.



## REPORT OF SURG. P. C. KALLOCH.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Portland Quarantine, Portland, Me., July 28, 1903.*

SIR: In compliance with Bureau letter of the 10th instant, I have the honor to make a report of the operations of the Service under my direction for the prevention and suppression of smallpox in the State of Maine to June 30, 1903.

I will first give the history of the epidemic, which is kindly furnished by Dr. A. G. Young, secretary of the State board, as follows:

"In the latter part of October, 1902, the secretary of the State board of health of Maine received a notification that smallpox was quite prevalent in the counties of the Province of Quebec upon the northwest boundary of the State of Maine, just across from Jackman. It was reported that there had been 28 cases of smallpox in one lumber camp across the line; that the local provincial authorities had quarantined the camp, but that the men had broken quarantine and gone to their homes. The State board immediately put a medical inspector on the old Canadian road which comes down from this part of the Province through the State of Maine by the way of Jackman, on the Canadian Pacific Railroad. Arrangements were made with a hotel keeper at the line so that all men coming across the line seeking employment in the lumber camps were stripped, given a disinfecting bath, put to bed, and their clothing and bundles disinfected. The men were vaccinated and in due time received their disinfected clothing, were presented with a certificate showing what had been done with them, and allowed to proceed on their way. Of the hundreds of men thus treated at this inspection station not one subsequently came down with smallpox, and not one communicated smallpox to the crews of any of the lumber camps.

"In spite of this work, however, smallpox was introduced into a considerable number of lumber camps in the Jackman region by men who had come across on various trails that could not be guarded. The policy pursued by the inspectors of the State board of health when smallpox was reported in a lumber camp was to get there as soon as possible, to remove the infectious person or persons from the camp, to isolate them in a small, special camp built for the purpose, to vaccinate the remaining men of the crew, and to disinfect the camp as thoroughly as it was possible to do such work under such disadvantageous conditions. A smallpox hospital was established near Jackman and all smallpox patients found in lumber camps were removed to this isolation hospital unless the distance from the hospital was so great as to make this impracticable.

"Circular letters were sent early to the lumbermen asking their cooperation, advising them to employ no Canadians in their camps who had not presented themselves at the inspection station and received a certificate of disinfection and of vaccination, and not to receive into their camps transient or unknown men, but to build a small special camp which might be used for lodging unvouched-for wayfarers and which might be used also for the isolation of any of the members of their crews who might have suspicious symptoms.

"The smallpox, which at first appeared to be more prevalent in the part of the Province of Quebec opposite to the Jackman region, rapidly spread southerly in the direction of Megantic and northwardly up along the northwest boundary, so that successively lumber camps farther north in the State of Maine were infected from across the line.

"December 12 a telegram was received by the secretary of the State board of health saying that smallpox had broken out in lumber camps on the north branch of the Penobscot, camps in which there were altogether about 500 men employed. A telegram was sent to Doctor Nichols, chief inspector for the State board of health, to attend to the matter. He took with him an experienced nurse, disinfectants, vaccine, etc., found 3 cases of smallpox, isolated them, vaccinated the exposed persons, left the cases in charge of the nurse, and returned. No other cases occurred in those camps. December 26 it was learned that smallpox existed in the Seven Islands region on the upper waters of the St. John River, still farther north. Doctor Nichols was sent to Fort Kent, thence up the river by team, a three days' journey. He found that smallpox had existed for some time and counted up 58 cases in various camps, many of them widely distant from each other. Fixing them up as well as possible, he returned to Fort Kent for further supplies.

"Dr. E. T. Flint was then sent to take charge of the various outbreaks in the Seven Islands region and remained there until the middle of February, when the outbreak was cleared up with the exception of one man, who was left in charge of a Canadian physician to disinfect and to release from quarantine.



"January 5, 10 cases of smallpox and many exposures were reported in Van Buren. This outbreak was speedily stamped out by the health officer of the local board of health with the aid and advice of the inspector of the State board. About the same time a serious outbreak of smallpox was reported in Presque Isle and an investigation made by the State board of health showed that smallpox had existed for some months in the five towns northwest of Presque Isle, and that many lumber camps still farther west and north, particularly along the newly opened railway from Ashland to Fort Kent, had been infected. In one of these towns, at least, it was found that as many as 100 houses had been infected. The job of disinfecting in the dead of winter and much of the time at zero weather was rather a discouraging prospect. The secretary of the State board of health met through previous arrangement the local boards of health in the village of Presque Isle and arrangements were there made for the work of disinfection. Each town was to build a disinfecting cabinet for formaldehyde disinfection, to be placed in a portable protective shed, heated with a wood-burning stove. The door of the disinfecting cabinet opened to the outer air, but on the other three sides the disinfecting cabinet was surrounded by warm air. Each town was further required to furnish two good, intelligent men to constitute a disinfecting gang. On the part of the State board of health a skilled disinfecter was to be sent to instruct successively crew after crew and to work with them until the work of disinfection was well under way. Good and efficient work was done by these local boards of health, and in a comparatively short space of time the outbreaks in these towns were well under control.

"The most serious problem, however, has been the control of smallpox in the so-called Madawaska region, which extends from above Fort Kent to below Van Buren along the St. John River, settled almost exclusively by the French descendants of the refugees from Arcadia. Here outbreak after outbreak has been stamped out with surprising rapidity, considering the unfavorable circumstances, only to be followed by new outbreaks in the same towns and plantations, or elsewhere. The infection which has started many of these outbreaks has been imported from that part of the Madawaska settlement across the St. John River in the Province of New Brunswick, and many have been started by persons who have returned to their homes from infected lumber camps and river drives."

On February 15, in accordance with a telegram received from the Surgeon-General, I called upon Dr. Charles D. Smith, president, and Dr. A. G. Young, secretary of the State board of health, and consulted with them as to what was desired in the way of assistance from the Service. It was thought best to visit some points in the northern part of the State and to establish inspectors and disinfecting camps at the points where lumbermen were passing on their return from lumber camps in northern Maine and southern Canada. In company with Doctor Young I visited Millinocket and Ashland, and with Doctor Nichols, representing the State board, I visited Fort Kent and Connors, New Brunswick. At the latter place we met Dr. E. Bayard Fisher, secretary of the provincial board of health, and he consented to establish a camp on the Temiscouata Railroad, a few miles from the Maine border.

This railroad and a "tote road," which crossed Glasier Lake, were the two ways by which lumbermen returned to this section of the State from the lumber camps, some of which were known to be infected with smallpox. A camp was therefore established at Glasier Lake, on the Canadian side, by the Service, under the direction of Acting Asst. Surg. Luther Mason, assisted by two helpers.

A small building was erected for the isolation of any cases of smallpox which might be found, and the clothing of passing lumbermen was disinfected with formaldehyde. Some trouble was experienced in vaccinating, as many of the men refused to have it done. One party of 30, unusually lacking in respect for law or custom, passed by without submitting to inspection.

The men were detained long enough for inspection and the disinfection of their effects, board and lodging being supplied by a local resident. The camp was ready for work on March 12, and during the first three days Doctor Mason reported the inspection and disinfection of 53 men. Most of these refused vaccination, and as they lived in isolated parts of Maine and Canada, where there were no local boards of health, there was no way of inflicting a penalty.

The subsequent reports show that there were about 300 men detained and 200 vaccinated at this camp before June 1, at which date the camp was discontinued, Doctor Mason being transferred to Fort Kent, Me., where he has been engaged in disinfecting houses and visiting suspicious cases.

The lack of rain throughout this region in the early summer interfered seriously with log driving, so that communication between the camps and towns was quite irregular, and the necessity for watchfulness and sanitary work continued beyond the end of the fiscal year.



On or about January 1 Acting Asst. Surg. J. M. Boothby began the inspection of persons passing in the vicinity of Lowelltown, Me., near the western border of the State. As there was no provision for disinfection, the persons who were regarded as suspicious were turned back.

On April 6 Dr. Estes Nichols was appointed inspector at Sandy Bay Plantation, this being one of the points of entry from the lumber camps in eastern Quebec. He was given two helpers and was provided with the means of disinfecting clothing. During the time up to June 30, 1,138 persons passed the camp and two cases of smallpox were treated.

Respectfully,

P. C. KALLOCH,  
*Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### MORGANTOWN, W. VA.

Early in March reports were received at the Bureau as to the prevalence of smallpox in Morgantown, W. Va. Following the usual policy of the Bureau, advisory aid and assistance were rendered, upon the request of the proper State health authority, as the following correspondence will show:

[Telegrams.]

WASHINGTON, March 5, 1903.

Dr. A. R. BARBEE,

*Secretary State Board Health, Point Pleasant, W. Va.:*

Have request from Representative Dayton to send expert to Morgantown, but as customary wish to do so with a thorough understanding with you as representing State board. Please send request. Matter believed to be urgent. Will send experienced officer.

WYMAN, *Surgeon-General.*

POINT PLEASANT, W. VA., March 5, 1903.

WALTER WYMAN,

*Surgeon-General, Washington, D. C.:*

Will appreciate your sending expert to Morgantown. Would like report.

A. R. BARBEE.

WASHINGTON, March 5, 1903.

CARTER, *Marine Hospital, Baltimore, Md.:*

Have request from Representative Dayton for an expert at Morgantown, W. Va. One thousand students in university. Smallpox diagnosis doubted and called chickenpox. Have wired Doctor Barbee, secretary, at Point Pleasant, W. Va., for request for expert. Expect reply. Proceed as soon as possible to Morgantown, wire arrival, and await orders.

WYMAN.

WASHINGTON, March 6, 1903.

Dr. S. N. MYERS, *President State Board Health,*

*Martinsburg, W. Va.:*

Surg. H. R. Carter will be in Morgantown to-day and will consult Doctor Warren. By direction of the Surgeon-General:

WHITE, *Assistant Surgeon-General.*

[Letter.]

WASHINGTON, March 6, 1903.

Dr. A. R. BARBEE,

*Secretary State Board of Health, Point Pleasant, W. Va.*

SIR: Referring to your telegram of the 5th instant, stating that you would appreciate the sending of an expert to Morgantown, and would like a report, I have to inform you that Surg. H. R. Carter, of this Service, will be in Morgantown to-day.



He has been directed to confer with the local health officer and investigate the cases under suspicion. A copy of his report will be sent you when it is received by the Bureau.

By direction of the Surgeon-General:

J. H. WHITE,  
*Assistant Surgeon-General.*

[Telegram.]

WASHINGTON, March 6, 1903.

Surg. H. R. CARTER,

*Public Health and Marine-Hospital Service, Morgantown, W. Va.:*

Have received request for your services as diagnostician from both State board health and Congressman Dayton. See Health Officer E. McL. Warren, and after conference with him investigate matter in hand. Wire Bureau when investigation is complete for return orders.

By direction of Surgeon-General:

WHITE,  
*Assistant Surgeon-General.*

#### REPORT OF SURGEON CARTER.

BALTIMORE, MD., March 11, 1903.

SIR: As directed by Bureau telegram of March 5, 1903, I proceeded by the mid-night train to Morgantown, W. Va. Arriving there, after receipt of instructions from the Bureau, I held a conference that night with the board of health and the health officer, and the next morning, in company with the latter, visited 20 patients, in 13 houses, suffering, or having recently suffered, from an eruptive disease. Of these, 3 were varicella. Of the remainder, 9 were certainly smallpox, and the 8 others, judging from their history and conditions of occurrence, were with reasonable certainty the same disease.

This smallpox has been in Morgantown since early January or late December. There had been the usual disagreement as to the diagnosis of the disease, and consequently no efficient steps have been taken to check its spread. I advised with the health officer on measures for the suppression of the disease. I especially urged that, in spite of the existence of varicella, any eruptive disorder should be guarded by vaccination and isolation as if it were certainly smallpox.

Respectfully,

H. R. CARTER, *Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### LUMPKIN, GA.

Surg. W. P. McIntosh reports from Mobile, Ala., April 7, as follows:

In obedience to telegraphic orders of the 4th and 5th instants, to "proceed to Lumpkin, Ga., as expert to decide diagnosis in suspected case of smallpox," I left Mobile at 12 o'clock (midnight) April 5, arriving at Lumpkin the following morning. I visited the office of the mayor, who immediately called a meeting of the board of health. After ascertaining the condition of affairs, I visited, in company with the president of the board of health, Doctor Carter, several of the suspected cases. The first case I saw was a negro, suffering from a severe attack of semiconfluent smallpox, the eruption on face and parts of body being confluent, the conjunctiva badly affected, the patient suffering from secondary fever at time of visit. The wife of this man had just recovered from a mild attack, and two or three children were suffering from a mild form of the disease. In only one child was the eruption severe and umbilicated. There were a number of negroes in the yard and near the house, and no doubt many cases will follow. I saw only one case in a white man, and he was convalescent. I was informed that the wife of a prominent merchant was very ill with confluent smallpox, but I did not see her. The cases are either in the city limits or in suburbs.

After seeing the cases I again visited the mayor's office. The meeting of the board of health was reconvened and a meeting of the council also called. I was requested



to make a short talk and did so, pointing out the necessity of immediate vaccination of everyone, also the advisability of opening a pesthouse or smallpox hospital, the isolation of the sick, and quarantine of the infected part of the town until all had been vaccinated and thoroughly disinfected with moist sulphur dioxide, scrubbing with bichloride solution, 1 to 800; whitewashing of cabins and houses, boiling in water of all clothes and bedclothes, emptying mattresses, burning the straw and boiling the ticking, all this to be followed by a thorough airing and exposing of articles and habitations to sunlight, the premises to be cleaned up generally and useless articles burned. The gentlemen present were very earnest in their support of these measures. It was decided to carry out compulsory vaccination and a sufficient supply of vaccine was ordered by telegraph. Steps were taken looking to the establishment of a smallpox hospital, the placing of an efficient guard around the infected area, and the thorough cleaning and disinfection of infected or suspected premises.

I was asked concerning the schools, in which a few cases had occurred about three weeks ago. I advised a proper vaccination of all pupils and the immediate isolation of infected children should infection occur, but I do not think it necessary to close the schools. The postmaster asked me regarding the mails, particularly regarding the writing of letters by persons suffering from the disease, and related the case of a man who had come into the office with the eruption all over his hands and had written a letter, used blotting pad, etc. I explained that all infected people would be quarantined. I also requested the health officers to disinfect all mail coming from infected places, and explained to the postmaster how to clip the ends of envelopes and drop in a few drops of formalin, then place the letters in a cigar box with sponge saturated with formalin, seal, and keep in a warm place twelve hours. The county judge and the ordinary were present a part of the time during the meeting and were very earnest in their participation in the proceedings and offers of assistance.

In the afternoon I visited the cases a second time in company with a number of the local physicians, pointing out the characteristics of the disease.

#### SMALLPOX PATIENTS RECEIVED AT ANGEL ISLAND, CALIFORNIA, FROM NAVAL TRAINING STATION ON GOAT ISLAND, CALIFORNIA.

The Service in one instance cared for smallpox patients from the naval training station, Goat Island, California, as shown by letter from the medical officer in command of San Francisco Quarantine Station, Angel Island, California, upon this subject.

[Letters.]

SAN FRANCISCO QUARANTINE,  
*Angel Island, California, February 26, 1903.*

SIR: I have the honor to inform you that at the request of the commandant United States naval training station, Goat Island, California, I have admitted to the isolation hospital at this station 2 cases of smallpox, together with 2 contacts who will take care of the patients during their detention at this place.

Approval of my action in this case is respectfully requested.

Respectfully,

HUGH S. CUMMING, *Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, March 5, 1903.*

SIR: Referring to your letter of the 26th ultimo, stating that you have, at the request of the commandant of the United States naval training station, Goat Island, California, admitted to the isolation hospital at your station 2 cases of smallpox, together with 2 contacts who will take care of the patients during their detention, you are informed that your action is approved.

Respectfully,

W. WYMAN,  
*Surgeon-General.*

MEDICAL OFFICER IN COMMAND, P. H. & M. H. S.,  
*San Francisco Quarantine, Angel Island, Cal.*



## AID RENDERED POSTAL SERVICE.

During the year at several points, where smallpox prevailed, it became necessary for the postmasters to fumigate the post-offices and mails in order to expedite the service.

Small bills for the actual disinfecting material used were received from the Postmaster-General, and the amounts paid by this Service.

The following letter will show the attitude of the Service in this regard:

[Letter.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, April 2, 1903.*

SIR: Referring to your letter of the 6th ultimo, making inquiry as to the proper method of defraying the necessary expense of fumigation of post-office premises and mail matter, I have to inform you that this Bureau has adopted the custom of defraying the expense incident to providing disinfecting materials, such as sulphur and formaldehyde, in cases where the local board of health or other competent authority has decided that disinfection is necessary, but has not undertaken to pay for either labor or apparatus involved in such disinfection.

This custom has now been in vogue for several years.

Respectfully,

WALTER WYMAN, *Surgeon-General.*

FIRST ASSISTANT POSTMASTER-GENERAL,  
*Post-Office Department, Washington, D. C.*

## LEPROSY.

Since the presentation of the report of the commission of medical officers of the Service relative to the prevalence of this disease in the United States no developments have occurred, nor is there special apprehension felt as to its introduction from other countries, or from its existence in certain dependencies of the United States, where it appears to be under suitable supervision.

## REVISION OF QUARANTINE REGULATIONS.

Owing to the advances made in the scientific knowledge of the origin and propagation of certain quarantinable diseases, the quarantine regulations of the United States Treasury Department were modified in the interest of commerce with due regard to safety.

These regulations were approved and a new edition issued April 1, 1903.

## THE NATIONAL QUARANTINE STATIONS.

The operation of the 37 quarantine disinfection and inspection stations was continued and reenforced during the fiscal year. The advances in the scientific knowledge of the origin and propagation of quarantinable disease have been promptly made effective in the interests of commerce, consistent with the safety of health of the people of the United States.

All the portals of entry are now guarded by these national stations, together with the several State and municipal inspection and disinfection stations, with which harmonious relations have been maintained.

During the year 5,922 vessels were inspected before entering at these national stations, and 352 vessels disinfected.



[Inclosure.]



## REEDY ISLAND.

[Reedy Island Quarantine; post-office address, via Port Penn, Del.]

[Report of Passed Asst. Surg. H. W. Wickes. Assumed command under official orders of March 12, 1903.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Reedy Island Quarantine, via Port Penn, Del., July 30, 1903.*

SIR: As directed in Bureau letter of 27th instant, I have the honor to submit herewith the following report of transactions at this station for the fiscal year 1902-3:

Vessels spoken and passed .....	35
Steamers inspected and passed .....	932
Steamers disinfected .....	2
Sailing vessels inspected and passed .....	141
Sailing vessels disinfected .....	1
Crew on steamers inspected .....	36,100
Crew on sailing vessels inspected .....	2,054
Passengers on steamers inspected .....	32,816
Passengers on sailing vessels inspected .....	2

Respectfully,

H. W. WICKES, *Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

(Through medical officer in command of national quarantine service on Delaware Bay and River.)

[Inclosure.]

*Transactions at Reedy Island National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessel spoken and passed .....						1	3	1	5	7	7	11	35
Steamers inspected and passed ...	94	85	86	71	69	85	55	62	71	76	86	92	932
Steamers disinfected .....										2			2
Sailing vessels inspected and passed .....	18	24	15	11	15	8	6	5	6	6	9	18	141
Sailing vessels disinfected .....									1				1
Crew on steamers .....	3,295	3,045	3,235	3,847	2,461	2,695	2,349	2,425	2,864	3,081	3,289	3,515	36,100
Crew on sailing vessels .....	190	313	235	124	249	136	136	89	119	79	148	236	2,054
Passengers on steamers .....	2,659	2,097	2,577	2,704	1,234	1,352	831	2,560	3,217	6,007	4,472	3,106	32,816
Passengers on sailing vessels ...	2												2

## DELAWARE BREAKWATER.

[Delaware Breakwater Quarantine; post-office address, via Lewes, Del.]

[Report of the medical officer in command, Passed Asst. and Surg. C. H. Lavinder. Assumed command under official orders of March 8, 1901.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Delaware Breakwater, Delaware, July 31, 1903.*

SIR: In connection with the tabulated statistical report of the quarantine transactions of this station for the fiscal year ending June 30, 1903, I have the honor to submit below fuller details:

There were boarded during the year a total of 149 vessels of all classes. This is an increase over the total number boarded last year. It is however a decided decrease in the number boarded here three or four years ago. The shipping at this port has greatly decreased during this time, from what causes I am unable to say.



During the year the following vessels were held in quarantine and were disposed of as follows:

British steamer *Allanton* with sugar, from Java ports, arrived September 30, 1902, with history of a death from cholera while in Java. Held in quarantine for a few hours and released on Bureau order.

Russian steamer *Baron Driesen* with sugar, from Java ports via Suez Canal, arrived November 2, 1902, with the body of a dead seaman on board, the history of whose illness led to a suspicion of plague. The vessel was quarantined, the body removed, and an autopsy performed. Specimens taken were examined by Assistant Surgeon-General Geddings on the station, and were finally taken by him to the Hygienic Laboratory for animal inoculation. After being held for several days the vessel was released, under Bureau order, without pratique, and the quarantine officer of her port of destination was informed of the facts in the case. During her stay here a part of her living compartments were disinfected twice by formaldehyde gas and washing down with bichloride solution.

American schooner *Millie R. Bohanon* with coal, from Philadelphia, arrived March 16, 1903, with 1 case of smallpox on board. The case was removed and the vessel with all hands remanded to Reedy Island for treatment.

British steamer *Riverdale*, with pig iron, from Middlesboro, arrived March 27, 1903, with 2 cases of smallpox. The cases were removed, and later all on board (30) were transferred ashore, bathed, all effects disinfected, vaccinated, and held for fourteen days. No fresh cases developed. A fresh crew were put aboard the vessel and she was towed to Reedy Island for treatment.

British steamer *Tonawanda*, in water ballast, from Manchester, arrived April 1, 1903, with 1 case of smallpox on board. The case with his attendant (the only man on board regarded as a contact) was removed, and the vessel remanded to Reedy Island for treatment.

In addition to this, the British steamer *Milton*, with sugar, from Alexandria, was passed without pratique and reported to the Bureau. She was granted pratique by Bureau order January 21, 1903. A case of eruptive disease was removed from fishing schooner *Victor*, from Gloucester, on April 15, 1903; the case proved to be one of general dermatitis. The Italian bark *Beech Holm*, with sugar from Callao, refused pratique, and reported to the commanding officer at Philadelphia; granted pratique by his order June 7, 1903. Dutch bark *Amsterdam*, from Java ports, with sugar, arrived June 10, 1903, with several of her crew sick. Held a few hours for observation of sick. Diagnosis made of beriberi and vessel released.

Respectfully,

C. H. LAVINDER,  
Passed Assistant Surgeon.

The SURGEON-GENERAL,  
Public Health and Marine-Hospital Service.

(Through medical officer in command National Quarantine Service, Delaware Bay and River.)

[Inclosure.]

*Transactions at the Delaware Breakwater National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	1	0	0	0	0	0	0	0	0	0	0	0	1
Steamers inspected and passed....	5	8	15	17	13	1	3	1	5	5	6	7	86
Steamers disinfected.....	0	0	0	0	<sup>b</sup> 1	0	0	0	<sup>a</sup> 1	<sup>a</sup> 1	0	0	3
Sailing vessels inspected and passed.....	2	8	3	7	4	6	4	1	7	4	5	7	58
Sailing vessels disinfected.....	0	0	0	0	0	0	0	0	<sup>a</sup> 1	0	0	0	1
Crew on steamers.....	111	237	499	517	461	47	94	25	180	173	152	160	2,656
Crew on sailing vessels.....	23	110	74	166	137	123	58	19	159	68	85	131	1,153
Passengers on steamers.....	1	1	0	1	0	0	2	6	0	3	9	5	28
Passengers on sailing vessels.....	0	0	2	1	2	0	0	0	0	0	1	0	6

<sup>a</sup> Remanded to Reedy Island for disinfection.

<sup>b</sup> Partially disinfected.



## ALEXANDRIA.

[Report of Acting Asst. Surg. Arthur Snowden, in charge.]

*Transactions at the Alexandria (Va.) national quarantine station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....													
Steamers disinfected.....													
Sailing vessels inspected and passed.....	3	1	1		4		1			1	2	2	15
Sailing vessels disinfected.....													
Crew on steamers.....													
Crew on sailing vessels.....	23	6	6		33		9			8	11	15	111
Passengers on steamers.....													
Passengers on sailing vessels.....					3							1	4

## CAPE CHARLES.

[Cape Charles Quarantine; post-office address, via Fortress Monroe, Va.]

[Report of the medical officer in command, Asst. Surg. J. S. Boggess. Assumed command under official orders of November 21, 1902.]

CAPE CHARLES QUARANTINE,  
*Fortress Monroe, Va., July 29, 1903.*

SIR: Referring to Bureau letter of the 27th instant regarding the annual report of this station, I have the honor to state that 276 vessels of all descriptions came under the jurisdiction of this station, of which 32 were sailing vessels and 244 were steamers. Two steamers and 1 schooner were spoken and passed, while 240 steamers and 30 sailing vessels were inspected and passed. Two steamers and 1 sailing vessel were fumigated.

Twelve thousand eight hundred and eighty-eight members of crews were inspected, of which 11,832 were on steamers and 1,056 on sailing vessels. One thousand two hundred and twenty-four passengers on steamers were inspected, while none were on sailing vessels. No patients with quarantinable disease were treated at the isolation hospital at Fishermans Island.

Respectfully,

JOHN S. BOGGESS,  
*Assistant Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Transactions at the Cape Charles National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....				2	1								3
Steamers inspected and passed.....	19	32	35	27	14	18	13	11	12	15	20	24	240
Steamers disinfected.....	1											1	2
Sailing vessels inspected and passed.....	1	3	3		4	1	3	2	1	1	6	5	30
Sailing vessels disinfected.....												1	1
Crew on steamers.....	705	960	1,484	1,104	790	553	884	410	1,274	1,239	1,185	1,244	11,832
Crew on sailing vessels.....	11	43	23	4	350	8	45	37	29	7	419	80	1,056
Passengers on steamers.....	206	65	57	39	52	27	8	50	54	43	581	42	1,224
Passengers on sailing vessels.....	0	0	0	0	0	0	0	0	0	0	0	0	0



## CAPE FEAR.

[Cape Fear Quarantine; post-office address, via Southport, N. C.]

[Report of the medical officer in command, Asst. Surg. B. S. Warren. Assumed command under official orders of March 19, 1903.]

CAPE FEAR QUARANTINE STATION,  
*Southport, N. C., August 28, 1903.*

SIR: I have the honor to state that I assumed command of this station on April 3, 1903, relieving Asst. Surg. L. D. Fricks.

During the year 56 vessels were boarded, 51 were passed, and 5 disinfected. Sixteen were from the West Indies, 4 from South America, 8 from South Africa, 14 from Europe, 4 from Cuba, and 10 from domestic ports.

Of the 5 vessels disinfected 3 were from South Africa and 2 from South America.  
Respectfully,B. S. WARREN, *Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Transactions at the Cape Fear National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	0	0	2	1	0	0	0	0	0	0	0	0	3
Steamers inspected and passed.....	0	2	6	6	3	3	0	2	0	0	0	3	25
Steamers disinfected.....	0	1	0	0	0	0	0	0	0	0	0	0	1
Sailing vessels inspected and passed.....	2	0	2	1	3	4	2	1	1	4	2	1	23
Sailing vessels disinfected.....	0	2	0	0	0	0	0	0	2	0	0	0	4
Crew on steamers.....	0	70	141	131	77	65	0	55	0	0	0	70	609
Crew on sailing vessels.....	19	10	13	12	30	29	11	13	32	37	14	15	235
Passengers on steamers.....	0	0	0	0	1	0	0	5	0	0	0	0	6
Passengers on sailing vessels.....	0	0	0	0	0	0	0	0	0	2	0	0	2

## SAVANNAH.

[Savannah Quarantine; post-office address, via Savannah, Ga.]

[Report of the medical officer in charge, Acting Asst. Surg. William J. Linley. Assumed charge under official orders of May 2, 1899.]

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Savannah Quarantine, Savannah Ga., August 1, 1903.*

SIR: In compliance with instructions received in Bureau letter dated July 27, 1903, I have the honor to submit the following report of transactions at this station for the fiscal year ended June 30, 1903:

One hundred and eighty-six steamships and 116 sailing vessels, carrying 6,805 seamen and 52 passengers, were boarded and inspected. One hundred and sixty-nine of the former were given pratique immediately after inspection, 7 held for disinfection, 1 held for two hours and 1 for four days and then released without disinfection, and 1 other held for fumigation, but departed without it, having received orders to sail for another port. Three of the steamships held for quarantine regulations were disinfected and detained for observation or instructions. One of these was held for a period of six days, 1 two days, and 1 four days.

The other 4 were simply fumigated to kill rats or mosquitoes and then released, 3



being held one day, and 1 two days. Eighty-nine sailing vessels were boarded at the station and 27 in Tybee Roads. Of the former, 58 were given pratique on inspection, 27 detained for disinfection, and 4 held from one to seven days before being released without disinfection. Nine of the 27 vessels boarded in the roads were given pratique on inspection, 5 of them subsequently passing up to Savannah and 4 putting to sea. The other 18 were held for either fumigation or disinfection. Twelve of these put to sea, and 6 passed up to Savannah after treatment at quarantine. Seven sailing vessels were disinfected and held for observation, and 26 were fumigated to kill rats or mosquitoes and then released, the average period of detention for the former being 6½ days and for the latter 2½ days.

*Transactions at the Savannah (Ga.) National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed.....	1	11	22	20	22	24	20	11	13	14	6	9	173
Steamers disinfected.....	0	1	2	2	0	1	0	0	1	0	0	0	7
Sailing vessels inspected and passed.....	6	4	2	21	9	11	6	5	4	4	5	6	83
Sailing vessels disinfected.....	6	2	3	1	3	1	1	2	2	6	5	1	33
Crew on steamers.....	31	318	695	663	613	752	542	326	379	391	182	495	5,387
Crew on sailing vessels.....	143	81	62	288	151	142	94	67	79	110	111	90	1,418
Passengers on steamers.....	0	1	10	3	1	1	4	4	0	3	3	2	32
Passengers on sailing vessels.....	0	2	0	4	2	0	1	4	4	0	3	0	20

NOTE.—Under the 83 "sailing vessels inspected and passed" in the above table, are included 12 which arrived in Tybee Roads for orders and were held under observation, but not disinfected, having received orders for some other port; also 4 other vessels detained for observation, but not disinfected.

*Nationality and class of vessels boarded during the year.*

	British.	Swedish.	Norwegian.	Danish.	Russian.	Italian.	Belgian.	Uruguayan.	German.	Austrian.	Spanish.	Dutch.	Finnish.	American.	Total.
Steamships.....	118	1	3	6	0	1	12	0	14	13	3	9	0	0	180
Ships.....	2	0	4	0	0	1	0	0	0	0	0	0	0	0	7
Barks.....	2	9	38	0	3	12	0	1	9	0	1	0	1	3	79
Barkentines.....	1	0	1	0	1	0	0	0	0	0	0	0	0	2	5
Brigs.....	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Brigantines.....	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Schooners.....	10	0	0	0	0	0	0	0	0	0	0	0	0	13	23
Total.....	134	10	46	6	4	15	12	1	23	13	4	9	1	18	296

*Treatment of vessels arriving during the year.*

STEAMSHIPS.

Inspected and passed.....	169
Held for disinfection.....	7
Held for fumigation, but put to sea.....	1

German steamship *Coblentz* held one day for instructions and passed.

Brig steamship *Darlington* held two hours pending diagnosis case of malaria and released.

Brig steamship *Whitgift* held four days pending diagnosis case of pneumonia and then released.



## SAILING VESSELS.

Inspected and passed .....	58
Held for disinfection .....	27
Tybee for orders:	
Inspected and passed—	
Put to sea .....	4
Passed up to Savannah .....	5
Held under observation—	
Put to sea .....	12
Passed up to Savannah after treatment .....	6

Russian barkentine *Latwiga* held seven days pending diagnosis case of enteric fever and released.

American schooner *J. H. Buttrick*, case of malaria removed and vessel proceeded to Brunswick without pratique.

Norwegian bark *Smart*, case of inflammation of lymphatic glands of groin, removed and vessel proceeded to Glasgow.

American schooner *Abbie Bowker*, provisioned in quarantine and proceeded to Philadelphia.

*Countries from which detained vessels came.*

South Africa .....	20	East Indies via New York .....	1
Cuba via Philadelphia .....	1	French Guiana .....	1
Venezuela .....	1	Brazil .....	1
Uruguay .....	1	West Indies .....	13
East Indies via Liverpool .....	1		

*Cargoes and ballast brought by detained vessels.*

Salt and general .....	1	Sand and stone .....	16
Molasses .....	1	Water .....	6
Light .....	8	Stone .....	2
Sand .....	5	Iron slag .....	1

No infected vessels were treated during the year. Two thousand three hundred and seventy-five tons of ballast were discharged.

The following cases of sickness were observed aboard vessels on arrival at quarantine:

Valvular disease of heart .....	1	Acute articular rheumatism .....	2
Enteritis .....	1	Myalgia .....	1
Malaria .....	5	Enteric fever .....	1
Enteralgia .....	1	Acute lobular pneumonia .....	1
Inflammation of lymphatic glands, groin .....	2	Suppurative arthritis kneejoint .....	1
Syphilis .....	2	Beriberi .....	1

Respectfully,

WM. J. LINLEY,  
*Acting Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## SOUTH ATLANTIC.

[South Atlantic Quarantine; post-office address, via Inverness, Ga.]

[Report of the medical officer in command, Asst. Surg. G. M. Corput. Assumed command under official orders of November 25, 1901.]

SOUTH ATLANTIC QUARANTINE, VIA INVERNESS, GA., July 1, 1903.

SIR: I have the honor to submit the following report of transactions at this station during the fiscal year ended June 30, 1903:

Two steamships, with a total tonnage of 7,327 tons, were disinfected and detained; 22 steamships, with a total tonnage of 45,452 tons, inspected and passed; 1 steamship spoken and passed. Eighteen sailing vessels, with a total tonnage of 17,098 tons, were inspected and passed; no sailing vessels disinfected during the year. No vessels were remanded here from other ports, and no sickness has occurred in quarantine during the year.



The health of officers and attendants has been exceptionally good. Two slight cases of malarial fever occurred among the attendants; in both cases disease was acquired ashore. The men recovered rapidly under ordinary treatment.

A rule requiring all attendants to report immediately any slight illness among them has been rigidly enforced, and has, in my opinion, done much good in maintaining the general health of the force to a high standard.

In conclusion, I have to respectfully report that relations with local and other health authorities have been, without exception, pleasant and harmonious.

A request for information concerning mosquitoes on vessels from foreign ports was received from the health officer of Louisiana, and was replied to through the Surgeon-General, Public Health and Marine-Hospital Service.

Many requests for permission to visit and camp on the reservation have been received, but as in my opinion the granting of such requests was not good quarantine practice, and would probably have established a bad precedent, they were refused.

Respectfully,

G. M. CORPUT, *Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Transactions at the South Atlantic National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....								1					1
Steamers inspected and passed....	1	1	1	3			2	3	3	1	1	6	22
Steamers disinfected.....	1		1										2
Sailing vessels inspected and passed.....					2	7	3	2	1		1	2	18
Sailing vessels disinfected.....													
Crew on steamers.....	53	23	51	85			47	62	83	24	33	153	604
Crew on sailing vessels.....					30	102	47	25	12		16	39	271
Passengers on steamers.....									2				2
Passengers on sailing vessels.....						1							1

#### BRUNSWICK.

[Brunswick Quarantine; post-office address, via Brunswick, Ga.]

[Report of medical officer in command, Asst. Surg. J. T. Burkhalter. Assumed command under official orders of July 18, 1902.]

BRUNSWICK QUARANTINE STATION, *July 30, 1903.*

SIR: I have the honor to acknowledge receipt of Bureau letter, dated July 27, with the inclosed copy of Bureau letter of May 11, and one blank statistical form letter.

In reference to the information that only the statistical form letter showing transactions at this station during the fiscal year ending June 30, 1903, was received, I would state that I made out in addition to this a complete report of transactions, as directed in Bureau letter of May 11, and directed the acting steward to attach the two securely together. I can not account for its loss, as a copy of the report appears in the copying book at this station.

I have the honor to transmit herewith the annual report of transactions of this station, together with the statistical form letter. In column of "Vessels spoken and passed" I have included also all vessels boarded and passed.

Respectfully,

JNO. T. BURKHALTER,  
*Assistant Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[Inclosures.]

*Transactions at Brunswick (Ga.) National Quarantine Station for the year ending June 30, 1903.*

The inclosed schedule shows that 22 vessels were spoken and passed, 20 steamers inspected and passed, 61 sailing vessels inspected and passed, and 22 sailing vessels disinfected.

In addition to these, two sailing vessels disinfected in Habana were held in quarantine to discharge their ballast. One sailing vessel from Buenos Ayres, bound for Sapelo, put into this port on account of storm, and was held subject to quarantine inspection at Sapelo. One sailing vessel from Savannah, bound north, met with a storm and arrived in quarantine with the captain and mate suffering with a severe attack of malarial fever. The American steamer *M. F. Plant* was held one day in quarantine to diagnose a case of fever, which proved to be malarial. She was from Jacksonville, Fla.

Sixteen steamers and 5 sailing vessels, coastwise, were spoken and passed, having arrived in the States from noninfected foreign ports. One sailing vessel from Ponce was passed on certificate of an officer of the Service.

Nationality of vessels disinfected: Norwegian, 9; Spanish, 6; Swedish, 3; British, 3; Portuguese, 1.

Ports from which they arrived: South African, 8; Cuban, 6; Brazilian, 8.

No vessel arrived at this station with a quarantinable disease aboard.

All vessels were examined to discover presence of mosquitoes, but without results.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total.
Vessels spoken and passed.....			1	2	3	2	1	2	7	1	2	1	22
Steamers inspected and passed.....	1	2	1	4	2	2	3	.....	1	2	1	1	20
Steamers disinfected.....													
Sailing vessels inspected and passed.....	8	.....	3	2	3	10	7	10	5	3	8	2	61
Sailing vessels disinfected.....	3	3	2	4	2	.....	.....	.....	1	.....	2	5	22
Crew on steamers..	28	41	27	107	75	66	67	28	22	65	22	25	573
Crew on sailing vessels.....	156	37	81	120	94	109	103	121	87	35	132	91	1,176
Passengers on steamers.....									2	12	.....	.....	14
Passengers on sailing vessels.....					3	.....	.....	2	2	2	6	.....	15

## TAMPA BAY.

[Tampa Bay Quarantine; post-office address, via Tampa, Fla.]

[Report of medical officer in command, Asst. Surg. C. C. Pierce; assumed command under official orders of November 7, 1901.]

TAMPA BAY QUARANTINE,  
Mullet Key, via Tampa, Fla., July 1, 1903.

SIR: I have the honor to inclose herewith the tabulated report of transactions of this station for the fiscal year ended June 30, 1903, as directed by circular letter of May 11, 1903: Steamers inspected and passed, 67; sailing vessels inspected and passed, 123; steamers disinfected, 9; sailing vessels disinfected, 17.

Eleven sailing vessels were required to discharge ballast and were afterwards disinfected, fumigated for rats, or mechanically cleaned, as the conditions required.

Comparing the number of steamers inspected and passed during this fiscal year with the number last year, viz, 108, shows a decrease of 41. This is not due to less commerce at this port, but to certain changes, both in the practice of the station and the character of the vessels.

During the fiscal year preceding this one the State authorities had charge of this station during the month of July, and required every foreign steamer entering coastwise from American ports to undergo a second inspection here, which practice was continued by this Service until the end of the closed quarantine season of 1902, when it was discontinued under proper authority.

Such inspection was unnecessary and caused considerable loss of time in case a vessel arrived just after dark and had to remain at anchor all night for inspection the next day.



The exporting of cattle to Cuba has been almost entirely discontinued, thus decreasing materially the number of vessels inspected and passed, a considerable portion of which were returning cattle vessels. The amount of phosphate sent out this year was 354,018 tons, being an increase of 10,543 tons over the preceding fiscal year.

During the fiscal year ended June 30, 1902, there entered this port a total of 459 registered vessels, of which 266 were inspected or quarantined at this station, thus showing that 58 per cent of all vessels entering were subjected to some quarantine restrictions during that year.

During the fiscal year just closed, on June 30, 1903, the total number of vessels entering up to June 27 was 474, an increase of 15 vessels over last year. The number of vessels subjected to quarantine restrictions during the year was 216, being 45½ per cent of all vessels entering.

The only case of quarantinable disease was one diagnosed mild yellow fever, taken from the British steamship *Aberfelday*, arriving December 27 from Tampico with one man sick. He was isolated ashore and his blood examined repeatedly, showing the absence of plasmodia. Recovery was prompt. The vessel was disinfected and released after five days' detention with all well on board.

On July 22 the German ship *Siam* arrived from Limerick, Ireland, with 800 tons of ballast. One member of the crew developed a mild case of enteric fever the second day after anchoring here. The water tanks in use were emptied, cleaned, and refilled. The vessel was disinfected on August 4, but on account of some legal trouble with charter, parties remained at anchor at the station until August 28, when pratique was given with all well on board, the case of enteric fever having recovered before that date.

The Norwegian bark *Pallas* arrived October 27, from Delagoa Bay, in ballast. One man had acute pulmonary tuberculosis, the diagnosis being confirmed by a bacteriological examination of his sputum. The vessel was disinfected, in accordance with Department circular, No. 15, of February 11, 1902, and also fumigated for rats.

On June 16 the British steamship *Elswick Manor*, from Vera Cruz, was disinfected and detained five days. This vessel was bound for Port Inglis, 100 miles north of here, at which place there is no health officer, as but few vessels load there. Loading is done from lighters at a distance of about 10 or 12 miles from shore. This was the first vessel disinfected at this station for ports other than those on Tampa Bay since the State transferred charge to the Treasury Department.

The only vessels arriving with cargo which were inspected were some small schooners with cedar logs from Cuban ports and those engaged in the fruit business from Honduras.

These vessels have been uniformly clean and from noninfected ports.

Respectfully,

CLAUDE C. PIERCE,  
Assistant Surgeon.

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Transactions at the Tampa Bay Quarantine, Mullet Key (Fla.), National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	7	9	1	1	0	0	0	0	1	3	6	6	34
Steamers inspected and passed.....	12	15	11	12	2	4	0	2	4	2	1	2	67
Steamers disinfected.....	1	3	2	0	0	1	0	0	0	0	0	2	9
Sailing vessels inspected and passed.....	10	12	1	7	10	4	5	8	10	10	23	13	123
Sailing vessels disinfected.....	5	0	2	3	1	1	2	0	2	1	0	0	17
Crew on steamers.....	308	384	267	274	45	95	0	53	134	58	34	108	1,760
Crew on sailing vessels.....	146	101	19	88	101	35	75	65	100	94	197	98	1,119
Passengers on steamers.....	1	12	0	0	0	0	0	0	0	0	0	0	13
Passengers on sailing vessels.....	0	0	0	0	0	1	2	0	14	2	1	0	20



## CUMBERLAND SOUND.

[Cumberland Sound quarantine; post-office address, via Fernandina, Fla.]

[Report of Acting Asst. Surg. J. Louis Horsey, in charge.]

*Transactions at the Cumberland Sound National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	14	24	14	26	0	0	0	0	0	22	26	14	140
Steamers inspected and passed...	9	4	8	8	2	5	0	4	7	4	5	4	60
Steamers disinfected.....	0	0	0	1	0	0	0	0	0	0	0	0	1
Sailing vessels inspected and passed.....	3	0	1	2	2	4	5	8	4	5	7	1	42
Sailing vessels disinfected.....	1	2	2	0	0	0	1	0	1	0	2	3	12
Crew on steamers.....	218	98	228	247	55	120	0	102	227	104	134	110	1,643
Crew on sailing vessels.....	138	242	134	220	22	45	53	98	74	67	85	49	1,227
Passengers on steamers.....	0	0	0	0	0	0	0	0	0	0	0	1	1
Passengers on sailing vessels.....	0	0	0	0	1	0	3	0	14	0	0	3	21

## MAYPORT.

[St. Johns River inspection station; post-office address, via Mayport, Fla.]

[Report of Acting Asst. Surg. George Macaulay, in charge.]

ST. JOHNS RIVER INSPECTION STATION,  
Mayport, Fla., July 31, 1903.

SIR: I herewith have the honor to transmit my annual report of the transactions at this station for the fiscal year ending June 30, 1903.

Respectfully,

GEORGE MACAULAY,  
Acting Assistant Surgeon, Public Health and Marine-Hospital Service.  
The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Transactions at the St. Johns River (Florida) National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	29	28	8	35	0	0	0	0	0	27	38	25	190
Steamers inspected and passed...	1	0	0	0	0	0	0	0	3	0	0	0	4
Steamers disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed.....	3	2	0	3	9	5	5	8	7	7	2	3	54
Sailing vessels disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers.....	79	44	24	82	0	0	0	0	88	99	28	63	507
Crew on sailing vessels.....	205	188	42	221	68	33	43	60	51	151	245	132	1,439
Passengers on steamers.....	3	8	0	0	0	0	0	0	22	0	0	0	33
Passengers on sailing vessels...	11	7	1	5	12	2	1	2	4	10	6	6	67



## KEY WEST.

[Key West Quarantine; post-office address, Key West, Fla.]

[Report of Sanitary Inspector Y. Porter, in temporary charge.]

KEY WEST QUARANTINE STATION,  
*Key West, Fla., July 6, 1903.*

SIR: I have the honor to inclose, in obedience to Bureau circular letters of May 11 and June 26, current year, a statistical table of quarantine inspection and disinfection of vessels arriving at this port, and likewise of inspection of passengers and crew, for the period ending June 30, 1903. In compliance also with instructions, the following report on the condition of the quarantine service at the port of Key West, Fla., together with a statement of condition of the appliances and machinery connected therewith, is respectfully submitted for your information:

There have been no incidents of marked sanitary importance or interest in quarantine management at this port during the past year, but the work of the station has been conducted with careful attention to details of law and regulations. The freedom of the island of Cuba from yellow fever has not only simplified quarantine procedures for all of the ports of Florida having commercial relations with Cuba, by lessening many burdensome, although at one time necessary, restrictions, but has greatly relieved the tenseness of mental anxiety, and consequent worry to the quarantine officials, which formerly harrassed and annoyed the citizens of the State as each summer season came around.

There is no longer a necessity for an imposition of immunity requirement against yellow fever on passenger service to and from Cuba, and disinfection of baggage has altogether ceased, except as may be demanded at odd times as a precautionary measure against introduction to the State from foreign sources of the contagious maladies of scarlet fever, diphtheria, or smallpox, although as regards the last named, and speaking for Cuba, there has not been a case reported in Habana as of municipal development since 1900. Passengers arriving at Key West from foreign ports are examined as to general healthfulness at time of arrival, and if from known yellow-fever ports where bills of health viséed by a medical officer of the United States Public Health and Marine-Hospital Service show existence of yellow fever at ports of departure, must be immune to yellow fever and to smallpox by successful vaccination and free from leprosy, else the vessel, with passengers, will be remanded to the quarantine station at the mouth of Tampa Bay on Mullet Key. If passengers at the time of quarantine inspection show evidences of any constitutionally dangerous communicable disease the immigration agent of the United States is informed, who calls to his assistance in determination the medical officer of the Service who is charged with such service at this port.

It will be remembered that the disinfecting plant for this port is located ashore and on property rented from the Peninsular and Occidental Steamship Company. The machinery and house is owned by the Service. The machinery was purchased from the Florida State Board of Health in 1901, and had been used by that organization for two years, consequently it was a second-hand machine and machinery when bought. The condition at the present time is fair and in good repair.

Respectfully,

JOSEPH Y. PORTER,  
*Sanitary Inspector, Public Health and Marine-Hospital Service,  
in Charge of Station.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.







## CEDAR KEYS.

[Cedars Keys Quarantine; post-office address via Cedar Keys, Fla.]

[Report of Acting Asst. Surg. R. T. Walker, in charge.]

*Transactions at the Cedar Keys (Fla.) National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....							1						1
Steamers disinfected.....													
Sailing vessels inspected and passed.....													
Sailing vessels disinfected.....													
Crew on steamers.....							25						25
Crew on sailing vessels.....													
Passengers on steamers.....													
Passengers on sailing vessels.....													

## ST. GEORGE SOUND.

[St. George Sound Quarantine, East Pass (nothing at West Pass), Carrabelle, Fla.]

[Report of Acting Asst. Surg. E. L. Stewart, in charge.]

*Transactions at the Carrabelle National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	4	2	1	5	6	10	6	5	4	7	12	4	69
Steamers inspected and passed.....													
Steamers disinfected.....													
Sailing vessels inspected and passed.....	3	1	1	4	5	10	6	4	4	6	11	4	59
Sailing vessels disinfected.....													
Crew on steamers.....													
Crew on sailing vessels.....	38	9	15	39	58	94	58	41	4	48	113	32	417
Passengers on steamers.....													
Passengers on sailing vessels.....													

## PENSACOLA.

[Santa Rosa Quarantine; post-office address, via Pensacola, Fla.]

[Report of Acting Asst. Surg. R. C. White, in charge.]

SANTA ROSA QUARANTINE,  
Pensacola, Fla., August 3, 1903.

SIR: As directed in Bureau letter of July 27, 1903, I have the honor to transmit herewith report of the quarantine transactions at this station during the fiscal year ended June 30, 1903.

Respectfully,

R. C. WHITE,  
Acting Assistant Surgeon, in charge.

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[Inclosure.]

*Transactions at the Santa Rosa National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....			2	1	1							3	7
Steamers inspected and passed.....	19	5	18	14	16	20	20	19	27	28	17	16	219
Steamers disinfected.....	4	5	6	6	1		1	1			6	3	33
Sailing vessels inspected and passed.....		2		2	32	16	20	12	14	16	8	5	127
Sailing vessels disinfected.....	11	4	6	7	5		1	3	2		5	1	45
Crew on steamers.....	517	318	699	430	418	528	572	488	720	807	636	580	6,713
Crew on sailing vessels.....	158	76	87	126	515	203	279	190	210	203	170	82	2,299
Passengers on steamers.....	7	4	4	5			2	1			2	2	27
Passengers on sailing vessels.....					11				4	2	3		20

NOTE.—Included under the head of steamers inspected and passed are those held to complete five days from date of completion of fumigation at port of departure:

July, 1902.....	3
August, 1902.....	2
September, 1902.....	6
May, 1903.....	2
June, 1903.....	5
	<hr/> 18

Besides the number of passengers enumerated on steamers and sailing vessels, there were the following stowaways:

On steamers:	
August, 1902.....	1
September, 1902.....	1
October, 1902.....	2
January, 1903.....	1
May, 1903.....	1
	<hr/> 6
On sailing ships:	
November, 1902.....	2

#### MIAMI.

[Biscayne Bay Quarantine; post-office address, via Miami, Fla.]

[Report of Acting Asst. Surg. James M. Jackson, jr., in charge.]

BISCAYNE BAY QUARANTINE STATION,  
Miami, Fla., July 6, 1903.

SIR: I have the honor to herewith hand you annual reports of transactions at this station for fiscal year ending June 30, 1903.

Very respectfully,

JAMES M. JACKSON, JR.,  
Acting Assistant Surgeon, in Charge.

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[Inclosure.]

*Transactions at the Biscayne Bay National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	9	12	12	14	9	15	12	15	18	10	10	9	145
Steamers inspected and passed.....	2	0	0	0	0	3	9	10	20	12	1	0	57
Steamers disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed.....	3	4	3	1	1	1	2	2	1	0	2	1	21
Sailing vessels disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers.....	36	0	0	0	0	141	451	528	1,047	577	18	0	2,763
Crew on sailing vessels.....	16	36	18	5	5	5	12	5	7	0	8	3	120
Passengers on steamers.....	0	0	0	0	0	45	213	647	1,551	307	0	0	2,763
Passengers on sailing vessels.....	2	22	24	0	5	3	8	10	0	0	0	2	76

## PUNTA RASSA.

[Punta Rassa Inspection Station; post-office address, via Punta Rassa, Fla.]

[Report of Sanitary Guard G. R. Shultz, in charge.]

PUNTA RASSA, FLA., June 30, 1903.

SIR: I have the honor to report that for the year ending June 30, 1903, no vessels directly from foreign ports have arrived at this port.

The county (Lee) has been quite free from contagious sickness, with but a few cases of malaria, and nothing has been reported to me during the year to cause alarm.

Respectfully,

G. R. SHULTZ, *Sanitary Guard.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.  
(Through Sanitary Inspector Joseph Y. Porter.)

[Inclosure.]

*Transactions at the Punta Rassa (Fla.) National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....	2	3											5
Steamers disinfected.....													
Sailing vessels inspected and passed.....	6	4									7	9	26
Sailing vessels disinfected.....													
Crew on steamers.....	32	48											80
Crew on sailing vessels.....	20	20									49	61	160
Passengers on steamers.....													
Passengers on sailing vessels.....													

The above vessels were from Cuba and inspected at Key West, Fla. Loaded at this port with cattle and left for Key West, thence cleared for ports in Cuba. From August, 1902, to May, 1903, nothing from foreign or contagious ports.

Respectfully,

G. R. SHULTZ, *Sanitary Guard.*



## PASCAGOULA.

[Pascagoula, Miss., quarantine.]

[Report of Acting Asst. Surg. B. F. Duke, in charge.]

PASCAGOULA, MISS., July 1, 1903.

SIR: I have the honor to submit herewith annual report of transactions at this station for the year ending yesterday, which I trust will be satisfactory. No quarantinable disease has appeared on any vessel during the year. The health of the port and towns adjacent is good.

Respectfully,

B. F. DUKE,  
*Acting Assistant Surgeon, in Charge.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Transactions at the Pascagoula National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vesselsspokanand passed.....	5	2	8	4	6	3	3	3	0	2	5	7	48
Steamers inspected and passed.....	0	1	0	0	1	2	0	1	0	0	1	0	6
Steamers disin- fected.....													
Sailing vessels in- spected and passed.....	2	0	1	1	18	5	2	11	11	9	13	3	76
Sailing vessels dis- infected.....													
Crew on steamers..	0	25	0	0	23	49	0	25	0	0	25	0	147
Crew on sailing vessels.....	16	0	12	8	152	39	16	104	85	73	105	24	634
Passengers on steamers.....													
Passengers on sail- ing vessels.....								2					2

## GULF.

[Gulf Quarantine; post-office address, via Biloxi, Miss.]

[Report of medical officer in command, Passed Asst. Surg. S. B. Grubbs. Assumed command under official orders of April 18, 1902.]

GULF QUARANTINE STATION, July 28, 1903.

SIR: I have the honor to make the following report of transactions at this station for the year ending June 30, 1903, as per table attached.

Eighty vessels were inspected and passed, while 76 were disinfected.

One case of yellow fever, received during the year, was treated in the station hospital and discharged; recovered.

Respectfully,

S. B. GRUBBS,  
*Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[Inclosure.]

*Transactions at the Gulf National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	3	3	2	2	0	0	0	0	0	0	0	0	10
Steamers inspected and passed...	3	0	1	3	0	1	0	1	2	2	0	1	14
Steamers disinfected.....	1	0	1	0	0	1	0	0	0	0	2	1	6
Sailing vessels inspected and passed.....	2	3	3	4	6	4	10	10	7	8	6	3	66
Sailing vessels disinfected.....	12	14	12	6	2	0	0	1	2	0	13	9	71
Crew on steamers.....	163	21	50	91	0	49	0	21	54	49	73	54	625
Crew on sailing vessels.....	127	172	174	98	101	29	124	136	95	71	181	119	1,427
Passengers on steamers.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Passengers on sailing vessels.....	1	1	0	5	0	1	0	0	0	1	6	0	15

## SAN DIEGO.

[San Diego Quarantine; post-office address, via San Diego, Cal.]

[Report of medical officer in charge, Acting Asst. Surg. W. W. McKay. Assumed charge under official orders of April 4, 1889.]

SAN DIEGO QUARANTINE STATION,  
*San Diego, Cal., July 15, 1903.*

SIR: In accordance with Bureau circular letter of date May 11, 1903, I have the honor to report herewith the transactions of this station for the fiscal year ending June 30, 1903. During this period, as noted on the accompanying report, 151 vessels arriving at quarantine were inspected and passed and 2 were disinfected, making a total of 153 vessels. One of the vessels disinfected was bound from San Francisco to Panama. When about 300 miles off San Diego, smallpox broke out aboard and the vessel, which was an American schooner, put into San Diego Quarantine Station for relief. The other vessel disinfected was the U. S. training ship *Adams*. The disinfection was done on request of the commanding officer of the vessel on account of measles having broken out among the apprentices. The sick were isolated in tents ashore and the vessel disinfected. No further cases occurred.

Respectfully,

W. W. MCKAY,  
*Acting Assistant Surgeon, in Charge.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Transactions at the San Diego (Cal.) National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed..	4	7	8	8	8	8	7	5	10	12	10	9	97
Steamers disinfected.....	0	0	0	0	0	0	0	0	0	0	1	0	1
Sailing vessels inspected and passed.....	6	3	7	6	7	6	5	1	3	2	5	3	54
Sailing vessels disinfected.....	0	0	0	0	1	0	0	0	0	0	0	0	1
Crew on steamers.....	68	142	135	174	365	512	287	85	474	991	731	718	4,682
Crew on sailing vessels.....	39	12	16	12	104	71	23	2	6	5	36	29	355
Passengers on steamers.....	106	243	168	120	118	144	84	78	129	163	144	65	1,562
Passengers on sailing vessels.....	0	1	0	4	5	0	0	0	0	0	0	0	10



## LOS ANGELES AND SANTA BARBARA.

[Los Angeles Quarantine and subport Santa Barbara; post-office address, via Los Angeles, Cal.]

[Report of medical officer in command, Surg. J. O. Cobb. Assumed command under official orders November 29, 1902.]

*Transactions at the Los Angeles National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	1	4	1	2	1	5	3	3	1	1	1	5	28
Steamers inspected and passed....	0	0	0	0	0	1	1	0	1	1	0	3	7
Steamers disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed.....	1	4	1	2	1	4	2	3	0	0	1	2	21
Sailing vessels disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers.....	0	0	0	0	0	48	32	0	33	33	0	134	280
Crew on sailing vessels.....	26	97	28	51	23	110	48	72	0	0	26	54	535
Passengers on steamers.....	0	0	0	0	0	0	0	0	0	0	0	34	34
Passengers on sailing vessels.....	0	1	0	0	0	0	0	1	0	0	0	0	2

J. O. COBB, Surgeon.

*Transactions at the Santa Barbara (Cal.) National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed.....												1	1
Steamers disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed.....						1			1			1	3
Sailing vessels disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Crew on steamers.....												24	24
Crew on sailing vessels.....						17			17			18	52
Passengers on steamers.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Passengers on sailing vessels....	0	0	0	0	0	0	0	0	0	0	0	0	0

C. S. STODDARD,  
Acting Assistant Surgeon.



## SAN FRANCISCO.

[San Francisco Quarantine; post-office address, via Angel Island, Cal.]

[Report of medical officer in command, Passed Asst. Surg. Hugh S. Cumming. Assumed command under official orders of December 28, 1901.]

SAN FRANCISCO QUARANTINE,  
*Angel Island, Cal., July 1, 1903.*

SIR: I have the honor to submit report of transactions at this station during the fiscal year ended June 30, 1903:

The past year has been one of daily anxiety and apprehension for the quarantine officer at this port.

The time has passed when this coast was protected by its distance from the endemic centers of cholera and pest and consequent length of the passage. The epidemic of plague along the Mexican coast, its presence to an unknown and consequently dangerous extent upon the South American coast, its spread in Australia, the Philippines, and Asia, and the epidemic of cholera which is sweeping the coast, constitute, in my opinion, a graver danger to this country than the cholera epidemics in Europe in times past, and the situation demands the very best work of our Service and the increasing vigilance of its officers.

During the cholera epidemic of 1893 most vessels from the danger points in Europe took more than twelve days en route. The large swift vessels already built or under construction for trade between here and Asia are modern vessels and the trip has been made in less than eleven days. The greatest safeguard is in having reliable officers at ports of departure as well as at our own ports.

During the past year 256 vessels have arrived at this port from ports where cholera or plague or both prevail, and 52 from yellow-fever ports.

Glandular examinations or temperatures or both are made of the steerage passengers and crew of all vessels from plague ports and of cabin passengers when deemed advisable. The baggage of persons en route direct from yellow-fever ports to Southern States has been disinfected when necessary. The condition of water and food supply is determined by the certificate of medical officers at ports of departure.

There are still no customs guards placed upon vessels arriving at night and this Service maintains an efficient system of guarding vessels at night, at its own expense.

During the latter part of 1902, several foreign ports quarantined against this port on account of the plague situation. I was requested by the British consul-general and others to disinfect outgoing vessels upon their request; authority to do this was not given until after the city authorities had commenced work upon our refusal, and no vessels have been so disinfected at this station.

At the request of the senior medical officer, United States naval training station, Goat Island, I inspected that station and advised measures for stamping out smallpox, diphtheria, measles, mumps, and scabies upon the station and the U. S. S. *Pensacola*.

Tents were advised during the disinfection, cleaning, repainting, etc., but owing to lack of room, the detention camp, Angel Island, was suggested by me; pending its occupancy by the crew of the U. S. S. *Mohican* disinfected here, the facilities of this station were extended the Navy and accepted. The personnel of the naval station and U. S. S. *Pensacola* were bathed, and the personal effects, library, books, etc., disinfected.

During the year 13 cases of smallpox, 23 cases of diphtheria, 1 case of measles, 1 of beriberi, and 4 of mumps were treated in the various isolation hospitals here. There was 1 death from beriberi.

In addition to the quarantine work of the port the medical inspection of aliens for the Immigration Service is done by the quarantine officer, and a ruling secured by him that Chinese aliens should be subject to the same inspection as other aliens has greatly increased his work.

The relations of the Service at this station with local authorities and coordinate branches of the Federal Government continues friendly.

Your attention is respectfully invited to the advisability of detailing regular officers for duty, especially upon boarding duty, at this station.

Respectfully,

HUGH S. CUMMING,  
*Passed Assistant Surgeon,*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



[Inclosure.]

*Transactions at the San Francisco National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Steamers inspected and passed.....	40	40	45	34	37	41	31	32	32	34	36	29	431
Steamers disinfected.....	0	0	0	1	0	0	1	1	1	0	2	2	8
Sailing vessels inspected and passed.....	40	50	79	36	41	39	32	30	39	26	27	35	474
Sailing vessels disinfected.....	4	2	0	0	0	0	0	0	1	1	2	1	11
Crew on steamers.....	3,446	3,179	3,786	3,099	3,230	3,207	2,528	2,135	3,219	2,524	3,554	1,986	35,893
Crew on sailing vessels.....	815	982	3,313	816	932	762	646	554	628	394	416	724	10,982
Passengers on steamers.....	6,784	6,445	6,286	6,237	3,200	3,753	3,717	1,869	4,506	5,472	3,700	4,646	56,615
Passengers on sailing vessels....	61	74	2,228	35	41	26	15	14	28	32	41	103	2,698

Vessels from ports infected with cholera or bubonic plague or both.....	256
Vessels from yellow-fever ports.....	52
Persons detained in quarantine.....	2,295
Cases treated in isolation hospitals (smallpox, 13; diphtheria, 23; measles, 1; beriberi, 1; mumps, 4).....	42
Vessels held for diagnosis.....	2

## EUREKA.

[Eureka (Cal.) Quarantine. ]

[Report of Acting Asst. Surg. B. Y. Harris, in charge.]

*Transactions at the Eureka (Cal.) National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....			1		1			1		1			4
Steamers disinfected.....													
Sailing vessels inspected and passed.....	2	7	3	3	5	1	2	2	2	2	1	3	33
Sailing vessels disinfected.....		1	2			1	1		1			1	7
Crew on steamers.....			28		30			31		30			119
Crew on sailing vessels.....	30	105	71	23	72	29	40	14	39	20	20	73	536
Passengers on steamers.....													
Passengers on sailing vessels.....	2	3	14	2	5				3			2	31



## COLUMBIA RIVER.

[Columbia River quarantine; post-office address, via Astoria, Oreg.]

[Report of medical officer in command, Asst. Surg. Baylis H. Earle. Assumed command under official orders of November 28, 1900.]

*Transactions at the Columbia River National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....	4	14	18	17	14	10	10	4	3	6	4	7	111
Steamers inspected and passed...	1	2	2	1	1	1	2	1	2	2	1	1	17
Steamers disinfected.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Sailing vessels inspected and passed.....	3	12	16	15	13	8	8	3	1	4	3	5	91
Sailing vessels disinfected.....	0	0	0	1	0	1	0	0	0	0	0	1	3
Crew on steamers.....	74	68	141	70	71	30	136	62	121	105	71	70	1,019
Crew on sailing vessels.....	78	466	643	400	302	293	191	60	20	78	71	132	2,734
Passengers on steamers.....	73	0	53	17	68	0	60	22	14	24	80	42	453
Passengers on sailing vessels.....	0	5	1	1	1	2	2	0	0	5	1	8	26

## HOQUIAM.

[Hoquiam, Wash., quarantine.]

[Report of Acting Asst. Surg. T. C. Frary, in charge.]

PORT OF HOQUIAM, WASH., *August 3, 1903.*

SIR: I have the honor of acknowledging letter dated July 29, directing me to forward report of quarantine transactions at port of Hoquiam, Wash., for the fiscal year ending June 30, 1903. I have no regular blank on which to make this report, but inclose a report which I trust will embrace the quarantine transactions at this port.

Respectfully,

T. C. FRARY, *Acting Assistant Surgeon.*

THE SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

Vessels arriving from foreign ports .....	31
Crew on vessels from foreign ports .....	305
Passengers on vessels from foreign ports.....	27
Vessels disinfected from foreign ports.....	0
Vessels disinfected from domestic ports.....	0
Vessels from foreign ports inspected and passed .....	31

## PORT TOWNSEND AND SUBPORTS.

[Port Townsend Quarantine; post-office address, via Port Townsend, Wash., and subports Seattle, Tacoma, South Bend, and Port Angeles.]

[Report of medical officer in command, Passed Asst. Surg. J. H. Oakley. Assumed command under official orders of May 28, 1903.]

PORT TOWNSEND QUARANTINE STATION,

*Port Townsend, Wash., August 3, 1903.*

SIR: I have the honor to report on the transactions at this quarantine station during the fiscal year ending June 30, 1903, as follows: The total number of vessels boarded was 433, of which 250 were sail and 183 steam. Of the 433 vessels boarded, 408 were inspected and passed, and 25 were sent to the quarantine station for disinfection in whole or in part. The crews on these vessels numbered 18,696 persons, and there were 19,161 passengers. The glandular regions of all male steerage passengers and of the crew on vessels from plague-infected ports were examined.

During the year 11 vessels arrived with a history of sickness or death having occurred en route.



[illegible]



## TACOMA.

TACOMA, WASH., July 6, 1903.

SIR: I have the honor to report the following transactions at this port for the fiscal year ending June 30, 1903, of Chinese food stuffs and merchandise disinfected, viz: December, 1902, 34 packages per steamship *Olympia*, from Hongkong; December 5, 1902, 43 packages per steamship *Yantze*, from Hongkong; December 12, 1902, 17 packages per steamship *Shawmut*, from Hongkong; December 19, 1902, 81 packages per steamship *Duke of Fife*, from Hongkong; December 29, 1902, 38 packages per steamship *Lyra*, from Hongkong; January 30, 1903, inspected and passed 448 bags peanuts, all dry; May 7, 1903, inspected 2 packages per steamship *Olympia*, from Hongkong.

Respectfully,

F. J. SCHUG,  
Acting Assistant Surgeon.

Passed Asst. Surg. J. H. OAKLEY,  
In Command Port Townsend Quarantine, Port Townsend, Wash.

## PORT ANGELES.

Transactions at Port Angeles (Wash.) National Quarantine Station for the year ending June 30, 1903.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....													
Steamers disinfected.....													
Sailing vessels inspected and passed.....	0	0	4	1	0	3	1	1	0	1	1	0	12
Sailing vessels disinfected.....													
Crew on steamers.....													
Crew on sailing vessels.....			85	19		64	20	15		25	16		244
Passengers on steamers.....													
Passengers on sailing vessels.....			3	4		2					1		10

F. S. LEWIS,  
Acting Assistant Surgeon.

## SOUTHBEND.

Transactions at the Southbend (Wash.) National Quarantine Station for the year ending June 30, 1903.

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....													
Steamers disinfected.....													
Sailing vessels inspected and passed.....									2			1	3
Sailing vessels disinfected.....													
Crew on steamers.....													
Crew on sailing vessels.....									22			12	34
Passengers on steamers.....													
Passengers on sailing vessels.....									4				4

Respectfully,

CALEB E. MARTIN,  
Acting Assistant Surgeon.



## NOME, ALASKA.

[Nome, Alaska, Quarantine.]

[Report of Acting Asst. Surg. A. L. Derbyshire, in charge.]

NOME, ALASKA, July 5, 1903.

SIR: I have the honor to transmit herewith annual report of transactions at Nome, Alaska, National Quarantine Station for year ending June 30, 1903.

Respectfully,

A. L. DERBYSHIRE,  
Acting Assistant Surgeon,  
Public Health and Marine-Hospital Service.

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

[Inclosure.]

*Transactions at the Nome (Alaska) National Quarantine Station for the year ending June 30, 1903.*

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Vessels spoken and passed.....													
Steamers inspected and passed.....	12	12	10	10								25	69
Steamers disinfected.....													
Sailing vessels inspected and passed.....	4	2	2	1								4	13
Sailing vessels disinfected.....													
Crew on steamers.....	577	663	656	713								1,410	4,019
Crew on sailing vessels.....	31	15	19	14								49	128
Passengers on steamers.....	897	262	104	284								4,017	5,564
Passengers on sailing vessels.....	5	3										9	17

## TEXAS-MEXICAN BORDER QUARANTINE.

This border inspection has been continued at El Paso, Eagle Pass, and Laredo, Tex., to prevent the introduction of smallpox, yellow fever, and possibly typhus fever into the United States, cooperating with the health authorities of the State of Texas.

The following reports have been received from the officers stationed at those points of entry:

## LAREDO, TEX.

REPORT OF ACTING ASST. SURG. H. J. HAMILTON.

LAREDO, TEX., July 10, 1903.

SIR: I have the honor to submit following report of transactions at this station for year ended June 30, 1903: During the period mentioned there were 711 passenger trains entering from Mexico, inspected; persons on trains entering from Mexico, 26,794 inspected. There were 83 persons detained at detention camp or refused entry, to comply with quarantine regulations. Disinfected 43 trunks, 2 valises, and 17 bundles of baggage, presumably infected. Inspected 1,666 immigrants upon entry; vaccinated 460 immigrants upon entry. Immigrants certified, 30; immigrants deported, 29. During the period mentioned the National de Mexico Railroad, which crosses the frontier at this point, has broadened its gauge to the standard of the United States with the exception of about 100 miles at the south end, which will also soon be accomplished, when the time from Mexico City to Laredo will be twenty-eight or thirty hours, which will have, no doubt, the effect of increasing the traffic at this point considerably.

Respectfully,

H. J. HAMILTON,  
Acting Assistant Surgeon.

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



## EL PASO, TEX.

## REPORT OF ACTING ASST. SURG. E. ALEXANDER.

EL PASO, TEX., *August 2, 1903.*

SIR: In Bureau letter dated July 29, 1903, I am directed to forward report of quarantine transactions at my station during the fiscal year ending June 30, 1903. I would respectfully state that such report was forwarded June 30, 1903.

Respectfully,

E. ALEXANDER, *Acting Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

[Inclosure.]

*Transactions for the fiscal year ended June 30, 1903.*

Inspection Mexican Central passengers .....	9,719
Inspection Rio Grande and Pacific passengers .....	1,024
Inspection Mexican immigrants .....	6,893
Inspection of certificates of death of bodies transported into the United States .....	7
Inspection (special) on account of yellow fever and bubonic plague .....	135
Disinfection soiled linen imported for laundry .....	pieces.. 21,022
Disinfection of cattle hides:	
Loose .....	4,041
Carloads .....	3
Disinfection of bones .....	carloads.. 1
Disinfection of baggage, trunks, and household goods .....	pieces.. 95
Detention from one to three days each of passengers from Tampico and Vera Cruz and lower coast of Mexico .....	28
Vaccinations .....	189

## EAGLE PASS, TEX.

## REPORT OF ACTING ASST. SURG. LEA HUME.

EAGLE PASS, TEX., *August 1, 1903.*

SIR: I have the honor to make the following report of inspection of persons entering the United States via this port during the fiscal year ended June 30, 1903:

Trains inspected .....	380
Persons inspected on trains .....	13,428
Persons inspected on Rio Grande River .....	5,631
Pieces of baggage disinfected .....	20
Persons detained in quarantine .....	11

No contagious diseases developed at the detention during the year.

Respectfully,

LEA HUME,

*Acting Assistant Surgeon, in Charge.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

## POLICE POWER OF NATIONAL QUARANTINE OFFICERS.

In relation to the police power of medical officers in command of United States quarantine stations, on September 19, 1902, the medical officer in command of the Gulf Quarantine Station, Biloxi, Miss., addressed a letter to the Bureau on this subject.

As the question concerned all the quarantine stations of the Service, the Honorable, the Secretary of the Treasury, was requested to obtain, for the use of the Service, a decision upon the matter from the Solicitor for the Treasury Department. The following is the correspondence:



[Letters.]

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
Washington, November 5, 1902.

SIR: I have the honor to inclose herewith a communication from the medical officer in command at the Gulf Quarantine Station asking instructions as to the extent of his authority in maintaining discipline, and whether he may or may not confine an unruly individual or bring about a punishment for him further than his discharge.

It should be stated in this connection that quarantine stations are, as a rule, so isolated that the assistance of any police official can not be obtained, and consequently the whole responsibility for the preservation of discipline and order rests upon the officer in command of the station.

In view of the above-stated facts I have to recommend that this letter be referred to the Solicitor for the Treasury for an opinion in the premises.

Respectfully,

GEO. PURVIANCE,  
*Acting Surgeon-General.*

The SECRETARY OF THE TREASURY.

[Inclosure.]

GULF QUARANTINE,  
Biloxi, Miss., September 19, 1902.

SIR: I have the honor to request information as to what police power the officer in command of a quarantine station of the Service can exercise. The case in point is that of Attendant Richard Johnson, who to-day became intoxicated, unruly, and violent. He was immediately sent ashore, but a simple discharge is a wholly inadequate punishment for such an offense, and if the station had been in strict quarantine would not have been possible.

I would like to ask:

(1) Can the commanding officer confine, tie, or handcuff such a person till such time as he can be disposed of?

(2) Can he obtain any punishment beyond his discharge; if so, by what method of procedure?

Such an occurrence as we have had is not only very detrimental to discipline unless punished, but could easily result in violence to other persons on the station, who have a right to protection.

Respectfully,

S. B. GRUBBS,  
*Passed Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

DEPARTMENT OF JUSTICE,  
OFFICE OF THE SOLICITOR OF THE TREASURY,  
Washington, D. C., November 11, 1902.

SIR: A communication from the Acting Surgeon-General of the Public Health and Marine-Hospital Service, dated the 5th instant, has been referred to this office by Acting Secretary H. A. Taylor, with a request for my opinion upon the following questions:

First. Whether the officer in command of the Gulf Quarantine Station may arrest and confine and tie or handcuff an intoxicated attendant of the station, who is unruly and violent, until such time as he can be disposed of.

Second. Whether any punishment beyond the discharge of such person may be imposed, and if so, by what procedure.

I am informed that this station is located on Ship Island, in the Gulf of Mexico, and that it is in command of one of the surgeons of the Public Health and Marine-Hospital Service.

Ship Island lies about 12 miles off the Mississippi coast. It was ceded to the United States by an act of the legislature of the State of Mississippi, November 15, 1858 (Laws Miss., 1857-58, p. 49), and has, by Executive order, been made one of the military reservations of the United States.

There is no Federal statute which gives a marine-hospital surgeon the power to arrest and confine a hospital or station attendant for drunkenness or disorderly conduct. The Marine-Hospital Service is no part of either the military or naval establishments of the United States, and the employees therein are not liable to arrest and confinement for breaches of discipline or disorderly conduct, except in so far as the offense may be cognizable by the civil authorities. Hence the power to arrest and



confine a hospital attendant who is intoxicated, violent, and unruly must be determined by the laws of the United States or of the State in force in such locality where the offense is committed.

There is no Federal statute which makes intoxication or disorderly conduct on the part of an employee of the Marine-Hospital Service an offense against the United States. But the act of Congress, July 7, 1898 (30 Stat. L., 717), provides as follows:

"SEC. 2. That when any offense is committed in any place, jurisdiction over which has been retained by the United States or ceded to it by a State, or which has been purchased with the consent of a State for the erection of a fort, arsenal, dockyard, or other needful building or structure, the punishment for which offense is not provided for by any law of the United States, the person committing such offense shall, upon conviction in a circuit or district court of the United States for the district in which the offense was committed, be liable to and receive the same punishment as the laws of the State in which such place is situated now provide for the like offense when committed within the jurisdiction of such State, and the said courts are hereby vested with jurisdiction for such purpose, and no subsequent repeal of any such State law shall affect any such prosecution."

And by the laws of Mississippi drunkenness and profane swearing in the presence of two or more persons are made offenses punishable by fine of \$10 for each offense.

I do not find that a common assault or affray, or breach of the peace, is in terms made an offense or misdemeanor under the laws of the State of Mississippi. But conduct of this kind is a misdemeanor at common law (4 Bl. Com., 145, 216), and the common law, except where changed by statute or unsuited to conditions existing in the State of Mississippi, is still in force in that State. (*Noonan v. State*, 1 Smedes & Marsh., 562.)

By the common law a private person—that is, a person not a peace officer—can not make an arrest without a warrant, except where an offense is committed or about to be committed in his presence. The right of a private person to make an arrest without warrant is not limited to cases in which a felony has been or is about to be committed in his presence. He may arrest another for an affray or breach of the peace committed in his presence; and when a misdemeanor amounts to a breach of the peace he not only may, but is bound to, interfere and suppress it; and in case of misdemeanors which do not amount to a breach of the peace, he may, according to some authorities, make an arrest without warrant, but is not bound to do so. (2 Am. and Eng. Encyc. of L., 2d ed., p. 888.)

But this power of a private person to make an arrest without warrant for a misdemeanor is strictly limited to cases in which the misdemeanor is committed in his presence, and a person so arrested must be carried without delay before the nearest magistrate. (*Id.*, pp. 880, 888.)

From this review of the authorities, I conclude that the surgeon in charge of the station on Ship Island, as a private person, or any private person there, may, without warrant, make an arrest of an attendant who, in the presence of two or more persons, is intoxicated and violent, and may detain such person until he can, with reasonable dispatch, be taken before the nearest magistrate to be dealt with according to law, and that he may use such reasonable force, including tying or handcuffing, as may be necessary to accomplish the detention.

Very respectfully,

F. A. REEVE, *Acting Solicitor*.

The SECRETARY OF THE TREASURY.

#### TREATMENT OF "VIA" VESSELS AT SOUTHERN STATIONS.

On May 2, 1903, a letter of inquiry was received by the Bureau from the medical officer in command of Cape Charles Quarantine, Fortress Monroe, Va., in regard to the interpretation of paragraphs 102 to 109 of the United States Quarantine Regulations of the year 1903, under the heading: "Special regulations on account of yellow fever." The following correspondence ensued:

[Letters.]

CAPE CHARLES QUARANTINE,  
Fortress Monroe, Va., May 2, 1903.

SIR: I have the honor to inquire if the Bureau construes paragraphs 102 to 109, inclusive, of the revised quarantine regulations, being "Special regulations on account of yellow fever," as applying to via vessels from noninfected ports where there is no



Public Health and Marine-Hospital Service officer, and also whether they apply to via vessels from noninfected ports where there is a Public Health and Marine-Hospital Service officer.

Respectfully,

JNO. S. BOGGESS,  
*Assistant Surgeon, in Command.*

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TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, May 4, 1903.*

SIR: Referring to your letter of the 2d instant, asking if the Bureau construes paragraphs 102 to 109, inclusive, of the revised quarantine regulations as applying to "via" vessels from noninfected ports where there is no Public Health and Marine-Hospital Service officer, and also whether they apply to "via" vessels from noninfected ports where there is an officer of the Public Health and Marine-Hospital Service, you are informed that these paragraphs apply to any vessel arriving at your station from a yellow fever infected port via a port north of the southern boundary of Maryland, unless the vessel has been so treated at the port north of the southern boundary of Maryland as to obviate the danger of her still conveying the infection of yellow fever.

If proper measures have been taken at the northern port and evidence is placed in your possession which satisfies you of this fact, you will make due allowance for the measures in question.

Respectfully,

GEO. PURVIANCE,  
*Acting Surgeon-General.*

MEDICAL OFFICER IN COMMAND, P. H. & M. H. S.,  
*Cape Charles Quarantine, Fortress Monroe, Va.*

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#### CONCLUSION.

The above report covers the work of the service coming under the purview of the Bureau Division of Domestic Quarantine during the fiscal year.

Respectfully submitted.

A. H. GLENNAN,  
*Assistant Surgeon-General.*



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DIVISION OF SCIENTIFIC RESEARCH.

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DEPARTMENT OF AGRICULTURE



## REPORT OF THE DIVISION OF SCIENTIFIC RESEARCH.

By H. D. GEDDINGS,

*Assistant Surgeon-General, Public Health and Marine-Hospital Service, in Charge.*

SIR: I have the honor to submit the following report of the operations of the Bureau division of scientific research for the fiscal year ending June 30, 1903:

### TRANSACTIONS OF THE DIVISION.

The work of the division has been continued this year as in the previous years, embracing the review of medical and scientific journals and the card indexing of all subjects pertinent to the communicable diseases and to the public health. It is to be noted that the files in relation to tuberculosis and plague are growing rapidly, and the number of references accumulating in these subjects is very large. From time to time by your direction indices have been opened for new subjects, and the system promises in the future to be of great value as a matter of Bureau reference.

### YELLOW FEVER INSTITUTE.

The work of the institute has been continued. Meetings of the executive board have been held from time to time as required. Contributions have been received from various correspondents and members of the institute, and the following bulletins have been published during the past year: In July, 1902, Bulletins Nos. 9 and 10, entitled, respectively, "Are Vessels Infected with Yellow Fever? Some Personal Observations," by Surg. H. R. Carter, and "The Methods of the Conveyance of Yellow Fever Infection," by the same author, the demand for which latter was so active that a second and revised edition had to be issued. In March, 1903, Passed Asst. Surg. S. B. Grubbs contributed an article entitled, "Vessels as Carriers of Mosquitoes," which was published as Bulletin No. 11; and in the same month a contribution was received from Passed Asst. Surg. J. M. Eager, at Naples, Italy, on "The Early History of Quarantine," which was published as Bulletin No. 12.

In view of the unsettled sentiment in the scientific mind as to the etiology of yellow fever, it was deemed expedient that the matter should be investigated by the Yellow Fever Institute, and by and with the approval of the honorable the Secretary of the Treasury, under date of March 5, 1902, a working party composed of Asst. Surg. (now Passed Asst. Surg.) H. B. Parker and Acting Asst. Surgs. George E. Beyer and O. L. Pothier, was organized and dispatched, and arrived in Vera-Cruz on May 12, 1902. The labors of the working party at Vera-Cruz terminated about the end of October, 1902, when the party returned to the United States, and the time between October, 1902,



and February, 1903, was spent in a review of the notes and material collected by the party and in preparing a report to the Surgeon-General. This report has been published as Bulletin No. 13 of the Yellow Fever Institute.

It was deemed important to still further investigate this subject, and about May 1, 1903, working party No. 2, composed of Passed Asst. Surg. H. B. Parker, chairman; Asst. Surg. Edward Francis, and Acting Asst. Surg. George E. Beyer, was dispatched to Vera Cruz for this purpose. The party is still at work, but no report of importance, other than a report of progress, had been received at the close of the fiscal year.

Further investigations of questions related to the etiology and method of transmission of yellow fever are contemplated, and an opportunity only is awaited to enter upon the investigation of dengue and other communicable diseases.

#### SPOTTED FEVER.

For a number of years a disease of mysterious nature and attended by considerable mortality has annually made its appearance in the spring of the year in the Bitter Root Valley of Montana, and while some attempts have been made to investigate its nature and to suggest measures for its suppression, they have so far met with only a limited amount of success.

At the request of the State board of health of Montana, the Surgeon-General consented in April, 1903, to dispatch Passed Asst. Surg. John F. Anderson, assistant director of the Hygienic Laboratory, to Missoula, Mont., for the purpose of making investigations as to the nature of the disease and aiding with his advice the local and State health authorities in their efforts to accomplish the eradication of the malady. Doctor Anderson is still engaged upon his investigations. Reports received from time to time show that the disease is widely scattered over quite a large area of country; that it is violent, and that the mortality from it is considerable. It is hoped in the near future to publish something authoritative from him as to the nature of the disease.

#### FIRST GENERAL INTERNATIONAL SANITARY CONVENTION OF AMERICAN REPUBLICS.

The Second American International Conference of the Pan-American States, held in the City of Mexico, October, 1901, to January, 1902, passed resolutions that a sanitary convention should convene in Washington within a year of the signing of the resolutions on sanitation and quarantine, and that the said convention should elect an international sanitary bureau, which should have permanent headquarters at Washington, D. C., for the purpose of rendering effective service to the different republics represented in the said convention. In pursuance of this call, the convention assembled at the New Willard Hotel, Washington, D. C., December 2, 1902, and continued in session to December 4, inclusive. The republics of Central and South America, Mexico, and the United States were represented by delegates as follows:

*Chile.*—Dr. Garcia y Callao, Dr. Eduardo Moore.

*Costa Rica.*—Dr. Juan J. Ulloa.

*Cuba.*—Dr. Juan Guiteras, Dr. Carlos J. Finlay.

*Ecuador.*—Minister Louis Felipe Carbo.



*Guatemala.*—Minister Lazo-Arriaga.

*Honduras.*—Nicanor Bolet Peraza.

*Mexico.*—Dr. Eduardo Liceaga, Dr. Jose Ramirez.

*Nicaragua.*—Dr. D. Roman.

*Paraguay.*—Mr. John Stewart.

*United States.*—Surg. Gen. Walter Wyman, Dr. M. J. Rosenau, Dr. H. L. E. Johnson, Dr. James Taggart Priestly, Dr. Arthur R. Reynolds, Dr. Charles B. Adams, Dr. Edmond Souchon, Dr. Fred W. Powers, Dr. Joseph Y. Porter, Dr. Alva H. Doty, Dr. L. M. Powers, Dr. Frank Wm. Porterfield, Dr. J. Glendower Owen, Dr. Rhett Goode, Dr. Irving A. Watson, Dr. George P. Bradley, U. S. N.; Dr. P. W. McCaw, U. S. A.

*Uruguay.*—Luis Alberto de Herrera, chargé d'affaires.

The following resolutions were adopted by the convention prior to its adjournment:

[NOTE.—All of these resolutions were adopted unanimously.]

#### I.

*Convention to be governed by resolutions of conference in Mexico.*

*Resolved,* That the convention shall be governed by the resolutions agreed upon by the International Conference of American States held in Mexico in 1901 and 1902.

#### II.

*Time of detention and disinfection at quarantine.*

*Resolved,* That the time of detention and disinfection at maritime quarantine stations shall be the least practicable time consistent with public safety, and in accord with scientific precepts.

#### III.

*Yellow fever, mosquitoes, and quarantine.*

(a) *Resolved,* That measures of prophylaxis against yellow fever shall be based upon the fact that up to the present time the bite of certain mosquitoes is the only proven natural means of propagation of yellow fever.

(b) *Resolved,* That the governments represented in this conference approve the measures employed in Habana for the prevention of the spread of the disease on land, for the isolation of cases, and the fumigation of buildings, it being understood that said measures are based upon the principle enunciated in resolution (a).

(c) *Resolved,* That the prevention of the importation of the disease by vessels, wherein persons actually infected are found, must conform to the methods employed on land, yet there are questions concerning the importation of infected mosquitoes that require further study before any decided modification of the quarantine laws can be recommended.

(d) *Resolved,* That the subject of bringing the quarantine laws to conform with the new doctrine of mosquito infection shall be referred to the International Sanitary Bureau of the American Republics, for report at the next meeting.

#### IV.

*Geographical distribution of yellow-fever mosquito.*

*Resolved,* That the different governments study in their respective territories the geographical distribution of the mosquito of the genus *stegomyia*, in order that said study may have practical application in subsequent conventions.

#### V.

*Garbage, lower animals, and disease.*

Whereas bubonic plague and other diseases are spread by rats, mice, and other lower animals, which, to a great extent, find sustenance in animal and vegetable kitchen wastes commonly called garbage; therefore, be it

*Resolved,* That all organic waste or garbage shall be kept separately on the premises until it can be removed, unmixed with anything else, and destroyed.



## VI.

*Typhoid fever and cholera—Disinfection of discharges.*

Whereas typhoid fever and Asiatic cholera are caused by swallowing food or drink contaminated by the discharges of previous cases; therefore, be it

*Resolved*, That it be recognized by this conference that if all the discharges of every existing case of typhoid fever and Asiatic cholera were instantly disinfected, typhoid fever and Asiatic cholera would cease to be a menace to the world.

## VII.

*International Sanitary Bureau—To aid and to be aided by the several republics.*

Whereas the Second American International Conference of the Pan-American States, held in the City of Mexico, October, 1901, to January, 1902, provided that a sanitary convention convene in Washington within one year from the signing of the resolutions on sanitation and quarantine, and shall elect an international sanitary bureau with permanent headquarters at Washington for the purpose of rendering effective service to the different republics represented in this Convention; it is hereby

*Resolved (a)*, That it shall be the duty of the International Sanitary Bureau to urge each republic to promptly and regularly transmit to said bureau all data of every character relative to the sanitary conditions of their respective ports and territories.

(b) And to furnish said bureau every opportunity and aid for a thorough, careful, and scientific study and investigation of any outbreaks of pestilential diseases which may occur within the territory of any of the said republics.

(c) It is further resolved that it shall be the duty of the International Sanitary Bureau to lend its best aid and experience toward the widest possible protection of the public health of each of the said republics in order that disease may be eliminated, and that commerce between said republics may be facilitated.

(d) It is further resolved by this convention that it shall be the duty of the International Sanitary Bureau to encourage and aid or enforce in all proper ways the sanitation of seaports, including the sanitary improvements of harbors, sewerage, drainage of the soil, paving, elimination of infection from buildings, and the destruction of mosquitoes and other vermin.

(e) It is also recommended by this convention that in order to carry out the above measures a fund of \$5,000 shall be collected by the Bureau of American Republics in accordance with paragraph 7 of the resolutions of the Second International American Conference above referred to.

The convention elected the following International Sanitary Bureau, the office of which bureau is permanently located in Washington, D. C.:

*International Sanitary Bureau.*—Surg. Gen. Walter Wyman, chairman; Dr. Eduardo Liceaga, of Mexico; Dr. Eduardo Moore, of Chile; Dr. Juan Guiteras, of Cuba; Dr. Juan J. Ulloa, of Costa Rica; Dr. Rhett Goode, of the United States; Dr. A. H. Doty, of the United States.

The transactions of this convention are published as Senate Document No. 169, Fifty-seventh Congress, second session.

## PLAGUE CONFERENCE.

On January 19, 1903, in accordance with a request from a number of State boards of health and under authority of section 7 of the act of Congress approved July 1, 1902, a conference with regard to the plague situation in the city of San Francisco and the State of California was held in the bureau. The States represented and their delegates were as follows:

California, Dr. Mathew Gardner; Connecticut, Dr. C. A. Lindsley; Colorado, Dr. H. R. Bull; Delaware, Dr. C. W. Cooper, Dr. Alex. Lowber; District of Columbia, Dr. William C. Woodward; Indian Territory, Dr. M. K. Thompson; Iowa, Dr. T. L. Kennedy; Indiana, Dr. J. N. Hurty; Louisiana, Dr. Arthur Nolte; Maine, Dr. Charles D. Smith; Maryland, Dr. John S. Fulton; Minnesota, Dr. H. M. Bracken; New Jer-



sey, Dr. Henry Mitchell; New York, Dr. Daniel Lewis; North Carolina, Dr. R. H. Lewis; Pennsylvania, Dr. Benjamin Lee; Rhode Island, Dr. Gardner T. Swarts; South Carolina, Dr. T. Grange Simons; Tennessee, Dr. J. A. Albright; Vermont, Dr. H. T. Holton; Virginia, Dr. P. A. Irving.

The transactions of the conference were published in full in the Public Health Reports of January 23, 1903, and February 6, 1903. (See also reference to this conference under report of domestic quarantine division.)

#### FIRST ANNUAL CONFERENCE OF STATE AND NATIONAL HEALTH AUTHORITIES.

In accordance with the provisions of section 7 of the act of Congress approved July 1, 1902, entitled "An act to increase the efficiency and change the name of the Marine-Hospital Service," the first annual conference of State health authorities with the Public Health and Marine-Hospital Service was held in Washington on June 3, 1903, being called to order at 10 a. m. The meetings were held at the New Willard Hotel, the Surgeon-General presiding. Introductory addresses were made by the Assistant Secretary of the Treasury, Mr. Armstrong, and the Surgeon-General. Twenty-three States and Territories were represented by delegates.

In his opening address the Surgeon-General referred to the proposed organization of these conferences in the following words:

##### CONFERENCE ORGANIZATION.

I have deemed it necessary to give this somewhat extended account of the organization of the Service, both that our aims and methods may be understood and that I may the more readily explain a proposed method of making these annual conferences of practical utility. It might be advisable to appoint on special committees members of the conference especially interested in the several subjects to be considered by these committees, said committees to remain in organization during the year and to receive for further conference with the Surgeon-General such matters as might be pertinently referred to them by him. The titles of these committees would find their analogies in the several divisions of the Bureau. The reports of these committees could be read to the full conference at its annual meeting, and, if adopted by the Bureau and the conference, would have a force and influence which would naturally result from the conjoint action of the national and State authorities. I would suggest tentatively the following committees: First, on scientific research and sanitation; second, on the prevention and spread of epidemic diseases; third, on morbidity and mortality statistics; fourth, on State legislation; fifth, on education. In addition to these, there might be special committees on certain specified diseases, namely, cholera, yellow fever, plague, smallpox, tuberculosis, leprosy, typhoid fever. To these committees might be committed such resolutions as may be offered here, but the adoption of any resolutions by this conference, it seems to me, should not be until after a report thereon had been made by the special committee to which it is referred.

It is believed that the above plan is at least worthy of trial. It would give real aid and would stimulate the members of the committees in an investigation of the subjects confided to them, and might produce a uniformity of effort, a coordination of work in different parts of the country, which now does not obtain.

The above plan of organization was approved by the conference, as evidenced by the following resolution, subsequently passed:

*Resolved*, That the methods of cooperation between national and State health authorities suggested by the presiding officer in his address meets the approval of the conference.



## CONFIDENCE AS TO PLAGUE MEASURES IN SAN FRANCISCO.

The conference also passed the following resolution with regard to the plague situation in California:

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 of travel or traffic to or from that State.

## INFORMATION AS TO STATE HEALTH ORGANIZATIONS.

Following the opening address by the Surgeon-General, each delegate present addressed the conference, giving information as to the organization, powers, etc., of their respective State health establishments. These addresses (together with subsequent information invited by Bureau circular letter from those present as well as States not represented at the conference) will appear in the transactions of the conference, which will constitute a separate publication.

## LIST OF DELEGATES.

Following is a list of States represented at the conference, together with the names and titles of those representing them:

California, Dr. N. K. Foster, secretary State board of health.  
 Connecticut, Dr. J. H. Townsend, member State board of health.  
 Delaware, Dr. E. W. Cooper, president State board of health.  
 District of Columbia, Dr. William C. Woodward, District health officer.  
 Florida, Dr. Joseph Y. Porter, State health officer.  
 Illinois, Dr. J. A. Egan, secretary State board of health.  
 Iowa, Dr. R. E. Conniff, member State board of health.  
 Kentucky, Dr. William Bailey, member State board of health.  
 Louisiana, Dr. Edmond Souchon, president State board of health.  
 Maine, Dr. A. G. Young, secretary State board of health.  
 Maryland, Dr. J. S. Fulton, secretary State board of health.  
 Michigan, Dr. H. B. Baker, secretary State board of health.  
 Minnesota, Dr. F. F. Westbrook, delegate State board of health.  
 Mississippi, Dr. J. F. Hunter, secretary State board of health.  
 Missouri, Dr. A. W. McAlester, president State board of health.  
 Ohio, Dr. C. O. Probst, secretary State board of health.  
 Oregon, Dr. Andrew C. Smith, president State board of health.  
 Pennsylvania, Dr. Benjamin Lee, secretary State board of health.  
 Rhode Island, Dr. Gardner T. Swarts, secretary State board of health.  
 South Carolina, Dr. T. Grange Simons, chairman State board of health.  
 Texas, Dr. George R. Tabor, State health officer.  
 Utah, Dr. T. B. Beatty, delegate State board of health.  
 West Virginia, Dr. Samuel N. Myers, president State board of health.  
 Total, 23.

## REPORT OF THE HYGIENIC LABORATORY.

(Prepared by Dr. John F. Anderson from notes left by the director, Dr. M. J. Rosenau, who was at Vera Cruz, Mexico, working in yellow fever at the time.)

## PERSONNEL.

Asst. Surg. Edward Francis, who was detailed for duty in the Hygienic Laboratory August 22, 1901, pursued the course as outlined in Bulletin No. 8. During this time he completed the subject of pathol-



ogy and bacteriology, especially devoting attention to those portions having a bearing upon the public health. The latter portion of the time of his service in the laboratory was devoted to original investigation of the *Trypanosoma Lewisi*, the results of his labors having been published in Bulletin No. 11. Doctor Francis also rendered much assistance in the examination of bacteriological impurities in vaccine virus and the antiseptic and germicidal value of glycerine. He was relieved from duty in the laboratory February 13, 1903, and ordered to Mexico in connection with the plague then prevailing in Mazatlan.

Asst. Surg. Allan J. McLaughlin was detailed to the laboratory April 30, 1902, for instruction, and pursued the course in pathology and bacteriology. Doctor McLaughlin also did original work on the inefficiency of ferrous sulphate as an antiseptic and germicide, the results of his labors having been published in Bulletin No. 15. He was relieved from duty October 27, 1902.

Passed Asst. Surg. Herman B. Parker was detailed to the laboratory October 27, 1902, in order that he might have the opportunity of completing the examination of specimens collected by working party No. 1 of the Yellow Fever Institute and the preparation of his report.

Asst. Surg. Thomas B. McClintic was detailed to the laboratory November 17, 1902, and has steadily pursued the course in pathology and bacteriology outlined by the director. He has shown special aptitude for laboratory work and is now engaged in original research work in connection with typhoid fever.

Asst. Surg. Clarence W. Wille was detailed to the laboratory November 21, 1902, and has now about completed the course outlined for the instruction of student officers in the laboratory.

Much of the time of the director during the year was occupied in superintending the construction of the new laboratory building. Questions constantly arose in regard to the details of construction in which it was necessary that he should be consulted by the supervising architect. A large portion of his time was also taken up in supervising and instructing student officers in the laboratory. At the request of the president of the Naval Medical School the director delivered a series of lectures on immunity to the students; also two lectures on disinfection. During the year he compiled Bulletins Nos. 8 and 12.

Passed Asst. Surg. John F. Anderson, assistant director, has assisted in the instruction of the student officers, has done original work on formalin as an antiseptic and germicide, and on April 23, 1903, was detailed by the Surgeon-General to proceed to the Bitter Root Valley, Montana, to investigate the so-called "spotted fever." The results of his work there have been compiled and are now in press in the shape of Bulletin No. 14 of the Hygienic Laboratory, entitled "Spotted Fever (Tick Fever) of the Rocky Mountains; a New Disease." During the absences of the director the assistant director performed his duties.

On August 16, 1902, Dr. Ch. Wardell Stiles was appointed chief of the division of zoology, Hygienic Laboratory, and one of the three divisions authorized by act of Congress, approved July 1, 1902, was organized. Doctor Stiles was directed to proceed to various points in the South on September 24, 1902, for the purpose of investigating the prevalence of hookworm disease. His report, which has excited a great deal of interest, has been published as Bulletin No. 10, Hygienic Laboratory.



## STUDENT OFFICERS.

During the past year five commissioned officers have been detailed for a course of instruction in the laboratory. Two of the number have completed the course; the others are now undergoing instruction.

The great value of a laboratory course, especially in connection with the public health work of the Service, has long been realized, but the lack of available officers, on account of the needs of the Service at our quarantine and hospital stations, has prevented the detail of more than two at one time; but it is hoped, and earnestly recommended by the director, that the needs of this Service may be such as to allow the detail of at least five officers for instruction each year.

It seems to the director that a detail to the laboratory before doing quarantine duty would be preferable, as in connection with the course there is given very complete instruction in practical disinfection, so that when an officer arrives at a quarantine station he can put into practice the theory that he learned at the laboratory. Moreover, by having a large number of officers trained in laboratory work, there would be at command of the Service just so many trained bacteriologists who would be able to make diagnoses of cases of suspected plague, cholera, yellow fever, and other infectious diseases. The great value of this from a quarantine point of view and the great saving to the commercial world is at once apparent, and it is hoped that this may become a routine practice for quarantine officers as they enter the Service.

Up to the present time ten officers have received the laboratory course and are now competent to do independent bacteriological, diagnostic, and research work. I think that this is a larger number of trained bacteriologists than any other Government medical service possesses.

## JOURNAL CLUB.

The laboratory receives about forty publications, about one-half of the number being foreign. In order to have the benefit of this large amount of literature and to keep pace with the progress of scientific research in different countries, the director assigned a certain number of journals to each officer on duty in the laboratory. One night each week the officers meet and each presents a brief résumé of the principal articles in the journals which have been assigned to him. This plan has been of great benefit to all connected with the laboratory.

## BULLETINS.

During the year the laboratory has issued Bulletins Nos. 8 to 13, inclusive, and Bulletins 14 and 15 have been submitted for publication. The titles are:

*Bulletin No. 8.*—Laboratory course in pathology and bacteriology; by M. J. Rosenau.

*Bulletin No. 9.*—Presence of tetanus in commercial gelatin; by John F. Anderson.

*Bulletin No. 10.*—Report upon the prevalence and geographic distribution of hook-worm disease (uncinariasis or anchylostomiasis) in the United States; by Ch. Wardell Stiles.

*Bulletin No. 11.*—Experimental investigation of *Trypanosoma Lewisi*; by Edward Francis.

*Bulletin No. 12.*—The bacteriological impurities of vaccine virus; an experimental study; by M. J. Rosenau.



*Bulletin No. 13.*—A statistical study of the intestinal parasites of 500 white male patients at the United States Government Hospital for the Insane; by Philip E. Garrison, Brayton H. Ransom, and Earle C. Stevenson. A parasitic roundworm (*Agamomermis culicis* n. g., n. sp.) in American mosquitoes (*Culex sollicitans*); by Ch. Wardell Stiles. The type species of the cestode genus *Hymenolepis*; by Ch. Wardell Stiles.

Bulletion No. 10, on account of its economical importance, has elicited great interest throughout the entire South.

Bulletin No. 12 has received much attention, especially on account of the act of Congress approved July 1, 1902, requiring the inspection of establishments manufacturing viruses, serums, toxins, and analogous products. The warning given that manufacturers of vaccine had been putting the green product on the market with a high degree of bacteriological impurities has resulted, according to the examinations which have been conducted in the laboratory, in a decided improvement in the product.

This has been decidedly the banner year for publications by the laboratory.

#### REPORTS OF CONVENTIONS.

The director of the laboratory was detailed as the representative of the Public Health and Marine-Hospital Service to act upon the committee of revision of the Pharmacopœia of the United States concerning the introduction of diphtheria antitoxin into the next Pharmacopœia.

The director was also detailed to represent the service at the meeting of the International Sanitary Conference which met in Washington, December 2 to 6, 1902, and his report thereon is hereinafter published.

#### STANDARD ANTITOXIN.

In view of the duties imposed upon the Public Health and Marine-Hospital Service by the act of Congress approved July 1, 1902, entitled "An act to regulate the sale of viruses, serums, toxins, and analogous products in the District of Columbia, to regulate interstate traffic in said articles, and for other purposes," it is greatly to be desired that a standard antitoxin should be prepared in the laboratory in order to supply the same to the various manufacturers. At the present time the only standard antitoxin that is prepared is made in Germany and only one or two manufacturers in the United States obtain this. The other manufacturers have adopted an arbitrary standard based upon the strength of a toxin of varying potency and on the recent inspection of these establishments by the director and assistant director of the laboratory the hope was expressed by each manufacturer that the laboratory would prepare a standard antitoxin for distribution to the manufacturers. The following letter to the Surgeon-General by the director of the Hygienic Laboratory in reference to this matter is appended:

I have the honor to invite your attention to the fact that it would seem to be the duty of the hygienic laboratory to prepare a standard diphtheria antitoxin for free distribution to responsible laboratories engaged in original investigation and to establishments licensed to manufacture and sell this product in accordance with the law approved July 1, 1902.

During my recent trip of inspection I was told by all the firms making diphtheria antitoxin that they looked to this laboratory for their standard, and they all urged that we take the matter up. Doctor Anderson tells me the same as a result of his inspection trip.

Further, I am informed that at a recent meeting of the American Pharmaceutical



Association which convened at Mackinac a resolution was adopted requesting the hygienic laboratory of this Service to furnish such a standard unit for testing antitoxins.

The regulations made in accordance with the law of July 1, 1902, provide that diphtheria antoxin shall have a definite potency; but as there is no legal standard it would be quite impossible to enforce the requirements of this part of the regulations, even though a firm made an inert product.

I have to especially invite your attention to the fact that in order to produce a standard antitoxin the constant services of one man skilled in this work will be required. A standard of this character must be made with the greatest precision, and the minutest precautions with every detail are necessary in order that the standard shall not deviate the smallest fraction from its true unit value. In the present state of our knowledge there are no special difficulties to be encountered in making and distributing such a standard value. It is more a question of infinite patience and attention to minute details.

In order to eliminate the personal factor from biological work of this character, it is of the greatest importance that one person be detailed for this duty; and in view of this phase I have, therefore, to recommend that it be done by a commissioned medical officer of the Service.

#### PLAGUE.

Several specimens from cases of suspected plague were received at the laboratory during the year. In one of these cases from the New York quarantine the plague bacillus was demonstrated and a report thereon was made. The other cases were examined with negative results, so far as the presence of the *Bacillus pestis* is concerned.

A test of the efficiency of a lot of Yersin serum, which had been in the laboratory about two years, was made, and it was definitely demonstrated that during that time the serum had lost its protective and curative properties.

An abstract of the methods of preparing various plague vaccines is given in another portion of this report.

#### WEEKLY INSPECTIONS.

Upon the reorganization of the laboratory on July 1, 1902, weekly inspections such as are observed at all stations were inaugurated by the director. Each Saturday morning complete and thorough inspection of the laboratory is made by the director or assistant director. This plan has resulted in much benefit to the general appearance of the laboratory, and it is contemplated that when the new building is occupied the inspection and fire drill shall be carried out as at all stations of the first class.

#### WATER ANALYSIS.

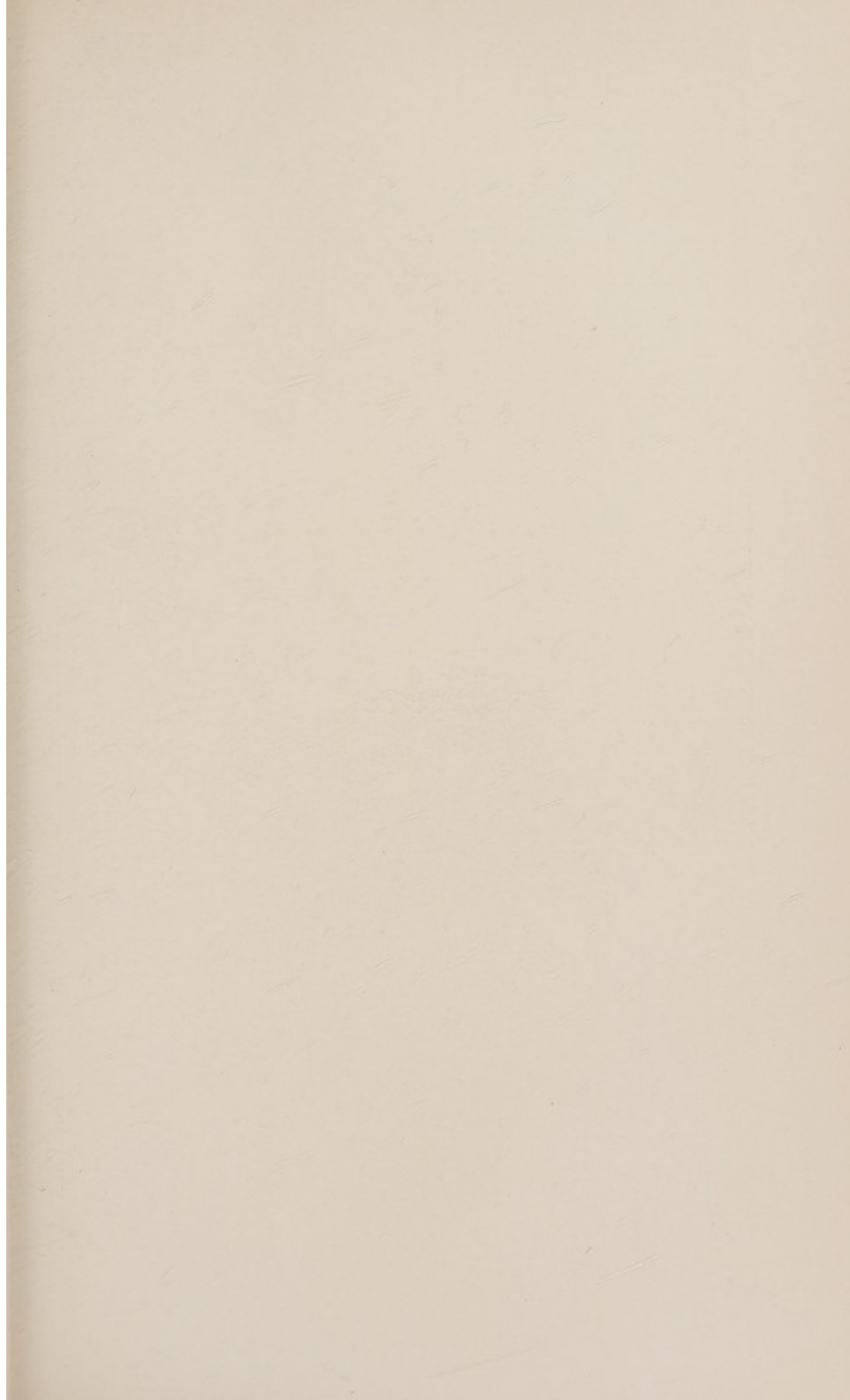
A number of samples of water were received in the laboratory for analysis, both chemical and bacteriological. Complete reports of these were made.

#### PATHOLOGICAL REPORT.

During the year a number of pathological specimens were received in the laboratory for diagnosis. They are as follows:

Epithelioma .....	7	Tuberculous prostate.....	1
Carcinoma .....	12	Tubercular adenitis.....	3
Sarcoma .....	4	Acute yellow atrophy.....	1
Papiloma .....	1	Cerebrospinal meningitis.....	2
Fibroma molluscum .....	1	Popliteal artery from case of gangrene.	1
Myoma .....	1	Nodular leprosy.....	1
Fibroma .....	1	Chancroid ulcer.....	1
Lipoma .....	1	Typhoid ulcer of the intestine.....	1
Tuberculous testicle .....	3	Appendices .....	11







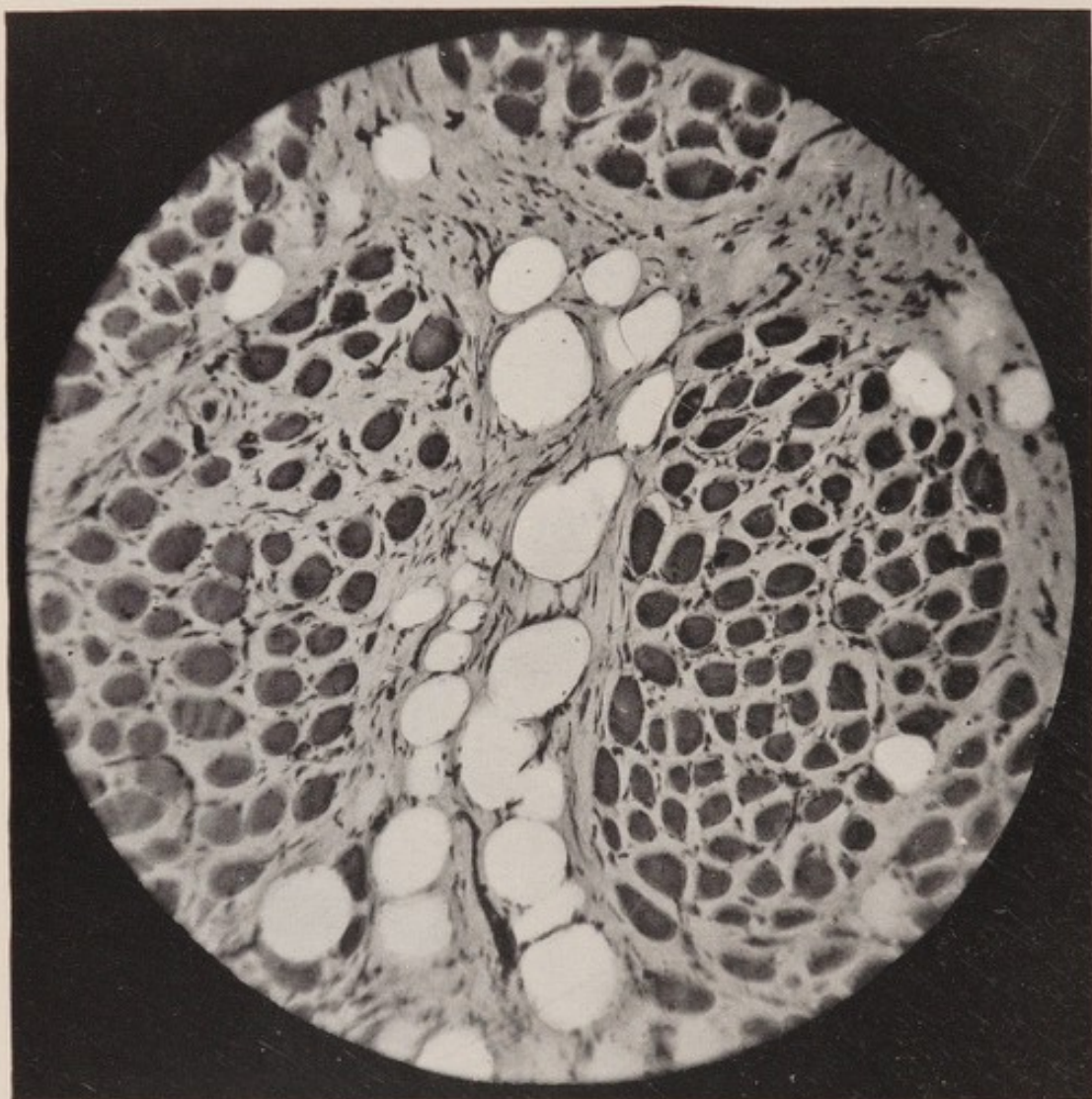


1.—PHOTOGRAPH OF TUMOR AFTER REMOVAL.



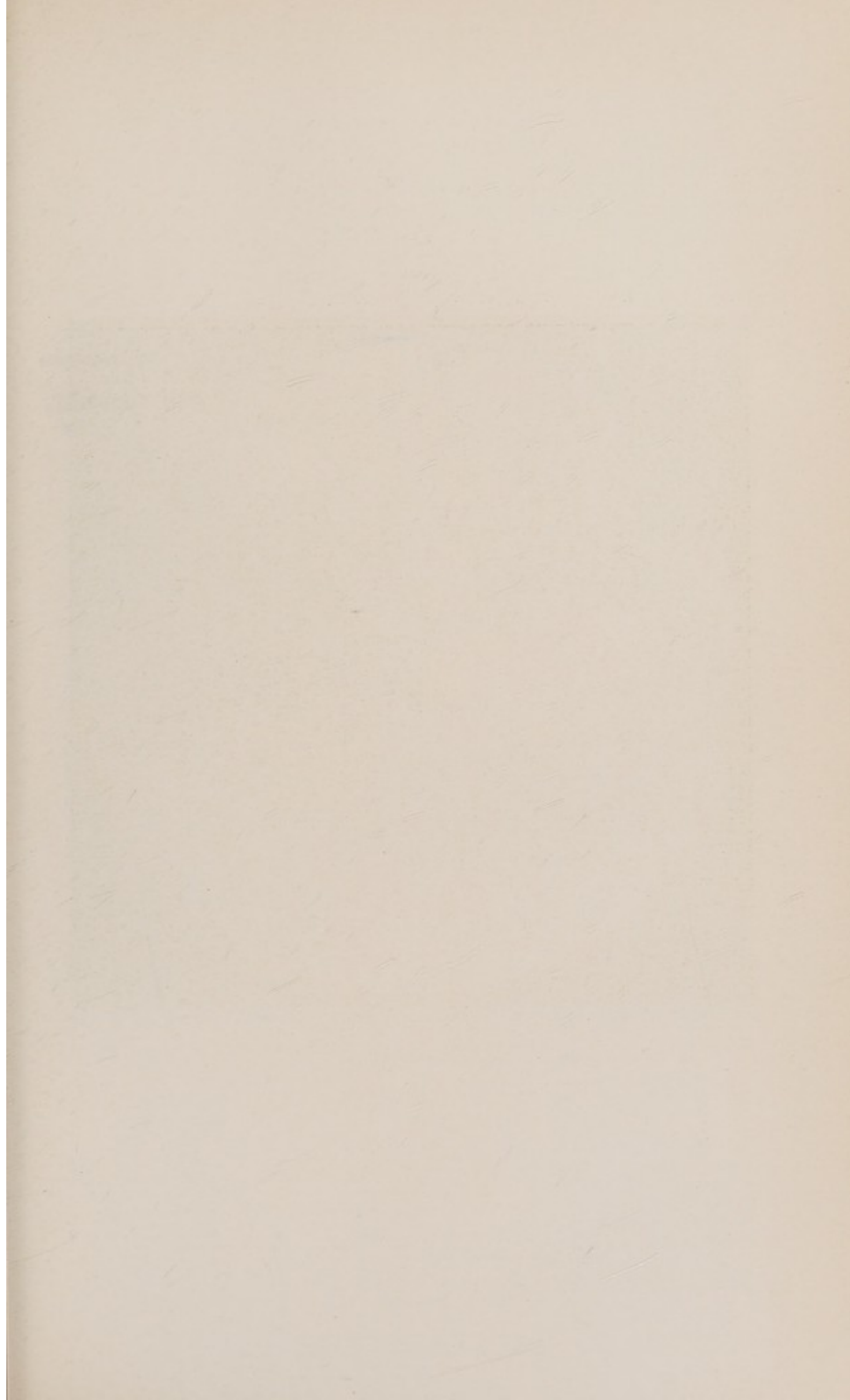




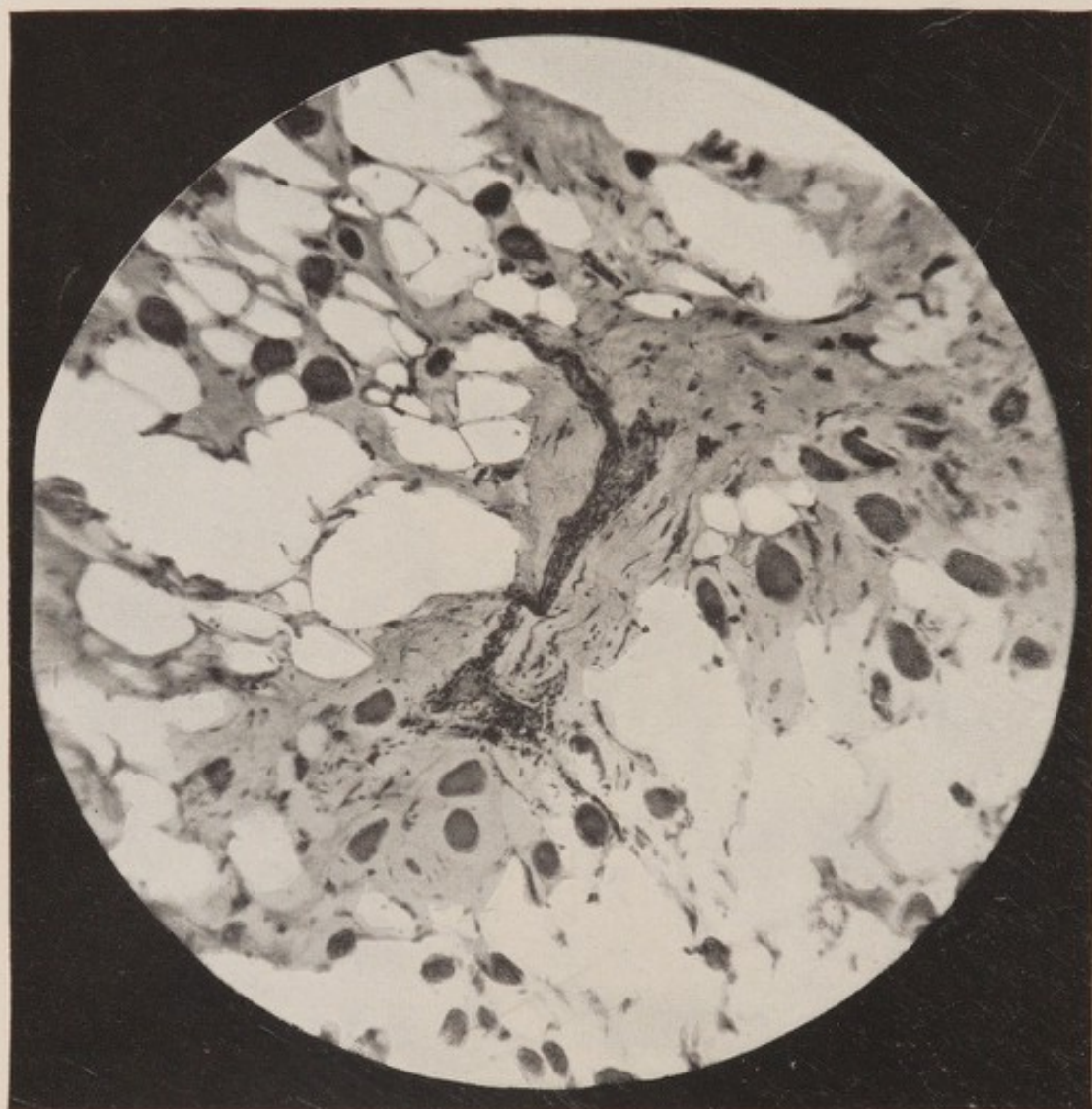


II.—SHOWING PROLIFERATED FIBROUS AND ADIPOSE TISSUE IN MUSCLE. STAINED WITH  
HEMALUM AND EOSIN.  $\times$  ABOUT 250.









III.—SHOWING BLOOD VESSELS AND ISOLATED MUSCLE FIBERS AMONG THE FAT. STAINED WITH HEMALUM AND EOSIN.  $\times$  ABOUT 250.



A complete report with diagnosis of each of these specimens was forwarded to the sender. The receipt of these specimens in the laboratory has been of great interest, as well as assistance, to the student officers undergoing instruction, and it is to be hoped that interesting specimens of pathological processes collected at our hospitals will be forwarded to the laboratory in order that they may be placed in the laboratory collection.

#### REPORT OF A CASE OF LIPOMA ARBORESCENS WITH MICROPHOTOGRAPHS.

By Asst. Surg. T. B. McCLINTIC.

This variety of fatty tumor apparently has attracted but little attention, and consequently medical literature on the subject is limited and unsatisfactory. Some of the leading pathologists make no reference in their works to a fatty tumor of this nature. Zeigler, in his *Special Pathology*, only briefly mentions it in his discussion of arthritis deformans, in which he states that when fat is later deposited in the folds and fringes of the affected joint a condition known as lipoma arborescens results.

The American Textbook of Pathology speaks of it as a proliferation of fatty tissue in the synovial layers, in which the joint recesses are filled by papilliform branching fat masses; that it is rather frequently observed in joints already affected with tuberculosis or arthritis deformans, and is rarely observed as a disease of tendon sheaths.

It is now held by some to be more frequent than has been supposed, especially in connection with diseased joints, and that conditions often classed as simple hypertrophies really belong under this heading. Evidently they consider it a secondary change, having its origin in the joint structures or tendon sheaths, and usually a result of some chronic pathological process, as arthritis deformans, tuberculosis, etc.

The case under consideration differs from the idea conveyed above in several material points. At the time of removal the tumor presented the appearance of a multiple lipoma, being made up of numerous lobes of various shapes and sizes ranging in weight from a gram or so to 300 or 400. The lobes had various attachments, some sessile, others pedunculated, which on the whole gave it a very ragged appearance. It was located in the connective tissue of the back of the thigh extending from the lower border of the gluteus maximus muscle to a point 1 inch below the kneejoint, but having no connection with the joint. The only osseous relation to be found at all was a small bone about the size of a hickory nut encysted in the tumor mass.

It is not known whether it originated in some tendon sheath or not; but it is possible, as the muscles in its neighborhood were affected. The size of the tumor, too, was unusually large, weighing at the time of removal 2,000 grams.

On section it appeared to be composed of adipose tissue inclosed in a strong fibrous capsule. After careful examination it was seen that the tumor did not have the benign characters observed in simple lipoma, but showed a tendency to invade the muscular tissue in its vicinity, replacing and destroying it. Another evidence of its not being wholly benign is its tendency to recur, having been removed twenty years ago and again five years previous to the last operation. Portions of it showed microscopically the condition ordinarily observed in simple lipoma, while other portions gave quite a different picture.

The fibrous tissue was abundant and particularly so where the muscular tissue was involved. The epimysium, perimysium, and endomysium were much thickened, but in composition did not differ materially from normal tissue found here, except that surrounding the individual muscle fibers (endomysium) which was relatively well supplied with nuclei. This showed that it was not as fully developed as the other, which consisted principally of dense, wavy, fibrous bands almost free from nuclear elements. It seemed that the proliferation of the fibrous tissue surrounding the muscle (epimysium) first took place, later that surrounding the muscle bundles (perimysium), and finally that enveloping the individual muscle fibers.

After this proliferative process had reached a certain stage of development the formation or deposition of fat would begin. From this increase of intermuscular tissue the muscular fibers would be forced apart and isolated. The effect of this was that the muscular fibers lost their striation, became more or less homogeneous, and finally atrophied or disappeared. The fat cells are larger than ordinarily observed in adipose tissue, and appear to be formed at the expense of the fibrous tissue until there is only a framework of the latter remaining, i. e., a process of metaplasia.

The blood vessels are not abundant, but are distributed in the connective tissue and branch freely. The different coats of the vessel are not distinguishable, but



that portion next the lumen is very rich in cellular elements, which gives it the appearance of a newly formed blood vessel.

There is some round-celled infiltration in the perivascular space, but not abundant.

The accompanying photographs show particularly the involvement of the muscular tissues.

#### MICROPHOTOGRAPHY.

During the year there was supplied to the laboratory a complete Zeiss microphotographic apparatus, and with this some very satisfactory microphotographs of bacteria and tissues have been made.

The photographs accompanying the article on lipoma arborescens were taken with this same apparatus.

#### DISINFECTANTS.

Much work was done the past year with various disinfectants. Upon the request of the Clayton Fire Extinguishing and Disinfecting Company, the director of the laboratory was directed by the Surgeon-General to proceed to New York for the purpose of making tests of their apparatus. His report upon this subject has not yet been completed.

The work upon the inefficiency of ferrous sulphate as an antiseptic and germicide was published as a bulletin.

Work upon formalin as an antiseptic and germicide is now being prosecuted in the laboratory, and when completed it will be the subject of a bulletin.

During the year, in view of the fact that glycerine is used by all vaccine manufacturers in conserving their product, an extended series of experiments on the antiseptic and germicidal value of glycerine in various percentages was done in the laboratory. This work has been about completed, and the results are now being compiled for publication as a bulletin.

#### PLAGUE VACCINES.

The following is a brief summary of the various methods for the preparation of plague vaccines:

*Haffkine's prophylactic.*—A 2-days-old virulent serum culture of *Bacillus pestis* from the heart's blood of a plague-inoculated rat is used. Subcultures from this are made by inoculating flasks containing about 1.5 liters of nutrient bouillon. These are grown at 30° C. for one month. The flasks are shaken at intervals of a few days. The cultures are sterilized at the end of this time in a water bath by heating at 70° C. for one hour. After sterilization 0.5 per cent of carbolic acid is added.

The dose of this vaccine for a man is 3 cm.<sup>3</sup>.

*The vaccine of the German plague commission.*—The German plague commission, while working in Bombay, believed that as a result of their experience a more exact dose of the vaccine could be obtained than is possible with the vaccine prepared by Haffkine's method. Their method was as follows:

As an original culture they use a serum culture. From this they inoculate flasks of agar having a large surface. These are grown in the incubator at 30° C. for three days, then flooded with sterile bouillon and the suspension sterilized by heating at 65° C. for one hour. For every 10 cm.<sup>2</sup> of culture surface 3 cm.<sup>3</sup> of bouillon are used. The dose is the same as that for Haffkine.

*Vaccine of Lustig-Galeotti.*—Bouillon is inoculated with a 2-days-old serum culture and grown in the incubator at 30° C. for two days; then flasks of agar with a large surface are inoculated heavily from this bouillon growth. After three or four days incubation at 30° C. the agar plates are flooded with 1 per cent caustic potash solution; then the flasks are well shaken, with the result that the culture forms a mass resembling the white of a hen's egg, rather sticky, and permitting to be drawn out into threads. The mass is then poured off into beakers and mixed with 1 per cent acetic acid constantly stirred, producing a flocculent precipitate, which settles to the bottom. The supernatant fluid is decanted and discarded. The sediment is gathered



on filter paper, washed with sterile water until the filtrate is of a neutral reaction. The residuum left upon the filter is placed in watch crystals and dried in vacuo; then the dry mass is pulverized, and in this state will keep for a long time. Lustig and Galeotti believed this to be a nucleo-proteid.

The dose of this vaccine for a man is 0.0133 gram of the dry substance; 0.04 gram of the powder is dissolved in 21 cm.<sup>3</sup> sodium carbonate solution, and this is sufficient for three immunizing doses; or by dissolving 2 grams of the dry powder in 1 liter of sterile sodium carbonate solution we have a quantity sufficient for immunizing 143 persons.

*Modification of Lustig's vaccine.*—The German plague commission made some tests with a combination of Haffkine's and Lustig's method. They used a culture 1 month old in the same way that Haffkine's vaccine was prepared. This was precipitated with ammonium sulphate and filtered. The residuum was washed with 1 per cent potash solution, then with 1 per cent acetic acid solution and precipitated with a few drops of 5 per cent hydrochloric acid, and it was allowed to settle. The sediment was collected on filter paper, washed with sterile water until the filtrate was of a neutral reaction, then placed in watch crystals, dried in vacuo, and pulverized. This gave a brown powder, which was dissolved in 1 to 2 per cent sterile carbonate solution before injection.

*Vaccine of Calmette.*—This vaccine consists of cultures dried directly upon agar or bouillon cultures, filtered, and the residue allowed to dry. The mass thus obtained is placed in hermetically sealed tubes. This is readily dissolved and injected.

The results of this method have no advantages over Lustig's method; but, on the contrary, it is more dangerous in the preparation of large quantities, and, therefore, it was not tried in the laboratory.

*Antipest vaccine, anticholera vaccine, and antityphoid vaccine.*—A forty-eight-hour old culture of agar is used. The surface is scraped and emulsified in a small amount of physiological salt solution, then heated at 60° C. for one hour in the water bath. The emulsion is then poured into a cylindrical vase containing agglutinative serum, which agglutinates the bacilli. Two layers are formed: The microbes on top and the serum below. The clumps at the junction of the two form larger and larger until finally they drop to the bottom, the supernatant fluid becoming clear. This is decanted and discarded. The mass at the bottom of the flask is thoroughly washed in a centrifuge with physiological salt solution until the last trace of serum disappears. The mass which remains is pasty, semiliquid white, and mixed with physiological salt solution gives a fine homogeneous emulsion. This is the vaccine.

Anticholera and antityphoid serum are made in the same way, except that the bacteria and the serum are mixed before washing. The serum must be very actively agglutinative, not necessarily protective or prophylactic. The microbes must be thoroughly washed of all serum. It is claimed that the vaccine thus prepared has lost all toxic action. Immunity in a mouse appeared forty-eight hours after injection and lasted five and one-half months. In a guinea pig immunity was possessed for five and one-half months.

#### NEW LABORATORY BUILDING.

The new building, an appropriation of \$35,000 for which was approved March 3, 1901, is now about completed, and a description of it might be of interest. It is constructed of dark, hard-burned brick, two stories and an attic.

On the first floor at the west side of the entrance is the general office for the stenographer and pharmacist. Adjoining this is the private office of the director. To the east of the entrance is the reception room, and adjoining this is the office of the assistant director. A large room, 17 by 27 feet, in the east wing has been set aside for the division of zoology. This room will be divided by glass partitions, so that there will be one large general workroom and two smaller rooms for special work. Opening off this room is the private office of the chief of the division. The large room, 17 by 27 feet, in the west wing of the building on this floor is to be devoted to photography. In this room will be placed the microphotographic apparatus, cases for the preservation of negatives, and the storage of any special photographic apparatus. This room will be provided with a large roll curtain, so that lantern exhibitions may be given to the student officers. Connected with this



room is the dark room. This room is provided with a window of rich, orange-colored glass. In it are the necessary sinks and a special cabinet for plates. South of the main entrance is the library, 14 by 19 feet, which will contain sufficient shelf room for about 10,000 volumes. This room will be fitted with a long table in order that it may be used for board meetings.

The second floor has in the center, facing north, 3 rooms for the chiefs of the divisions of pathology and bacteriology, chemistry, and pharmacology, respectively. The west room, 28 by 28 feet, is for the division of pathology and bacteriology. This room contains workbenches so arranged that 9 officers may be easily accommodated, each with an entire window for his own use. The desks will be so arranged that there will be ample locker and drawer room. Small sterilizers will also be placed in this room, with a large sink for washing small glassware, a small post-mortem table, a table for the microtomes and reagents for urinalysis. A special apparatus for the delivery of trikresol, distilled water, and tap water will be installed at each workbench. The runways for pipes are so arranged that there are no pipes exposed to view. The east room on this floor is for the use of the divisions of pharmacology and chemistry. Complete workbenches with necessary lockers and drawers will be installed. Two large tables are to be placed near the center of the room for general work. A chemical hood and a large sink are also to be provided.

On this floor are the incubator and cold rooms. It is contemplated that the incubator room shall be maintained at a uniform temperature by electric heaters. In the cold room a low uniform temperature is to be maintained by means of a special system of brine circulation through pipes placed near the ceiling.

The attic, while not to be used for storage, is light and roomy. In the southwest and southeast ends are to be placed two large tanks, capacity about 1,000 gallons. The tanks for trikresol and distilled water will also be placed in the attic.

In the basement are located the heating plant (steam), the necessary storage for coal, and two large general storage rooms. The large sterilizers and a large sink for the cleaning of heavy glassware will also be located here.

The building is provided with two lifts running from the basement to the attic, one on each side of the stairway.

All workbenches, cases, cabinets, tables, and other fittings will be of oak with a golden oak finish.

A large flag pole surmounts the building, from which the national ensign will float.

Following is the report of the chief of the Division of Zoology, Dr. Ch. W. Stiles.

#### REPORT OF THE DIVISION OF ZOOLOGY OF THE HYGIENIC LABORATORY.

By Dr. CH. WARDELL STILES, Chief of Division.

SIR: I have the honor to submit the following report of the Division of Zoology for the fiscal year ended June 30, 1903:

#### TEMPORARY QUARTERS.

Pending the completion of the new laboratory building this division has been occupying temporary quarters from August 16, 1902, to June



1, 1903, in the laboratory of the Division of Zoology, United States Bureau of Animal Industry, and from June 1, 1903, to date in the Medical School of Georgetown University.

The fact of being in temporary quarters has naturally interfered some with regular routine work.

#### FIELD WORK.

Three field trips have been undertaken, namely, one through the Southern Atlantic States by myself to study hookworm disease; one through the anthracite coal region of Pennsylvania by myself to study the parasites of the coal miners; and one to Middletown, Conn., by Mr. Garrison to study the parasites of the insane.

#### HOOKWORM DISEASE (*uncinariasis*).

By far the most important work of the division this year has been the determination of the prevalence and geographic distribution of hookworm disease in the Southern Atlantic States. The results obtained are printed in Bulletin No. 10, Hygienic Laboratory, United States Public Health and Marine-Hospital Service, Washington.

Since the scientific and press reports of this investigation have appeared my observations have been confirmed by a number of practitioners, who report excellent results with the thymol treatment. Almost every week letters are received from various practitioners telling of cases they have found. Of such correspondents I would mention in particular Dr. E. D. Bondurant, of Mobile, Ala.; Doctor Harrison, of Talladega, Ala.; Doctor Julian, of Thomasville, N. C.; and Dr. J. S. Helms, of Tampa, Fla.

#### PARASITES OF PENNSYLVANIA MINERS.

In accordance with instructions from the Surgeon-General, dated March 5, 1903, I visited the anthracite coal region of Pennsylvania to determine whether hookworm disease was present in that region.

The statements relative to anæmia among the Pennsylvania miners, gathered from the daily press, were very contradictory, but there were good a priori reasons for assuming that hookworm disease would be found. I was unable, however, to find any cases.

#### INTESTINAL PARASITES OF THE INSANE.

In order to ascertain the approximate frequency of various intestinal parasites of man in this country according to sex, age, and race, arrangements were made with the Government Hospital for the Insane to obtain material from all the patients of that institution. The results of the first 500 examinations have been published in Bulletin No. 13, Hygienic Laboratory, United States Public Health and Marine-Hospital Service, Washington, pages 5-13. The results of further examinations at this hospital will be published during the fiscal year 1903-4.

In order to obtain similar statistics for some other locality as a basis for comparison, an arrangement has been made with the Connecticut Hospital for the Insane, at Middletown, Conn., where we shall make 1,000 examinations.



THE DWARF TAPEWORM (*Hymenolepis nana*) PRESENT IN THE UNITED STATES.

Incidentally the division has been able to show that the dwarf tapeworm is much more common in this country than has hitherto been supposed. A bulletin which has been prepared by Mr. Ransom dealing with this subject will soon be submitted for publication.

## THE ZOOLOGICAL COLLECTION.

Following the precedent of the United States Bureau of Animal Industry, the specimens of our zoological collection have been given numbers in the Helminthological Collection of the United States National Museum. The museum numbers reserved are as follows:

Nos. 1-4700 have been set aside for the United States Bureau of Animal Industry.

Nos. 4701-9400 have been set aside for the miscellaneous specimens of parasites deposited in or presented to the United States National Museum or sent to the Museum for determination.

No. 9491 has been set aside for the United States Public Health and Marine-Hospital Service.

The advantage of this plan is self-evident. According to the sundry civil act of March 3, 1879, scientific specimens collected by any service in this Government eventually become the property of the National Museum when the service collecting them has no further use for them. By the plan adopted every specimen collected will retain its original serial number, thus preventing future confusion which would result from a change of number.

The following specimens have been entered in our collection during the fiscal year 1902-3:



Catalogue No.	Nature of specimen.	Name.	Sex.	Locality.	When collected.	Received from—	Collected by—	When entered.	Determined by—	Host.
9401	Slide	<i>Agamomermis culicis</i> Stiles.	Larva	New Brunswick, N. J.	Summer, 1902.	John B. Smith.	John B. Smith.	1902. Aug. 22	Stiles	<i>Culex sollicitans</i> .
9402	do	<i>Hymenolepis nana</i> (Siebold).		Galveston, Tex.	do	J. T. Moore, M. D.	J. T. Moore, M. D.	Aug. 28	do	<i>Homo sapiens</i> .
9403	do	Tenia segments		Philadelphia, Pa.	Aug., 1902	L. N. Boston, M. D.	L. N. Boston, M. D.	Sept. 5	do	Greyhound, <i>Canis familiaris</i> .
9404	do	Tenia eggs		do	Sept., 1902	do	do	do	do	Do.
9405	do	Tenia segments		do	do	do	do	Sept. 19	do	Do.
9406	Alcohol	<i>Tenia saginata</i>		Mullet Key, Fla.	do	Dr. C. C. Pierce.	Dr. C. C. Pierce.	Sept. 29	Hassall	<i>Homo sapiens</i> .
9407	do	Leech		Stillwater, Okla.	do	F. S. Rector.	F. S. Rector.	Sept. 29	Stiles	Crayfish.
9408	do	<i>Tenia saginata</i>		Mullet Key, Fla.	do	Dr. C. C. Pierce.	Dr. C. C. Pierce.	do	Stiles	<i>Homo sapiens</i> .
9409	do	<i>Echinorhynchus</i> sp.		San Antonio, Tex.	Oct., 1902	Dr. Jos. W. Parker.	Dr. Jos. W. Parker.	Oct. 11	Hassall	Pointer, <i>Canis familiaris</i> .
9410	do	<i>Opisthorchis sinensis</i> .		San Francisco, Cal.	do	Dr. J. W. White	Dr. J. W. White	Oct. 28	do	<i>Homo sapiens</i> .
9411	do	" <i>Distoma heterostomum</i> ,"		London, Ontario	Nov., 1902	Dr. W. J. Stevenson	Dr. W. J. Stevenson	Nov. —	do	
9412	Alcohol and slide.	<i>Uncinaria americana</i> .	Female	San Francisco, Cal.	do	Dr. Geo. H. Evans and Dr. Mary Halton.	Dr. Geo. H. Evans and Dr. Mary Halton.	Nov. 26	Stiles	Do.
9413	Alcohol	" <i>Ascaris capsularia</i> ,"		Hartford, Conn.		Dr. C. C. Beach.	Dr. C. C. Beach.	do	do	Codfish.
9414	Slide and dry bottle.	<i>Stegomyia fasciata</i>		Orizaba, Mex	Sept. 20, 1902.	Dr. M. J. Rosenau.	Dr. M. J. Rosenau.	Nov. 28	Parker, Ransom, Stiles, Coquillett.	
9415	Alcohol	<i>Tenia serrata</i>	Eggs, male and female.	Columbia, Mo.	Nov., 1902	W. McN. Miller	W. McN. Miller	do	Stevenson	<i>Canis familiaris</i> .
9416	2 slides	<i>Achylostoma duodenae</i> .		Chicago, Ill.	Fall, 1902	Dr. J. A. Capps	Dr. J. A. Capps	Dec. 1	Capps	<i>Homo sapiens</i> .
9417		" <i>Distoma pseudochinatum</i> ,"								
9418		<i>Tenia saginata</i>		Washington, D. C.		Dr. G. L. Magruder			Stiles	Do.
9419		Banana, as spurious parasite.		Portland, Me	Dec. 7, 1902	Dr. Ch. D. Smith	Dr. Ch. D. Smith	Dec. 11	Ransom	Do.
9420	Alcohol	<i>Hymenolepis nana</i> .		Charleston, S. C.	Dec., 1902.	Dr. J. L. Dawson	Dr. J. L. Dawson	do	do	Do.
9421	do									
9422	do	<i>Dipylidium caninum</i> .		Mullet Key, Fla.	do	Dr. C. C. Pierce	Dr. C. C. Pierce	1903. Jan. 2	Stevenson and Stiles.	<i>Canis familiaris</i> .
9423	do	<i>Dibothriocephalus latus</i> .		do	do	do	do	do	do	Do.
9424	do	Larval <i>bothrioccephalus</i> .		do	do	do	do	do	do	Do.







## DETAIL TO UNITED STATES BUREAU OF ANIMAL INDUSTRY.

Upon request of the Secretary of Agriculture I was detailed to act as consulting zoologist of the United States Bureau of Animal Industry, and as such I have continued to have supervision over the division of that Bureau.

## DETAILS TO MEDICAL AND SCIENTIFIC MEETINGS.

I have attended the following medical meetings upon request on the part of the respective societies to the Surgeon-General that I be detailed to address them on the subject of hook-worm disease:

Meeting of the Alabama State Medical Association, held at Talladega, Ala., April 21-24, 1903.

Meeting of the Texas State Medical Association, held at San Antonio, Tex., April 28-May 1, 1903.

Meeting of the American Medical Association (section on medicine), held at New Orleans, La., May 4-8, 1903.

Meeting of the North Carolina State Medical Association, held at Hot Springs, N. C., June, 1903.

Respectfully,

CH. WARDELL STILES,  
*Chief, Division of Zoology, Hygienic Laboratory.*

To the DIRECTOR OF THE HYGIENIC LABORATORY,

U. S. P. H. AND M. H. S.

# REPORTS OF OFFICERS DETAILED TO MEETINGS OF MEDICAL AND PUBLIC HEALTH ASSOCIATIONS.

REPORT ON MEETING OF THE ASSOCIATION OF MILITARY SURGEONS, AT BOSTON, MASS., MAY 19-21, 1903.

By Asst. Surg. Gen. GEORGE T. VAUGHAN.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, July 13, 1903.*

SIR: In accordance with Bureau letter of May 15, 1903, detailing me to represent the Service at the meeting of the Association of Military Surgeons in Boston, May 19, 20, and 21, I have the honor to make the following report:

The opening exercises were held at 10.30 a. m., May 19, at Faneuil Hall. Addresses were delivered by Governor John L. Bates, Dr. George A. Francis, and the president of the association, Gen. Robert A. Blood.

The foreign delegates were: Colonel Wreden, from Russia; Colonel Charlton, from England; Colonel Ryerson, from Canada; Colonel Augurre, from Mexico, and Lieutenant Castelli, from Italy.

Other officers of the Public Health and Marine-Hospital Service in attendance were Surg. Gen. Walter Wyman, Surgs. S. D. Brooks, D. A. Carmichael, and R. M. Woodward, Asst. Surg. W. C. Rucker, and Acting Asst. Surg. W. H. Marsh.

The second Enno Sander prize was awarded to Asst. Surg. W. C. Rucker, Public Health and Marine-Hospital Service, the title of the paper being "The differential diagnosis of typhoid fever in its earliest stages." This paper was read by its author and discussed by Surg. Gen. Walter Wyman and others.

In the report of the necrology committee one item of interest to the Service was mentioned with reference to the death of Surgeon Vansant, namely, that some years ago he had published an article on certain bodies he had found in the eruption of or in connection with smallpox, which were thought to have an important relation to its etiology.

In the evening a reception was given by the First Corps Cadets, M. V. M., to the members, ladies, and invited guests.

May 20: The association met at 10 o'clock a. m., the president, General Blood, in the chair. Papers were read as follows: "The education of the medical officer," by Maj. William C. Borden, U. S. Army; "My first aid to the wounded; the trip of the steamer *S. R. Spaulding*, transporting our wounded prisoners from City Point, Va.,



to Philadelphia after the Seven Days' Battles in 1862," by Lieut. Col. Henry O. Marcy, U. S. Volunteers; "New England men in the Medical Corps of the Navy of the United States," by Medical Inspector Franklin Bache Stephenson, U. S. Navy; and "Service conditions, retirement and pensions," by Medical Director John C. Wise, U. S. Navy.

The nominating committee was then appointed, and the writer was appointed on this committee to cast the 10 votes to which the Service is entitled. The association adjourned at 1 p. m. to lunch given by Dr. H. O. Marcy at his house. At 2.30 the association was called to order by the president, and the following papers read and discussed: "The acting assistant surgeon, United States Army," by Maj. Azel Ames, U. S. Volunteers; "On the prevention of the spread of infectious diseases on board ship," by Surg. Henry G. Beyer, U. S. Navy; and "Appendicitis," by Dr. E. Castelli, of the Italian army.

At 7 p. m. the nominating committee met and unanimously submitted the following slate for confirmation by the association: President, Medical Director John C. Wise, U. S. Navy; first vice-president, Surg. Gen. Walter Wyman, United States Public Health and Marine-Hospital Service; second vice-president, Maj. A. H. Briggs, New York National Guard; third vice-president, Surg. Gen. Robert M. O'Reilly, U. S. Army; treasurer, Maj. Herbert Arnold, National Guard Pennsylvania. St. Louis was recommended as the next place of meeting.

In the evening the association attended an exhibition of the ambulance corps, Massachusetts Volunteer Militia, Capt. Robert E. Bell.

May 21. The association met at 10 o'clock a. m., the president in the chair. The following papers were read and discussed: "Results of treatment of tuberculosis at Public Health and Marine-Hospital Service sanatorium, Fort Stanton, N. Mex.," by Surg. P. M. Carrington, Public-Health and Marine-Hospital Service. A synopsis of this paper was read by Asst. Surg. Gen. George T. Vaughan and photographs of the station were exhibited. "The treatment of anterior dislocation of the shoulder, with report of a case in which reduction was prevented by the detached greater tuberosity," by Asst. Surg. Gen. George T. Vaughan, Public Health and Marine-Hospital Service; "An external suture," by Capt. Thomas Page Grant, K. S. G.; "Sixteen cases of tropical abscess of the liver," by Lieut. E. W. Pinkham, late U. S. Army, and "Three cases of fracture of the base of the skull," by ———, Massachusetts Volunteer Militia.

The report of the nominating committee was confirmed and the selection of the next place of meeting was left to the executive committee.

The new president was installed and about 1 p. m. the association was invited to take a trip to Lexington and Concord on automobiles, through the courtesy of the Automobile Club of Massachusetts, and other excursions by land and water were tendered for the next day. The association having adjourned, I left Boston about 7 o'clock p. m., reaching Washington about 10 o'clock a. m., May 22.

Respectfully,

GEORGE T. VAUGHAN,  
*Assistant Surgeon-General.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### REPORT ON MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION, NEW ORLEANS, LA., DECEMBER 8-13, 1902.

By Surg. H. R. CARTER.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
*Baltimore, Md., December 20, 1902.*

SIR: As directed by Bureau orders of December 3, 1902, I have the honor to submit the following report of the meeting of the American Public Health Association held in New Orleans, La., from December 8 to December 13, 1902:

The first day of the meeting was devoted to the bacteriological section of the association. Owing to the train being late, I was unable to attend the morning session of the section, which I regret, as it was devoted to the *Bacillus coli* and its congeners and methods of detecting and differentiating these organisms in waters, a subject of the greatest importance and interest to sanitarians. At the afternoon session there were a number of interesting papers read—two, by Mazyck P. Ravenel and E. A. de Schweinitz, respectively, to show the identity of bovine and human tuberculosis, a view which I think was sustained; one by Doctor Park on an epidemic of dysentery



in New York and New Jersey marked in a large proportion of the cases examined by the presence of Shiga's bacillus. A paper by McFarland, on the "Value of antiseptics to preserve serums," was, I think, of importance to the Service. Of carbolic acid, tricresol, and formalin, the substances tested, he found that formalin, one-tenth per cent, was the most efficient except against molds. In sufficient large amount to prevent molds (one-half per cent) it was objectionable from the pain produced by the injection. In spite of this, he ranks formalin the best, and carbolic acid, one-half per cent, the next best, and does not approve of the use of tricresol.

A paper on "The differential morphology of the *B. diphtheriae*, *B. pseudo-diphtheriae*, and *B. xerosis*," by Denny, of Brookline, Mass., was also interesting from a practical standpoint. He claims that the differentiation of the first organism from the other two is easy from their morphology in pure cultures of over twenty-four hours old, the difference becoming more marked with the age of the culture. In cultures symbiotic with the pus organisms—such as are always depended on for the diagnosis of diphtheria by most boards of health—this difference in morphology is slight and not dependable. A most important observation if confirmed.

A paper on "Formaldehyde disinfection," by Hill, of Boston, seemed to me to be of less practical value than similar work by Geddings and Rosenau, of this Service. He laid stress, as do all, on the need of the presence of moisture with the gas for it to be most efficient. In the debate on this paper an instance was related by a member of the use of paraform in what seemed great excess with failure to kill test organisms. No explanation was vouchsafed, but from the statements of the reporter it seems to me probable that he had evaporated the paraform as such without decomposing it.

The morning session of the second day was occupied by a paper on "The examination of the waters of the United States," by Mr. Leighton, United States Hydrographer, a paper valuable for the work outlined rather than as a report of work done. The examination contemplated was commercial, not sanitary, but took cognizance of contamination from the commercial standpoint. This was followed by a symposium on the disposal of city refuse by a number of prominent men. Only brief abstracts of the papers, made by Rudolph Herring, were read. It was easy to see that garbage generally—as distinguished from sewage—was considered as a nuisance rather than as a menace to health.

In the afternoon session the paper by Doctor Liceaga on the "Sanitary measures proposed to railroad companies" seemed the most important. He did not state that the measures were adopted by the companies, and I am inclined to think that some of them would not willingly be carried out, if avoidable.

I was unable, on account of sickness, to be present on the third day (December 10) until the evening session. The feature of the session was the symposium on yellow fever. Doctor Liceaga stated that the yellow fever epidemic in Vera Cruz had diminished as soon as "war was made" on the *Stegomyia*, but that owing to the nature of water supply the measures against this mosquito could not be carried out with completeness. The next summer this could be done, and he then hoped to show the same results in Vera Cruz as had been obtained in Habana. Doctor Iglesias, of Vera Cruz, recommended the disinfection of all cars, especially Pullman cars, with  $\text{SO}_2$  when leaving a focus of yellow fever. He does not seem to have tried it, and, however advisable it may be, there are some obvious difficulties. The two papers by Ross, U. S. Navy, and Gorgas, U. S. Army, both defending the thesis that yellow fever is only transmissible by means of an infected *Stegomyia* mosquito, were the papers of the evening, and they alone were debated. The paper of Ross, in particular, excited much favorable comment as a close argument. Unfortunately the debate began late and was thus less interesting than would otherwise have been the case. Only one man, Souchon, of the Louisiana board of health, opposed the position taken in the above papers, although, to my knowledge, there were several in the audience (Matas and Parham, of New Orleans, Porter, of Florida, and others) who agreed with him. It was late and the feeling was that nothing would be settled by debate. There is a disposition in New Orleans to await further direct evidence as to other alleged means of conveyance, such as the present quarantine of Habana against Vera Cruz—a quarantine against vessels and people, but not against fomites—may give. I believe that the sentiment among the profession in New Orleans is changing toward the view that the *Stegomyia* is the only means of conveyance of yellow fever, but it has not entirely accepted it yet.

The papers of the last day, save one of Liceaga on arm-to-arm vaccination, and one by Formento on agricultural colonies for tuberculosis, were of little Service interest.

Surgeon-General Wyman, Public Health and Marine-Hospital Service, was elected president for the ensuing year and was installed amid general enthusiasm. He was nominated by Durgin, of Boston, and was seconded by Montizambert, of Canada



and Conn, of New Hampshire, in speeches at once highly laudatory and very hopeful of the good that would result to sanitation in America through him from the law of July 2, 1902.

The meeting adjourned December 12, 1902, to meet in Washington, D. C., next year.

Respectfully,

H. R. CARTER,  
*Surgeon, Public Health and Marine-Hospital Service.*

THE SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

MEETING OF SPECIAL COMMITTEE WITH COMMITTEE ON THE REVISION OF THE PHARMACOPŒIA OF THE UNITED STATES.

By Passed Asst. Surg. M. J. ROSENAU, Director Hygienic Laboratory.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
HYGIENIC LABORATORY,  
Washington, March 11, 1903.

SIR: In compliance with Bureau orders of February 28, 1903, I have the honor to report that I attended the meeting of the special committee called to confer with the committee on revision of the Pharmacopœia of the United States.

The object of the meeting was to decide upon the advisability of admitting diphtheria antitoxin and serum products into the Pharmacopœia and further to determine the methods of standardizing serum products for potency and purity.

The committee met at the residence of Prof. Joseph Price Remington, 1832 Pine street, Philadelphia, Pa., at 4 p. m., Saturday, March 7, 1903, and remained in continuous session until after midnight of that same day.

The following were present: Dr. Theobald Smith, chairman, professor of comparative pathology, Harvard Medical School, and director of pathological laboratories of State board of health, Cambridge, Mass.; Dr. William Hallock Park, assistant director of the research bacteriological laboratories, department of health, New York, N. Y.; Dr. Herbert D. Pease, director of the antitoxin laboratory, New York State department of health, Albany, N. Y.; Dr. J. J. Kinyoun, director of the biological laboratory, H. K. Mulford & Co., Glenolden, Pa.; Dr. E. M. Houghton, director of the pharmacological department, Parke, Davis & Co., Detroit, Mich.; Prof. Hobart A. Hare, professor of therapeutics, Jefferson Medical College, Philadelphia, Pa.; Capt. Joseph E. Craig, U. S. Navy, Washington, D. C.; Dr. M. J. Rosenau, passed assistant surgeon and director hygienic laboratory, U. S. Public Health and Marine-Hospital Service, Washington, D. C.

There was a unanimity of opinion among those present that diphtheria antitoxin should be admitted into the Pharmacopœia. The Pharmacopœia, however, demanded that the standard be accurately described and the antitoxic unit be definitely defined. On account of the complications and difficulties surrounding these definitions, and on account of certain differences of opinion, it was impossible to reconcile all the members present, so that we could not agree upon a standard and proper definition.

Other minor details arose, which required further elucidation, and it was finally decided to adjourn the meeting until May, when all the members constituting the committee will be in Washington to attend the meeting of the Society of American Pathologists and Bacteriologists.

Respectfully,

M. J. ROSENAU,  
*Passed Assistant Surgeon and Director Hygienic Laboratory.*

TO THE SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

REPORT ON FIRST EGYPTIAN MEDICAL CONGRESS, CAIRO, EGYPT, DECEMBER 19-24, 1902.

By Asst. Surg. Victor G. Heiser.

CAIRO, EGYPT, January 3, 1903.

SIR: In accordance with the instructions contained in Bureau letter of November 20, directing that I attend the First Egyptian Medical Congress which was to be held at Cairo, Egypt, commencing December 19, as a delegate to represent the Service, I have the honor to report as follows:



The First Egyptian Medical Congress was informally opened by a reception given to the members at the Continental Hotel on the evening of December 18, and was formally opened on the morning of December 19 by His Highness the Khedive. The ceremony took place in the Khedival opera house in the presence of an immense audience. The Khedive read an address of welcome in which he stated that he had no doubt that the bringing together of so many eminent scientific men could but result in much good to his country.

The following delegates replied in the order named: For Germany, Doctor Nolda; Austria, Professor Nothnagel; Belgium, Doctor Eid; United States, Surg. Maj. William Gorgas, U. S. Army; France, Professor Bouchard; Great Britain, Dr. Reginald Harrison; Hungary, Prof. Karl Hoor; Italy, Professor Maragliano; Persia, Mirza Mohamed M. Kahn; Russia, Professor Pawloff; Switzerland, Professor Eternod.

In the afternoon the Khedive received the delegates who represented countries, at the Abdine Palace. He took occasion to personally thank each delegate for his presence, and begged that his appreciation be conveyed to the country which the delegate represented.

The scientific sessions commenced on the morning of December 20. The different sections met daily from 9 to 12 a. m. and 3 to 6 p. m. During the hour from 12 to 1 the members of the faculty of the Cairo School of Medicine kindly showed patient suffering with diseases not commonly seen in other countries. Many interesting cases of pellagra, leprosy, ankylostomiasis, bilharzia, etc., were shown. The entire work of the congress was transacted in French. At such times as the members of the congress were not at the scientific sessions, entertainments in abundance were given. Invitations to attend various functions were literally showered upon the delegates. The Khedive himself gave no less than three entertainments. The committee and officers of the congress are to be congratulated upon the successful manner in which the gathering was managed. It was no small task to arrange the details, especially when it is considered that this is an oriental country and that the delegates came from many countries and spoke many different languages.

The following were the officers of the congress: President, S. E. Ibrahim Pacha Hassan; general secretary, Doctor Voronoff.

The scientific work of the congress was divided into three sections, viz, internal pathology, surgery, and ophthalmology.

Almost the entire time of the congress was taken up by papers and discussions on tropical disorders. The diseases most discussed were bilharzia, dysentery, malaria, and ankylostomiasis. The disease which received the greatest amount of attention was bilharzia. A short description of this disease is given below.

The statements of Doctor Kartoulis, of Alexandria, a recognized authority on dysentery, were considered very important. (See below.) Malaria received considerable attention, but nothing particularly new was advanced. Very little interest was manifested in the subject of yellow fever, probably because it is a disease not known here. Ankylostomiasis received much attention, owing to the important contributions of Professor Loos, of the Cairo School of Medicine, and that of Doctor Stiles, of the Public Health and Marine-Hospital Service. Considering the extent of the recent cholera epidemic in Egypt, considerable surprise was expressed that not more matter was presented at the congress on this subject. (The manner in which the cholera epidemic was managed will be made the subject of a separate report.)

*Bilharzia*.—Disease is caused by the *Hoematobia bilharzia*, discovered in Egypt by Professor Bilhartz. The organism is unisexual. Male measures from 5 to 12 mm. in length and is cylindrical in shape. The female, which is much smaller, lies in a groove in the male. The digestive tube has a mouth, pharynx, esophagus, and gastro-intestinal cavity, but there is no anal opening. The organs of reproduction are distinct in each sex. Fecundation takes place in the portal vein, from which place the eggs are carried to all parts of the body. The disease may localize anywhere, but the genito-urinary tract is the seat of election. Disease is much more common among the inhabitants of lower Egypt. This is attributed to the fact that nearly all the water in upper Egypt is rapid-running water, while that of lower Egypt is of a more stagnant nature owing to the extensive irrigation. Change of residence to another country usually has a tendency to make the symptoms disappear, but they recur again on returning to Egypt. Ninety per cent of cases are found in men. It is introduced into the body by the ova being swallowed with drinking water, food, etc. "It is also supposed to gain entrance through the skin, but this has not been satisfactorily demonstrated as yet" (Loos). In the vesical form of the disease the eggs may usually be found in the few drops of blood that are voided at the end of micturition. Presence of the disease in the human body generally causes fistulas, vesical calculi, tumors, and abscesses (particularly hepatic), owing to the tissue destruction which takes place wherever the disease localizes itself. It is gen-



erally described as occurring in two forms, the mild and the grave. In the mild form medical treatment as a rule is alone employed. In the grave form surgical intervention is usually necessary, the indications for which are the same for like lesions due to other causes. All treatment is symptomatic. Change of climate, salol, urotropine, alkaline mineral waters, and a general tonic treatment are recommended.

Below is given a brief résumé of the more important papers read before the Congress.

#### SECTION OF INTERNAL MEDICINE.

President, S. E. Dr. COMANOS PACHA.

- (1) "Dysentery," by Doctor Kartoulis, of Alexandria.

He states that only the tropical form of the disease gives rise to hepatic abscesses. He considers that a case of dysentery seen early in the course of the disease should never reach the abscess stage. From an experience gained from hundreds of cases he has seen, it is his opinion that when properly treated there need be no fear of liver abscess. His treatment consists of rectal injections of a solution of tannin and the internal administration of salicylic acid in some form. He states that the administration of ipecac and other remedies may be of value, but that the essential part of the treatment must be the irrigation of the large bowel.

- (2) "Recent experiences of the United States Army with regard to the sanitation of yellow fever in the tropics," by Surg. Maj. William Gorgas, U. S. Army.

This paper was read by title only.

- (3) "Early diagnosis of typhoid fever by a culture, which is always positive in the blood of typhoid cases," by Dr. J. Courmont, of Lyons.

He states that by making cultures from the blood of typhoid cases, between the first and twentieth day of the disease, a positive diagnosis may be arrived at. At least 5 cm.<sup>3</sup> of blood must be withdrawn. Claims that the test is superior to Vidal's because it is available so much earlier.

- (4) "Epidemics in Egypt," by Doctor Bitter, of Cairo.

Considers that the spread of the recent cholera was due almost entirely to water. Great obstacle to successful management was the inability to enforce the registration of deaths, thus making the concealment of cases possible. Another difficulty was that many of the villages do not have a doctor. Epidemic was managed from a scientific standpoint and with great success. Mortality was lower than in previous epidemics, in spite of the fact that the disease was of a virulent form. (For details of management see separate report.)

- (5) "Ankylostoma Duodenale," by Professor Loos, of the Cairo School of Medicine.

This paper was considered a very important contribution, because the proof that the organism of this disease may gain entrance into the system through the skin was considered conclusive. He stated that he had mixed a culture of the organism with powdered charcoal and smeared this lightly and without scarification on the skin of a dog. In a definite number of hours symptoms of the disease were observed and on post-mortem the typical lesion were found. A similar smear was accidentally left on the back of his own hand and shortly afterwards he developed the disease. He also showed numerous microscopical preparations, in which the organism could be seen to have penetrated the skin to various depths.

- (6) "Uncinariasis (Ankylostomiasis) in the United States," by Doctor Stiles, of the Public Health and Marine-Hospital Service, read by Asst. Surg. Victor G. Heiser.

The object of the paper was to show that the disease exists in the United States, particularly in the sand districts of Georgia and Florida. It is due to a hitherto unrecognized hook worm which he named the *Uncinaria Americana*. Many facts were also cited to show that Bentley's view that the initial symptom of the disease was ground itch was incorrect, at least in so far as the cases observed in the United States were concerned.

#### SURGICAL SECTION.

President Dr. H. MILTON.

The surgery of Bilharzia was the principal topic discussed and the following rules for the treatment of this disease were generally concurred in:

- (1) It is a reasonably safe procedure to puncture hepatic cysts through the abdominal wall, but the operation should never be attempted unless hospital facilities are immediately available in case of accident.

- (2) Vesical calculi may be treated by lithoplaxy when the stone is small and the case not otherwise complicated. The hypogastric operation is considered the best for the remainder of the cases.



(3) The indications for the surgical interference for abscess, tumor, fistula, etc., are the same as when the lesion is due to other causes.

(4) Temporary relief may be obtained for rectal cases by the use of iodoform, ichthyol, or opium suppositories.

(5) It is not believed that even a light case can be permanently cured.

(6) Prophylaxis should be strenuously urged, and should consist of signs in street cars, restaurants, railway coaches, etc., which should set forth the danger of infected water for drinking or bathing.

#### OPHTHALMOLOGICAL SECTION.

President, MAHAMED ELOUI BEY.

The principal subject discussed was the so-called "Egyptian eye disease," but there was so much diversity of opinion among the delegates that no conclusions were arrived at.

At a general meeting held at 6 p. m. December 24 at the Continental Hotel, the following resolutions were adopted:

(1) That a conference similar to the Venice convention be held in the near future for the purpose of revising the quarantine regulations.

(2) That the next Egyptian Medical Congress be held in the latter part of December, 1907.

(3) By Doctor Langlois, that pilgrimages to Morocco be governed by the same rules as now exist in Egypt.

(4) By Doctor Legrand, of France, that the surveillance of eastern Egypt be more active at Suez and particularly on the Red Sea.

(5) By Doctor Gayet, that measures be taken to prevent the spread of trachoma in Egypt and that the measures proposed by Dr. Eloui Bey be adopted.

(6) By Doctor Chantmesse, of France, that separate pavilions be adopted in all hospitals for typhoid cases in order to prevent contagion.

On the morning of December 24 a general meeting was held at the Khedivial Opera House. The president, Dr. Ibrahim Pacha, thanked the delegates for their assistance in making the congress a success. A delegate from each country represented replied with a few appropriate remarks.

The following resolution was then read:

"The members of the First Egyptian Medical Congress learn with most profound regret of the death of Major Reed, of the Medical Corps of the United States Army. The brilliant and important part that he took in the discovery that the *Stegomyia* mosquito was the only transmitter of the parasite of yellow fever, succeeding thereby in putting the ravages of this terrible disease under the control of hygiene, makes his death a cruel loss to humanity. The congress decides in consequence to express on this occasion all its sympathy to the Medical Corps of the United States Army, and also to the family of Major Reed.

"The congress decides further to beg the secretary to send, through the proper official channels, a copy of this resolution to the Surgeon-General of the United States Army and another copy to Mrs. Reed."

A brilliant address on prophylaxis was delivered by Professor Nothnagel, of Vienna. After the report of the secretary had been read, S. E. Fakhry Pacha, minister of public instruction, declared in the name of the Khedive that the congress was closed.

Respectfully,

VICTOR G. HEISER,  
*Assistant Surgeon.*

The SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### REPORT ON THE MEETING OF THE AMERICAN PUBLIC HEALTH ASSOCIATION, NEW ORLEANS, LA., DECEMBER 8-12, 1902.

By Asst. Surg. CLAUDE C. PIERCE.

TAMPA BAY QUARANTINE,  
*Mullet Key, Florida, December 20, 1902.*

SIR: I have the honor to make the following report of the proceedings of the thirtieth annual meeting of the American Public Health Association, which took place at New Orleans, December 8-12, 1902.



In accordance with instructions contained in Bureau letter of November 22, I arrived at New Orleans on December 7.

The annual convention of the section of bacteriology and chemistry was held in Gibson Hall, Tulane University, on Monday, December 8, and many interesting papers dealing with recent original research along the line of bacteriology were read.

The paper by Hill and Ricards on "Formaldehyde disinfection" was ably prepared and some important conclusions reached, viz, humidity is an important factor in formaldehyde disinfection, and atomization by steam current is the most satisfactory method of applying the gas.

All the papers on bacteriology were of interest to the Service; the printed proceedings of the association will contain these papers as read, so that further comment is unnecessary.

The first session of the general association was held December 9, at 10 a. m., in Tulane Hall, University Place, being called to order by President Holton. After some preliminary executive details, including election of a large number of new members, among whom were Passed Assistant Surgeons Wertenbaker and Grubbs and Assistant Surgeon Pierce, the reading of papers was taken up.

The morning session was devoted to discussion of disposal of refuse materials in cities; the afternoon session brought out two papers relative to vital statistics and the necessity for uniformity and cooperation in keeping such records.

This work should be under the auspices of the Public Health and Marine-Hospital Service to insure the most practicable results. In the "Report of the committee on the cause, prevention, period of incubation, and duration of infectious diseases," the chairman referred to the highly scientific article by Surgeon Carter relative to yellow fever which appeared as Bulletin No. 10, Yellow Fever Institute; to the work of the Marine-Hospital Service Commission sent to San Francisco to investigate bubonic plague; and to Passed Assistant Surgeon Perry's report on the epidemic of cholera in the Philippine Islands.

The evening session was given to addresses of welcome and the annual address of the president. He expressed satisfaction at the recent legislation changing the name and increasing the efficiency of the Marine-Hospital Service, and suggested as an additional duty that the sanitary administration in connection with the works on the proposed Isthmian Canal be under the supervision of the Public Health and Marine-Hospital Service.

The morning session of the second day brought up the "Report of the committee on public health legislation," which was read by the chairman, Dr. U. O. B. Wingate. In speaking of the recent legislation affecting the Marine-Hospital Service, which was at first opposed by the American Public Health Association, he said, "It is hoped that this measure provides a foundation upon which may be built up a national health service, such as the intelligence of the people and the age in which we are living demands."

At this session was also read the "Report of the committee on national lepers' homes," in which the recommendations of the Marine-Hospital Service leprosy commission were referred to and indorsed by a resolution placing the association on record as favorable to the establishment of national leprosaria.

The evening session was devoted entirely to papers and discussion upon yellow fever. The fact that this disease is transmitted only by the *Stegomyia fasciata* was accepted by all who spoke upon the subject except Dr. Edmond Souchon of the Louisiana State board of health.

The morning session of the third day, December 11, was partly occupied with executive work, after which some papers relative to smallpox were read by the Mexican representatives present.

The afternoon session was taken up by the reading and discussion of the remaining papers on the programme. At the last session, Friday morning, December 12, the following officers were elected: Surg. Gen. Walter Wyman, president; Dr. Charles O. Probst, Columbus, Ohio, secretary; Dr. F. W. Wright, New Haven, Conn., treasurer.

The election of Surgeon-General Wyman as president of this association, aside from recognition of his prominence in sanitary and public health affairs, will harmonize the organizations interested in public health and eliminate useless friction between those who should work in unity.

The association adjourned at noon on Friday, December 12, to meet next year in Washington, D. C.

Respectfully,

CLAUDE C. PIERCE,  
Assistant Surgeon.

THE SURGEON-GENERAL PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



## REPORT ON MEETING OF THE FLORIDA STATE MEDICAL ASSOCIATION, ST. AUGUSTINE, FLA., APRIL 8, 1903.

By Asst. Surg. CLAUDE C. PIERCE.

TAMPA BAY QUARANTINE,  
*Mullet Key, via Tampa, Fla., April 13, 1903.*

SIR: I have the honor to report that in accordance with instructions contained in Bureau letter of April 3, 1903, detailing me to represent the Service at the Florida State Medical Association, I left this station on April 7 and arrived in St. Augustine April 8.

I went directly to the meeting place and was in time for the opening of the first session and made application for membership. During this session the usual business was transacted.

The afternoon session was taken up by Doctor McCormack, of Kentucky, in an address on the "Reorganization of the medical profession," this paper having been changed from Thursday morning to the afternoon of Wednesday. A committee was appointed to report on the advisability of Florida adopting the constitution as prepared by the American Medical Association regulating the organization of county and State societies, to report on the following morning.

The evening session was for an oration by Dr. De Witt Webb, of St. Augustine, upon the "Hippocratic oath."

The morning session on April 9 was taken up by business. The American Medical Association constitution was adopted; new members were elected—one of the number being myself—and a bill approved for introduction to the State legislature to establish a board of State medical examiners to replace the present unsatisfactory system of district examiners. Reports from the county medical societies were also read.

Dr. Edward Andrade, bacteriologist for the State board of health, read a paper on "Bacteriology and public health," in which he reported cases in which the general practitioner had been helped by work done in the State laboratory. Doctor Pittman introduced a resolution, which was carried, to extend to State Health Officer Porter a vote of thanks for having established the laboratory which examines any bacteriological specimen free of charge for doctors throughout the State.

At the afternoon session on April 9 the election of officers was taken up, resulting in the election of Dr. De Witt Webb, of St. Augustine, as president, and Dr. J. D. Fernandez, of Jacksonville, as secretary and treasurer. Representatives of Ocala and Liveoak both invited the association to meet there during April, 1904, and the location balloted upon, the result being the selection of Liveoak.

The reading of papers was then taken up at about 4.30 p. m. The regular order of the programme was reversed to permit Dr. J. B. S. Holmes, of Atlanta, Ga., to first read a very excellent paper on renal surgery. This was followed by a paper by Dr. S. G. Worley on non-union of fractures, and "Report of cases of appendicitis" by Dr. J. N. Fogarty. Discussion on these surgical papers was delayed until all were read.

The section of medicine was then taken up and a scholarly oration on "Political and professional ethics" was read by Dr. J. D. Love, of Jacksonville. The paper on "Education against tuberculosis" was then read by Assistant Surgeon Pierce. The next paper was "Foreign bodies in ear and nose," by Doctor Goodbred, of Mayo, Fla., and then "Report of abdominal sections," by Doctor Liell, of Jacksonville.

The surgical papers were then discussed briefly, some additional cases being reported. The last paper on the programme, "Hygiene in schools," was then read by Doctor Bennett, and the society adjourned to meet next year in Liveoak.

Nine papers in all were read hurriedly and received but little discussion. All the papers were referred to the publication committee.

At 9 p. m. on this date the association was tendered a banquet at the Alcazar Hotel by the St. John's County Medical Society, which was attended by all present. Those in attendance upon the meeting left St. Augustine for their homes upon the following day, April 10.

Respectfully,

CLAUDE C. PIERCE,  
*Assistant Surgeon.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.



## REPORT OF MEETING OF THE ALABAMA STATE MEDICAL ASSOCIATION, TALLADEGA, ALA., April 21-24, 1903.

By CHAS. WARDELL STILES, Ph. D., Chief Division of Zoology, Hygienic Laboratory.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
HYGIENIC LABORATORY,  
Washington, May 23, 1903.

[Through Director Hygienic Laboratory.]

SIR: Referring to Bureau letter dated April 20, instructing me to represent the Service at the meetings of the State Medical Association held at Talladega, Ala., April 21 to 24, 1903, I have the honor to submit the following report:

The early part of the meetings I missed, not arriving until Thursday, April 23.

Of the papers presented on Thursday morning, April 23, Doctor Bondurant's discussion of "The prevalence of hookworm disease in Alabama" attracted the most attention. He stated that this disease is common near Mobile. He has diagnosed about 50 cases and knows of about 150 cases found by other men. His results fully confirm the work of this Service. I was requested to open the discussion and, after presenting the Surgeon-General's compliments to the president and members of the association, I gave an account of my results on hookworm disease. In the discussion by other men the fact was brought out that a number of Alabama practitioners have found cases in different parts of the State and have had good success with thymol. The cases in question have been diagnosed heretofore chiefly as "chronic" or "pernicious" malaria.

After the discussion I visited four local State institutions for the deaf, dumb, blind, and orphans in company with Doctor Harrison and Doctor ———, where we found several cases without difficulty. Doctor Harrison and I also visited the cotton mills and saw several persons whom we suspected were suffering from uncinariasis, and Doctor Harrison has since informed me that he has had positive diagnosis in several cases.

Dr. Seale Harris, of Union Springs, discussed sources of infection with typhoid, laying stress upon flies as distributors of the infectious material.

Dr. W. H. Blair, of Sheffield, discussed pneumonia in the aged, laying stress upon treatment with turpentine, and upon packing instead of baths.

Dr. W. H. Sanders, of Mobile, briefly discussed massage as a much neglected therapeutic measure.

Dr. G. S. Brown, of Birmingham, reported a case of extra-dural hemorrhage, the result of the violence of the paroxysms of whooping cough in a boy of 5. The symptoms were, first, pain, to which was added somnolence, paralysis of the left arm, and then convulsions. The skull was trephined over the motor area and a clot the size of a bean was found. The symptoms were immediately relieved and the paralysis disappeared in less than two hours. Holt says that such hemorrhages are always from the middle meningeal artery and that most of the patients recover. He does not give any statistics and does not say whether or not there are ever any sequelae, such as permanent paralysis. Townsend (old Ref. Handbook, Wood) reports 12 cases with 5 deaths and says that doubtless the mortality is higher than this, because it is the successful cases that are most often reported. The speaker had not been able to find that such a case had ever been operated upon before. The patient recovered rapidly and was out in two weeks.

Dr. L. L. Hill, of Montgomery, presented the patient in whom he had sutured the heart. He gave no new facts not contained in his article printed in the Medical Record of November 29, 1902.

Of the other papers I heard especial attention should be directed to a discussion on pulmonary tuberculosis by Dr. William Curtis Baily, of Las Vegas, N. Mex., in which the speaker laid stress upon diagnosis during the "prætubercular stage," viz, before the bacilli were to be found in the sputa. His chief points may be summarized as follows: (1) The earliest change to be noted is in the outline of the infraspinal muscles of the scapula on the affected side. This outline changes from the curve to a straight line and then to an angle. The scapula falls and lies nearer to the dorso-median line than does the scapula of the other side. (2) What he called the "shadows of the throat" in an early tubercular case are quite variable morning, noon, and night, and this variation is accentuated by tuberculin or by iodine. (3) Rest is of much greater importance than is usually admitted, especially if a temperature is noted. Doctor Baily's results on early symptoms are new and, if confirmed, would appear to be of considerable importance. He will furnish the Service with a copy of his paper as soon as printed.



Among other matters which came before the meeting of particular interest to the Service was the report of Dr. W. H. Sanders, health officer of Alabama, as to the action of the board of health of his State on the subject of maritime quarantine.

Respectfully,

CH. WARDELL STILES,  
*Chief Division of Zoology.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

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REPORT OF MEETING OF THE TEXAS STATE MEDICAL ASSOCIATION, SAN ANTONIO, TEX.,  
APRIL 28-MAY 1, 1903.

By CH. WARDELL STILES, Ph. D., Chief Division of Zoology, Hygienic Laboratory.

TREASURY DEPARTMENT,  
BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
*Washington, May 23, 1903.*

[Through Director Hygienic Laboratory.]

SIR: Referring to Bureau letter dated April 20, instructing me to represent the Service at the meetings of the State Medical Association held at San Antonio, Tex., April 28 to May 1, I have the honor to submit the following report:

Of the 74 papers announced on the programme, attention should be called to the following:

Dr. John T. Moore, of Galveston, in one paper laid stress upon the geographic situation of Texas in reference to tropical diseases. In another paper he gave an account of a case of infection with the dwarf tapeworm (*Hymenolepis nana*) occurring in Texas. The only earlier case of this kind for this country is 1 reported by Spooner (1873) in Philadelphia, but the zoological division has found 1 case in South Carolina, 3 in Georgia, and 1 in the Government Hospital for the Insane. The indications are that this parasite will prove to be very common in our Southern States.

Maj. C. F. Mason, U. S. Army, Fort Sam Houston, discussed Malta fever, reporting a case. He reviewed the cases thus far reported for this country. Major Mason also reported on dhobie itch.

Dr. H. A. West, Galveston, gave an excellent general summary of the symptomatology of heart disease, and Dr. J. C. Anderson, Granger, gave an interesting historical review of certain discoveries in the obstetric art.

Dr. Hugh W. Crouse, Victoria, presented a new method of procedure in compound fractures, using rubber in windowing. His chief results may be summarized as follows:

The method of using plaster of Paris in immobilizing compound fractures leads frequently to septic results. The frequent changes necessary in order to secure aseptic conditions leads very readily to malposition of the reuniting bone. On account of having met a case of marked septicemia resulting from a compound fracture of the tibia, accompanied by excessive laceration and bone fragmentation, the following technique was devised: Dental rubber, known as No. 2, was dissolved in commercial chloroform, sufficient of the latter being used to form a semigelatinous paste; absorbent wool was worked into this until a meshed mass resulted. Taking strands of the rubber-laden wool, the plaster cast having been windowed sufficiently to give an inch of healthy uninjured tissue around the entire circumference of the wound, the skin having been previously shaved, sterilized, and well dried, layer after layer was rapidly packed by the aid of a dural elevator between the cast and skin until at every point a snug filling existed; then, by using a plain chloroform solution of the rubber, the entire area was rapidly veneered until a smooth rubber mass, extending from near the wound margin well out onto the cast existed. The cast was then shellaced. The wound is dressed antiseptically, after being flushed with copious weak antiseptic solutions, the cavity of the wound packed with 5 per cent iodoform gauze, as a drain, covered with sterile gauze and cotton, bandaged, and the limb reswung to afford chance of change of position. In some cases, where the wound is extensive, necessitating wide windowing, the cast should be strengthened not alone by doubling back and forth the plaster bandage, but reenforced with two or three pieces of No. 10 to 12 telephone wire laid lengthwise to the cast. The exact location of the wound and extent of the windowing is indicated by taking a couple of pieces of tin, having them X-jointed, then four other pieces formed so as to slide over the ends, the sliding parts being perforated on the top to permit the passage of a pin. These are all sterilized with the instruments used



in the primary dressing of the case. The limb should be shaved, dusted with boracic acid, covered with absorbent wool (the latter is preferred to cotton on account of its resiliency despite moisture). The jointed tin strips, with their pin-laden sliding pieces are placed, the slides slipped to give the area you desire to cover in windowing, and the cast put on with the usual precautions, care being taken alone in allowing the pin points exit to secure their aid in locating the amount of healthy space desired about the wound in opening the cast the subsequent day. After the cast has been cut around the pins, which can indicate a narrow or wide space by simply spreading or closing the X, the strips are caught at the joint, bent, and the ends readily removed from under the cast by traction. Sillex, a liquid glass, can be used instead of shellac for protecting the cast. Doctor Hoff, of Ann Arbor, Mich., professor of dental surgery in the University of Michigan, has used rubber for several years in handling compound fractures of the inferior maxillary, windowing on the inside of the mouth. This technique commends itself in several types of cases outside of compound fractures, such as Anderson's split operation in correcting severed tendons, exsecting of tubercular joints, and in any case where immobilization is desired and a wound being present demanding frequent treatment.

In résumé, the old method demands frequent changes endangering each time the position of the reuniting bone; the accumulation of discharges frequently induces skin necrosis and resulting ulcers, the cast readily becomes septic and malodorous, double windowing being demanded for counter drainage, a puncture through healthy tissue being forced upon one in order that the tube should have a dependent point for drain. This method is aseptic, permits exact windowing, permits frequent inspection, delivers us from puncturing healthy tissue for counter drain, allows copious flushing—the ideal treatment in septic wounds—permits constant immobilization and is decidedly cosmetic. Originality is not exactly claimed for this technique; it is simply commended to the medical profession and a trial asked by the author of this paper.

In the section on State medicine and public hygiene I gave an evening lecture on "The significance of the recently recognized hook-worm disease for the Texas practitioner," which led to considerable discussion, which brought out the fact that this disease exists in Texas, more particularly in the eastern part of the State.

Dr. S. M. Morris, Galveston, was to have presented "A new form of formaldehyde generator with disinfecting experiments," but he was not present. From various sources I learned that it is claimed for this apparatus that it is simple in structure, cheap in price, easy of operation, and that it generates formaldehyde more rapidly than the disinfectors now in use.

A committee was appointed by the association to draft a bill for a State board of health and to present the same at the next meeting.

The association also decided to reorganize in accordance with the plan of the American Medical Association.

Of special interest to the Service is the following resolution, which was unanimously adopted by the association:

*Resolved by the State Medical Association of Texas, That we do hereby petition the various Gulf State boards of health to adopt the regulations for the season of 1903, as laid down by the Public Health and Marine-Hospital Service of the United States, thus giving open quarantine with Cuba until such time as Cuba may become infected with yellow fever.*

Respectfully,

CH. WARDELL STILES,  
*Chief of Division of Zoology.*

Respectfully forwarded on date received, July 31, 1903.

JOHN F. ANDERSON,  
*Assistant Director.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

#### REPORT OF THE MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, PHILADELPHIA, PA., SEPTEMBER 8-15, 1902.

By Senior Pharmacist SAMUEL W. RICHARDSON.

PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE,  
OFFICE OF MEDICAL OFFICER IN COMMAND,  
St. Louis, Mo., September 23, 1902.

[Through the medical officer in command.]

SIR: In compliance with Bureau orders, dated September 2, 1902, I have the honor to submit the following report of my attendance upon the meetings of the American Pharmaceutical Association held at Philadelphia, Pa., September 8-15, 1902.



With my colleague, Pharmacist and Chemist A. M. Roehrig, I met with all the general sessions and those of the various sections on scientific subjects. Many papers were presented, read, and discussed. Much interest was taken therein by all in attendance.

Prof. H. W. Wiley, representative of the Department of Agriculture, was present and made remarks on the investigation of crude drugs for impurities and adulterations. The announcement of the establishment of a pharmaceutical laboratory by that Department was well received and its work officially indorsed by the association.

The American Medical Association was represented by Dr. Frank S. Woodbury, who, in the course of his remarks, took occasion to express his thanks for the material assistance of the association to the body he represents.

All the State pharmaceutical associations and the colleges of pharmacy were represented by delegates.

The question of a reduction in the internal-revenue tax on alcohol was discussed, and resolutions looking to that end were passed. The excessive import duty on drugs preserved by alcohol was also made the subject of remark.

Higher educational qualification for matriculants at colleges of pharmacy, was the subject of an interesting paper by Professor Searby, of California, who advanced the opinion that candidates for a pharmaceutical education should at least be graduates of high schools, or pass examinations in branches equivalent thereto. The opinion expressed was generally concurred in.

The trade relations of the profession were given close attention in the section devoted to that subject.

The letter from the Surgeon-General was received with applause, and the representation of the Service at this meeting of the association highly appreciated by the members, who expressed the desire that the cordial relations established might be continued. The status of the pharmacist in public service was informally discussed, and gratification evinced at the action of the Surgeon-General in the change of title from hospital steward to pharmacist, increase of compensation granted by the regulations of 1897, and other official recognition in his published reports.

Telegrams of congratulation on the semicentennial celebration of the association were received from all quarters of the world and appropriately acknowledged.

The election of officers resulted in the selection of Dr. George F. Payne, of Atlanta, Ga., to the office of president of the association for the ensuing year.

Mackinac Island, Mich., was selected as the next place of meeting, and the date set for Monday, August 10, 1903.

Respectfully,

SAMUEL W. RICHARDSON,  
*Pharmacist, P. H. and M. H. S.*

Respectfully forwarded.

JAMES M. GASSAWAY,  
*Surgeon, P. H. and M. H. S., in Command.*

THE SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

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REPORT ON MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, PHILADELPHIA,  
SEPTEMBER 8-15, 1902.

By Senior Pharmacist ALBERT M. ROEHRIG.

UNITED STATES IMMIGRATION SERVICE,  
MEDICAL DIVISION,  
*New York, N. Y., September 18, 1902.*

[Through the medical officer in command.]

SIR: In compliance with Bureau order September 2, 1902, detailing me to represent the Service at the meeting of the American Pharmaceutical Association, held in Philadelphia, Pa., September 8, 1902, I have the honor to report that, together with Senior Pharmacist Samuel W. Richardson, of the Service, I attended the semicentennial meeting of the association, which was called to order by the president, Dr. Henry M. Whelpley, of St. Louis, Mo., September 8, 1902. I attended the meetings of the general sessions, also those of the various sections. Many interesting papers were read, and in some instances quite extensively discussed.

Dr. H. W. Wiley, Chief of the Division of Chemistry, in and representing the Department of Agriculture, delivered a very interesting address before the section on scientific papers upon the establishment of a pharmaceutical laboratory in that Department for the purpose of investigating drug and food adulterations and developing



uniform methods for their examination. Doctor Wiley's remarks were well received and officially indorsed by the association.

Dr. Frank L. Woodbury, of Philadelphia, represented the American Medical Association.

An informal discussion of pharmacy in the public service elicited many warm expressions of commendation for the Surgeon-General for his efforts in behalf of the pharmacists of the Public Health and Marine-Hospital Service and changing the title from hospital steward to pharmacist. A telegram from the Surgeon-General in response to an invitation to be present at the meeting was read and highly appreciated by the members of the association.

The last general session was held at 3 p. m. Monday, September 15, 1902. At the conclusion of business the following officers, elected to serve during the ensuing year, were installed: President, Dr. George F. Payne, Atlanta, Ga.; vice-presidents, W. L. Cliffe, Philadelphia, Pa., E. J. Eberle, Dallas, Tex., and H. L. Willis, Quebec, Canada; treasurer, S. A. D. Sheppard, Boston, Mass.; general secretary, Charles Caspari, jr., Baltimore, Md. After which the meeting adjourned, to meet at Mackinaw Island, Mich., August 10, 1903.

Respectfully,

ALBERT M. ROEHRIG,  
*Pharmacist and Chemist.*

Respectfully forwarded.

C. T. PECKHAM,  
*Surgeon, P. H. and M. H. S., in Temporary Command.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

The work of the scientific research division of the Bureau having thus been detailed in the foregoing pages, I have the honor to remain,

Respectfully,

H. D. GEDDINGS,  
*Assistant Surgeon-General, in Charge.*

The SURGEON-GENERAL, PUBLIC HEALTH AND MARINE-HOSPITAL  
SERVICE.



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## MISCELLANEOUS DIVISION.

(INCLUDING CONTRIBUTED ARTICLES AND NECROPSY REPORTS.)

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RECEIVED

OFFICE OF THE SECRETARY OF THE ARMY



## REPORT OF THE MISCELLANEOUS DIVISION.

By H. D. GEDDINGS,

*Assistant Surgeon-General, Public Health and Marine-Hospital Service, in temporary charge.*

SIR: The work of the miscellaneous division has been continued up to March 1, 1903, when, owing to the relief of Assistant Surgeon Warren by reason of illness, the work of the miscellaneous division was consolidated with that of the scientific division. The routine of the division has been continued. The Bureau publications have been regularly mailed, including Annual Reports, Public Health Reports, Yellow Fever Institute and Laboratory Bulletins, and others of a miscellaneous nature. New regulations for the government of the Service having been prepared, these were mailed. The Quarantine Regulations, as revised, were mailed, and likewise the Regulations Governing the Uniforms of Officers and Employees of the Service.

Four hundred and sixty-three papers referred to the Surgeon-General for opinion by the General Superintendent of the Life-Saving Service were acted upon by direction of the Surgeon-General. These papers called for opinion upon the medical evidence submitted upon claims for benefits under the act of May 4, 1882, or upon cases of rejection of candidates for enlistment or reenlistment.

The correspondence work of the division involved supervision of correspondence relating to Service publications; supervision of correspondence of a miscellaneous character, such as could not properly be referred to any other bureau division; making necessary replies; acknowledgment of books or other publications donated to the Service library.

All books destined for the Service library were received and cared for. The medical journals subscribed for or received by the Bureau were read, and all articles upon matters affecting the Service, upon the communicable diseases and upon matters relating to hygiene and the public health were marked for the notice of Bureau officers. A card index was made from the articles so marked and sent with the journals, after they had been seen and checked by the Surgeon-General and all chiefs of Bureau divisions, to the division of scientific research for filing.

The necropsy reports sent in from the various marine hospitals during the year were edited and prepared for publication in the annual report of the Surgeon-General. A classified table of surgical operations performed during the year at marine hospitals was compiled from the annual reports of surgical operations (Form 1925) and prepared for publication in the Surgeon-General's annual report.

Following are articles contributed by officers of the Service for publication in the annual report and reports of fatal cases with necropsies received from the various stations.

Respectfully submitted.

H. D. GEDDINGS,

*Assistant Surgeon-General, in Temporary Charge.*



## CONTRIBUTED ARTICLES.

### DISLOCATION FIRST METATARSAL BONE DOWNWARD AND OUTWARD INTO PLANTAR ARCH—DIRECT REDUCTION THROUGH OPENING MADE BY INCISION—RECOVERY.

By Surg. HENRY W. SAWTELLE.

But little reference is made to this rather unusual form of injury in the surgical literature at my command, and the following particulars of a case may not be without interest:

The patient is a surfman of one of the United States life-saving stations, 28 years of age, a strong, robust man, weighing 200 pounds. He was admitted to the United States marine hospital at Chicago, Ill., June 5, 1902, four hours after the injury, and stated that on jumping into the surfboat that morning for drill the dorsum of right foot struck the gunwale heavily over the first metatarsal bone. He pulled his oar, however, a short time after the accident, or until the exercises were over, and upon rising he was unable to stand on the injured foot.

On admission there was considerable swelling over the dorsum, the contour of the inner border was abnormal, the proximal end of the first metatarsal was not palpable, and the internal cuneiform was unduly prominent.

The following day reduction was attempted under chloroform anaesthesia without success, and an X-ray picture obtained showing that the proximal end of the first metatarsal was forced downward and outward into the plantar arch, and the distal end of the internal cuneiform upward and inward. The separation of the internal cuneiform from the other bones was doubtless due to wedge action of the first metatarsal when driven downward, and to traction upward by the tibialis anticus.

On June 7 another attempt at reduction by manipulation was made, the patient being under the influence of an anaesthetic, which also proved unsuccessful, and on June 9, five days after the reception of the injury, reduction was effected through an opening made by incision. The patient was etherized and an incision 7 centimeters in length was made down to the first metatarsal, the proximal end of which was found firmly lodged in the plantar arch, requiring the use of a strong metal retractor, together with much more force than one would consider necessary for the reduction of such a dislocation. This was undoubtedly made necessary, largely, by the contraction of the peroneus longus, which is inserted into the outer side of the base of the bone. This view is apparent from the fact that when reduced and traction was suspended the bone would slip back again to its former abnormal place; and to insure retention in the normal position, it was wired to the internal cuneiform. Aseptic dressings were applied, and the foot was placed in a plaster cast. Anticipating that the trauma to which the plantar tissues were subjected in the necessa-



rily forcible reduction would give rise to some destruction of the tissue, the wound was partly left open for drainage. There was quite a free discharge of serous fluid until the plantar cavity filled up, but no pus infection. The wire sutures came away spontaneously in two weeks, and the patient made a good recovery, with no untoward symptoms except a severe dermatitis on the dorsum of foot, caused by the application of liniments made by friends at the time of the accident. The patient was discharged August 1, 1902, and soon thereafter returned to full duty as a surfman.

Under date of January 5, 1903, Dr. William A. Kimmet, acting assistant surgeon, to whom I am indebted for assistance in the treatment of the case, reports that he examined the man in October, 1902, and found the tarso-metatarsal joint firm, so that the patient walked without limping.

H. Doc. 338—23



A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER COMPARED  
WITH TWO CASES OF WEIL'S DISEASE.

By Surg. EUGENE WASDIN.

L. M., aged 22 years, a native of the United States, was admitted to the Marine ward of the Buffalo Hospital of the Sisters of Charity, on the 21st and died on the 22d of July, 1902.

*History.*—He was employed on a line of steamers plying between Buffalo and Chicago, and while en route was taken sick on the 19th; he says that he had a hard chill, followed by high fever, but did not take to his bed until the morning of the 21st. He was wildly delirious when the ambulance surgeon reached him at 8 p. m. of the same day.

July 22.—He presents a condition of mild delirium, and is totally unconscious; the pupils are dilated; the skin is of a pronounced lemon-yellow color, with small petechiæ over the arms and abdomen; the spleen is enlarged to the free border of the ribs and to the anterior axillary line; the liver is smaller than normal, extending from the sixth to the tenth interspace; it is tender to the touch; bowel slightly distended; urine scant, specific gravity 1.006; breathing labored and heart action weak, pulse 110, temperature 37.5. Diagnosis of acute yellow atrophy of the liver. The treatment was directed to the relief of the pronounced uræmia by hot baths, fomentations and cupping, saline transfusions, and diuretics internally. The hemorrhages into the skin were now more pronounced; there were hemorrhages from the gums, from the intestine, and from the urinary bladder. At 2 p. m. there occurred convulsive movements; he died at 8 p. m.

*Necropsy* (fourteen hours after death).—Anatomical diagnosis, acute atrophy of the liver, with hemorrhage into the hollow viscera and skin; general staining of the tissues and the skin with bile pigment.

Microscopically the liver was found in an extreme condition of fatty degeneration; the epithelium of the convoluted tubes of the kidneys was also in advanced fatty change.

Muscular young adult in good physical condition; rigor mortis slight; the skin lemon yellow, with extensive hemorrhages; blood caked about external nares; there is marked hypostasis. Abdomen opened; fluids and tissues a deep yellow color; spleen soft, and a few extravasations on the surface; kidneys of normal size; liver atrophied to two-thirds of its normal size, of less firm consistence, and of a light yellow color. The stomach was found to contain 2,000 cc. of a dark fluid which resembled "black vomit;" the mucosa was pale, the vessels slightly distended; the small intestine contained an equal quantity of dark blood, its mucosa also pale. The heart was normal, as were the lungs.

*Microscopical examination.*—Fresh frozen sections were made from the liver and the kidneys, stained in hemotoxylin-eosin. The fresh sections showed immense quantities of free fat from the broken-down liver lobules, patches of liver tissue in which the cells were filled with fat droplets, and numerous nuclei, many of them fragmented.



The tissue reacted to the stain very poorly, the nuclei staining normally in those cells still holding their form, the connective tissue inclosing great masses of cell débris and fat droplets. In no section from various parts of the liver could any normal cells be found; in one or two areas there was cloudy degeneration of the cells, but these were always in immediate relation with others extremely fatty. There was no evidence of inflammatory change in the vessels or bile ducts. Through the courtesy of Dr. Harvey R. Gaylord, of the Gratwick research laboratory, I had some of the liver tissues stained after the manner adopted for staining the Russell bodies in cancer tissues, in the expectation of detecting any possible inclusions in the hepatic cells of a protozoan organism, but none were found in the few cells still intact, nor were any bodies of this nature detected in the cell débris. Fresh sections of kidney tissue showed extreme fatty degeneration of the epithelium of the convoluted tubules, many of which were entirely blocked with masses of cell débris and fat droplets. This was true throughout the kidney cortex; the collecting tubules were normal, their epithelium in marked contrast to that of the more highly organized cortical tubes. Stained sections gave the same picture of fatty disintegration of the cortical epithelium; there was no fullness of the vessels nor infiltration of the tissues with small cells.

*Bacteriological examination.*—Ten hours before death venous blood and ear tip blood was planted in bouillon and incubated at 37° C. Only one tube developed a colony of bacillus coli communis. After death tubes were planted from the heart's blood and from the liver and spleen. The heart blood remained sterile, and only one tube developed from several prepared from the spleen, so that no organism was found in sufficient number to declare a bacteremia. It is to be greatly regretted that in this instance the man was unable to make a statement of the commencement of the attack, but from others about him it was learned that he left Chicago on the 18th, and was suddenly taken ill on the 19th of July with a severe chill, but did not stop working until the morning of the 21st; the picture of an acute intoxication from some cause.

Just preceding this case there occurred in my service two cases of the so-called acute infectious jaundice or Weil's disease, which in this connection may be of interest.

I. A. McF. entered hospital September 25, 1902, presenting symptoms of a light general infection, such as malaise, headache, furred tongue, and loss of appetite; he had been sick for one week. Examination showed the skin of a decidedly yellow tint, as were the conjunctivæ, with numerous small hemorrhages; there was nose-bleed and the stools were blood stained, and there occurred from the bowel two small hemorrhages of 40 cc.; the heart sounds were faint, the pulse dicrotic and of low pressure at 100; the temperature about normal; there was a marked sense of impending danger. The liver area was diminished and there was tenderness on pressure. The hemorrhages depleted the patient to the imminent danger point, but he finally recovered. During his treatment there was no increase of temperature as seen in ordinary infections, and bacteriological examination of the blood gave no evidence of contamination at any time.

II. C. W. entered hospital November 18, 1902, suffering from jaundice of the eyes and skin of bright yellow tint, with small extravasations over trunk and arms; temperature 37.5, pulse 110, diminished urea.



He states that he has been sick five days with malaise, headache, and loss of appetite; there have been chilly sensations, and some diarrhea. Under treatment he rapidly recovered. Blood plantings gave no results.

This group of cases would seem to illustrate the three forms of this peculiar disease, that of the very mild type, so often diagnosed as "catarrhal jaundice," and that of the more severe form partaking of the nature of "purpura hemorrhagica," in many cases of which death results; and finally of that obscure clinical entity, "acute yellow atrophy" of the liver, which, in the case presented, amounted to fatty disintegration of the organ, with reduction in the formation and elimination of urea through the impaired renal epithelium. The cardinal symptoms are the same in all, evidence of a toxic interference with the functions of the liver, resulting in more or less marked jaundice which is the most prominent symptom, this toxic influence at times being sufficient to utterly destroy the hepatic cells; also evidence of endotheliolysis resulting in hemorrhages wherever the vessels are not well supported, as in the skin and in the hollow organs; the secretion from the blood of some intense toxin is evidenced by the fatty changes in the glandular parenchyma of the kidneys, resulting in grave uræmic conditions. Clinically one can but be impressed with the similarity which obtains in the three types, and be convinced as to the identity of the causative agent. That this agent is of intestinal production is very probable. The absence from them of any organism colonized in the blood or organs examined, as well as the nondetection of any protozoan infection, would irresistibly influence one to assume these cases to be dependent upon the absorption of some toxic material from the intestinal canal, produced from faulty metabolism therein, or resulting from a faulty transmission of these complex bodies through the intestinal mucosa. The rapid and complete destruction of the cells of the liver in the severe cases partakes of the nature of a lysis of those cells, and the ever-accompanying hemorrhages forcibly recall the experience of Flexner in the conditions of snake venom poisoning, wherein he found a lysis of the endothelium of the vessels. Thus far there has been no such accurate demonstration of these lytic bodies as a result of the introduction of the bacterio-toxins into the animal body, yet in all of the acute infections the pathology is that of fatty degeneration of the parenchyma of the organs, or of necrosis, with, in the most toxic forms, a disposition to hemorrhage. It would seem, therefore, that in acute infective jaundice or Weil's disease, we have to deal with the presence of a toxin of complex character, and of possibly animal origin, an antitoxin capable of influencing even to active degeneration the highly organized tissues of the body, especially those of the liver, the kidneys, and the blood vessels, rather than with a toxin of bacterial origin absorbed from the alimentary canal.



## THE EPIDEMIC OF CHOLERA IN THE PHILIPPINE ISLANDS DURING THE YEAR 1902.

By Passed Asst. Surg. J. C. PERRY.

Although this article will treat almost exclusively of the cholera epidemic in the Philippine Islands during the year 1902, including the data of cases and mortality from the commencement, March 20, 1902, to March 16, 1903, still it may be of interest to briefly review the other epidemics of cholera that have visited the Philippine Islands prior to the period embraced by this report.

In studying the literature on this subject and the reports of the different epidemics, one is impressed with the imperfect manner in which they have been compiled and the probable inaccuracy of the data furnished; however, enough has been gleaned from the available reports and publications on the subject to subserve the intent of the preliminary note embodied herein.

Although cholera has probably existed in India from time immemorial, and old writings speak of an epidemic sickness that swept through the Oriental countries with fearful mortality in the time of Confucius, intelligent accounts are not found earlier than the tenth century. Authors show that India was visited with severe epidemics of cholera in 1513, 1517, and 1543, which spread to many countries in the Orient. Again, in 1629, a severe epidemic prevailed in Batavia, only a few days distant from the Philippines, but no records show that cholera invaded the Philippines during that time, or during the severe epidemics in 1642 and 1689 that swept over the Orient.

In 1817 another severe epidemic of cholera prevailed in India, causing 600,000 deaths, and rapidly spread throughout the Orient, including Ceylon, Malayan Peninsula, Borneo, Sumatra, Java, China, Japan, and the Philippine Islands; consequently the first invasion of the Philippines with cholera may be authentically stated as occurring in 1817. A report was published in 1819 stating that the above was correct; however, this is denied by other authors, who state that cholera first appeared in the Philippines at Manila in 1820. I believe that the earlier date is correct, since it is difficult to see how the Philippine Islands escaped invasion when such an extensive epidemic was raging on all sides. It is also probable that cholera appeared in the islands at even an earlier date and was treated as some other disease, but there are no records showing this, and it is possible, owing to the small amount of commerce in those periods, that infection was not introduced.

The data relative to the early epidemics is very meager, and this holds equally true of those occurring in recent years; but authentic records show that Manila suffered from epidemics of cholera in 1820, 1821, 1822, and 1823, those in the last three years specified being no doubt a continuation of the epidemic started in 1820, probably from recurring cases or reintroduction from the adjacent provinces and not from a reinfection from a distant country. Another epidemic pre-



vailed in the islands in 1830. This was spread to the coast towns by commerce and to the mountains and interior towns by refugees from the stricken centers. Other epidemics also prevailed in the Philippines in 1854, 1863, 1864, and 1865, but no reports exist showing their extent or severity.

EPIDEMIC, 1882-83.

The ravages of this epidemic are still fresh in the minds of the inhabitants of the Archipelago, on account of its wide and rapid dissemination and the great number of deaths caused. I have been unable to find a report on the epidemic, and am told that only reports for certain sections were written. I have seen several of these, and while they speak of the ravages of the disease in a general way and furnish statistics for limited localities, no accurate data of the total number of cases and deaths in the different provinces has been compiled. However, if such an attempt had been made I doubt if the statistics would be of much value, since in all the epidemics a great number of cases are never reported, many being concealed, and some of the milder forms not detected by the native physicians in the outlying districts and towns. Therefore, the best that can be accomplished in this connection is to speak of the epidemic in a general way.

In the early part of 1882 cholera was epidemic in India and China, and in May was announced as present in the Malayan Peninsula, Batavia, and Borneo, the last country being in direct and frequent communication by regular steamers and native boats (paraos) with Jolo and Zamboanga. The disease was introduced into Jolo early in June by passengers landed from a boat from Borneo. One of these passengers went to the sultan's house in Mayhun, and while there was taken ill with the disease and died, having contracted the infection in Borneo. In this small pueblo 200 deaths occurred in forty days. The disease spread rapidly throughout the Sulu group, being carried from place to place by the native boats landing persons that had acquired the infection in an infected town. In this way the disease was introduced by a Moro family in Lictabong, a small island near Zamboanga, and spread to Zamboanga on July 4, six days later. In Lictabong more than 50 per cent of the population died in a few weeks.

In Zamboanga the epidemic was sharp and severe. It reached its height on July 10, and continued with great severity until the 27th of the same month. The water supply became infected almost immediately, and the number of deaths reached 200 a day in a population of 7,000. On July 27 the epidemic commenced to decline, but was not officially declared at an end until September 4. In Zamboanga and the adjacent pueblos there were 3,954 deaths in a population of 15,359.

From Zamboanga the disease was carried to Manila in August by a steamer and to Iloilo about the same time. From these centers the disease was rapidly disseminated over the entire Archipelago; in fact every island was infected, and few if any towns escaped the ravages of the disease.

The history of the epidemic showed that new places were infected by the arrival of persons who had contracted the infection elsewhere, that were taken sick soon after arrival and thus established a new center of infection. The water supply, which consisted of shallow surface wells and shallow streams, soon became infected, and from this source the number of cases rapidly increased and continued with



great severity until the epidemic "died out" from using up all the susceptible material, or from the loss of virulence of the bacillus.

The disease first appeared in Manila in what is known as the Farola district, a densely populated peninsula at the mouth of the Pasig River, and soon became severe in the shipping on the river. This promptly infected the principal water supply, the Pasig River, and the epidemic soon became one of great severity. In this connection it may be wise to state that the present water system had not then been installed, and the poorer classes were dependent on the infected water from the Pasig River. The water was loaded in cascoes (small, flat-bottom boats) and distributed to the people along the water front and estuaries, the remaining supply consisting of that secured from shallow surface wells. The epidemic rapidly reached its height and continued with great severity until the last of October, and then in milder form until December, when the epidemic practically ended. During this time the number of cases reached 1,200 a day and about 32,000 deaths occurred.

The epidemic throughout the Archipelago was practically ended by December, but in a few places there was a recurrence of the disease in March, April, and May, 1883, but the number of cases was comparatively small, and the disease soon disappeared.

The total number of deaths caused by this epidemic is not known, since no accurate records were kept for the different provinces, but a conservative estimate places the number at 300,000, although some physicians place it at even a higher figure.

#### EPIDEMIC OF 1888-89.

In the epidemic of 1888 it was difficult to trace the manner in which the infection was introduced, but it is believed that the disease secured entrance through the quarantine station at Mariveles. During this year cholera was epidemic in Saigon and Hongkong, becoming severe in the latter place about June, although the authorities denied its presence. At that time there was frequent communication with both places, and a number of Chinese steerage passengers were brought from Hongkong. The boats from Saigon were required to bring certificates concerning the character and condition of cargo, but the Hongkong boats failed to comply with this provision of the law. Vessels from both places were subject to a quarantine of ten days, but as the station was very poorly equipped, this consisted of observation only. It is claimed that some of the Chinese passengers detained at the station evaded the guards and sold effects to the inhabitants of the village. The first case in the town of Mariveles was a native woman, who had not been away from the pueblo for more than a year, and the second case was that of a friend stopping at her house on a visit. No sickness had been observed on the boats in quarantine or at the station. The first case occurred in Mariveles on July 10, and this was followed with 26 cases and 18 deaths in the thirty-seven succeeding days. However, attention was not called to these conditions until August 14.

The first case in Manila was reported on August 15, and other cases occurred on the 16th, 17th, 18th, and 19th, so that on the 31st there had been 60 cases with 23 deaths to that date. On August 16 a case was reported at Pasig, a few miles from Manila, and the disease spread rapidly to the towns on the Pasig River, the Laguna de Bay and to



Cavite. On August 28 cholera was reported in Bulacan Province and in Pampanga Province on the 30th of the same month. From this time the disease increased so that by November all the provinces near Manila had become infected. Then the disease spread to the provinces of Nueva Ecija, Pangasinan, and Tarlac. Sporadic cases continued to occur in Manila, and local points of infection existed in the provinces until the early part of 1889. Zamboanga became infected January, 1889, probably from a vessel that arrived from Hongkong, and the epidemic lasted through February, March, and April.

The epidemic reappeared in most of the provinces during the months of January, February, and March, and in the majority of instances the same towns that suffered the preceding year were again the seat of the epidemic. The epidemic of 1888-89 was not a severe one, being confined to a few provinces in the island of Luzon, and to Zamboanga in the south. The deaths from cholera were approximately 10,000.

#### CHOLERA EPIDEMIC OF 1902.

In speaking of the epidemic as that of 1902, the selection has seemed wise, although the disease has continued in some parts of the Archipelago until the year 1903, and at date of writing the infection still exists in many places in the islands. However, the disease was introduced in the year 1902, and the epidemic reached its height and subsided during this period in most places, and only prevailed later in places that were infected more recently or that had not suffered severely.

In studying this subject the following points deserve consideration: (1) Did cholera exist in sporadic form in the Philippine Islands prior to the commencement of the epidemic, and was it the result of an increase of virulence of the infection and number of cases, as occurs in India? (2) Assuming that the preceding query is not borne out by facts, how or in what manner was the infection introduced? (3) The manner in which the disease was spread in the localities and from place to place. (4) Symptomatology and treatment. (5) Management of the epidemic. Is quarantine effective or practical in its application to the Philippine Islands? (6) Statistical.

Relative to the inquiry, "Does cholera exist in Manila at all times in sporadic form and was the epidemic a result of an increase in the number of cases," I must answer in the negative, although some believe that the disease is nearly always present in the islands, claiming that mild cases occasionally occur to keep the infection present. They base their opinion on the fact that severe diarrheal diseases are frequent and on the report showing a high mortality from such diseases. The majority of the physicians, however, hold the opposite view and believe that the epidemics that have occurred in these islands have been due to introduction of the infection from other localities, and I think the latter is the correct conclusion.

In more than two years' active quarantine work at Manila prior to occurrence of the epidemic, during which time there were returned to the United States on the army transports about 100,000 people, no sickness even of a supicious nature developed en route or after arrival, and as all these passengers were in Manila for periods of one or two weeks at least before embarkation, it would be reasonable to suppose that some of these would have contracted the infection if the disease had existed in Manila during that time. That some of the soldiers



would have contracted the disease is evident from the records regarding them during the 1902 epidemic, because many of them do not obey the orders of their officers relative to not eating or drinking away from their quarters. Many cases occurred from the latter cause during the epidemic when the greatest care was taken to prevent infection and orders were strict and the necessity of obeying them absolutely was emphasized by the officers. If such was the result under rigid discipline when every one was keenly alert concerning the danger, some cases would certainly have resulted when none of these precautions were enforced or observed, if cholera, even in its mildest forms, had existed in Manila.

*Introduction of the disease.*—On March 3d, notice was received that cholera existed in Canton, and the quarantine regulations relative to ships and passengers were placed in force at Manila, and such articles as were considered liable to convey infection, especially fresh vegetables, were prohibited shipment to the Philippine ports. However, investigations proved that cholera had been prevalent in Canton for about six weeks before the rumors concerning its presence were confirmed.

On March 8 a few cases of cholera were reported in Hongkong, but the disease was probably there before that time, since it is now known that cholera had existed in Canton for some time before its presence was detected, and it is difficult to see how Hongkong could have escaped with the free and unrestricted intercourse between the two cities.

As Manila is one of the greatest vegetable markets in the Orient, since nothing of this nature is produced in the Philippines, and nearly all such vegetables as cabbage, lettuce, celery, cauliflower, and potatoes were imported from the Canton district, the danger to Manila and the Philippines from this source was considered great. The Chinese method of fertilizing growing vegetables is too well known to require mention, and the danger of such articles as cabbage, lettuce, and celery, which are often eaten in the uncooked state, is apparent when it is probable that a disease like cholera has prevailed in the territory in which they have been grown.

Upon the appearance of cholera in Manila, the question of extreme importance was: "How did the infection enter; through what means or agents?" It is positively known that no vessel arrived prior to the time with sickness even of a suspicious nature on board, and as a quarantine of five days after disinfection had already been instituted, I think that the factor that the disease was introduced through persons or baggage can be eliminated. This statement is further borne out by the fact that all the first cases were among Filipinos who had not been out of Manila for months, and not among the Chinese—the class of passengers that had landed.

I think that cholera was unquestionably introduced into Manila by infected vegetables from Canton, and in this the board of health concurs, but it has been impossible to trace it to any such cargo of products. There is no question but that the cholera bacillus will retain its vitality for a considerable length of time on fresh vegetables, and these articles were brought to Manila in large quantities while cholera was more or less epidemic in Canton, prior to the time its presence became authentically known and the shipment of vegetables stopped. Another possible manner was the smuggling on shore at



night of vegetables that had been concealed on vessels sailing after these articles had been prohibited. That vegetables were concealed on board is evidenced by the fact that in searching the ships a few were often found hidden in lockers, coal bunkers, and other portions of the ship. It is possible that all were not found and some were smuggled ashore at night. The incentive was present, as the price of vegetables had materially advanced since their shipment from Hongkong had been prohibited. A third possible source, through the same agents, was the arrival of the S. S. *Rubi* on the night of the 16th of March with a large cargo of cabbages and potatoes that had been brought in violation of orders. Permission to land any of these articles was refused and the captain was ordered to return them to Hongkong, or if the cabbages spoiled to either burn or throw them overboard on the return voyage, but under no circumstances must he throw them into Manila Bay, as they would float ashore and the natives would eat them. Some of them may have been smuggled ashore, but I have been unable to prove this although I am convinced that some smuggling was done from the ships by the natives, since Chinese stowaways have been landed in this manner. The fact remains, however, that the first cases of cholera occurred in the "Farola district," a densely populated peninsula between the mouth of the Pasig river and an arm of the bay. Numerous small vegetable shops existed in this district, and here lived many of the stevedores engaged in unloading cargo from the ships, fishermen who ply their vocation on the bay by night as well as by day, and those engaged in petty smuggling. In this district some cabbages were found on the beach, having been thrown overboard from some vessel and drifted ashore. The natives ate them without hesitancy.

*Manner in which new localities were infected and the disease was spread.*—In this epidemic the maxim that cholera follows the line of commerce and does not travel faster than persons has been forcibly exemplified, and the disease was carried from one district to another by two agents—infected persons and infected food.

The agency of infected persons is the usual one, and this epidemic has furnished numerous examples of this factor. The history of most towns and provinces was that a person had arrived from an infected center, becoming ill soon after arrival, and thereby establishing a center of infection either through the contacts or most often by the intestinal discharges infecting a well or stream that was used as a water supply. In this connection it should be stated that the natives wash their clothes and bathe in the same stream that furnishes them drinking water. The introduction of infection through the medium of infected food, although well established in several instances, has been much less frequent. I have already shown that the disease was introduced into Manila through this agency, and another excellent example is the infection of the town of Binang on the Laguna de Bay. In the latter town the infection was introduced by food that had been purchased in Manila for use at a "fiesta," which was "smuggled in" under a pass from the board of health of Manila as coal oil. The food consisted of cakes, sweetmeats, etc., and was used at the fiesta. Eighty cases of cholera and the first in this town were distinctly traced to this source, the person who purchased the food being among the victims.

It will probably be noticed that I did not mention above water as a factor, and while infected water has been the principal agent in the



spread of the disease in infected towns it has not been a potent one in spreading the disease from one district to another or from town to town, except in a few instances where an infected stream has been the source of water supply for several towns more or less widely separated. This has been the means of infecting the towns on the bank after cholera has made its appearance in the town above, and an excellent example of this was furnished in Camarines Sur, when cholera existed in the region of Nueva Caceres and the chain of pueblos on the river at that place.

*Spread of the disease in towns after infection.*—The dissemination of the disease in the towns and pueblos after the infection was introduced occurred through (1) water, (2) food, (3) contacts, and (4) flies.

In the provinces and the provincial towns the disease was spread almost exclusively through the water supply, since in all these places the supply was obtained either from shallow surface wells or small streams, and as these became infected early, through the habits of the natives in disposing of the intestinal discharges, washing clothes, and bathing in the streams, or washing their clothes near the wells, so that part of the water drained back, the disease soon became epidemic, especially sharp and severe when the water supply was obtained from streams, and of slower increase when water was obtained from wells, because all the wells would scarcely become infected at the same time.

Food was another means of spreading cholera, especially in Manila, and to a lesser extent in the provinces. Fresh vegetables, as lettuce, onions, and other articles of a similar nature, were eaten by the natives in an uncooked state, as well as cold, cooked food that had become infected from contact with dirty hands or by sprinkling with infected water. Cold food forms an excellent culture medium with rapid increase of the vibrios, so that in a few hours the food becomes capable of producing a fatal attack of cholera when ingested.

Fruits do not seem to have been an appreciable factor in spreading cholera, although when taken in excessive amounts they may derange the digestive functions and produce a diarrhea, thereby predisposing to the disease by furnishing a fruitful soil for the development of cholera, if a few germs are taken into the stomach, since in healthy conditions the few vibrios ingested would probably perish.

*Contacts.*—In speaking of contacts as a means of spreading cholera, I wish to be distinctly understood in the first place, that by this is not meant that a person has simply been in the same house, or in actual close communication with the sick, because in such cases the danger is no greater than in typhoid fever, but reference is made to the class that have soiled their hands or clothing with the intestinal discharges by such communication. It can readily be seen that among ignorant natives this class is by no means uncommon, and they become a menace not only to themselves but also to others through their ability to infect drinking vessels, cooking pots, and food after it has been prepared. The lower classes of Filipinos are extremely dirty in their habits; for instance, they clean themselves and the sick after stool by washing the anus with water, applied with their fingers, thereby not only infecting their hands, but also transferring the infection to vessels they touch, and more especially to the food they eat, since they invariably use their fingers in placing food in the mouth. Again, in this class and even among the more intelligent natives and the lower social order of other races, including Americans, the hands or



clothing often become soiled with infectious material in rendering assistance to a stricken comrade, member of the family, or friend, and they also become a source of danger, as above noted. Of course, if one could apprehend and disinfect all persons that had been in contact with the case, the problem would be solved; but unfortunately it is impossible to do this, since among the natives and lower classes the other occupants of the house and members of the family generally manage to escape before the case is detected or reported as suspicious. While the factor cited is not the principal cause of spreading the disease, and it is true that infection in the vast majority of instances is disseminated through the routes of water and food, still the minor ones must be borne in mind, and so many examples of this class or of the class of contacts here specified came under my observation that this report would be still further incomplete if no mention was made of this factor.

However, it may be proper to determine if the arguments advanced can be substantiated by facts, and if the danger is real instead of theoretical. In order to prove the statements, I will cite three instances out of many that have come under my observation during the epidemic, in studying the occurrence and course of the disease on 60 vessels that had cholera on board while serving the five days' quarantine prior to sailing. Two cases of cholera occurred among the soldiers on the transport *Warren*, the first one developing in forty-two hours after embarkation of the troops, the infection in this case being traced to food the soldier bought from a native vender and ate just prior to going on board. This man was taken sick early in the morning and was immediately isolated, and the place in which he was lying was promptly disinfected as thoroughly as possible under the circumstances. The ship was immediately remanded to the Mariveles disinfection station, where all persons on board were bathed, and their baggage and clothing disinfected, the troops being disembarked and segregated in barracks on shore. On the fourth day from the first case, and six days after embarkation at Manila, the second case occurred among the casual detachment in the barracks. Inquiry into his relations with the soldier first taken ill demonstrated the fact that he occupied the bunk next to him and rendered assistance to his comrade.

On another vessel with only a small crew the chief engineer was seized with cholera, having contracted the infection in Manila from infected food and drink, and although the food and water supply on board the ship was the same for all, the only other person who contracted the disease was the officer who assisted the first case to his room and attended him during the attack. He changed his clothes, took a bath, and attempted to disinfect his hands, still, two days later he was stricken with the disease and died. The ship and personnel had been thoroughly disinfected before the occurrence of the second case, but the latter had infected himself prior to that time by rendering assistance to his brother officer.

The third instance still more strikingly supports the contentions made, the history of the vessel being as follows: One case of cholera was removed from the vessel at Manila and the boat remanded to Mariveles on May 5 for thorough disinfection and detention; the food on board was destroyed, water and tanks disinfected, discharged, and a fresh supply of food and water furnished; personnel of ship bathed



and their baggage and clothing disinfected with steam, and vessel thoroughly disinfected. As all the barracks were occupied by passengers and crews of other vessels in quarantine, the personnel of this ship could not be removed. On the 8th, two days after disinfection and three days after the first case, another case of cholera occurred. Personnel and vessel redisinfecting. On the 10th a third case developed, and on the 11th, a fourth. After the fourth case, the barracks being available, the entire personnel of 150 was placed on shore in small segregation groups and no further cases of cholera occurred.

What deductions can be drawn from the history of this vessel? Upon the first appearance of the attack the patient was immediately removed from the vessel to the hospital on shore in a few minutes from the onset of the illness, the personnel and ship thoroughly disinfected, new food and water furnished, still cases would continue to develop. Evidently those in immediate contact with the patient became infected by soiling their hands with the discharges and neglecting the ordinary precautions, infected themselves through handling their food. As soon as it was possible to segregate the personnel in small groups, thereby minimizing the danger mentioned, no more cases occurred. That disinfection of the ship was thorough and infection of the ship itself was not responsible for the additional cases is evidenced by the fact that when the crew and passengers were returned and placed on board the vessel no further cases occurred.

*Flies.*—The remaining factor mentioned under the headings at the commencement of the considerations of the methods by which infection was spread in infected towns, that of flies, has been the least serious; in fact, I do not believe that these insects have been conveyors of the infectious microbes, except in certain isolated instances. Of course this source of danger must be borne in mind, but does not assume an important place in the spread of an epidemic. However, some of the cases that occurred in Bilibid Prison, Manila, are difficult of explanation unless the theory that flies conveyed the poison is accepted.

The facts briefly reviewed are as follows: Upon the appearance of cholera in Manila nothing except sterilized water was used or allowed the prisoners to drink; and later the hydrant water was discontinued for baths, because it was thought that some of the inmates drank it and this fact might account for some of the cases of cholera that had occurred. However, on two occasions, for two or three days each time, the prison authorities were unable to secure distilled water, and, not possessing proper facilities for boiling the water in sufficient quantities, it was deemed safe to use the hydrant water of the city supply for these short periods. The prison physician informed me during a conversation that on each occasion two or three cases of cholera occurred, and that no further cases developed after the water was discontinued and boiled or distilled water substituted, and he is of the opinion that most of the cases that occurred in the prison were due to infected water. Still the fact that isolated cases occurred while distilled water was in exclusive use has to be explained, as well as the fact that while the supposedly infected water was in use only three or four cases of cholera occurred among 1,800 persons using it. This is not the history of water infection, and I believe that if the water supply had been infected sufficiently to have been the sole factor in causing the cholera among the convicts, that the number would have been



much greater. The food was rigidly inspected both before and after cooking, and anything that might be the least suspicious was not allowed. All persons who visited prisoners were not allowed to bring anything in, and they were searched to see that no food or drink was smuggled into the prison for the use of their friends. The food and water was the same for all the inmates, but was served in different places, prisoners ("trusties") attending to the cooking and serving, so that the prison was practically "shut off" from the outside world.

However, in spite of the precautions that had been taken, a case of cholera occurred on April 3, two weeks after the appearance of the disease in the city. The patient recovered and no cases occurred until April 17, when a second case developed in an entirely different group of prisoners. After this no more cases occurred until May 3. Single cases developed on May 3, 5, and 8, in entirely separate buildings and among prisoners between whom there was positively no communication. No cases occurred in June, but in July there were five isolated cases occurring in different sections and independent of each other. In all, there occurred 30 cases in the prison during the epidemic. Now, how can the infection of these cases be explained?

If the food and water, or even the vessels used, had been infected, the number of cases would have been greater and there would not have been isolated cases at long intervals. The "smuggling in" of infected food by visitors for the use of their friends seems to have been amply guarded against; but even admitting that the latter happened in spite of the rigid precautions, it would not explain the occurrence of three cases among the prisoners serving a life sentence, because they are allowed little liberty and do not see visitors.

Now, admitting infected water may have caused some of the cases, still it will not explain all, and, in my opinion, we must look for limited, or, so to speak, special infection—that is, the infection of food after it had been cooked and served to the individual person. Nothing else would conform to the history of these cases. Flies will meet many of the indications mentioned, and, in my opinion, they must be held responsible for conveying the infection in certain specific cases, such as cited above.

These insects were present in Bilibid and the source from which they could convey the infection was at hand, since immediately surrounding the prison more than 200 cases had occurred in a short time, and the daily number of new cases furnished the infective material for the flies to convey on their feet and bodies to the individual plate of food consumed by the unfortunate.

Spread of the disease in Manila occurred through infected food, that infected by the contact in the manner already described, so that the class of contacts specified were, in my opinion, a fruitful factor in disseminating the disease, the person with infected hands infecting himself through his food in the process of eating, and thereby becoming a center to further spread the disease. I think this factor has been already shown to have existed, and this statement is further borne out by the study of the cases occurring in the city. The usual history during the epidemic was for one case and occasionally two cases to occur in a family or house containing a number of persons, and it is reasonable to suppose that if the food or water taken by the whole family was infected that more than one case would have occurred. However, the fact that the infected person ate food somewhere else



before coming home must also be considered; but even admitting this, it is just as probable that he infected his own food with dirty hands.

As already stated, infected food existed and was responsible for the greater number of the cases, but this infection was not general and was probably limited to a few articles eaten in an uncooked state, and more especially to cold cooked food that became infected through handling with soiled fingers.

Some attempt to explain the dissemination of the cholera in Manila by assuming a mild infection of the general water supply, but when you take into consideration that during the height of the epidemic that the daily number of new cases seldom exceeded 40 and the daily average for the six weeks when the epidemic was most severe was 34, in a population of 300,000, the infection, to say the least, must have been extremely dilute. That the general water supply was threatened, and it is difficult to see how it could have escaped on account of a population of 15,000 filthy natives living on the watershed, among whom a number of cases of cholera occurred, must be admitted by all conversant with the facts and conditions. However, on the other hand, repeated examinations of the water by a careful and skillful bacteriologist always resulted in failure to find any traces of infection, and the daily number of cases (40) is not the history of an infected general water supply; in fact, in my opinion, if the water had been infected the number of cases would have been much greater, probably several hundred or a thousand a day, as in the 1882 epidemic, or as occurred in the provinces during the present epidemic.

I do not doubt that infected water was also a causative factor in Manila, because a number of shallow wells existed which, although ordered closed, were no doubt used in some districts to a limited extent; again, the estuaries that run through Manila in some localities were no doubt infected, and the natives are not over fastidious about their drinking water when thirsty and use the nearest available supply, many of them drinking water from the Pasig River and the estuaries; in fact, I have on several occasions seen them doing so. In this connection it may be pertinent to note that many cases occurred in the houses situated on the banks of such sluggish streams. Again, most of the persons adjacent to these streams bathed in them, and may have taken water into their mouths during their bath. Food may also have been infected by washing or sprinkling with this water, and containers and other vessels may have been infected through the same agency.

Still, after a careful consideration, I can not believe that the history of the epidemic in Manila coincides with that due to an infection of the general water supply, and in my opinion the following factors were operative and causative in the order enumerated: (1) Infected food; (2) contacts infecting their own food and possibly that of others; and (3) infected water in the manner mentioned above.

#### SYMPTOMS AND TREATMENT.

*Symptoms.*—The epidemic presented nothing new in the symptomatology of the disease and little would be accomplished in enumerating and describing the classical symptoms given in all text-books treating of the subject; however, it may be pertinent to state that the premonitory stage was rarely seen in this epidemic, the patients being suddenly stricken with the disease while apparently in their usual health.



The onset was sudden and severe, with profuse vomiting and purging, the patient passing rapidly into the state of collapse, generally in two or three hours, but a number of cases were seen in which the advent of collapse occurred within an hour, in fact almost immediately after the onset of the disease, death generally occurring in this stage within twelve hours. The vast majority of deaths occurred in twenty-four to forty-eight hours after the commencement of the attack and many in from three to five hours after the onset of the disease. "Cholera sicca" was observed in a number of instances, and in these cases death occurred promptly.

The mental condition of the patient is characteristic. The mind is dull, listless, apathetic, although consciousness generally remains until death. However, the mind is not clear, as mentioned by some authors. Cerebration is slow and the patient seems incapable of thought; if aroused with a question an answer will be made often at random, and little reliance can be placed in its correctness.

At first I thought that an effort was being made by the patient to deceive me relative to the source of his food and drink, while I was trying to obtain a history in order to trace the source of infection. The above applies to all races and classes; in fact, it is almost impossible to secure from the patient a correct statement as to what he has eaten or drunk. The patient is not responsible for this apparent lack of knowledge or attempt to deceive, but the cause must be sought in the pathological conditions that underlie the dull, listless, apathetic mental state of the patient. This, in my opinion, is principally due to anæmia of the brain, occasioned by the great loss of fluids from the serous diarrhea, and to a lesser extent to the resulting altered condition of the blood, which has become thick and tarry, with diminished oxygen carrying properties, and probably to the action of the toxins on the brain centers.

*Treatment.*—The treatment of cases during the epidemic consisted mainly of stimulants, strychnia, caffeine, guaiacol carbonate in combination with calomel, saline infusion in some cases, and the administration of the newer germicidal agent, benzoyl acetyl peroxide (benzozone). The actions and indications for most of the agents are well known, and special attention will only be directed in this brief review to the results obtained by the administration of benzoyl acetyl peroxide. I am indebted to the report of Dr. Paul C. Freer for the data submitted. Experiments conducted in the laboratory had demonstrated that this agent absolutely destroys the comma bacillus in solutions as dilute as 1 part in 10,000, and their growth was materially inhibited in solutions of 1 in 30,000. When a culture in beef bouillon was directly mixed with equal parts of benzoyl acetyl peroxides solution, 1 to 1,000, the growth was prevented.

Acting upon this knowledge and the fact that the agent could be administered in sufficient strength to possess germicidal action without much irritation, the possibility that it might possess decided advantages in the treatment of cholera occurred and a practical test of the knowledge gained in the laboratory was made in these cases.

The treatment instituted was (first) the administration of benzoyl acetyl peroxide in solution and in capsules as an intestinal antiseptic for the destruction of the bacillus, and (second) the administration of stimulants to enable the patient to survive, if possible, the effect of the toxins already present.



At first the remedy was given per oram in solution, 1 to 1,000, and later in double-coated capsules, the latter method to insure the passage of the agent through the stomach into the small intestines before it became liberated in order to prevent the decomposition that takes place in the stomach, and so that the germicidal action of the drug would be exerted at the seat of the affection. The agent was administered in doses from 0.20 to 0.32 gram every two or four hours, being given on an empty stomach, as vomiting was much less frequently excited. This was later supplemented by high rectal injections of solutions, 1 to 2,000. The instability of the agent, coupled with the gastric irritation produced by decomposition of the drug interferes strongly with its regular administration, but nevertheless the cases treated with this agent alone showed a greater percentage of recoveries. Four hundred and eight cases were treated with either benzoyl acetyl peroxide alone, or in combination with guaiacol carbonate and calomel, and of this number 169 recovered, whereas of 593 receiving other treatment only 106 recovered, thus showing advantage in favor of benzoyl acetyl peroxide. In selected cases, especially in the American cases, the results obtained with this agent as compared to other treatments is still more favorable.

Concluding relative to treatment, I think it safe to state on the experience with benzoyl acetyl peroxide during the last epidemic that its administration in the treatment of cholera is rational therapeutics, and while its use has not been attended with a marked reduction in the mortality, still its practical value has been demonstrated, and with selection of cases, those that are seen at once, among the better classes, and in those of milder types its administration should prove far more efficacious than the statistics generally would indicate. Its action could be still further supplemented by using saline infusions, as was done in some cases during the year, and this with stimulants should offer a fair chance to those suffering from mild attacks, nothing being of avail in the very serious cases in which profound toxemia exists. Serum treatment was not used in Manila.

#### MANAGEMENT OF THE EPIDEMIC.

In speaking of the management of the epidemic, the first things that must be taken into consideration as bearing on the difficulties that had to be met are: (1) Dirty towns forming a fruitful field for the propagation of the disease; (2) uncertain water supplies, these apt to be readily infected and difficult of supervision; (3) ignorant and incompetent provincial boards of health and native officers to enforce the sanitary regulations; and (4) a people extremely dirty in their habits, ignorant, antagonistic, apathetic, among whom no cooperation could be secured and who are inclined to look upon the disease as a divine visitation and that the regulations of the board of health were useless and of no avail.

Mistakes were made, but it is easy to criticise after the fire; but when the difficulties are considered and the obstacles to be overcome are given due thought, it must be admitted that the board of health of Manila deserve considerable credit for the manner in which the epidemic was managed in Manila. The insular board also rendered valuable assistance to the stricken provinces by sending capable men to assume charge of affairs, and in a number of places the epidemic



was materially shortened through their intelligent efforts. The military authorities rendered every assistance by furnishing medical officers and through cooperation with the board of health. The thoroughness of the work and successful management of the epidemic were proportionate with the authority they possessed. In fact, towns and districts over which they had absolute control stand out in startling relief relative to lessened number of cases and shortened duration of the epidemic as compared to those in which they only worked in cooperation with the native provincial officers. The latter suffered longer and more severely in just the proportion that concessions were made to the Filipinos.

The time to fight a fire is while it is still smouldering and not when the conflagration is raging, and the same is true of a cholera epidemic; drastic and vigorous methods in the incipency, no matter whom it effects, the fewer concessions made to individuals whose support you can not interest, the less rapid the spread of the epidemic, the shorter the duration, and the greater the saving not only in human lives but also of financial losses. To state briefly, look after the water supply; supervise food, destroying that which is considered dangerous; and impose rigid and indiscriminating quarantine so that persons from an infected center can not enter a clean locality until five days have elapsed from exposure to possibility of infection, in order to eliminate danger of an infected person arriving to be seized with the disease and thereby establish a new center. The most satisfactory manner in which to accomplish this is to detain persons at port or place of entrance in a suitable camp or quarantine station for the requisite number of days. I have been told by a number of army surgeons that while the above regulation was strictly enforced the towns in the provinces did not become infected, but as soon as the provincial civil officials assumed charge, this rule was abolished or ineffectively enforced by allowing persons to enter on passes, and the towns promptly became infected by the arrival of some person from an infected center that developed the disease soon after arrival.

When the disease appeared in Manila the board of health instituted vigorous measures relative to guarding the water supply, supervising the food, destroying that which was considered dangerous from being eaten in the uncooked state, closing the wells, establishing numerous inspection stations with sufficient force of inspectors, hospitals, detention camps, etc. A cordon was also placed around the city, but this was composed of native guards, unreliable, and in sympathy with the people, and was ineffective, as persons passed it with little difficulty. However, guards were not placed on the beach to prevent the paraos and other small native boats from continuing their traffic, and as they landed and took passengers from the worse infected part of the city the disease was carried to the adjacent provinces in a few days after it was detected in Manila. Another feature that, in my opinion, was unwise was that of allowing persons to leave Manila on passes issued by the board of health, Filipinos and others, one hundred or more daily, after the infection existed in several parts of the city, since even if the cordon had been effective any good accomplished would have been rendered null and void by the pass system in vogue. These persons spread the infection along the railroad and up the Pasig River to the Laguna Province, and the conflagration was started in earnest. Possibly it was necessary to make this concession to the Filipinos, but it was a great mistake, and no epidemic can be curtailed or prevented



under such a procedure. The practice prevailed in the provinces, and while a land quarantine was in force to protect clean localities infected persons were daily passed through the cordons, and admitted into the towns without question, therefore it can be stated with safety that the land quarantine was ineffective and degenerated into a farce, accomplishing nothing except annoyance, opposition on the part of the natives, dissatisfaction, and dissension.

Quarantine can be applied to the Philippines in dealing with epidemics, and will prove effective if it is rigid and based on fundamental principles without concessions. The policy must be firm, and not intrusted to incompetent native officials. You can not secure the intelligent cooperation of the natives, and they must be forced to obey regulations; pass systems and discriminations must be abolished, and in the incipency of the epidemic healthy localities can be protected and infection prevented by the firm, definite policy outlined. It has been demonstrated in a number of places during the present epidemic that rigid quarantine intelligently conducted will protect the town, and although the task is herculean, it is certainly rational and scientific to make the effort, and if applied at the commencement of the epidemic the results will be of paramount importance, and such a visitation as that of 1882 and 1902 might be prevented.

If, however, the epidemic becomes widespread, I doubt if the quarantine can be made effective on account of the vast territory to be controlled and the lack of competent men to take charge of the work, since in most of the places in the provinces the work has to be left to poorly equipped boards of health, composed principally of native physicians, without the fundamental training in sanitary work. In fact, in many places the regulations have to be intrusted to the native presidente, a man most often entirely unreliable, without even an education, much less knowledge of sanitary matters, and naturally nothing is done, people from infected and clean places coming and going at will. The latter was the manner in which the disease was spread rapidly from one town to another and from province to province, until few islands and provinces escaped infection. The cases rapidly increased in the affected towns through infected water supplies and the epidemic swept on like a prairie fire, running a sharp, acute course.

In order to protect the other ports of the Philippine Islands and the United States against invasion an outgoing quarantine of five days was imposed on all vessels leaving Manila for ports in the territories mentioned. This was instituted immediately upon the appearance of the disease in Manila, and proved effective in preventing the infection of the other islands and ports through vessels, their personnel, or cargoes. During the period of ten months that this regulation remained in force no vessel had cholera on board after discharge from quarantine except the transport *Sherman*, and of sixty vessels upon which cholera occurred during the five days' quarantine prior to sailing no cases developed on board after discharge or could be traced to the vessels except in the case of the ship above specified. When it is taken into consideration that more than 200,000 persons were so detained, it will be seen that the regulation was effective. This procedure protected all parts of the Philippine Islands except the provinces contiguous to Manila, infected overland by persons from the city mentioned, except in the case of Nueva Caceres, which was infected about the same time as Manila by a vessel which sailed two days after the appearance of the disease in the latter place. This vessel was held in the bay,



loaded in quarantine, and allowed to sail without five days' detention; however, one member of the crew was taken ill with cholera soon after arrival at Nueva Caceres, and upon investigation it was ascertained that this person, with two others of the crew, broke quarantine and communicated with shore by means of a passing banca, without detection, and gave a history of eating and drinking on shore; consequently it was easy to see how the infection was acquired.

The outgoing quarantine protected the other ports in the Philippine Islands for two months, and they only then became infected by the disease spreading overland and infecting them from the land side. Batangas became infected in this manner, and the disease was carried by paraos to Isla de Verde and to Mindoro, and from the latter place to the island of Marinduque. Tacloban became infected probably by small boats from Nueva Caceres and at once constituted a dangerous center, because in the southern islands there are thousands of small native boats that land on the beach near towns or visit small places where only the presidente is intrusted with the enforcement of the quarantine regulations, and discharge their passengers and cargo. From Leyte the disease was promptly carried to a small town near Cebu in this manner, and later to Negros, Panay, Samar, Mindanao, and the Jolo group.

This factor of spreading the disease can not be controlled, because it is utterly impossible to apprehend all of them unless the natives worked in harmony and carried out the regulations in spirit as well as intention.

I knew that as soon as cholera gained a lodgment in the southern islands that it was only a question of time before it would spread throughout that part of the archipelago by the agents above mentioned. All the ports and interior places in the island of Luzon, except the port of Nueva Caceres, were infected by the disease spreading overland, and among the southern islands the small native boats, 3 to 10 tons, were the disseminating factor, as far as infecting new islands was concerned, where, after introduction, the disease conducted its death march practically unhindered.

#### STATISTICAL.

An attempt was made to compile statistics of the number of cases and deaths in each province and island, but it was found impracticable on account of the inaccurate reports received from the provinces, so that I will simply give the statistics of Manila, showing the different nationalities affected, and that showing the provinces and islands infected, with date of infection and end of the epidemic. In such report, where no date of cessation is given, it means that the disease still exists in mild form, the epidemic at date of writing not having subsided in many places in the islands.

#### *Statistics of Manila.*

Nationalities.	Cases.	Deaths.	Estimated population.
Filipinos .....	3,971	3,114	223,900
Chinese.....	341	181	60,680
Americans.....	151	76	9,722
Foreigners.....	97	57	7,852
Total .....	4,560	3,428	302,154



From a study of the above it will be seen that the Chinese did not suffer severely, in fact, not so much so as the Americans in ratio of population. This may be ascribed to the fact that (1) the Chinese drink little water, using tea almost exclusively for a beverage, and (2) they do not eat with their fingers, as the Filipinos, always using chopsticks for conveying the food to the mouth, consequently there is less danger of infecting their food. Again, they rarely eat uncooked food.

The rather large number of Americans may be attributed to neglect of usual precautions, because for the first two months of the epidemic the number was small, but toward the end, even when the daily number of cases was few, the number of cases among Americans increased, showing, in my opinion, that they had become lax in their precautions and were less careful with their food and drink.

It has been impossible to compile statistics by province or town for the places outside of Manila on account of inaccurate reports, and such data would be of no scientific value. However, the total cases and deaths for all the provinces are given as follows: Cases, 130,214; deaths, 82,352.

The above are the reports sent to the board of health, but they are of the opinion that many cases were not reported, as from the remote pueblos of a province no accurate reports were received.

I think that the number given above is far short of the actual number of cases that occurred in the islands, and if one-third is allowed for unreported cases I think the estimate would be approximately correct; therefore, there occurred in the provinces 173,619 cases and 109,703 deaths; adding to this, the statistics for Manila would give a total of 179,689 cases and 114,274 deaths due to cholera in the epidemic of 1902.

Statistics showing date of infection of provinces and the length of the epidemic are shown in the table given below.

*Table showing date of infection of provinces and islands.*

Province.	Number towns infected.	Date of infection.	Date of cessation.
<b>Island of Luzon:</b>			
Bulacan .....	28	March 20 .....	December 20.
Camarines Sur .....	25	.....do .....	.....
Rizal .....	35	.....do .....	January 17.
Pampanga .....	24	.....do .....	.....
Bataan .....	12	.....do .....	July 5.
Laguna .....	32	.....do .....	November 29.
Cavite .....	21	.....do .....	September 6.
Pangasinan .....	41	April 27 .....	December 27.
Nueva Ecija .....	19	May 3 .....	.....
Ilocos Sur .....	21	May 10 .....	October 18.
Ilocos Norte .....	5	March 20 .....	November 29.
Batangas .....	21	May 17 .....	.....
Cagayan .....	4	August 23 .....	.....
Isabela .....	1	October 18 .....	October 18.
Union .....	23	July 19 .....	Do.
Tayabas .....	11	May 17 .....	November 1.
Tarlac .....	27	May 3 .....	Do.
Sorsogon .....	4	June 28 .....	January 3.
Zambales .....	27	May 17 .....	.....
Albay .....	2	April 27 .....	.....
Benguet .....	2	July 5 .....	November 22.
Island of Marinduque .....	2	.....do .....	September 20.
Island of Cebu .....	26	July 12 .....	.....
Island of Leyte .....	17	May 10 .....	.....
Island of Samar .....	16	May 17 .....	January 10.
Island of Mindoro .....	5	June 14 .....	October 18.
Island of Bohol .....	17	August 2 .....	.....



*Table showing date of infection of provinces and islands—Continued.*

Province.	Number towns infected.	Date of infection.	Date of cessation.
Island of Panay:			
Iloilo .....	53	August 23.....	January 17.
Capiz .....	29	September 13.....	
Antique .....	21	October 4.....	
Island of Masbate.....	4	August 23.....	Do.
Island of Negros .....	52	.....do .....	
Island of Mindanao:			
Surigao.....	2	September 6.....	January 31.
Zamboanga .....	2	December 20.....	
Misamis .....	24	October 4.....	
Island of Basilan .....	1	December 27.....	December 27.
Island of Jolo .....	2	December 6.....	December 13.



## TRACHOMA AS AN EPIDEMIC AND MARITIME DISEASE.

By Passed Asst. Surg. J. M. EAGER (on duty at Naples, Italy).

Trachoma is seldom thought of as an epidemic, much less as a maritime disease. Its transmissibility and its relation to shipping are, however, brought prominently before the observer in connection with the inspection of emigrant ships in Italy. At the medical examination of immigrants at United States ports, trachoma, when in its active stage, is considered as coming under the head of dangerously contagious diseases, and its sequels, such as cicatricial conjunctival deformities and pannus, bring it into the category of diseases likely to render the sufferer a public charge. In view of the contagiousness of trachoma, the Italian Government now refuses to allow the embarkment of cases of active ophthalmia on emigrant vessels leaving Italy, either for South America, where there is no prohibition against the entrance of trachoma, or for the United States. The object of this ruling is to prevent the spread of the disease aboard ship. Thus one is led to look at trachoma in its maritime aspects, a view which is supported by the occurrence of an epidemic at sea in the early part of the last century. Although doubt might exist as to the nature of this outbreak, of which an account will be given further on, Fuchs, of Vienna, in his treatise on ophthalmology, attributes the occurrence to trachoma. The differences found in the nomenclature of the various forms of trachoma give rise naturally to the question whether the several varieties of the disease are due to the same specific cause, whatever it may be.

Literature plainly shows that those pathological conditions of the conjunctiva known as trachoma, though nowadays of a more or less chronic and endemic nature, presented themselves in former times as epidemics, alarming and disastrous in their results and affecting large moving bodies of men such as were congregated in armies and on board slave ships. In this respect trachoma is not unlike many other diseases whose history, traced through centuries and reviewed in relation to different countries, reveals often a period in which the maladies are insignificant or unrecorded, then an increase into epidemic proportions, and finally a subsidence to an endemic and chronic state. The chronicles of syphilis, a disease rarely thought of in connection with epidemics and shipping, show that at one time it prevailed in such a form as to be classed with pest. It was even considered to have been introduced from America by the first ships that visited the New World. ("Early history of quarantine." Yellow Fever Institute. Public Health and Marine-Hospital Service. Bulletin No. 12.)

From an epidemiological point of view trachoma may be considered as a disease which, though known in ancient times to be contagious, was not noted to take on an epidemic character until recent centuries, and which at the present period has relapsed into its former slowly spreading condition. Still, it can not be denied that trachoma is at present a form of disease which by accurate exclusion of infected per-



sons and things could be prevented from entering a country by sea. Thus the disease takes on an interest from a quarantine standpoint.

Hippocrates, Galen, Plutarch of Cheronca, and Rhases, the famous Arabian physician of the ninth century, mention ophthalmia as an eminently contagious malady. The Rabbi Moses, a great exponent of the doctrines of Galen, says in his aphorisms that to gaze steadily into the eyes of a trachomatous person is enough to make anyone's eyes water, and that continuous contact with sufferers from ophthalmia generally results in contracting the disease. Damascene, another Arabian physician, expresses the same opinion. In his celebrated work on contagion, Fracastoro says that he does not dwell especially on ophthalmia for the reason that the same measures applicable to other contagious diseases apply to it. Forest, a Dutch medical writer of the sixteenth century, describes a prevalence of ophthalmia in Louvain, Belgium, in 1556, of which the contagious character was very marked. Gerolamo Mercuriale, evidently impressed with the communicability of trachoma, believed that this was effected through the medium of a vitiated visual spirit thrown out by glances of diseased eyes, an influence which, thought Favenzio, gave a pestilential taint to the air; ideas fantastic enough, to be sure, but showing at least that the disease was considered to be transmissible.

Trachoma received the name of Egyptian ophthalmia through the writings of Prospero Alpino, an Italian, who visited Africa in the sixteenth century for the purpose of studying Egyptian medicine. As a result of his inquiries, he published in 1591 a work in Latin called *De Medicina Ægyptiorum*, in which he describes ophthalmia, and says that in Cairo the disease, always present, augments decidedly during the latter part of the dry season, assuming an epidemic character.

It was evidently from the operations and movements of the armies of Napoleon I that trachoma became disseminated throughout Europe, so that a period of epidemics was brought about. Fuchs states that in the year 1818 there were, owing to trachoma, 5,000 blind soldiers on the invalid list of the English army; in the Prussian army 20,000 to 30,000 men were attacked between the years 1813 and 1817; in the Russian army from 1816 to 1839 there were over 75,000 cases reported, while in Belgium in 1840, 20 per cent of the soldiers were trachomatous.

In 1820, Guillié, of Paris, made a demonstration of the contagiousness of trachoma by inoculating the muco-purulent secretions from the eyes of trachomatous boys into the eyes of some inmates of a blind asylum. The inoculated individuals were already hopelessly blind from amaurosis, but presented normal conjunctivæ. As a result of the inoculations, trachoma was produced in all the eyes experimented upon. In 1816 a Scotch oculist, Mackenzie, had experimented on his own eyes by applying to them compresses soaked with trachomatous secretions, but had escaped acquiring the disease.

Passing now to the claims of trachoma as a maritime disease, the only record found in literature of its spread aboard ship is that given by Guillié (*Bibliothèque Ophthalmologique*, Paris, 1820). The French slave-ship *Le Rôdeur*, 200 tons burden, left Havre for the west coast of Africa, January 24, 1819. March 14 she dropped anchor at Bonny, on the delta of the river Niger. On the voyage out and during the stay at Bonny the crew showed no signs of ophthalmia; neither was there any prevalence of the disease on the coast. April 6 the vessel set sail for Guadeloupe, and sixteen days later, while standing on the equator on a westward course, the first symptoms of the disease became evi-



dent. The slaves aboard, 160 in number, were lodged partly between decks and partly on the main deck. It was noticed that many of them had reddened eyes. Very soon ophthalmia was general among them. The spread from one individual to another was startlingly rapid, but the crew did not attach much importance to the disease, believing it to be due to scarcity of fresh air and the small ration of drinking water, which had been reduced to a quarter of a pint a day. The malady received more serious consideration when it began to attack the crew, and an effort was made to bring the negroes on deck. The slaves, torn from friends and country, once aboard refused to leave cover, and those who were dragged into the open air speedily threw themselves into the sea.

A description of the disease is given by the surgeon of *Le Rôdeur*. The onset manifested itself by an itching and burning sensation along the free edge of the lids, by lachrymation and photophobia. Within a day great palpebral swelling ensued, with increased pain. About the third day a sticky secretion, at first yellowish, later greenish, made its appearance and soon became abundant. In a few days everyone aboard, with the exception of one seaman, was affected. A riot threatened among the slaves and the ship was managed with difficulty. In this condition *Le Rôdeur* overtook the Spanish ship *Leon*, which reported the crew suffering from the same malady and in such a state as not to be able to govern their vessel. The ships parted without being able to aid each other, and the further history of the *Leon* is unrecorded. On the twelfth day the people of the French ship began to improve. The swelling subsided, the pain lessened, and when the conjunctiva was again seen numerous opaque patches were noticed.

The ship arrived at Guadeloupe, June 12, in a deplorable state. Three days after arrival the only person who had escaped the disease during the voyage took the malady. As a result of this epidemic, 39 of the 160 slaves went completely blind, 12 lost one eye, and 14 were left with corneal opacities more or less extensive. Of the crew, 12 lost their eyesight, among these the ship's surgeon; five, and the captain was one of them, lost one eye, and four were left with corneal opacities and anterior synechia.

At the present time trachoma is notably endemic in certain countries—Arabia, Egypt, Italy, Spain, western Russia, Poland, Ireland, and South America. In Italy its ravages are most marked in Sicily, Calabria, Puglia, and Sardinia. Exact statistics as to the prevalence of trachoma in Italy are not available. In a recent monograph (1903) on the prophylaxis of trachoma, Professor Fortunato, of the University of Palermo, provincial physician, presents certain interesting figures based on the following factors: School inspection; army recruitment; reports of medical, charitable, and educational institutions, and the medical inspection of emigrants leaving Naples and Palermo for the United States. The statistics are, in most instances, incomplete and in others, owing to inherent disadvantages, entirely indecisive. Still, some interesting though isolated facts are brought out. For instance, it is related that in the public schools of Noto, a city near Syracuse, Sicily, 36 per cent of the pupils were found to be trachomatous; and Professor Fortunato himself, charged with an inspection in Calabria, found that in one school where there were 34 girls, 28 were affected with trachoma. In 1892, in one of the sections of Palermo, it was found that among a school population of 607 there were 160 cases of trachoma.



The statistics of recruitment for the Italian army show that there is a progressive increase in granular ophthalmia in Italy; that trachoma prevails more extensively in maritime than in inland recruiting districts; that insular maritime places are more afflicted than other seaboard regions; that the disease, with some exceptions, becomes progressively more frequent from north to south, assuming a grave epidemic character in Sicily and Sardinia; and that it is sporadic (i. e., 0.13 to 2 per 1,000) in 117 districts, discretely endemic (2.01 to 4 per 1,000) in 51, and in 10, gravely epidemic (reaching 32.36 per 1,000) at Acireale, a seaport in Sicily.

Valenti, in a critical study of the levy of Italian troops, presents certain conclusions showing the increased proportion of trachoma between the years 1880 and 1894. For instance, the figures for the province of Lecce are 1 per 1,000 in 1880 and 17.70 per 1,000 in 1894; in Bari, almost no return in 1880 and 12.70 per 1,000 in 1894; and in Sicily and Sardinia, hotbeds of trachoma, the increase is still more marked, reaching in 1894 in Catania 21.5 per 1,000, in Cagliari 28 per 1,000, and in Sassari 38 per 1,000, whereas in 1880 the number of cases was so insignificant as not to be deemed worthy of note.

Dispensary reports also establish the fact that trachoma is greatly on the increase in Italy. At Turin, according to the report of the ophthalmic hospital presented at the general exposition of 1898, out of a total of 2,417 persons treated in hospital in 1896, there were 247 affected with trachoma. During the ten years, 1892 to 1901, of 13,106 out-patients, 1,429 were trachomatous.

Basso, in his report (1901) on granular conjunctivitis in Liguria, presents figures for Genoa which give a proportion of 30 per cent of trachoma among the individuals presenting for eye treatment.

In a contribution to the clinical study of trachoma, Bellinzona (1902) estimates that of public patients in the city of Pavia 142 per 1,000 are trachomatous, and 115 per 1,000 in the province.

In some of the maritime places of Sicily and Sardinia, it is stated by Professor Fortunato that, from all available means of observation, it may almost be said that the entire population is trachomatous.

The statistics of the medical inspection made in Italy for the United States are of little value in estimating the prevalence of trachoma in Italy for the reason that the figures are distorted by the fact that often persons notably trachomatous do not attempt to take passage or are refused the same by the transportation companies prior to the day of sailing and so do not appear at the regular medical visit. On the other hand, many less grave or less conspicuous cases present themselves and are refused passage again and again at the inspection. In this connection, it is interesting to note that, at times when vessels are leaving with all the places taken, fewer trachomatous persons present themselves at the medical inspection than at times when the passenger lists are incomplete and the vessels seeking patronage. Then, too, many persons, some not trachomatous but fearing they may fall under suspicion, and others really victims of the disease, practice a sort of inverse malingery at the time of the inspection. Adrenalin with cocaine hydrochlorate is a favorite prescription for eyedrops. By its application, a blanching of the conjunctiva is brought about, a condition which, even in the absence of other evidence, is sufficient to put the person under observation until the disappearance of drug effects has rendered proper examination practicable.



VALUE OF THE PROMPT RECOGNITION OF THE UNDERLYING CAUSES  
OF COMA, WITH REPORT OF A CASE OF PERNICIOUS MALARIAL  
FEVER OF THE COMATOSE TYPE.

By Asst. Surg. A. J. McLAUGHLIN.

Frequently cases are brought to the hospital in a comatose condition whose history, obtained from friends, relatives, or companions, is either negative or misleading. Under such conditions prompt diagnosis is extremely difficult and occasionally impossible; yet the prompt diagnosis of the underlying condition in these cases is of the utmost importance, and a few hours lost by indecision or mistaken diagnosis will often result in the patient's death.

Broadly speaking, comatose cases can be classed as febrile or afebrile, always remembering that a case of coma due to some cause which in itself does not cause fever may present a rise in temperature due to some coexisting complication, and that occasionally a case due to some cause which ordinarily produces fever will present a normal or sub-normal temperature.

Febrile coma may be due to thermic fever, malarial fever, typhoid fever, encephalitis, meningitis, or compression of the brain. Uræmic coma is sometimes accompanied by fever, and fever is present with coma in some cases of acute yellow atrophy of the liver. Afebrile coma may be due to alcoholism, uræmia, diabetes, epilepsy, opium poisoning, and apoplexy.

The causes of the condition of coma are so varied and the symptoms of diagnostic value so numerous that it is advisable to follow a regular routine in the examination of each case to avoid overlooking important clinical evidence.

The color of the face should be noted, whether flushed, pale, cyanosed, or jaundiced. The presence or absence of œdema, ecchymosis, or puffing out of the cheeks during expiration should be noted; also whether there is any discharge of blood or other fluid from nose or ears.

The eyes should be carefully examined and notes made of the condition of the lids, whether open or closed, ecchymosed, or œdematous; whether the pupils react to light, and whether they are dilated, contracted, or unequal.

Albuminuric retinitis and choked disk should be looked for, and absence or presence noted. Deviation and other ocular symptoms, if present, should be carefully noted.

The respiration should be studied, its character determined and noted; whether labored or free, slow or fast, deep or shallow, regular or irregular, noisy or stertorous, etc.

Note should be made of the odor of the breath and presence or absence of Cheyne Stokes type of respiration.

Position of the body should be observed and presence of rigidity or spasm, opisthotonos, or other peculiar manifestations noted. Hemi-



plegia should be searched for as shown by unequal expansion of the two sides of the chest, difference in muscle tone of the two sides, etc. The condition of the skin, whether moist or dry, hot or cool, should be recorded.

If there is a suspicion of head injury the entire scalp should be shaved and careful search made for contusions, lacerations, ecchymoses, or œdema. The temperature should be carefully taken, very high temperature being significant of thermic fever or brain compression, and subnormal temperature suggesting alcoholism.

The pulse is important, and its frequency, rhythm, force, tension, and any special features (such as dirotism, etc.) should be noted.

Next a quantity of urine should be obtained by catheter and sediment obtained by centrifugation. The examination should be particularly directed toward the demonstration of albumen, sugar, or casts, and the presence or absence of the diazo reaction. Last, but certainly not of least importance, a careful examination of the blood should be made. One or two fresh specimens and several spreads for staining should be obtained by puncturing the finger or lobe of the ear. An additional drop of blood should be secured for determining the presence or absence of the Widal reaction. The blood examination will enable the observer to diagnose or exclude malaria, and from the stained specimens, with a little practice, the presence or absence of leucocytosis can be determined. The Widal test is valuable, because in a typhoid infection severe enough to produce coma a positive reaction is almost invariably secured.

If the examination of blood and urine prove negative, malaria, typhoid, uræmia and diabetes can be excluded at once. Absence of jaundice excludes acute yellow atrophy of the liver and absence of opisthotonus and ocular disturbances excludes meningitis and encephalitis. Cases in which the examination of blood and urine is negative, and in which the temperature is extremely high and persistent, are probably due to thermic fever, although a careful examination will be necessary in these cases to exclude compression of the brain, in which condition hyperpyrexia with coma is not infrequent. Afebrile cases, in which the examination of urine is negative, are probably due to alcohol or opium poisoning or to apoplexy. Careful consideration of the notes taken in the examination of the patient will enable one to diagnose by exclusion which of the three conditions exists.

The following case serves to illustrate the value of an early blood examination in cases of coma. The prompt diagnosis in this instance made possible the institution of energetic treatment at once, with the result that a very grave case of profound coma cleared up within twenty-four hours.

J. L., age 28, nativity, Spain, was admitted to United States Marine Hospital, port of New York, February 26, 1903.

No history was obtainable; patient was in a comatose condition; face pale; no œdema or ecchymosis of lids; examination of eyes negative; respiration noisy, labored, and increased to 30 per minute; breath foul; lungs hyperresonant at apices; heart displaced upward; apex beat in the nipple line one-half inch above the nipple; soft systolic murmur heard over the second intercostal space to the left of the sternum, second sound accentuated; area of splenic dullness increased downward to the crest of the ilium, laterally to the median line in front and upward to the nipple line; liver was correspondingly large.



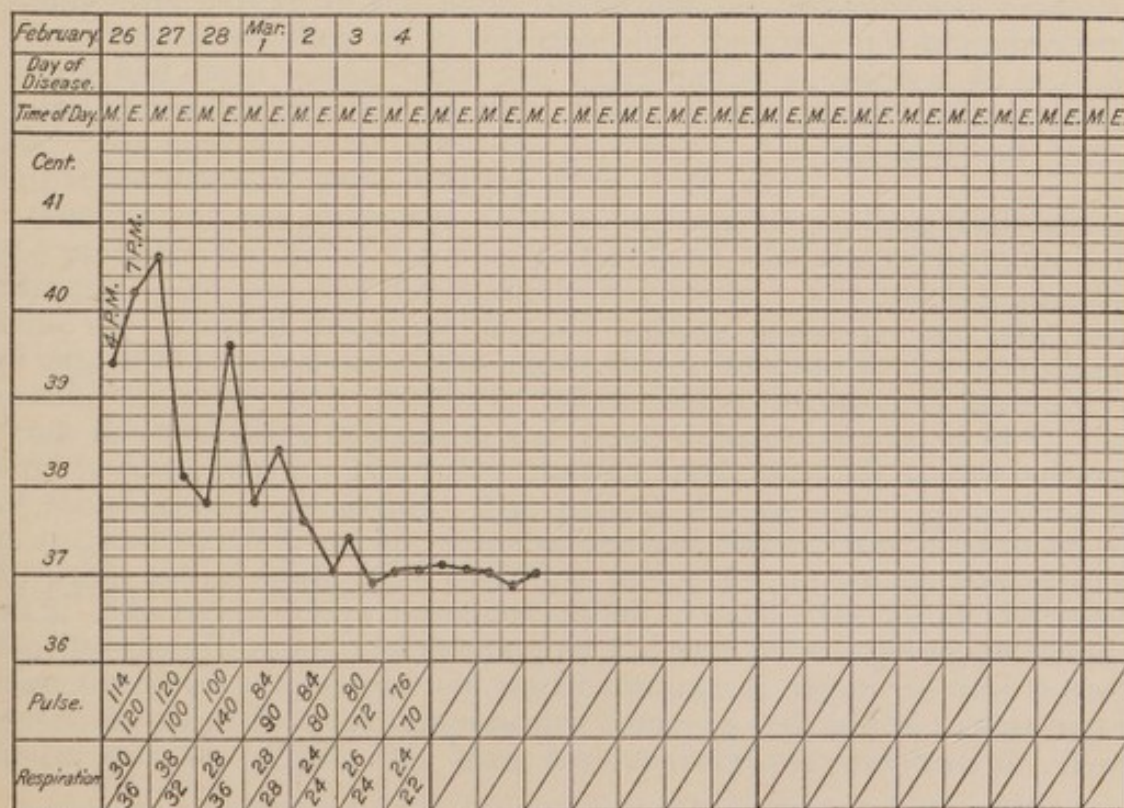
Enlargement of the liver and spleen caused considerable bulging of the antero-lateral portions of the chest walls, but the intercostal spaces were not obliterated. No signs of hemiplegia were discoverable. Careful examination of scalp, ears, and nose was negative; skin hot and dry; pulse, 114, rather feeble; temperature, 39.4.

Examination of blood: Number of red-blood cells per c. mm., 5,760,000; number of leucocytes, per c. mm., 6,000; hæmoglobin, 25 per cent. Widal test, dilution, 1 to 25, one hour, negative; small ring-form hyaline parasites were found in considerable numbers, and in the stained specimens were a number of crescents.

Examination of urine: A trace of albumen; no sugar, no casts, and Diazo-reaction negative. Diagnosis was made of pernicious malarial fever of the comatose type and treatment instituted at once. One gram of quinine bimuriate with urea was injected hypodermatically every two hours for twenty-four hours, when consciousness was regained and quinine was reduced to 0.6 grams every four hours.

At the end of forty-eight hours the patient's blood seemed to be free from active forms of plasmodia, but crescents were found until sixteen days after admission. On the fifth day patient was allowed out of bed for a short time, and from this time until he was discharged he had no chill, fever, headache, or other symptom of the disease, but steadily gained in strength each day. He was kept under observation until March 21, when he was discharged. He received 12 grams bismuriate of quinine hypodermatically the first twenty-four hours. He was given 2 grams (0.6 three times a day) the second twenty-four hours, and from the third day until his discharge he received 0.3 grams three times a day. When discharged he was strong and apparently well. His spleen was greatly reduced and his liver was normal in size. His apex beat was in the normal location and no murmur was heard.

Name, J. L.; age, 28; disease, malarial fever.





*Blood examinations made at intervals with the results given below.*

Date.	Crescents.	Ring form plasmodia.	Number of red corpuscles.	Number of white corpuscles.	Per cent of hæmoglobin.
February 27 .....	Present.....	Present.....	5,763,000	6,000	25
March 1.....	do .....	Not found .....	4,230,000	11,600	25
3.....	do .....	do .....	(a)	(a)	(b)
5.....	do .....	do .....	(a)	(a)	(b)
10.....	do .....	do .....	4,800,000	8,000	45
15.....	do .....	do .....	(a)	(a)	(b)
20.....	Not found .....	do .....	6,200,000	7,500	76

a Not counted.

b Not estimated.



A CASE OF OSTEOMYELITIS OF THE ULNA, FOLLOWING TYPHOID FEVER, DUE TO THE STREPTOCOCCUS PYOGENES—EARLY OPERATION—RECOVERY.

By Asst. Surg. A. J. McLAUGHLIN.

W. K., aged 24 years; nativity, New York. Was admitted December 29, 1902, to the United States Marine Hospital, port of New York, in a comatose condition. Pupils reacted to light and were symmetrical; tongue heavily coated in center to the tip, red on edges. Had sordes; lips cracked, dry, and bleeding. Temperature, 40; pulse, 86; respiration, 22. Lungs and heart normal. Abdomen tense, tympanitic and tender; no rose spots. Patient had a moderate diarrhea. Blood contained no plasmodia; widal test positive dilution 1 to 25, almost at once. Urine contained small quantity of albumen, and a few small hyaline casts; diazo reaction positive. Diagnosis: Enteric fever.

He had a rather severe tympanitic type of the disease, but on January 17 his temperature had reached normal, after a gradual decline, and remained within normal limits twenty-four hours. On the morning of January 19 he complained of excruciating pain in his right forearm, of a boring, tearing character. There was no swelling or redness at this time and no tenderness on pressure. In the course of eight hours (evening of 19th) the pain was more constant, and the posterior border of the ulna could be traced by a line of redness. Along this border of the bone tenderness on pressure was evident. There was no swelling up to this time, but the patient's temperature, which had been rising since the early morning, reached 40 and his pulse increased from 70 to 104. The arm was packed with cracked ice. The next morning (20th) the pain was not so bad as it had been, but there was now some swelling of the soft parts.

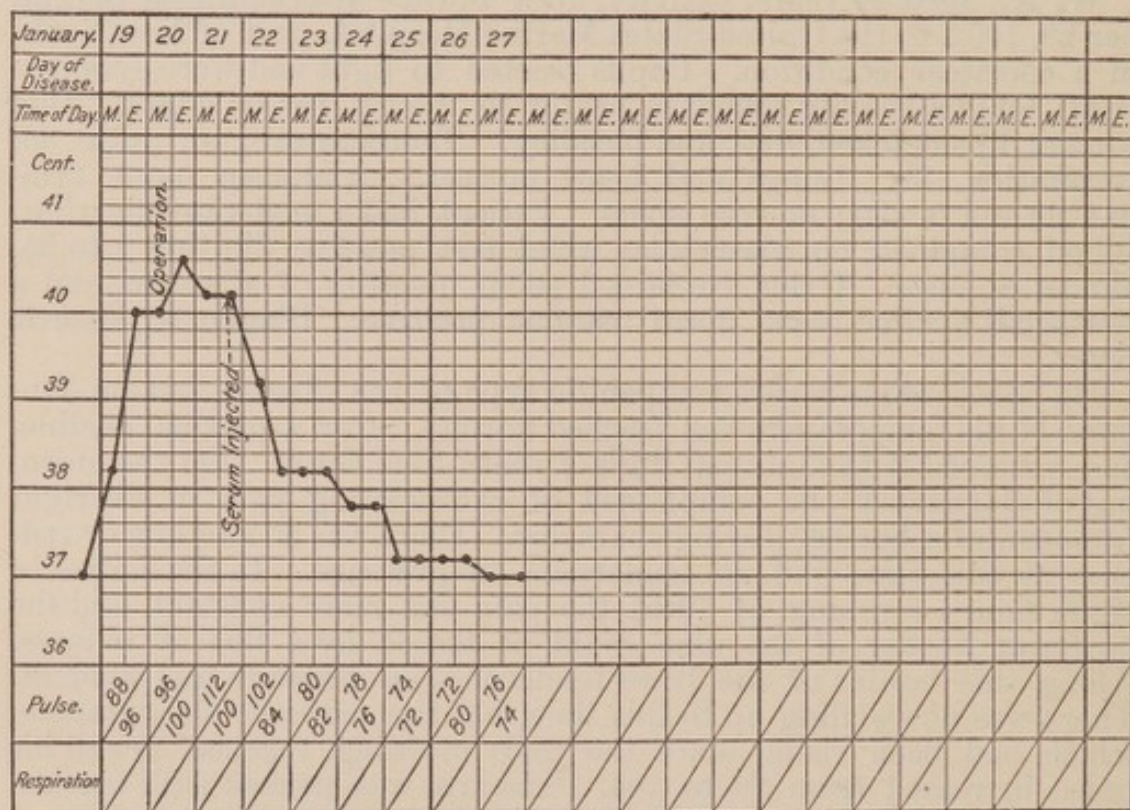
The patient was given ether, and an incision 10 cm. long made along the posterior border of the ulna to the bone, and the periosteum cut through. No pus was discoverable anywhere. The surface of the bone was chiseled away, making an opening about 2.5 cm. long and .3 cm. wide in the shaft of the upper third, reaching to the medullary canal. Cultures were carefully taken (blood serum and agar-agar) from the medullary substance, and these cultures grown at 37 C. for twenty-four hours. The tubes showed next morning a pure culture of streptococcus pyogenes. The patient was operated upon about 2 p. m., and by 10 p. m. his temperature had fallen from 40.6 to 38.4. It began to rise again from this time, and at 7 a. m. on the 21st it was 40.2. His temperature remained about 40 until 10 p. m. of the 21st. During the afternoon and evening of the 21st he was given, at three-hour intervals, injections of antistreptococcic serum in full doses. After the third dose his temperature began to fall, and in twenty-four hours was 38. From this time his recovery was uneventful. The



wound in his arm, which was not closed but simply packed with gauze, gradually healed by granulation, with no loss of bone. The patient's blood was examined at frequent intervals during the febrile period after the operation, but streptococci were never found in the general circulation.

Extensive destruction of bone and the possibility of septicaemia were probably prevented in this case by the early operation and free drainage. The temperature fell rather suddenly after the injection of antistreptococcic serum, but whether this was due entirely to the serum or to free drainage at the site of infection it is impossible to say with certainty.

Name, W. K.; age, 24; disease, osteomyelitis of ulna following typhoid.





## REPORTS OF FATAL CASES, WITH NECROPSIES.

Following are the reports on cases dying at the marine hospitals, with necropsic findings:

### ABSCESS OF LUNG.

J. L., a white, aged 28; born in New York; was admitted to the United States Marine Hospital, Chicago, Ill., on February 20, 1903, and died March 10, 1903.

FAMILY HISTORY.—Father died of exposure (was master of a ship); mother died of carcinoma; history otherwise negative.

PERSONAL HISTORY.—Patient stated that he had always enjoyed good health, and that on February 18 he was suddenly seized with "a stitch" in the left chest, followed by malaise, fever, prostration, and pain in left chest during respiration; was admitted to hospital at 11 p. m., being brought here in police ambulance. The physical signs were those common to cases of acute pleurisy. During the following four days the patient seemed to improve, but, beginning with February 25, he began to have increased pleural pain, higher fever, increased cough with more abundant sputum. March 4, percussion over left lower lobe elicited hyper-resonance anteriorly, flatness posteriorly; auscultation over same lobe anteriorly elicited loud, dry, tubular inspiration, with bubbling râles during expiration. No respiratory sounds could be heard posteriorly. Vocal and tactile fremitus present over this lobe anteriorly but absent posteriorly. Sputum had become thinner and more purulent in appearance. On March 5 and 7 sputum examination revealed many pus cells and pus organisms, but no tubercle bacilli. Numerous cells, morphologically like mononuclear leucocytes found, containing pigment granules resembling carbon. March 9, temperature fell to 37.2°, but rose to 39.8° by evening; cough was persistent, and patient slightly delirious. Patient failed very rapidly during the night, became unconscious toward morning, and, despite active stimulation, died at noon March 10, 1903.

TREATMENT.—The usual anodynes, counter irritants, and tonics were exhibited as indicated, together with abundant nourishing diet.

NECROPSY (9 hours after death).—Body: 1.85 meters long; emaciated; chest slender and asymmetrical (phthisical chest); rigor mortis marked; post mortem lividity slight; small amount of fluid found in left chest; fragile (recent) adhesions were present anteriorly over lower left lobe, while posteriorly the adhesions were dense and tough, and laterally (externally) they were intermediate in toughness. Separating the lateral adhesions, the visceral pleura was ruptured, and a fetid purulent fluid escaped into the chest cavity. After removal of left lung, 800 c. c. of intensely fetid, grayish-green pus was found in the left pleural cavity. Left lung weighed 610 grams; upper lobe was apparently normal; lower lobe consisted of an abscess cavity with pulmonary tissue still present anteriorly; a thin wall laterally where rupture occurred, and a wall of greatly thickened pleura posteriorly. The internal aspect of cavity was irregular, dark-brown in color, and the adjacent lung tissue was almost diffuent. Right lung weighed 1,350 grams, was very succulent, presented a small accessory lobe, but otherwise was normal. No signs of old or recent tubercular processes in either lung. The heart weighed 360 grams, all valves were competent, and all the cardiac cavities contained ante-mortem clots of considerable firmness; the pericardial sac contained about 15 c. c. of turbid, straw-colored fluid. The liver weighed 1,910 grams, was firm in consistence, somewhat congested, but otherwise normal. Gall bladder contained 10 c. c. of bile; structure normal. The spleen weighed 180 grams, capsule was wrinkled and parenchyma appeared normal on section. Both kidneys were markedly lobulated, capsules stripped off easily; both were congested, but appeared normal in all other respects. Right kidney weighed 220 grams, the left weighed 250 grams. The bladder was empty and contracted. All other abdominal viscera were normal. The brain was not examined.

L. P. H. B.  
C. E. B.



F. F.; aged 37 years; nativity, Germany; admitted to the marine ward of St. Marys Hospital, Milwaukee, Wis., August 26, 1902; died November 9, 1902.

**HISTORY.**—When admitted the patient was suffering with diarrhea, severe, dry cough, and prostration; temperature  $38.7^{\circ}$  C., and pulse 76. At this time there was some pain in the right side and over the abdomen, but no dullness could be detected by percussing the area of the right lung. At the end of the second week and for a part of the third the temperature maintained a maximum stand of  $39.5^{\circ}$  C. During this period the nurse claimed that the patient had passed several bloody stools. There were throughout the period of illness a fever of a remittent type, abdominal tenderness, tympanites, delirium, and mental torpor. It was impossible to obtain satisfactory answers to questions concerning subjective conditions.

**October 20.**—A fluctuating tumor about the size of an orange was detected at the angle of the scapular on the right side. A diagnosis of pyo-pneumothorax was made and the condition was thought to be due to the breaking down of a superficial tubercle into the pleural cavity. The extremely weak state of the patient did not warrant surgical interference. At first the patient was treated for "acute enteritis (typhoid);" later for enteric fever with a pulmonary complication, though this could not be definitely made out. The usual remedies, including Dover's powders and guaiacol carbonate, to meet such symptoms as diarrhea and flatulence, and later strychnine and digitalis, to sustain the failing strength, were administered.

**NECROPSY** (20 hours after death).—Body of an emaciated white man; rigor mortis present; incision made into tumor on right scapula; large quantity of pus, offensive in odor, was evacuated; cavity found to be continuous by small perforations through sixth and seventh intercostal spaces with the pleural cavity, and also to extend downward subcutaneously to a bed sore on the back. The muscular walls of this cavity were necrotic. Internal examination by the usual incision extending from the interclavicular notch to the symphysis pubis. Pericardium contained a small amount of fluid; heart normal in structure; both pleuræ free from adhesions, except for a small area over the lung surface opposing the fifth and seventh ribs of right side. The lungs: Left lung normal in size and consistence; the right lung, where the pleura was adherent, showed an abscess cavity about the size of a goose egg; abscess cavities were found to communicate through the chest wall by means of the perforations above mentioned. Liver showed fatty degenerative changes; left lobe was undersized; weight 1,390 grams. Gall bladder full of greenish bile. Pancreas normal; weight 90 grams. Spleen slightly enlarged; weight 305 grams. Intestines: No cicatrices of ulcers, old or recent; some congestion of mesenteric veins. Kidneys normal; weight of right 170 grams; left weighed 140 grams. Urinary bladder normal. Death due to septicæmia.

R. B.

#### ALCOHOLISM.

O. L.; aged 31; nativity, Sweden; was admitted to United States Marine Hospital, Boston, Mass., October 31, 1902, and died November 3, 1902.

**FAMILY HISTORY.**—Negative.

**PREVIOUS HISTORY.**—Has always been a healthy man; says he has never had a venereal disease; heavy drinker and smoker.

**PRESENT ILLNESS.**—Sunday he met a party of friends downtown, and after drinking more than was good for him he and one of the fellows in the company began to quarrel. Soon after the patient picked himself from the floor with a pair of swollen eyes and several bruises on his back and limbs. He went home, got in bed, and slept deeply all night. The next evening, aside from the blackness of his eyes, he felt well. Instead of letting whisky alone he again indulged too freely, and as a consequence could not sleep all night. From that day to this he denies drinking. He came into the hospital this afternoon with the characteristic odor to his breath. To-night he vomited his supper and a large quantity of mucous.

**November 3.**—Died at 7.15 p. m. after forty-eight hours of unconsciousness. This morning he was asked to stick out his tongue; he protruded it to the right. Pupils reacted to light properly. This afternoon his whole right side trembled, and at intervals stiffened. At 3.50 p. m. 355 c. c. of urine were drawn off. Enema gave slight return. Calomel had been used previously with no result. This evening at sick call face bluish; pulse not perceptible at wrists; stimulants did no good. Died at 7.15 p. m.

**NECROPSY** (15 hours after death).—Body well nourished; rigor mortis well marked. The brain was removed and found to be normal in appearance; its weight was 1,470 grams. The pericardial sac contained 10 c. c. of a straw-colored fluid; both ventricles contained fluid blood; the heart was apparently normal; it weighed 380 grams. The liver was slate-colored in appearance and weighed 2,270 grams. The right lung was normal except for a slight hypostatic congestion at its base; it weighed 500 grams; the



left lung was normal in appearance and weighed 450 grams. The spleen was of the same color as the liver and weighed 330 grams. The kidneys weighed each 220 grams. The right kidney was supplied by an artery running from the aorta just above its bifurcation and entering the kidney at its extreme lower margin.

W. K. W.  
R. M. W.

## APPENDICITIS.

### *General Peritonitis.*

H. McR.; aged 20 years; nativity, Cape Breton; was admitted to the marine wards of the German Hospital, February 26, 1903; died 2.50 a. m., March 12, 1903; necropsy performed 5.15 p. m., March 12, 1903.

CLINICAL DIAGNOSIS.—General peritonitis following appendicectomy. Anatomical diagnosis: General purulent peritonitis; acute toxic parenchymatous nephritis. The abdominal cavity was examined through the operative incision. There was a sinus leading from the incision to the posterior abdominal wall, thence downward over the brim of the pelvis into the pelvis, which contained a considerable amount of a thin yellowish pus. The adhesions between the omentum, loops of intestines, and anterior parietal peritoneum, elsewhere, were firm and competent. There were no secondary abscesses. There was a marked general purulent peritonitis. The visceral peritoneum was congested and covered with a thick yellow exudate. The intestines were distended. The mesenteric and retroperitoneal glands were slightly enlarged. Owing to objections of relatives, no further examination was made.

F. I.

## DISEASES OF THE BRAIN AND ITS MEMBRANES.

### *Abscess of brain.*

D. J. D.; age, 55 years; nativity, Louisiana; was admitted to the United States Marine Hospital, St. Louis, Mo., November 6, 1902, and died May 19, 1903.

HISTORY.—Little information could be had from the patient on entrance. His pulse, temperature, and respiration were normal and no lesions were discoverable in chest, abdomen, or extremities. He complained of confusion of ideas, and a constant dull headache. He was evidently somewhat imbecile, and was treated on expectant principles generally. During his stay in hospital he was a victim to an epidemic of influenza, from which he apparently recovered, perfectly. He was much given to nocturnal wandering about the buildings and grounds, frequently calling for assistance to find his way back to his ward. During the latter part of his stay he had a voracious appetite, assisting all the other patients in his ward in disposing of food of all kinds. His temperature, pulse, and respiration chart presents nothing of interest. Death was preceded by 48 hours coma.

NECROPSY (6 hours after death).—Body that of a small, elderly, white male, extremely emaciated; rigor mortis fairly well marked. Both pleura completely obliterated by old and strong adhesions of lungs to chest wall. Pericardium normal. Heart somewhat small, loaded with fat. Arteries atheromatous; heart tissue quite soft, ventricular walls hypertrophied, valves approaching atheroma, but apparently competent; weight, 380 grams. Lungs intensely congested, otherwise normal, except for extreme adhesions to chest wall; weight, right 500 grams, left 620 grams. Liver somewhat small, very dark in color, capsule strips readily leaving irregular granular surface; weight, 1,150 grams. Gall bladder full of normal bile. Appendix 10 cm. in length, normal. Urethra patulus. Bladder normal. Kidneys loaded with fat; pelves occluded with fat; right ureter unusually large; capsules strip readily, that of left kidney wrinkled and apparently about to separate from the organ; under capsules occasional cysts in both kidneys; weight, right, 120 grams, left 140 grams. Spleen, fatty; mottled on surface after removal of capsule, which was decidedly adherent; on section studded throughout with small calcareous bodies; weight, 155 grams. Abdominal contents loaded with fat, otherwise normal. Brain somewhat congested. Periphery studded with small pearly formations; left hemisphere the seat of an abscess occupying three-fourths of its area; weight, 1,150 grams.

H. C. W.  
J. M. G.



*Cerebral hemorrhage.*

R. M.; age 43; born in Kentucky; occupation, steamboat roustabout; admitted to United States Marine Hospital, Louisville, Ky., July 26, 1902; died August 18, 1902.

**HISTORY.**—Family history negative. Has always had good health and denies syphilis. Five days ago, while loading wheat on steamer, he became dizzy and fell, remaining unconscious about one hour. Vomiting and severe headache followed the faint. Complete anorexia followed, even water causing nausea. No diarrhea or convulsions. Complains of no pain, only extreme prostration and sleepiness. Patient is a well-muscled negro of medium height. Eyes dull; right pupil reacts to light more readily than the left; lips and gums covered with sordes; no facial paralysis; tongue protruded in the median line; right mammary gland enlarged and tender; large ulcer on skin of prepuce; lymph glands of right groin palpable; apex beat of heart diffuse, heaving, and displaced to the left; systolic retraction of fourth interspace. Heart sounds not clear; a distinct systolic roughening of first sound, not transmitted to left beyond a short distance from nipple. Lungs apparently normal. Knee jerk more readily elicited on left side. No ankle clonus. During his stay in the hospital there was a uniformly normal morning temperature and an evening rise (38 to 38.8°). Respiration unembarrassed and 18 to 22 to the minute. The pulse was rather small in volume and ranged from 90 to 108 per minute. At no time was pain anywhere complained of. When sufficiently aroused food and drink would be taken at command. Obstinate constipation, overcome only by enemas, existed for twenty days previous to death. Control of sphincters was lost ten days before death. No eye symptoms except as previously noted, and no paralyses were ever apparent. The urine showed no albumen. Approaching dissolution was evident twenty hours before actual death, which occurred quietly at 9 a. m., August 18.

**NECROPSY** (5 hours after death).—Only moderate emaciation; musculature good; no scars or recent wounds on body; ulcer on prepuce of penis; calvarium and dura mater removed, dura not adherent except over a small area on front part of left frontal lobe. A recent subdural hemorrhage found in great longitudinal fissure, apparently from anterior branch of middle meningeal artery. On upper border of marginal convolution of left hemisphere of cerebrum was a small necrotic spot, about 3 cm. in diameter and of undetermined depth, containing in its center a small amount of pus. The lateral ventricles were opened and found normal, except that the fluid in the anterior cornu of left lateral ventricles was red in color. Transverse and longitudinal sections of the cerebrum revealed no macroscopic abnormalities. The vessels at the base of the brain, left side, were distended with clotted blood; those of the right side were empty. Pericardium normal in attachment, color, and structure; pericardial fluid normal in amount and color; heart in systole, no clots in heart cavities or in attached great blood vessels; hypertrophy of left ventricle; columnae carneae of left ventricle hypertrophied and as hard as cartilage; two measuring over one-half inch from base to attachment of chordae tendinae. Aortic valves competent; small, hard, whitish nodules on leaflets of mitral valves; tricuspid and pulmonary valves normal; intima of aorta showed no inflammatory or degenerative condition. Weight of heart, 290 grams. Both lungs freely pigmented. Old adhesions posteriorly on right lung; healthy lung tissue throughout; weight of lung, 720 grams; left lung adherent to diaphragm, lower lobe consolidated, upper lobe normal; weight of lung, 770 grams. Abdomen not retracted; plenty of fat in great omentum; no intestinal adhesions; fecal impaction in sigmoid flexure of colon. Appendix free and 13 cm. in length. Stomach not dilated and contained a small quantity of decomposed food. Spleen adherent, enlarged, very friable, and intensely congested. The capsule of left kidney adherent; right stripped easily; on section of the left kidney the cut surface became studded with minute drops of blood; weight of right kidney, 220 grams; of left kidney, 240 grams.

G. B. Y.

*Abscess of cerebral cortex.*

H. M.; age unknown; probably about 21; nativity, England; admitted to United States Marine Hospital, San Francisco, Cal., August 31, 1902. Died September 1, 1902.

**HISTORY.**—Family, and previous personal history unobtainable. Present history obtained from acquaintances and shipmates, six hours after admission. Eight days previous to admission patient returned from the Orient. Five days later he complained of pain in the left ear, which discharged a foul-smelling pus. August 29 he vomited a worm which, on examination proved to be an *Ascaris lumbricoides*. Twenty-four hours previous to admission the patient was delirious, constantly moaning, and tossing himself about in bed. During this time he had a brief period



of consciousness. On entrance the patient was constipated and delirious. He presented slight opisthotonus, and continually moaned and moved about in bed. His pupils were equal in size, but directed fixedly upward, and to the right. Respiration rapid and shallow; pulse weak, rapid, and irregular; axillary temperature  $40^{\circ}\text{C}$ . Upon the abdomen and chest were numerous bluish marks about the size of a lentil, and there was gurgling on pressure in the right iliac fossa. The tongue was coated, the breath foul, the sputum thick and viscid. The external ear contained a small quantity of dried, foul-smelling pus. The urine was obtained by catheterization, and was high colored, and contained albumen in large amount. The patient was given an enema of turpentine, glycerin, and soapsuds, and three thin, yellowish stools containing numerous rice-like bodies, and a few whitish threads about 7 cm. in length, resulted. The patient's heart becoming weaker, and more irregular, he was given strychnine sulphate 0.002 grams by mouth. Later in the evening the delirium became greatly increased, and a tub bath at  $25^{\circ}\text{C}$ . was given. This was followed by deep sleep, and marked improvement of heart action. During the night the patient had three thin, yellowish stools. Three tub baths were required to keep the temperature below  $38.5^{\circ}\text{C}$ . The next morning the pupils were unequal, the right having an irregular aperture, and being more dilated. The right side of the body was lax, and presented entire abolition of the reflexes. It was decided to open and drain the mastoid cells at once, the lateral sinus and jugular vein to be explored if necessary. The patient was partially prepared for operation but died suddenly at 10.10 a. m.

NECROPSY (4 hours after death).—The body is that of a white, adult male, apparently about 21 years of age; well developed and well nourished; height, 1.70 meters. Upon the inner surface of the right forearm there is tattooed a dagger and a heart; upon the radial side of the left forearm, "H. J. P." and numerous illegible marks. There is a linear scar 2 cm. long upon the left side of the lower lip. The anterior surface of the body presents numerous petechiæ, varying in size from a pin head to a lentil. Upon the outer surface of both thighs are numerous larger, deep purple discolorations. The neck, especially the left side, presents several irregular plum-colored patches, varying from 4 cm. to 10 cm. in diameter. Dried pus is seen about the left external auditory meatus, which emits a disagreeable odor. Rigor mortis is well marked and the posterior surface of the body presents the usual post-mortem lividity. Upon opening the left mastoid process, its walls are found to be unusually thick and to contain a clot of fetid yellowish green pus. Upon enlarging the opening, the lateral sinus is exposed and found to contain a similar clot which extends 3 cm. into the internal jugular vein. The soft parts covering the skull are divided by an incision extending from ear to ear and reflected. Immediately above the external occipital protuberance is found a yellow, gelatinous exudate occupying an area about 6 cm. in diameter. The vessels of the scalp are filled with dark fluid blood. The dura mater is not adherent to the skull. Its vessels are much engorged. About 2 cm. above the lateral sinus is seen a small dark-green area, 1 cm. in diameter, having in its center a small opening. The vessels of the brain, especially those of the left side, are deeply engorged. The brain weighs 1,320 grams.

The substance of the brain is very soft and friable. Upon the left inferior temporo-sphenoidal convolution, immediately opposite the above-mentioned opening in the dura mater, is a necrotic area 1 cm. in diameter, surrounded by a deep-red areola. The spot of necrosis extends into the brain substance to a depth of about 1 cm. Extending backward from this spot is a greenish-yellow band of necrosis 0.5 cm. in depth and 3.5 cm. in width. It passes backward and covers the left inferior occipital convolution, then turns and enters the great longitudinal fissure, extends on to the uncinate convolution, and thence forward on the gyrus fornicatus a distance of 10 cm. The superior surface of the cerebellum is covered by a similar gangrenous material. The lateral ventricles are dilated and contain a quantity of foul-smelling bloody fluid. The cortex of the cerebellum is covered with dilated vessels; consistence pulpy. There is no foreign body in the abdominal cavity. Position of the parts normal. Large intestines unusually small. The pericardium contains about 16 c. c. of clear fluid. The visceral layer of the pericardium presents many punctate hemorrhages. The heart weighs 350 grams. There is a small ante-mortem clot in the aortic opening; the valves are normal. The lungs are free and unattached; the left weighs 385 grams, and the right 400 grams; they are normal in appearance. The mouth contains a quantity of tenacious mucus. The teeth are covered with sordes and the tongue with a brownish fur. The esophagus contains a reddish fluid; there is no change in its mucous membrane. The spleen weighs 225 grams and measures 15 cm. long, 8 cm. broad, and 2.5 cm. thick; is of a firm consistency; pulp abundant; follicles slightly enlarged and presenting numerous small, whitish points. There is a yellow gelatinous material covering the peritoneum between the intestines and the



kidney upon the left side and occupying an area 10 cm. long and 7 cm. wide. The left kidney is 12 cm. long, 7 cm. broad, and 3.5 cm. thick, and weighs 250 grams; the capsule is not adherent; the surface of the kidney is smooth, and of a brownish color; consistence pulpy. On section the organ drips blood freely and the medullary and cortical substance is deeply injected. The suprarenal capsules are normal. The right kidney measures 12 cm. long, 7 cm. broad, and 3 cm. thick. It weighs 200 grams, and shows the same changes as the left. The bladder contains some reddish urine. The stomach contains a quantity of black fluid, and presents deep injection of its mucous membrane. Fluid of a similar nature is found in the duodenum, whose lining membrane is also injected. The ileum contains two live *Ascaris lumbricoides*, each 21 cm. in length. The large intestine is empty. The liver (25 cm. broad, 22 cm. from front to back, and 5 cm. thick) is firm to the touch, of a normal color and normal resistance to cutting. The lobules are large and their color uniform. The gall bladder is 7 cm. long and 3 cm. in diameter. It does not contain billiary calculi.

W. C. R.

W. G. S.

*Leptomeningitis; hepatic cirrhosis; Bright's disease.*

R. S.; age, 48 years; born in Newfoundland; admitted to the United States Marine Hospital, Wilmington, N. C., August 5, 1902. Died September 8, 1902. Patient came from Savannah, Ga., suffering with iritis, which developed about July 1. Denied having had syphilis. Patient reached this hospital in a worn-out, half-imbecile condition. No history could be obtained from him. The iritis was treated with slight improvement at first. On August 10 he was restless and complained of headache. The next day became drowsy. Two days later there was marked somnolence, patient sleeping all the time except when fed, or when his bowels and bladder were moved. On the 30th there was impaired motion on the right side. September 1, right hemiplegia. Patient died on the 8th. During the last twelve days he was perfectly quiet, sleeping night and day when not aroused, and for the last two days arousing him even for food and drink was not possible.

NECROPSY (18 hours post mortem).—Subject is a medium-sized man, very much emaciated. Rigor mortis slight. Brain: Upon removing skull cap considerable bright-red blood escaped; brain very turgid, was removed with difficulty; there was nothing special in the condition of the dura mater, except that it was slightly thickened on the left side, temporal region; the pia was intensely congested, of a dark-red color, with some cloudy swelling in that portion underlying the thickened dura. The cerebellum seemed to be normal. The cerebrum was pale, flabby, in fact softened; section was made with extreme difficulty. There was no sign of tumor or clot either in the cortex or in the deeper structures. Brain weighed 1,240 grams. The pericardium contained about 100 c. c. fluid. The heart weighed 250 grams; valves normal. Left lung weighed 850 grams; very much congested and edematous. Right lung weighed 600 grams, similar to left lung in condition, and bound by old adhesions to diaphragm. Liver weighed 1,400 grams, and was adherent to diaphragm; left lobe very dark from bile pigment; right was in part cirrhotic. Gall bladder was fully distended. Right kidney weighed 120 grams, contained six or eight small hydronephrotic cysts; the left kidney weighed only 110 grams, and contained one small cyst. Spleen seemed normal in color and consistence, but was atrophied to 50 grams. Other organs normal.

J. G.

### EFFECTS OF HEAT.

W. D.; age, 60; nativity, Alabama; admitted to United States Marine Hospital, Mobile, Ala., July 17, 1902; died ———.

FAMILY HISTORY.—Unobtainable, as patient was admitted in a comatose condition.

CLINICAL HISTORY.—When admitted was suffering apparently from sunstroke or heat exhaustion (his fellow laborers stated that he was overcome by heat and fell on deck of vessel). Had convulsions for some time. Examination of chest showed heart to be free from valvular lesions, but hypertrophied. Pulse slow and hard, 64 per minute; pupils equal and normal; temperature, 37.4°; lungs apparently clear; respiration normal, 17 per minute. Blood examination shows tertian parasite and quinine administered. Man is extremely restless and will not remain in bed; can give no history of himself; does not talk in a connected manner; answers questions in monosyllables and then lapses into muttering delirium and tries to get up; can not sleep at all; bowels open; urinates freely; specific gravity of urine, 1.025; reaction,



acid; albumen, none; sugar, none; quantity of urea, normal; quantity of urine drawn by catheter, 400 c. c.; high enema given, followed by full action.

*July 18.*—Patient restless; can not keep in bed.

*July 19, 20, and 21.*—Requires special nurse night and day; hyosin and bromides given.

*July 22.*—Condition about the same.

*July 23.*—Urinate freely; bowels kept open; ice bags used.

*July 24.*—Passed catheter and drew off 400 c. c. urine; ordered bath; sleeps very little; tries to leave his bed; has to be watched and controlled, but is not in the least violent. Blood examination shows plasmodium malarie, malignant tertian. Quinine hydrobromate gm. 1 given at one dose hypodermically.

*July 24.*—Pilocarpine hydrochlorate, 0.02 gram, given hypodermically, followed by hot bath and stimulants. Ice bags continued; given compound jalap powder, 2 grams; urine drawn with catheter.

*July 29.*—Patient continues in semiconscious state; bowels kept open and catheter used twice daily; dullness over apex of left lung both in front and behind, with absence of respiratory sounds; patient died July 31, 1902.

NECROPSY (6 hours after death).—Body of a large, strong, muscular man, apparently 60 years of age. Eyes open, pupils dilated. No discharge from nose or mouth. Considerable echymosis on dependent parts of body. Large mole on anterior aspect of right thigh. Scars on anterior aspect of both thighs about halfway to knees. Body opened by long incision from chin to symphysis pubis. Omentum covered with fat. Diaphragm attached between seventh and eighth ribs. Heart covered with a considerable amount of fat; is somewhat hypertrophied; the left ventricle particularly so; mitral valves somewhat thickened, not competent; ante-mortem clot in left ventricle and extending into left auricle; tricuspid valves pale and flabby; aortic valves competent; heart's weight is 400 grams. The lungs are considerably congested; weight of left lung, 500 grams; dark post-mortem clots filling the pulmonary artery of right lung; weight is 480 grams. The spleen is extremely small and firm, and contains a recent hemorrhagic infarct about the size of a thumb nail; its weight is 180 grams. Left kidney is covered with large quantities of fat; capsule extremely hard to peel; substance of kidney very hard; contains a cyst the size of a hen's egg, also numerous smaller ones; the line of demarcation between the cortical and the medullary substance very poorly marked; weight of left kidney is 210 grams. The right kidney is covered with large quantity of fat; is somewhat granular and contains numerous small cysts; peels more readily than left kidney; the line of demarcation between the cortical and medullary substance is well marked; weight of right kidney is 190 grams. Ureters apparently normal. The vermiform appendix is normal, though small. The urinary bladder is empty. The lining membrane of the stomach is slightly congested and is covered with a sticky mucus. Liver is small in size and red in color, bleeds easily on section; weight of liver is 1,650 grams. Gall bladder contains a small amount of fluid. The soft parts covering the skull are divided by an incision carried transversely over the head and reflected back. Slight effusion of blood over left temporal and occipital bones, as from old injury; the skull cap is of ordinary thickness; there is no fracture at the base or top; the skull cap is sawn through, detached from the dura mater and removed; found dura mater very much congested; the left lateral ventricle is lined with a thick brownish-colored membrane and extremely dilated (about four times normal size), filled with fluid, mostly serum slightly colored with blood; the blood vessels are very much dilated. Slight areas of softening in various parts where the hemorrhage took place; no vessel of any size could be discerned from which the exudation took place; one exceedingly minute vessel had ruptured into ventricle, at least it contained a small clot, but most of the contents of ventricle was serum; the pia mater and arachnoid of ventricle were very thick and stained a dark brown. There was no history of fall or blow except fall on deck when overcome by heat. Serous apoplexy had supervened upon heat exhaustion, the malarial poison causing the dark-grayish appearance of brain substance.

W. P. Mc.

#### EMPHYEMA.

E. C.; aged 41; nativity, Nova Scotia; admitted to the United States Marine Hospital, Boston, Mass., October 2, 1902, and died October 20, 1902.

FAMILY HISTORY.—Negative.

PREVIOUS HISTORY.—No venereal history; was treated in August in this hospital for chronic nephritis, and was discharged improved.

PRESENT HISTORY.—About three weeks after leaving port began to complain of soreness of chest, constipation, weakness, loss of appetite, pain in back, shoulders and



neck, and swelling in tissues of neck and breast. He sleeps but little and suffers much pain; coughs a great deal when lying down.

NECROPSY (14 hours after death).—Rigor mortis present. There were no special distinguishing marks. The left pleural cavity contained 1,500 c. c. of colored fluid. The right pleural cavity contained 2,600 c. c. of fluid. The diaphragm was pushed down on the right side, displacing the liver. The left pleural cavity was free. The right lung was adherent to the pericardium, as well as the thoracic wall at its lower angle. Lungs: The right lung weighed 280 grams; was very small from compression by the fluid and clots in the pleural cavity; its base presented several areas of consolidation; the left lung was normal and weighed 470 grams. Heart: Weighed 710 grams; the valves and walls were normal; the first portion of the descending aorta was markedly dilated and presented on its surface 5 ulcers, one of which had perforated about 6 centimeters below the arch. Liver: Apparently normal, and weighed 1,540 grams. Stomach: Its walls were slightly thickened at the pyloric orifice; otherwise it was normal. The intestines were normal. Spleen: Weighed 170 grams and was normal. Kidneys: The right kidney was normal and weighed 200 grams; the left kidney was markedly congested, otherwise normal, and weighed 160 grams. Bladder: Contained 30 c. c. of urine and was normal. Brain: Was normal and weighed 1,485 grams.

W. K. W.

R. M. W.

D. McD.; aged 52 years; nativity, Cape Breton; admitted to United States Marine Hospital, Boston, Mass., November 10, 1902; died December 12, 1902.

FAMILY HISTORY.—Father died of cancer of lip. Mother's death due to unknown cause.

PREVIOUS HISTORY.—On October 20 patient had chilly sensation but no actual chill, epigastric tenderness, loss of appetite, and constipation. He had no cough. On urinalysis the specific gravity was 1.032, reaction acid. There was no albumen and no casts were found, only a few cells, probably bladder cells, being present. The patient exhibited all the symptoms of a typical case of typhoid fever until November 30, when the temperature began to fluctuate from 39.2° C. to normal; also had night sweats, which seemed to weaken him considerably. Throughout the remainder of his illness his pulse was very rapid and weak and his respiration shallow and feeble. Stimulants were employed and were pushed to the extreme limit, but with little response on the part of the patient. His consciousness remained till the end.

NECROPSY (24 hours after death).—Body that of a man about 55 years of age, fairly well nourished. Rigor mortis complete. Post-mortem, lividity present. On removing the sternum a quantity of serous fluid made its escape. Beneath the lower cartilages of the sternum was a quantity of thick, purulent fluid. There was an opening communicating from the pericardium to the left pleural cavity. The heart was firmly adherent to the pericardial sac, and was displaced toward the right; its weight was 460 grams; chicken-fat clots were found in all the cavities; the valves were normal. The left lung is adherent to the diaphragm and was covered by masses of lymph; it did not crepitate and showed marked carnification. It weighed 530 grams; the right lung was slightly adherent to the diaphragm; it was covered by lymph on its posterior surface; its weight was 650 grams. The position of the abdominal organs was normal. The appendix was normal. The capsule of the left kidney stripped easily. The tissue cuts with difficulty; the medullary portion is considerably diminished; it weighed 180 grams; the capsule of the right kidney was somewhat adherent; its weight was 250 grams. The pancreas was somewhat hardened. The spleen weighed 180 grams and was normal. The liver on its entire upper surface was adherent to the diaphragm. It presented on its superior surface several small abscesses about 2 cm. in depth. A section through its interior showed several miliary abscesses. There are a few small calcareous areas on the surface of the organ. No stones were found in the gall bladder. The liver weighed 1,950 grams. The bladder contained no urine. Its walls were thick and retracted. Stomach: About its middle curvature was a small ulcer which showed some hemorrhage. Intestines: The jejunum presented several areas of injection.

F. A. A.

W. C. R.

R. M. W.

#### ENTERIC FEVER.

##### *Perforation; peritonitis.*

R. W.; aged 22 years; nativity, Missouri; was admitted to the United States Marine Hospital, port of St. Louis, Mo., August 8, 1902; died August 20, 1902.

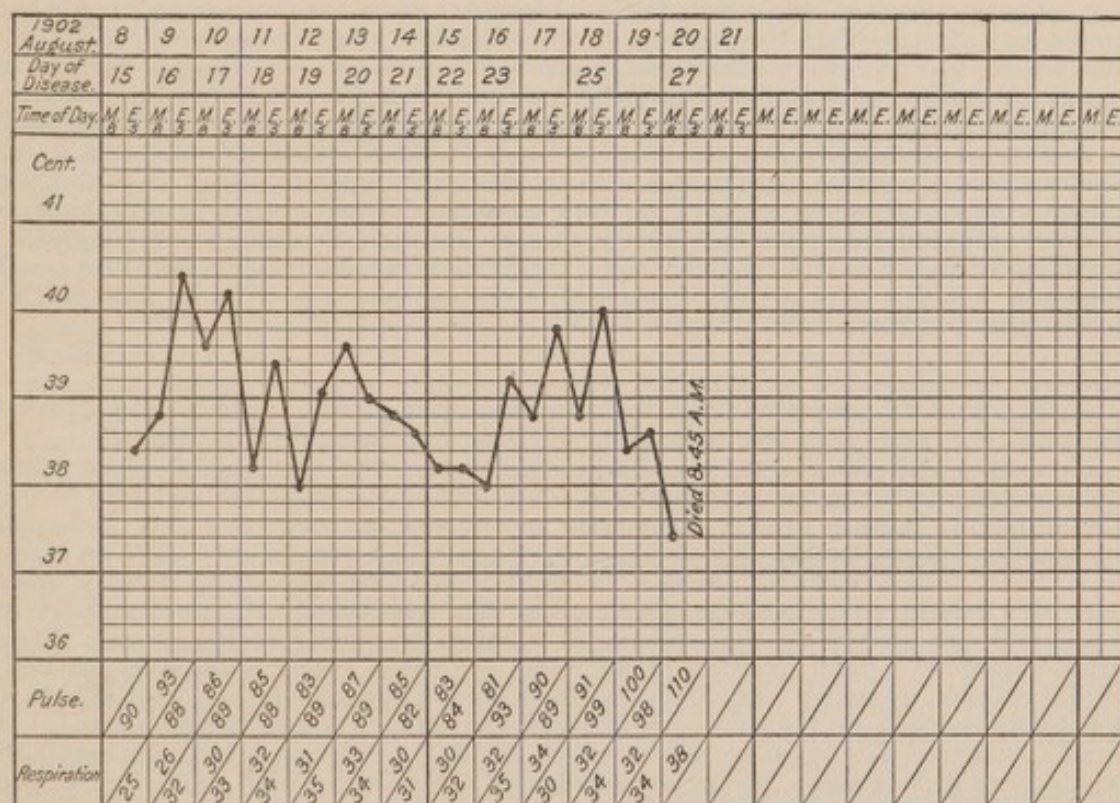
HISTORY.—On admission patient gave a confused history of repeated chills and of



a "hurting" in his abdomen, with diarrhea. He had not felt well for some weeks, but had continued work until advised to go to a hospital. Tongue was slightly coated; no headache. Pulse, 90; respiration, 25 per minute; both of fair volume; temperature, oral, 38.4° C. There was some tenderness over abdomen on palpation, with faint gurgling in right iliac fossa. Stools were 8 to 10 per day, dark brown, semiliquid, and of intolerable fetor. As he was a very black negro rose spots could not be exactly defined, though possibly existing. Enteric fever was diagnosed and immediate treatment began, which consisted of calomel and compound ipecac powder, with absolute diet of milk and limewater, followed by broken doses of quinine and acetanilid to control fever. Beef extract was (15th) alternated with the milk, but discontinued next day on account of patient's distaste. A mixture of Lugol's solution and carbolic acid in 5-drop doses was alternated (16th) with the antipyretic, and his diet increased by small pieces of boiled chicken. The latter was withdrawn next day. Whisky was added to the milk on 18th, and appeared of benefit. All medication was withdrawn for twelve hours, and emulsion of turpentine given to relieve slight tympanitis. At no time did the patient complain of *severe* pain, referring to it merely as a "hurting." Died at 8.45 a. m.

U. S. Marine Hospital, port of St. Louis, Mo.

Name, R. W.; age, 22; disease, enteric fever.



NECROPSY (7 hours after death).—Body that of a young, very black, adult male negro, muscular and well nourished. Rigor mortis marked. The pelvis of the right kidney was so encroached upon by the pyramids as to appear rudimentary. The spleen was of the typical currant-jelly aspect, and the smaller intestines matted together by recent lymph (with pus) exudations in the vicinity of two large perforations about 18 cm. above the ileo-cæcal valve. The small intestine was the seat of many ulcerations and peyers patches were throughout in a high state of inflammation. Weights: Brain, 1,405 grams; heart, 305 grams; lungs, right, 490 grams; left, 500 grams; liver, 1,980 grams; spleen, 190 grams; kidneys, right, 180 grams; left, 220 grams.

H. C. W.  
J. M. G.

F. H.; white seaman, aged 43, a native of the United States, was admitted to the marine ward of the Buffalo hospital of the Sisters of Charity on the 22d, and died on the 24th April, 1903.

**HISTORY.**—The patient is only semiconscious, and can give no competent history, save that he has had fever for several days.



**PRESENT CONDITION.**—He is in a state of subdued delirium, conscious when called, and attempts to answer questions; the tongue is protruded slowly, and is foul with dry, cracked dorsum and red tip; the pupils are dilated, the face flushed; there is involuntary discharge of urine and feces; the abdomen is distended, and there are numerous rose spots scattered over its surface; there are a few petechiae over abdomen and chest walls; the spleen is enlarged to the anterior axillary line and to the free border of the ribs; liver is normal in area; the right lower and middle lobes of the lung are paretic and edematous; there are numerous moist rales both on inspiration and expiration, with rough tubal sounds; breathing in the upper lobe is puerile in quality; percussion gives a slight increase of pitch over the mid and lower lobes, yet this is far from a dullness; the left lung gives a puerile breathing, with commencing hypostasis at base. The right heart is distended, the venous system embarrassed, the valve sounds weak; the pulse is dicrotic, the sphygmomanometer shows 112 mm. of mercury pressure; Widal reaction is positive in 10 minutes at 1-40 dilution; pulse 130, temperature 40° C. Diagnosis of typhoid fever in second week; treatment to meet the symptoms; death on third day from cardiac failure.

**NECROPSY** (10 hours after death).—Body of adult male much emaciated; there is some rigor mortis present; the skin is spotted with rose spots and small extravasations over the abdomen and chest walls, and there is hypostasis of buttocks and loins; the abdomen is greatly distended. Incision shows numerous glandular enlargements in the mesentery of the small intestine, and venous engorgement; there are no perforations at any point, but the ulcerated areas show plainly through the walls, and when opened the surface of the intestine presents a number of Peyer's patches in the ulcerative stage; the spleen is large and soft; the liver is normal in appearance; the heart is distended with venous blood, the left ventricle is empty, the muscle is pale and degenerated, the valves normal; the right lung is edematous in its lower and middle lobes, the tubes and alveoli full of blood-colored frothy fluid; sections float above the surface, and air can be readily squeezed from the cells; the upper lobe, and those of the left lung are contracted normally in the thorax; there is some stasis at left base posteriorly; the pleurae are normal; the kidneys are congested; the bladder contains albuminous urine. Cultures taken from the spleen and heart blood in bouillon give an organism which reacts positively with an antityphoid serum from the horse in dilutions of 1-100.

E. W.

A. H.; aged 29 years; nativity Finland; admitted to the United States Marine Hospital, San Francisco, Cal., December 6, 1902; died December 19, 1902.

**HISTORY.**—The patient stated he had been sick two weeks with high fever, pains in his chest, harsh cough and profuse muco-purulent expectoration mixed with blood. Examination: Tongue thickly coated, tip red, sordes on teeth and lips; abdomen tympanitic, spleen tender, bowels loose, stools thin and watery, rose spots on abdomen; heart sounds weak; dullness over right lower lobe and sticky rales present over this region. Temperature 40.3°; pulse 80; respirations 20; pneumococci in large numbers present in the sputum, no tubercle or plague bacilli present. The urine contained a small quantity of albumen, the diazo reaction was well marked. Widal reaction negative. The temperature was high throughout his sickness, but it was easily reduced by the cold-bath treatment sometimes descending to normal. It would, however, rise again in a few hours to 40° C or higher, when another bath would have to be given. His pulse and respirations were not high until the last two days. His mind was clear throughout his illness. He finally died from exhaustion at 6.25 p. m., December 19, 1902.

**NECROPSY** (16 hours after death).—Body greatly emaciated, post-mortem rigidity well marked; spots of post-mortem lividity over chest, abdomen, and back. Upon opening the abdominal cavity adhesions are found between the stomach, liver, omentum, and intestines. The gall bladder is very small and is bound down to the adjacent structures. Brain, weight 1,330 grams, tissue apparently normal. The anterior mediastinal glands are enlarged. The pericardium contains the usual amount of fluid. Heart, weight 365 grams; considerable yellow fat upon its surface; heart muscle pale brown in color; the ventricles contain chicken fat clots; valves normal. Left lung, weight 480 grams; tissue crepitant; dark blood exudes upon section. Right lung, weight 597 grams; dark bloody serum exudes on section; four hard white lumps the size of a pea are present in the base of this lung. Spleen, weight 310 grams, length 16 cm., breadth 10 cm.; consistency firmer than normal, the trabeculae showing distinctly in many places. A culture taken from the spleen shows the presence of typical typhoid bacilli. Left kidney, weight 165 grams; measurements 12 cm. by 6 cm. by 3 cm.; the cortical substance shows marked yellow striations. Right kidney, weight 175 grams, measurements 12 cm. by 7 cm. by 3 cm.,



color on section yellowish red, the cortical substance showing the same yellow striations as the opposite kidney. The lower end of the small intestine is very much congested, the vessels being deeply injected; numerous oval ulcers with their long diameter in the axis of the bowel are found on viewing the mucous membrane. Liver, weight 1,870 grams; measurements 26 cm. by 16 cm. by 5 cm.; on section the color is brown mottled with yellow.

W. G. S.

C. W.; age, 22; nativity, Alabama; admitted to the Marine Hospital, Mobile, Ala., April 1, 1903; died April 5, 1903.

HISTORY.—Admitted in semiconscious state. From outside information it was learned that he had been ill about five days. Upon admission the bowels were constipated; tympanites existed; tongue, coated; respirations, 22, and temperature, 40. The pulse was intermittent, very weak, and it was therefore impossible to obtain the number of beats per minute. Strychnine nitrate was given hypodermically at once, also whisky; later strychnine nitrate and nitroglycerine hypodermically. The Widal reaction was present. Strychnine nitrate, 0.003 grams, was given hypodermically every four hours and was later increased to 0.004 grams every three hours. Normal salt solution given several times with no effect. Acetozone was also used. Patient did not rally and died at 3.55 a. m., April 5, 1903.

NECROPSY (6 hours after death).—Body of a medium-sized, well-nourished male. Rigor mortis well marked, cicatrix on each side of forearm, and also on nose. One an inch below umbilicus; a mole about the size of a pea existed on the radial side of right forearm, another on back of right hand, and also one on each right knee. Eyes closed; pupils dilated; mouth open; teeth, closed. No foreign substance in nose. Body opened by long incision from the chin to symphysis pubis. Diaphragm attached between eighth and ninth ribs. Heart is medium in size, apparently normal, and filled with post-mortem clots; valves normal; weight, 290 grams. Both lungs slightly congested; weight of left lung, 345 grams; weight of right lung, 395 grams. The spleen is black in appearance, extremely soft and pulpy, tears easily, and is like a large blood clot; it weighs 1,095 grams. The capsule of both kidneys peel easily; right kidney is normal and weighs 140 grams. Left kidney normal, weighs 155 grams. The urinary bladder is distended with fluid. The stomach is slightly congested. The liver is very much congested, chocolate in color, tissue very firm, bleeds easily on section, and has post-mortem discolorations on lower surface. It weighs 2,000 grams. The gall bladder is partially distended with bile. The intestines are partly distended. The mesenteric glands are much enlarged. Extensive ulceration exists in the ileum and the cæcum, some patches being 5 cm. in diameter.

J. G. T., Jr.

S. B.; age, 22; nativity, Alabama; admitted to Marine Hospital, Mobile, Ala., January 31, 1903; died February 4, 1903.

HISTORY.—Patient states that he has never had gonorrhea, or syphilis; had chills and fever three or four months ago; says that just prior to his admission he had been having chills each day. At time of admission he had a temperature of 38° C., pulse 84, bowels open. The plasmodium malarie was found in the blood. On the second day in hospital he developed pneumonia or else had it when admitted, but was overlooked owing to other prominent symptoms. Patient became delirious twenty-four hours after admission. Examination of chest showed dullness, tubular breathing and other physical signs of lobar pneumonia. Delirium very severe. At one time patient's pulse became very weak and he collapsed. Hypodermoclysis was practiced and 1,000 c. c. of normal salt solution used. Strychnine and whisky given freely. Patient rallied and at 10 a. m. February 3 was somewhat better, although delirium continued. On February 3 (p. m.) the patient grew worse; normal salt solution repeated, without any benefit. Death resulted at 12.45 a. m., February 4, 1903.

NECROPSY (8 hours after death).—The body of a medium-sized young male negro. Cicatrices on anterior aspect of both knees and both legs; also a large one on right thigh. Eyes open, pupils dilated. Rigor mortis well marked. Body opened by long incision from chin to symphysis pubis. Diaphragm attached between seventh and eighth ribs. The heart is slightly contracted; the valves are pale and flabby, but are normal; semilunar valves are slightly stretched and are covered with a deposit. Right lung is very edematous, and contains a small area of pneumonic inflammation. Weight of right lung is 730 grams; left lung is very edematous, and weighs 440 grams. The spleen is dark and mottled in appearance with slight hemorrhage under capsule; tearing easily; weight, 480 grams. Right kidney slightly congested, but capsule peels easily; the line of demarcation between the cortical and the medullary substance is well marked; weighs 170 grams; left kidney slightly con-



gested, capsule peels easily; the line of demarcation between the cortical and medullary substance is well marked; weighs 180 grams. The larynx is stained a dark chocolate color, and is covered with sticky mucus. The mesenteric glands are very much enlarged. Ureters seem normal. The urinary bladder contains about 200 c. c. of fluid. The stomach is congested and minute hemorrhages are present throughout the organ. The liver is very much congested, light chocolate in color and weighs 1,700 grams. The gall bladder contains a small quantity of thick, yellow bile. The lower portion of the small intestines are congested, and the glands are very much enlarged; two ulcerations exist about 18 inches from the cæcum; one about the size of a 10-cent piece and the other slightly larger. The meninges are very much congested. The cerebellum seems normal and weighs 175 grams. The larger brain normal, except the vessels are congested; weight, 1,420 grams.

W. P. M.

*Right kidney and ureter absent.*

N. N.; age, 22 years; nativity, Denmark; was admitted to the marine wards of the German Hospital February 7, 1903; died March 2, 1903; necropsy performed March 3, 1903.

CLINICAL DIAGNOSIS.—Enteric fever—intercurrent relapse.

ANATOMICAL DIAGNOSIS.—Typhoidal ulceration of Peyer's patches of ileum, infiltration of follicles of ileum, ascending and transverse colon; acute splenic tumor; beginning nutmeg liver, absence of right kidney; suppurative adenitis of retroperitoneal glands; acute vegetating endocarditis, parenchymatous degeneration of myocardium, dilatation of heart, edema of lungs. The subject is a male, of subnormal weight, medium height, fair skeletal and muscular development, normal skin, fair nutrition, slight panniculus adiposus, marked post-mortem rigidity, moderate post-mortem lividity. Pupils were contracted and equal. Internal examination showed a small amount of preperitoneal adipose tissue, abdominal and thoracic muscles pale, absence of right kidney and compensatory hypertrophy of left kidney. Left lung: Size 20 by 15 by 4 cm.; weight, 630 grams; moderately pigmented air contents about normal; consistency increased by congestion and œdema, marked in dependent portions; color bloody; crepitation everywhere present, but only slight in dependent portions; on section a frothy mucus with slightly increased amount of blood exuded. Right lung: Size, 22 by 15 by 5½ cm.; weight, 860 grams; otherwise same as left lung; pericardium, normal. Heart was normally situated of normal shape. Weight, 325 grams. Right and left auricles and ventricles were increased in capacity. All the valves were competent. The free edge of both mitral leaflets were the seat of small vegetations about the size of a pin head, slightly elevated, surrounded by a small bright red halo. Several similar vegetations are present 3–4 mm. from the free edge of the leaflets. Cultures made from vegetations yield colon bacilli in pure culture; the walls of left ventricle were 8 to 10 mm. thick; left auricle 2 to 4; right ventricle 3 to 6; right auricle 1 to 3; the heart muscle was very pale and of friable consistency. The omentum was normal in size, apron shaped. The peritoneum was normal, glistening, transparent, pale; the liver was 30 by 24 by 6½ cm. in dimensions. It weighed 2,150 grams, was of normal shape, slightly increased in size, consistency firm, smooth surface, sharp edges; on section, the surface was glistening, moist, smooth, slightly opaque, pale with prominent liver lobules; the liver was beginning to show a "nutmeg" appearance. The gall bladder was normal. Spleen measured 13 by 10 by 4 cm.; weighed 430 grams; was of normal shape; decreased consistency, thickened capsule; section surface was dark in color, granular and soft; the pulp was much increased in amount; the follicles obscure, and the trabeculae obscure in center, prominent in hemorrhagic areas. There was considerable hemorrhage near the cortex; right kidney and ureter were absent; right adrenal was present and normal; left kidney measured 15 by 8 by 5 cm., was lobulated and irregular in shape, weighed 475 grams; capsule was normal; surface of kidney was smooth; color congested, consistency firm; cortex and pyramids normal; calices and pelvis contained pus; left ureter was large, and had a sort of mesenteric attachment along the anterior surface of the kidney; left adrenal normal. The blood supply to the kidney was from two arteries, one large from abdominal aorta originated much lower than the hilum and ascending entered it. The other was much smaller, also from the abdominal aorta. It entered the lower pole of kidney; there were no arteries for the absent right kidney; bladder normal (no right ureteral opening); prostate, penis, scrotum, and testicles normal; stomach normal; duodenum normal; pancreas normal; mesenteric glands enlarged; ileum was the seat of typhoid ulcers in various stages of development, some healed; jejunum normal; appendix normal; cæcum and colon contained infiltrated follicles; rectum normal; retroperitoneal lymph glands were enlarged and suppurating, containing a thick brown pus; aorta normal; the brain was not examined.

F. I.



J. L.; age, 28; nativity, Norway; was admitted to the United States Marine Hospital, Boston, Mass., September 17, 1902, and died September 24, 1902.

**HISTORY.**—Patient states that he has had malarial fever twice, and gonorrhea four times; he drinks and smokes to excess.

**PRESENT HISTORY.**—Patient complains of general malaise lasting four or five days, then the following symptoms: Headache, anorexia, general debility, dryness of mouth and tongue, loss of sleep, abdominal pain and tenderness, with diarrhea.

**EXAMINATION.**—Tongue slightly coated and moist. The bowels are open, the stools being soft and offensive. Patient has intense thirst and no desire for food. Temperature 39° C. on admission, rising to 40° C. in the evening. The pulse weak and heart required stimulation. Treatment, liquid diet and heart stimulants.

*September 20, 1902.*—Patient had a slight hemorrhage from the bowels, the temperature falling 1.2°. Stimulation was necessary and was given hypodermatically.

*September 24, 1902.*—There were four hemorrhages from the bowels, and patient sank rapidly and died at 2.45 p. m.

**NECROPSY** (20 hours after death).—Rigor mortis well marked; well marked suffusion about the face, neck, and back; a small amount of gas escaped after the first incision. The intestines, both large and small, were dilated with gas. Six hundred and fifty cubic centimeters of a bloody, offensive fluid were found in the peritoneal cavity; about 30 c. c. of a clear, amber-colored fluid was removed from the pericardial sac. The heart weighed 318 grams, and was filled with a dark-colored, semi-clotted fluid; the valves were apparently normal; a small anti-mortem clot was found in the left ventricle and another in the right auricle; a small post-mortem clot was found in the left auricle; the heart tissue was somewhat flabby and anæmic. The left lung weighed 370 grams and was bound to the chest wall by recent adhesions at the junction of the upper and lower lobes; it showed considerable pigmentation, crepitated, and was slightly œdematous. The right lung weighed 520 grams, contained at its upper portion several patches of surface emphysema, and was adherent to the chest wall near the junction of the costal cartilages. The lower part was very much congested and œdematous. The liver weighed 2,120 grams, and was very soft, showing signs of fatty degeneration. The œsophagus, stomach and duodenum were normal. The jejunum was apparently normal. The ileum contained about 20 typical ulcers, 6 of which showed signs of recent hemorrhage, and several were about to perforate the peritoneal coat of the intestines. The large intestines contained some large blood clots. The pancreas weighed 75 grams and was normal. The spleen weighed 510 grams, and was soft and friable. The kidneys, with their ureters, were next examined, and no obstruction in the course of the ureters was discovered; the right kidney weighed 270 grams, the left kidney 228 grams; the capsule was not adherent, and the tissue appeared to be normal. The bladder was empty and contracted. The mesenteric glands were much enlarged, especially about the colon. The caput coli contained a mass of typhoid ulcers, some of which had almost reached the stage of perforation. The remaining portion of the large intestine was normal. The brain and spinal cord were not examined.

W. K. W.  
R. M. W.

L. A.; age, 20 years; nativity, Norway; was admitted to the marine ward of the German Hospital, Philadelphia, Pa., December 23, 1902, and died January 3, 1903, at 11.15 p. m.

**HISTORY.**—Family history, negative; denied venereal disease; has had malarial fever; about two weeks before admission the patient's present affection began with chills, pains in chest, back, and legs; no diarrhea or epistaxis; complained of chills, which were not followed by sweats; had a slight cough, with scanty expectoration; marked anorexia and insomnia; the face was flushed, tongue clean, red, and dry; there was a systolic murmur, heard best at apex; dullness over base of left lung, posteriorly; expiratory sound was prolonged and harsh; rose-colored spots on abdomen; the date of admission corresponded with the twelfth day of the disease. On admission the patient's temperature was 37.2, pulse 84. In the evening of the same day it reached 39.4, and later on in the course of the disease ran up to 40.8; shortly before he died it was 41.4, his pulse 120, and the respiration 34. The urinary examination revealed albumen, pus, and epithelial cells at first, and later on granular casts. The patient died January 3, 1903, on the twenty-third day of the disease, at 11.15 p. m.

**NECROPSY** (49 hours after death).—The body is that of a fairly well-developed, moderately well-nourished white adult male of medium size. Rigor mortis is marked, and the dependent portions of the body show cadaveric lividity. Pupils equal and dilated. The positions of the abdominal, pelvic, and thoracic organs are normal. The pleuræ show no adhesions. The left lung weighs 550 grams, is crepitant all over,



and the fluid exuding on pressure is normal; the hypostatic congestion is slight, the large bronchi contain mucus. The right lung weighs 800 grams, is crepitant, except in the lower lobe posteriorly, which contains much blood, in consequence of hypostatic congestion; this lobe shows a beginning pneumonia; the bronchial lymph glands are anthracotic. The pericardium is normal and contains 20 c. c. of clear fluid. The heart weighs 370 grams, and is normal in appearance; the cavities contain a normal amount of clotted blood, and the valves are normal; the heart muscle is firm, but pale. The diaphragm is normal. The liver weighs 200 grams, is normal in shape, but its consistency is lessened; the capsule strips easily; section surfaces are moist and show slight cloudy swelling. The gall bladder is normal, and the duct patulous. The spleen is enlarged and weighs 400 grams; its capsule strips with difficulty; section shows a congested, soft pulp. The right kidney weighs 220 grams; its capsule strips easily; section shows several cortical cysts and a pale, glistening surface. The left kidney weighs 220 grams, is pale, and on section shows a pale surface and a few cortical cysts. The adrenal bodies, the pelves of the kidneys, and the ureters are normal. The bladder is distended with clear urine. The stomach is normal and contains milky, turbid fluid. The duodenum is normal. The pancreas weighs 120 grams and is normal. The mesenteric glands are much enlarged. The ileum shows several large ulcers, and the jejunum some healed Peyer's patches. The vermiform appendix is normal. The retroperitoneal lymph glands are greatly enlarged. Brain: The dura is transparent, and its inner surface smooth and glistening; the arachnoid is transparent, moist, and edematous; the cerebrum is firm in consistency, and shows on section a moist surface with well-marked puncta vasculosa; the cerebellum, pons, and medulla are normal; cultures made from the left pia and arachnoid showed the staphylococcus albus; those made from the right subdural space were sterile, as were those from the cerebro-spinal fluid. Cultures from the spleen showed the bacillus typhosus.

F. I.

## EXTRAVASATION OF URINE.

W. M.; age 27, nativity, Tennessee; admitted to the United States Marine Hospital, Cairo, Ill., April 24, 1903; died at 4.30 p. m. May 5, 1903.

CLINICAL HISTORY.—Patient entered hospital complaining of piles; an examination disclosed a painful swelling in his perineum; there were no piles; he had a stricture at the bulbous portion of the urethra, which allowed a bougie No. 2 E. to pass; bougie seemed to cause most acute pain when it reached the prostatic portion of the urethra; he said he had never had any trouble with his genito-urinary organs and was able to pass his urine without straining. He first noticed the painful swelling above-mentioned about a day before he entered the hospital. Patient was put to bed and ice bag applied to perineum. That evening his temperature rose to 40.4 and there was some swelling of scrotum. The next day he felt easier. Bowels moving regularly and urine passing normally.

On the 25th there was greater swelling of scrotum and there was also some œdema of the penis; case was then determined to be one of ruptured urethra with extravasation of urine, and although there was a good passage of urine through the usual channel an opening was made in perineum and two in the scrotum. In spite of the incisions and drainage the infiltration of tissue continued to spread until it was halfway to the umbilicus. Urine passed freely in natural way, and on the 29th it began to be passed freely through the opening in perineum. Subcutaneous tissues of scrotum, perineum, left ischio-rectal fossa, and both inguinal regions became gangrenous. The sloughs were removed and cavities flushed and packed with gauze daily. Notwithstanding stimulation by mouth and hypodermatically, the patient died at 4.30 p. m. May 5, 1903.

NECROPSY (20½ hours after death).—Body that of a well-developed negro. General nutrition good. Rigor mortis present. Pupils dilated. Subcutaneous tissues of anterior surface of scrotum sloughed away. Tissue of perineum sloughed out, leaving a cavity about size of an ordinary hen egg. Cavity in left ischio rectal fossa extended up alongside of rectum for about 5 cm. This is what made patient think he had piles. The subcutaneous tissues of both inguinal regions had sloughed out for a distance of about 4 cm. above Poupart's ligament, and there was a loss of tissue over left hip. Brain removed and found normal, weight 1,081.50 grams. Heart normal, weight 370.5 grams; ante-mortem clot found in right ventricle. Right lung showed tuberculous cavity about 1 cm. in diameter in apex, which was full of pus. It was otherwise normal and weighed 555.75 grams; left lung weighed 413.25 grams, and was normal; liver weighed 2,009.25 grams and was normal; spleen weighed 313.50 grams and was normal; right kidney weighed 256.50 grams and was normal; left kidney weighed 242.25 grams and was normal. The bladder and entire urethral



tract was dissected out; the bladder walls were thickened and the inner surface was rough and red in patches; there was a stricture of the urethra just anterior to its bulbous portion; the bulbous portion of urethra was dilated and its walls were ulcerated; a rupture of urethra was found in the membranous portion. Other organs and tissues normal.

J. H. O.

H. C.; aged 37, born in Norway; was admitted to the United States Marine Hospital, Chicago, Ill., on October 19, 1902, and died on October 20, 1902.

Owing to patient's mental condition at time of admission, no clear history was obtainable beyond following facts: About fifteen years ago acquired organic stricture of urethra; about six years ago retention of urine occurred, and an external urethrotomy was performed. Later the stricture was again neglected; and on October 15, 1902, complete retention again occurred. Patient denies having made any attempts to pass instruments on himself. Yesterday (October 18) he was catheterized and large amount of urine drawn. A few hours later the scrotum began to swell; hot applications produced no effect except vesication. When admitted to hospital scrotum was fully distended by infiltration, and extravasated urine had invaded the lower abdominal wall on both sides, following course of Poupart's ligaments. Several attempts to pass catheters and bougies were abortive. Suprapubic introduction of trocar was likewise a failure. Several incisions were made into scrotum for drainage. Mental habitude deepened until active delirium supervened; gradually coma developed, despite hot hip baths and use of pilocarpine hypodermically; patient died at 1.30 a. m. October 20, 1902.

NECROPSY (13 hours after death).—Body well nourished and muscular; suggillations present over dependent portions of body. Skin of lower abdominal wall (anteriorly) elevated and discolored (dirty brown). Puncture (trocar) wound in median line, just above pubes. Penis somewhat retracted into scrotum, which is greatly distended and presents three incised wounds in lower surface. The skin of the right half of scrotum is blue, almost black in color, and of a pulpy consistence. A deep linear scar is present to the right of the raphe. Thorax: Lungs congested, dark in color, firm, and free from any evidence of past or present tubercular involvement; no pleural adhesions; weight—right, 770 grams; left, 630 grams. Pericardium contained about 30 c. c. of clear straw-colored fluid. Heart, which had stopped in systole, weighed 380 grams; contained several ante-mortem clots; valves all normal; no atheroma present in aorta. Abdomen: Incision in median line, about 6.5 cm. above pubes revealed small hæmatoma in deeper portion of superficial fascia; contents black-blue in color, and grumous lamina adiposa about 6 cm. thick just above the pubes, infiltrated with urine, brownish in color, and unusually friable. Recti muscles apparently normal. Stomach and intestines normal. Spleen very dark in color, soft and diffluent; weighed 190 grams. Liver, normal in appearance, firm, and weighed 2,250 grams. Gall bladder normal; contained about 25 c. c. of bile; no calculi; no constrictions in common duct. Kidneys: Right weighed 210 grams; left, 180 grams; capsules strip off readily, cortical surface of both mottled with grayish yellow areas ranging in size from pin head to kidney bean; these are slightly elevated, the small areas firm, the larger ones soft; on incision they are seen to be somewhat conical in shape with apices pointing to pelvis of kidney. Left kidney presented one as large as a lima bean, which was quite soft and its base (the cortical surface) depressed; on section, the kidneys were somewhat congested and darker than normal, but no other changes were noted. Ureters were normal. Bladder, with ureters and vasa deferentia attached, weighed 290 grams, was very small, empty, its walls enormously thickened and fibrous, and the mucous surface very rugose; the mucous membrane of the base of the bladder was liberally covered with precipitated crystalline urinary solids and felt gritty; this extremely contracted viscus was very deeply seated in the floor of the pelvis and this fact, together with the hard fibrous condition of its walls and the unusual thickness of the peniculus adiposus above the pubes, accounts for the failure of the trocar to enter the bladder. The prostate was quite fibrous throughout. The vesiculæ seminales were somewhat enlarged.

External genitalia: Penis infiltrated and retracted; the scrotal epidermis is dark, distended, and discolored, particularly on right side, which is almost black; on section the areolar tissue is found infiltrated and similarly discolored, very friable, and, in darkest area, completely gangrenous. Testicles apparently normal; spermatic cord unusually large and firm. In the right wall of the urethra was found a rent three-quarters inch long at distal end of very thick organic stricture of very small caliber, which was buried in scar tissue and located just anterior to triangular ligament; inferior and posterior to the rent was a cavity filled with a dark, grumous, foul-smelling material, evidently mixed urine and broken-down tissue.

L. P. H. B.  
C. E. B.



A. B.; age, 47; German; admitted to hospital at Menominee, Mich., September 2, 1902; died September 6, 1902.

He gave history of very frequent micturition with severe vesical tenesmus; urine normal in quantity but contained pus; he gave history of former attack one year ago, of similar character, followed by recovery in about a week. On admission, he had marked cedema of perineum, scrotum, and penis, with beginning gangrene of the scrotum. Temperature  $38.8^{\circ}\text{C}$ . Pulse 130. Repeated attempts to locate pus with the aspirating needle were unsuccessful. Put him to bed, incised the scrotum to relieve tension, and applied hot boracic-acid dressing. Milk diet, rest, and stimulation. Cedema decreased, but gangrene continued to spread, finally involving about one-third of the scrotum, and a portion of the abdominal wall over the pubes. Temperature ranged from  $36.2^{\circ}\text{C}$ . to  $38.8^{\circ}\text{C}$ . Pulse from 130 to 160 from time of admission to death. Patient became unconscious on the evening of the 4th, and died September 6, at 1.30 a. m.

NECROPSY.—Calvarium and contents normal, except some slight inflammatory exudate at the vertex. Thorax and contents normal, except some slight adhesions of anterior surface and apex of right lung, and at apex of left lung. Abdomen and contents normal, except urinary organs; urinary bladder normal size, somewhat thickened wall and injected mucous membrane; prostate normal size, hard; ducts filled with pus; body of prostate filled with many small calculi; penis normal, except for cedema; urethra normal, except at point just anterior to the triangular ligament, where there was a small caliber stricture involving about 1.5 cm. of the urethra and surrounded by numerous small abscess cavities. These cavities were in communication with two larger ones within the scrotum. The scrotum was gangrenous for about one-third of its surface.

W. R. H.

#### FRACTURE OF THE SKULL.

R. H.; white seaman; age, 23 years; was admitted to the marine ward of the Buffalo hospital of the Sisters of Charity on the 6th and died on the 22d September, 1902.

HISTORY.—When admitted he was suffering from a severe crush of the right parietal bone; he was unconscious, and there was paralysis of the left arm and left leg. Over the right parietal boss there was an extensive laceration of the scalp, and a gaping fracture of the skull from which brain substance was escaping. The lacerated tissues were lifted from the bone and the fracture found to extend from the vertex to the base of the skull. At the boss the greatest force had been expended and the bone badly comminuted; on removing these fragments the membranes are found extensively torn. All the tissues are soiled with coal dust, the wound having been inflicted by a coal-hoisting bucket. After thorough cleansing the wound was drained from its lower angle through a large trephine opening, and irrigated every four hours with acetozone solution 1-8000. Disintegration of the brain substance with suppuration was quite extensive, although the parietic symptoms in arm and leg almost entirely disappeared, and death occurred from sepsis on the sixteenth day of treatment. During the last few days his mentality became much impaired, and basic meningitis developed.

NECROPSY (24 hours after death).—Body somewhat emaciated; rigor mortis present; stasis of dependent portions of the trunk; there is an ecchymosis of the right side of the face involving the tissue of the orbit; there is total loss of the right parietal boss, and from the lower border of this opening a fissure 1.5 cm. wide narrows toward the base of the skull; from its upper border a fissure passes upward to the great longitudinal sinus; beyond this opening there is a cavity in the brain substance drained by a gauze twist. Calvarium removed; the dura mater and membranes are inflamed about the wound, and this extends to the base of the brain; the right temporal lobe is the seat of purulen disintegration; the line of fracture is found to have divided at the temporal bone, the anterior arm passing into the middle fossa had lacerated the middle meningeal artery, the blood from which had passed between the dura and the bone and escaped through the tissues of the right orbital canal and became apparent as the facial ecchymosis spoken of above; the other arm of the fissure passed downward and backward across the posterior fossa of the skull, ending near the foramen magnum. No further examination allowed by his friends.

E. W.



## FRACTURE OF THE PELVIS.

*Rupture of the urinary bladder.*

C. C.; white seaman; age, 40; a native of the United States; was admitted to the marine ward of the Buffalo hospital of the Sisters of Charity on the 25th, and died on the 25th, of April, 1903.

HISTORY.—When admitted the patient was unconscious and could give no statement as to the injury. Eyewitnesses had informed the ambulance surgeon that he had been caught between the ship's side and the dock in attempting to jump ashore, and was crushed between them. Examination shows extensive contusions of the body, and a large laceration over the right hip. The pelvis is shattered, the right ilium is broken into three fragments; the pubic arch is destroyed, the bladder is ruptured and blood is flowing from the urethra; the left ilium is also fractured. Shock is extreme, pupils at pin points, skin cold, breathing shallow and 40 to the minute. All efforts to relieve the shock were futile, and he died within an hour of his admission.

AUTOPSY (3 hours post-mortem).—There is slight rigidity; the skin of the right side and hip is lacerated and contused. Incision over the right hip discloses extensive comminution of the ilium, three large and several small fragments; also fracture of the ischium and pubis on the right side, a fragment of the ischial ramus penetrating the urinary bladder, and opening the peritoneal cavity; the pelvic cavity is full of bloody urine, and there is free blood in the abdomen; the iliac vessels have escaped injury. Death had resulted from shock, since there is no injury to any of the organs save the rupture of the bladder.

E. W.

N. McF.; white seaman; age, 62 years, and a native of Scotland; was admitted to the marine ward of the Buffalo hospital of the Sisters of Charity on the 26th and died on the 27th September, 1902.

HISTORY.—He states that he had been caught between the ship's side and the dock and crushed some two hours before admission.

PRESENT CONDITION.—He is conscious but suffering from severe shock; face pale and moist; pulse rapid and without pressure tone; there is sighing respiration and hiccough. Examination of the injury shows an extensive discoloration of the soft parts overlying ilio-pubic arch, but the femoral pulsates, and there is not yet evidence of venous retardation. The iliac crest is crushed in and the pubic arch destroyed, the femoral head displaced from the acetabulum; the bladder has been injured; the urine contains blood. Effort was directed to the relief of the shock, and a soft rubber catheter placed in the bladder. Death from continued shock in fourteen hours.

NECROPSY (limited to local examination at the solicitation of his friends).—The right hip and groin are much discolored, the skin is abraded over the superior spine of the ilium, blood is flowing from the instrument in the bladder, the right leg is oedematous about the ankle. Pressure applied to the iliac crest shows the bone to be comminuted, and incision shows the soft parts infiltrated with blood, the iliac vein being punctured by a spicule of bone still in malposition. The ilium is in four fragments, the pubic arch destroyed, the fragments penetrating the bladder; the pelvic tissues are infiltrated with blood and urine.

E. W.

## GANGRENE.

J. J.; age, 64; nativity, Norway; was admitted to United States Marine Hospital, Boston, Mass., September 16, 1902, and died November 3, 1902.

FAMILY HISTORY.—Father died of renal calculus; mother died of septicæmia, following an infected wound of the foot.

PREVIOUS HISTORY.—Had gonorrhœa twenty years ago; was treated two years ago in this hospital for rheumatism; has had pneumonia twice; never had any serious sickness until had reached the age of 48 years.

PRESENT HISTORY.—Two years previous while fishing had foot frozen. The foot has since felt numb, but six weeks ago his foot became painful and the great and little toes of the left foot became red, swollen, and a slough formed. At present the toes do not pain, but the foot feels cold all the time. The toes are very tender, but sensation is not impaired. The right foot is apparently normal.

September 20, 1902.—The third toe was amputated at the meta tarsal-phalangeal articulation. Ether was the anæsthetic employed.



*October 2, 1902.*—The foot and leg becoming gangrenous, the leg was amputated at the junction of the upper and middle thirds, under ether. After the completion of the operation, oxygen was given by inhalation, as the patient's condition was precarious. Healing progressed satisfactorily for some time, but finally the edges of the wound became gangrenous. The patient from this time on began to sink so rapidly that an operation was not deemed advisable. After four hours of unconsciousness the patient died, November 3, 1902.

**NECROPSY** (4 hours after death).—The body is that of a poorly nourished man. Rigor mortis absent. The left thigh shows signs of recent amputation. An area of gangrene about 7 cm. wide and 20 cm. long was found about the lips of the wound. The peritoneal cavity contains 200 c. c. of pale straw-colored fluid. The pleural cavities contain 100 c. c. of similar fluid. The pericardial cavity contains 30 c. c. of similar fluid. The left lung presented numerous strong adhesions throughout the entire surface with the exception of the apex. The adhesions over the lower lobe were very firm. The right lung was also firmly adherent throughout except over the lower lobe. The left lung, with the exception of passive congestion, is normal. The right lung is in a similar condition. The bladder contains 150 c. c. of urine. The right kidney is considerably injected and contains masses of fat in its pelvis. The left kidney is in similar condition. The gall bladder contains 25 c. c. of bile. The liver presents chronic passive congestion, "nutmeg liver." The left ventricle contained a small ante-mortem clot. The right ventricle contained the same. The right auricle is entirely filled with an ante-mortem clot. The aortic valves present calcareous deposits. The pulmonary valves are normal. The mitral orifice admits two fingers, and the tricuspid three fingers. The heart muscle is somewhat anæmic. The spleen shows passive congestion. The œsophagus, stomach, and intestines are normal.

**DIAGNOSIS.**—Diabetic gangrene.

W. K. W.  
R. M. W.

#### GONORRHEA.

Seaman R. H.; age, 40; nativity, Germany; color, white; admitted to the United States Marine Hospital, San Francisco, Cal., March 23, 1903; died March 27, 1903.

**HISTORY.**—Carpenter; addicted more or less to alcohol and tobacco. Family history negative. In the personal history nothing can be elicited except that he had typhoid fever twenty years ago and dysentery fifteen years ago.

**HISTORY OF PRESENT SICKNESS.**—Three weeks ago he contracted gonorrhea and has had it ever since. For one week he was unable to walk on account of sharp shooting pains in his legs. Later had them also in his arms and was unable to raise them. The skin of the scrotum was purpuric in appearance. There had been a slight cough for three weeks; appetite was poor; bowels constipated. He was unable to sleep at night on account of pain; body very filthy. The foreskin showed œdema and phimosis, and the urethra showed a purulent discharge. There was frequent urination.

*March 25.*—Feels very weak; was delirious during the night; the feces and urine pass off involuntarily.

*March 26.*—There was no marked difference. During the afternoon he got out of bed while delirious and four men were required to get him back again. It was then necessary to tie him in bed.

*March 27.*—About 1 a. m. deep coma developed, from which he could not be aroused, pulse rapid and weak, respiration shallow and rapid with an occasional deep sigh and of the Cheyne-Stokes type; skin intensely hot and moist. Stimulants had no effect and death occurred in about half an hour. It should be stated that the temperature was high from the time of admission to the hospital and that speech was more or less thickened in quality. The urine had an offensive odor and contained pus and albumen.

**NECROPSY** (twelve hours after death).—Body well developed. There was hypostatic congestion of part of the head and neck. Numerous small, pale scars were present on both legs. Elaborate tattooing on left arm and leg. Brain: On removing the calvarium the condition of the skull cap, the brain case, the sinuses and vessels, and the membranes was apparently normal; the weight of the brain, including the cerebellum, was 1,570 grams; on section a cyst of the size of a pea was found in the left hemisphere at the posterior border of the corpus striatum; the remainder of the brain appeared normal; the cyst just described contained bloody serum. Thorax: The anterior mediastinum exhibits nothing of interest. The pericardium contained the usual amount of serous fluid. The heart weighed 430 grams; the muscular tissue was of pale red color and very soft and friable in consistency; all the valves were in a normal condition; a chicken-fat clot was found in the pulmonary artery. The



right lung had adhesive bands between the upper and middle lobes and between the lung and pleura at the apex; when removed the lung showed at the apex a hard, depressed scar penetrating for about 1 cm. into the lung substance at the site of the pleural adhesion; a similar scar occurred on the inner surface of the right lower lobe—both perfectly healed; both lungs crepitated fairly well all over; section revealed considerable bloody serum exuding from the cut surface; the larger bronchi contained a moderate amount of muco-purulent fluid. The great vessels, nerve trunks, and diaphragm were apparently normal. Abdomen: In the muscular substance of the abdominal wall on the right side and near the ensiform cartilage was found a small abscess of lima-bean size; the omentum contained considerable fat and was adherent to the anterior abdominal wall. The spleen weighed 510 grams, was enlarged, bluish in color, cut with increased resistance, showing section to be bright red. The malpighian bodies projected prominently, and the fibrous stroma was increased somewhat. The kidneys were enlarged, the right weighing 337 grams and the left 250. The fibrous capsules stripped readily. Sections were reddish brown and showed faint yellowish striation in the cortical portions, with somewhat indistinct outlines of the pyramids. The pelvis of each organ exhibited numerous miliary hemorrhages into the mucous membrane. The suprarenal capsules were normal. The urinary bladder was partially distended with cloudy, dark-yellowish urine containing pus and having a bad odor; its walls were much thickened and covered with whitish deposits; the prostate gland, seminal vesicles, and testicles appeared normal; the penis showed phimosis and œdema of the foreskin, with an abscess of the connective tissue near the frænum. The epidermis of the scrotum was bluish and partially sloughed off. The urethra contained purulent material, and had an organic stricture (permeable) of the prostatic portion. The rectum and duodenum were normal. The mucous membrane of the stomach was hemorrhagic. The gall-ducts were patent. The liver was enlarged, weighing 2,660 grams. The surface was smooth and shining, and was mottled by a number of yellowish plaques. It cut easily, the section was quite bloody, and showed the centers of the lobules darker than the periphery. The liver tissue was somewhat friable. The pancreas, solar plexus, mesentery, small and large intestines, vermiform appendix, and the great vessels were apparently normal.

**MICROSCOPICAL EXAMINATION.**—In tissues from the spleen and inguinal lymph glands diplococci staining with Gram's stain, and putrefactive rods were found. The urethral discharge contained gonococci, also the urine. The abscess on the penis showed many pus cells and a small number of cocci staining very faintly and bearing some resemblance to gonococci.

**ANATOMICAL DIAGNOSIS.**—Cyst of corpus striatum; acute myocarditis; localized fibrous pleuritis (right); obliterated pulmonary tuberculosis of right lung; acute bronchitis; small abscess of right abdominal wall; acute peritonitis; acute splenitis; acute nephritis with pelvic hemorrhages; subacute cystitis; œdema, phimosis and abscess of penis; necrosis of scrotal epidermis; subacute urethritis; organic stricture of prostatic urethra; acute gastritis with submucous hemorrhages; acute hepatitis.

C. R.

## DISEASES OF THE HEART AND GREAT VESSELS.

### *Endocarditis.*

P. K.; age, 42; admitted to United States Marine Hospital, Baltimore, November 5, 1902; died January 6, 1903. Patient complained of shortness of breath and weakness of legs. First noticed shortness of breath three weeks before admission while rowing a boat; had been getting worse since. Had poor appetite and some cough.

**EXAMINATION.**—Apex beat was normal; heart sounds were tumultuous and loud. Slight blowing diastolic sound at aortic valve, heard also at the mitral during diastole (aortic murmur transmitted). Pleuritic friction sound and fine subcrepitant râles (bronchial) right and left side.

Subsequent remarks by Surgeon Carter: Apex beat can not be found; impulse perceptible but diffused, apparently under nipple. Temperature, 38.6; pulse, 94. Heart sounds accentuated and rapid.

**TREATMENT.**—Nitroglycerin, 0.0006 gram, t. i. d.; saturated solution potassium iodide, 0.3 c. c., t. i. d., and increasing daily; tr. nux vomica, 1 c. c., t. i. d.; Basham's mixture, 5 c. c., t. i. d.

*January 1, 1903.*—Removed 2,500 c. c. blood-tinged fluid from abdomen.

*January 5.*—Great dyspnoea and weakness. Tapped abdomen and removed from 550 to 600 c. c. blood-tinged fluid.

*January 6.*—Abdomen distended, tympany, ordered turpentine stupes; rectal tube passed to expel gas. Died at 10 p. m. from heart exhaustion.



NECROPSY (eighteen hours after death).—Male, large frame, somewhat emaciated, abdomen distended. Post-mortem lividity about neck, forehead, chest, and dependent portion of back; oedema of feet and legs. Subcutaneous connective tissue over abdomen contained large amount of clear fluid. Connective tissue in anterior mediastinum was oedematous and contained blood-tinged fluid. Abdominal cavity contained 2,500 c. c. of blood-stained fluid. Omentum was contracted, thin, and contained little fat. Intestines, large and small, were normal in color and not unduly distended. Liver: Weight, 1,450 grams; was moderately small, capsule was closely adherent, the general surface appearance was gray and granular, in the interspaces were darker areas; on section, cut hard, showed larger areas of dark and lighter tissues; tissues were hard and tough on pressure and were broken down with difficulty; there was total absence of blood on section. Gall bladder was small and contained small amount of fluid. Spleen: Weight, 240 grams; was adherent to costal surface, was small, hard; its extremities presented normal color, while central part was white, and on section cut with resistance; near central part of organ the tissues were softer and devoid of blood; section of both extremities was normal in appearance. Kidneys: Right, weight, 290 grams; was enlarged, capsule easily detached, leaving a smooth surface; the surface presented small, black pointed areas surrounded with normal colored cortical substance; section cut with resistance, almost entire absence of blood; was tough, broke with difficulty; on lower antero-lateral surface was a whitish area about the size of a 10-cent piece, which on section was seen to extend down through the cortex, and was hard and resistant on section with knife; cortex was moderately thickened. Left, weight, 280 grams; capsule easily detached, leaving smooth kidney surface; cortex was thickened. Pericardium contained a small amount of reddish-colored fluid; surfaces were smooth, white, and polished. Heart: Weight, 810 grams; was enormously enlarged, was pale, and showed evidences of an old exudate on small portions of anterior surfaces of right auricle and ventricle; right ventricle, endocardium was red, smooth, and glossy; left ventricle, greatly enlarged and thickened. The mitral valves were filled with a thick, hard, calcareous deposit, occupying almost their total areas; right ventricle, walls were thin; left auricle, the endocardium was dark and congested on posterior surface; small, calcareous deposits were noticed at four points. Lungs: Right lobe had adhesions anteriorly, laterally, posteriorly, at base and apex, being loosened by hand with great difficulty; on postero-lateral aspect of lower lobe, and extending from the sixth rib transversely upward and inward, was a hard, calcareous band or ridge from 1.5 cm. to 3 cm. broad; the lung substance was closely adherent to this surface, which in turn was closely bound down to the costal pleura; lower and middle lobe crepitated somewhat less than normal, and appeared somewhat more resistant than normal lung tissue, otherwise appeared normal; at the apex was a small, firm, hard area resembling the color of liver tissue. Left lung had slight adhesions over anterior surface, crepitated normally; section presented outflow of frothy blood.

J. A. N.  
H. R. C.

*Acute pericarditis.*

O. J. (white); age, 72; nativity, Finland; was admitted to the United States Marine Hospital, Chicago, Ill., on March 23, 1903, and died May 13, 1903.

HISTORY.—During the greater part of the past forty years this patient was afflicted with ulcers of the legs, and for several years past had been under treatment for this condition at the out-patient office and hospital at this port. On January 23, 1903, the patient was brought to the hospital suffering from septicæmia, infection evidently having occurred through an ulcer on anterior aspect of left leg. There was lymphangitis extending up to the groin, where the lymph glands were enlarged and painful. The superficial veins of both legs were varicose and the epidermis of the entire body was of a peculiar parchment-like quality. A confirmed habit of scratching (possibly due to senile pruritis), by producing abrasions, was beyond doubt the exciting cause of his infection. He was very ill, his temperature reaching 41°, and cardiac exhaustion was imminent for several days, but gradually, under the use of supportive treatment and nourishing diet, the patient recovered from his septicæmia, was discharged on March 22, and immediately readmitted for treatment of the ulcer on the leg. The skin of the left leg and thigh had been the site of eczema (crustosquamosum) for several weeks and had resisted all treatment. On the 22d the skin of the face, forehead, and ears was found to be cracked, weeping, and encrusted, a condition similar to that of the legs. Zinc oxide ointment failed to have any effect, and the next day general edema of affected portions of the head was present to such an extent that both eyes were completely closed. The head was enormously swollen, but the edema stopped abruptly at the lower border of the inferior maxilla. Tem-



perature was normal and patient reported no subjective symptoms. At the end of a week the edema was practically absent and the skin becoming free of crusts. On April 3 the dorsum of both hands and both wrists became eczematous. A 25-per-cent ointment of balsam of peru in lanoline and vaseline was found to be most efficacious, quickly clearing up the patches of eczema. The suspicion that these extensions of the eczema were due to scratching were borne out on April 29, when the right leg (lower third) was found scratch-marked and covered in places with inspissated blood and serum and numerous small pustules; this leg now became eczematous and edematous. The patient's hands were kept bandaged to prevent scratching, and the eczema gradually began to clear up. On May 5 the patient had a sharp chill, followed by a temperature of 38.4°. The next day he complained of headache, slight cough, and indefinitely located thoracic pain; at 3.30 p. m. chills recurred and temperature rose to 39.8°, but responded well to sponge bathing. He reported slight thoracic pain and pain in dorsum of both feet—a symptom of frequent occurrence in the case. On May 8 he reported pain in feet only and a cough. Examination elicited only mucous rales in both lungs. Temperature fluctuated between 37° and 38° daily until his death. On May 11 his pulse became rapid (120), respiration 30, expirations being forced and wheezing in character, with numerous mucous rales. On May 12 temperature was normal, but pulse and respirations rapid; he had no cough; percussion note over lungs was somewhat tympano-resonant, and he still complained of pain, now becoming localized under lower half of sternum. Physical examination proved negative. Respiration was less distressing. On May 13 respiration was again wheezy in character, with expiration prolonged and somewhat forced; percussion note high-pitched, tympanitic; auscultation elicited loud bronchial breathing, with mucous rales. Cardiac sounds were feeble and greatly obscured by respiratory sounds. No friction sound was heard at any time. Pulse was rapid and feeble. At 2 p. m. was suddenly seized with sharp pain in region of xyphoid cartilage and pulse became slow and weak. Morphine sulph., 0.01 gram hypodermically, gave relief and patient slept two hours. Upon awakening said he felt very comfortable, but his conversation showed that he anticipated an early death. Expressing a desire to be left quietly alone, he closed his eyes and gradually ceased breathing, dying at 4.50 p. m.

NECROPSY (3 hours after death).—Body was well nourished; no rigor mortis, lividity, nor localized edema present; the superficial veins of lower extremities were markedly varicose, and the skin of the anterior and lateral aspects of both legs, from ankles to knees, was deeply pigmented and scarred; one very small clean-looking ulcer was present over crest of left tibia. The subcutaneous tissues seemed unusually moist; 20 cc. of clear fluid was found in the pericardium; the heart was attached almost universally to the pericardium by very friable adhesions. The heart was flabby, muscular tissue rather pale, and weighed 550 grams. The wall of the left ventricle was hypertrophied, that of the right ventricle dilated. All the valves were normal in appearance and texture, excepting a small firm nodule at the base of the left leaflet of the aortic semilunar. Fibroid degeneration was present in the arterial walls, but no atheroma or calcification. About 350 cc. of clear straw-colored fluid was present in left pleural cavity and extensive recent adhesions bound the left lung to the diaphragmatic, dorsal, and apical portions of the pleural wall. The left lung weighed 350 grams, was very dry and leathery on section, and somewhat anthracotic. The right lung presented recent adhesions over lower lobe anteriorly and to the diaphragm, weighed 400 grams, and was of the same appearance and consistency as the left lung. No tubercles present in either lung. The omentum was shrunken, greatly distorted, and adherent to the under surface of the left lobe of the liver, to the parietal peritoneum anterior to the liver, and to the mesentery and walls of the small intestines. The liver weighed 1,450 grams, and was adherent anteriorly to parietal peritoneum; its capsule was so thickened and shrunken in places as to appear scarred; its edges were sharp; its parenchyma was very firm on section, dark, and distinctly lobulated. The gall bladder contained 30 cc. of bile; no calculi. Stomach contained coagulated milk, its posterior wall was congested—probably a post-mortem change—but otherwise apparently normal. Intestines normal in appearance. The appendix was 3 cm. long, retrocecal in position, and directed upward, and possessed a mesentery. The spleen weighed 230 grams; the phrenic surface was grayish-white in color, and somewhat distorted by a very thick layer of old inflammatory exudate by which it was bound to the diaphragm; on section the spleen was found very fibrous and leathery. The left kidney weighed 270 grams, was firm, congested in the cortical portion, while the pyramids had a grayish-red, smooth, pearly appearance and gave a wax-like surface on section. The right kidney weighed 220 grams, and had the same gross appearance, excepting that the periphery of the pyramids shared in the congestion. The bladder was fibrous, contracted, and



empty. The prostate was fibrous, but not enlarged. All the adhesions found in the abdominal cavity were very dense, firm, and contracted, evidently the result of a remote inflammatory process.

L. P. H. B.,  
C. E. B.

*Aneurism of the aorta.*

F. L. (colored); age, 51; nativity, Tennessee; admitted to the United States Marine Hospital, Louisville, Ky., March 31, 1903; died June 30, 1903.

Patient is a river fireman by occupation, and until the last three years has had uniformly good health; denies ever having had a venereal sore; was in this hospital three years ago suffering from the effects of a severe contusion of right side of head and body as the result of a fall of about 15 feet; paralysis of the right side of the face developed, but he had about recovered from this at the time of his discharge two months later; his next admission was on March 2, 1902, for an acute pericarditis. He complained of severe cutting precordial pain which had existed for four days prior to admission, but stated that he had felt slight pain in the same side for many months. A pericardial friction rub was heard. Had some elevation of temperature for a few days. Had several anginal attacks during his stay. Left against advice on April 8, and returned to work. The same night he had a terrible anginal attack lasting hours, but after a few days at home he pluckily resumed work. He was in hospital again in June, staying ten days; at this time a basic murmur was heard. He had several anginal attacks during this stay. After this he worked when his physical condition would permit, until his last admission, on March 31, 1903. This time he had dyspnoea, and feet were swollen most of the time; he had anginal attacks upon the least exertion, and he was never free from a boring pain behind the sternum. Ascites soon developed and the oedema of limbs, face, and body increased. Death occurred suddenly on morning of June 30, 1903. Cyanoses was rapid and pronounced immediately before death.

NECROPSY (6 hours after death).—On opening thorax, it was noted that all veins, both superficial and deep, were distended with dark fluid blood under pressure, and which continued to ooze out of veins some time after they had been severed. The heart was enlarged and hypertrophied, and its surface was rough, shaggy, and adherent in places to the pericardium, as a result of an old pericarditis. On removing heart the base was seen to have been the seat of a large sacculated aneurism. The aneurism was a dilatation of the first portion of the aorta, the aortic valves opening directly into it. Curiously enough, however, these valves were perfectly competent. Aneurism, in shape, was strikingly like one of the auricles, for which it was at first mistaken. It was a little larger in size than either of the auricles, which it had crowded to one side, the aneurism occupying the anterior aspect of the base of the heart. Aneurism had ruptured through a small linear tear into the pulmonary vein, this finding accounting for the sudden death and the great cyanosis previously mentioned.

T. D. B.

*Aneurism of thoracic aorta.*

S. C.; age, 48; nativity, West Virginia; admitted to the marine ward of the German Hospital, Philadelphia, Pa., on December 22, 1902; died January 18, 1903, at 1.45 a. m.

HISTORY.—Family history, negative. Has had malarial fever, pneumonia, pleurisy, rheumatism, and gonorrhea. Admits the use of alcohol and tobacco. About five months ago patient noticed a lump in the right axilla, about the size of a walnut and painful. Since then it has gradually increased in size and now extends over on the front of the chest; it pulsates.

PHYSICAL EXAMINATION.—Marked arcus senilis. A prominent, immovable, but pulsating tumor about the size of a cocoanut occupies the right mammary region. Auscultation over this tumor reveals a systolic and diastolic bruit. The lungs are normal. A double murmur is heard at apex and also at aortic cartilage. An X-ray examination on December 24, 1902, revealed a large, dense shadow to the right of the heart area, extending well beyond the median line. Urinary examination shows a trace of albumen, leucocytes, and epithelial cells. The patient's temperature remained about normal during his illness, but his pulse rate increased from 96 at admission to 120 during the last days of his illness.

NECROPSY (23 hours after death).—The body is that of a fairly well developed and nourished black adult male of medium height. Rigor mortis is slight and cadaveric lividity is observed in the dependent portions of body. Considerable bulging of



anterior chest wall is noticed between the second and fourth ribs, and the right border of the sternum and the anterior axillary line. A sacculated aneurism of the aorta, beginning about 2 cm. above the heart and ending about 2.5 cm. to the proximal side of the origin of the innominate artery was found to be the cause of the bulging of the chest wall. The aneurism involves all the coats of the aorta, the sac measuring 18 by 15 by 15 cm. and contains both organized and unorganized clots. Rupture of the aneurism has occurred on its anterior aspect opposite the mid-clavicular line, the hemorrhage occurring into the right pleural sac, causing almost complete atelectasis of the right lung. The diaphragm on the right side is bulged downward by the blood in the right pleural sac to a level below the free margin of the ribs. Dense adhesions, fibrous in character, exist between the aneurismal sac and the right costal pleura. Ten centimeters of the third rib is completely, and the lower border of the second, and the upper border of the fourth rib are partially eroded by the aneurism, the eroded surfaces being rough and jagged. The ruptured anterior surface of the aneurism presents immediately beneath the right pectoral muscles. The left pleural sac and the left lung are normal. The right lung is almost completely collapsed, showing no crepitation on account of the carnification of its tissue. The pericardium is normal in character and contains 50 c. c. of clear fluid. The heart is displaced to the left, but is normal in shape and size. The valves and endocardium are normal, and the cavities contain a moderate amount of clotted blood. The heart muscle is firm and of a reddish-brown color. The coronary arteries are slightly atheromatous. The liver is displaced downward to such an extent by the depression of the diaphragm on the right side that its lower border corresponds to a line drawn from the anterior superior iliac spine through the umbilicus. Its weight is 1,330 grams. Section of the liver shows a glistening, moist, smooth surface of normal color. The capsule strips easily. The spleen weighs 130 grams, its capsule strips easily, its consistency is slightly increased, but the pulp is normal. The right kidney weighs 220 grams, its capsule strips easily, is normal in shape and color, and on section shows a slightly darkened and opaque surface. The right adrenal body showed some softening in its center. The left kidney weighs 195 grams, is normal in shape and consistency, and its capsule strips easily. Section discloses a slightly opaque and darkened surface. The ureters, pelvis, and the left adrenal body were normal. The bladder contains a small amount of clear urine, its walls are thickened, but the mucous membrane is normal. The stomach is displaced downward and to the left, but appears normal. The pancreas weighs 80 grams and appears normal. The mesenteric blood vessels are congested and the retroperitoneal lymph glands slightly enlarged. The vermiform appendix is very long and points toward the liver. The abdominal aorta shows local areas of sclerosis. The brain and spinal cord were not examined.

F. I.

*Aortic incompetency and aneurysmal dilatation of aorta.*

S. M.; age, 50; nativity, Maine; entered United States Marine Hospital, Baltimore, Md., August 18, 1902; died September 23, 1902.

CLINICAL HISTORY.—Was treated here for rheumatism four years ago; had syphilis about seven and a half years ago; duration of present trouble is since January, 1902. He suffers from dyspnoea always on exertion; has some attacks of dyspnoea apparently without cause. Some of these attacks, only a small proportion of them, however, are accompanied with pain in the præcordia and radiating to the right shoulder, where it was severe. The pain and distress are intense.

EXAMINATION.—Showed a heart very much enlarged, with marked aortic regurgitation and rough, rasping, aneurysmal-like bruit over ascending and transverse portions of aorta; bruit transmitted in carotids and axillary arteries. Heart was very feeble and irregular.

The attacks of dyspnoea were true anginal attacks, the distress, fear of immediate death and pain, being more marked than the dyspnoea; face pale and covered with perspiration. They were rare at first, only one the first two weeks in hospital, but increased in frequency until there were occasionally more than one per day. He died in one, September 23.

NECROPSY (about 2 hours after death).—Spare man, medium size, not specially reduced; has a slight puffiness about the ankles. Chest: Medium amount of subcutaneous fat; pericardial sac; heart very large, extending from the third intercostal space to the seventh rib, and from median line to axillary line; pericardial sac contains about 75 c. c. pericardial fluid, clear and limpid; heart has normal amount of fat; coronary veins turgid and tortuous, auricles distended and full of blood, right auricle distended with blood, holding about 150 c. c.; right ventricle distended with blood, but not so much so as the auricle; the right ventricular wall somewhat



hypertrophied, capacity being much greater than usual (i. e., dilated), left auricle distended with blood; left ventricular wall thickened, being about 2 c. m. thick; weight of heart, empty of blood and washed, 560 grams. Right lung: No adhesions in front or laterally; some slight ones are to be found posteriorly and below; some fluid found anteriorly, about 200 c. c. in pleural cavity, clear and limpid. Left lung: Adherent to the chest wall anteriorly from about third to fourth intercostal spaces, adhesions recent but dense; also adhesions to diaphragm and ribs, especially lower ribs, toward the spine; adhesions to the diaphragm very dense, not recent; left pleural cavity contained 300 c. c. of fluid. Abdomen: Abdominal muscles in good condition; intestines partly full of normal constituents; mesocolon normal; appendix normal and in normal location, turned inward and backward, free and extending over and in contact with sacroiliac junction; the organ measured 10 c. m. long, somewhat thicker than goose quill. Spleen: Rather hard, about the normal size; weight 145 grams; rather firmer in consistency than usual. Liver: About the normal size; the weight of same is 1,410 grams, it being passively congested; normal on cross section; gall bladder distended with normal yellow bile. Right kidney: Dark and congested; capsule not adherent; cortex and the pyramids well marked. Left kidney: Same as the right one. Examination of heart: Aortic valves absolutely incompetent to water test; not especially deformed—simply did not meet; mitral valves absolutely competent to water test, bulging and not leaking when a stream is turned into the proximal end of the cut aorta; the whole part of the aorta from the origin to the descending portion is inelastic; the aorta is dilated from origin to end of transverse portion; bulging and thin, with bosses of bulged, thin tissue near the origin on convex surface; one very thin spot as large as a pigeon's egg, a larger spot also thin lying just proximal to origin of subclavian artery; another one involving the origin of the subclavian artery and yet a few bosses found as far as 7 cm. beyond the origin of the subclavian artery. From the origin of the vessel, and especially the thin places, the inner surface was rough and with striations of healed ulcers; no hard, atheromatous plaques observed; no abraded places; the condition of the aorta from the subclavian to its origin was, in effect, a fusiform aneurism, in some places very thin. Coronary arteries: Both patent and both soft; they were unusually small, and were empty of blood; the left coronary arose in one of the thinned and roughened spots of the aorta.

H. R. C.

*Valvular disease of heart—aortic.*

C. W.; age, 60 years; nativity, Sweden; admitted to the United States Marine Hospital, San Francisco, Cal., August 28, 1902; died February 13, 1903.

HISTORY.—The patient stated three years ago he was exposed to bad weather for a week, after which he had asthma and trouble with his heart. He said that his abdomen felt as if it would burst and his heart seemed to be in his throat; his head and neck felt thick and distended. He was short of breath and his feet would swell at night. He coughed considerably, and he frequently had severe pain over the cardiac region. He passed only a small quantity of urine.

PHYSICAL EXAMINATION.—Bronchial breathing and râles present on both sides of the chest; there was a loud, blowing, systolic murmur heard over the whole left side of the chest. The area of heart dullness was increased. There was some ascites present, and the legs were swollen. This patient was given the ordinary heart tonics, but the greatest improvement appeared to result from hot baths containing eucalyptus leaves. He did fairly well until the middle of December, 1902, when he became too weak to move around. His ascites and œdema of the legs increased, and his dyspnoea became so troublesome he could not sleep except when under the influence of hypnotics. The pulse was slow, frequently intermittent, and of low tension. He had no appetite, and he often vomited slimy mucus. The expectoration frequently contained blood. He passed a good quantity of urine, in which albumen and tube casts were present. He became greatly emaciated, and died of exhaustion at 8.30 a. m. February 13, 1903.

NECROPSY (6 hours after death).—Height, 167 cm.; two small bedsores over the sacrum; brain weighs 1,350 grams, and is apparently normal. There is 500 c. c. of bile-stained fluid in the abdominal cavity. Pericardium very much thickened; the sac is obliterated. Heart weighs 1,000 grams; length, 16 cm.; thickness, 10 cm.; width, 16 cm.; the ventricles are filled with dark clots; the leaflets of the aortic valve and the walls of the aorta are lined with calcareous plates; the aortic orifice will scarcely admit a finger; other valves normal. The left lung is bound down by numerous adhesions, which also extend between the lobes of the lung; tissue normal. The right pleural cavity contains 700 c. c. of fluid; the right pleura is thickened and the right lung is contracted. Spleen weighs 270 grams; color, dark brown. Tissue



cuts with considerable resistance. Left kidney weighs 310 grams; color, reddish brown; cortical portion thickened. Right kidney weighs 225 grams; tissue similar to the other kidney. Liver weighs 1,520 grams; tissue congested, showing the condition known as "nutmeg." It cuts hard to the knife. Stomach dilated; mucous membrane covered with thick reddish-brown mucus; pyloric orifice patent. Intestines normal.

W. G. S.

#### *Aortic.*

J. A. O.; age, 45; nativity, Sweden; admitted to United States Marine Hospital at Delaware Breakwater, Delaware, October 26, 1902; died October 28, 1902.

**HISTORY.**—White seaman, last voyage from Honolulu; uses tobacco and liquor, probably both to excess. Family history negative. Previous history negative, except for "chancres" which he had some time ago. Present illness first began about thirty days ago. His legs and feet began to swell; this gradually extended to his thighs. Suffered next from dyspnoea and took to his bunk. Finally his abdomen began to swell; had nausea and vomiting. Was transferred to hospital in this condition.

**PRESENT CONDITION.**—Large fleshy man, dorsal decubitus, urgent dyspnoea, oedema legs and thighs, color somewhat cyanotic with slight jaundice, anxious countenance. Pulse rather small and compressible. Tongue, clean. Examination lungs showed few râles over both sides; heart, percussion note over præcordium flat, but owing to patient's urgent dyspnoea little else determined. Abdomen, tympanitic with very slight dullness in flanks; liver, dullness in mammary line almost obliterated. Urine very scanty, dark red color, no sediment, acid, 1.012 specific gravity, a trace of albumen present. (Note: History and examination very unsatisfactory by reason of patient's serious condition.)

His treatment was begun with heart stimulants, saline purgatives, and milk diet. It was soon found that his stomach could not retain anything. Hypodermic medication with enemata was then resorted to. Patient rapidly grew worse, had distressing hiccup, became very restless, much cyanosed, mentally confused, and died about 2 a. m., October 28.

**NECROPSY** (10 hours after death).—*Externally:* Body of white male, about 6 feet in length, probably 200 pounds in weight; rigor mortis marked; cadaveric lividity over dependent parts, and particularly marked in neck of right side, extending up and involving right ear; bloody froth issuing from mouth and nose; two small healing ulcers on extensor surface left forearm, and one on inner side right thigh; pupils moderately dilated, sclerotics tinged a deep lemon yellow; legs and thighs much swollen, and pit on pressure; purplish spots over a considerable extent of anterior surfaces of both legs and dorsum of feet, probably result of an old eruption or old ulcers; external genitals show no evidence of venereal disease. Calvarium not removed. Abdomen: Considerable deposit of adipose tissue, muscles dark red on section; intestines (especially the large) much distended and protrude on section; about 800 to 1,000 c. c. clear, amber fluid in peritoneal cavity; peritoneum dull, opaque, over large intestines; elsewhere glistening; no adhesions. Spleen: Moderately enlarged, firm; incision clear, with moderate oozing of blood; pulp soft. Liver: Moderately contracted, light brownish color, firm; surface granular, more distinctly at external end of right lobe, where it is quite uneven; dry on incision and dark red, little oozing; apparently no marked fatty changes. Gall bladder moderately distended with dark bile, and intestinal coils in vicinity stained dark brown. Kidneys: Left slightly the larger, otherwise appearances the same; somewhat small, surrounded by considerable fat, surface smooth; capsules strip easily exposing a dark reddish, smooth surface, with stellate veinlets prominent; on section oozing of dark blood, tissue generally dark, cortex perhaps slightly lessened, pyramids dark purple in color. Pelvis clean and its mucous membrane normal in appearance. Bladder moderately distended with urine. Stomach and intestines: Stomach small; omentum has a considerable deposit of fat; no enlarged lymphatic glands found; large intestine much distended; on incision, stomach contains a small quantity of almost blackish fluid, mucous membrane very dark and soft, some mucus present, much congestion. Intestines almost empty, mucous membrane in same condition as that of stomach. Chest: Pericardium contains large quantity of clear amber fluid (heart almost covered); membrane clean and glistening. Heart enlarged generally, pale, considerable deposit of fat; right heart in diastole and cavities contain considerable dark fluid blood with some dark clots; left heart in systole and chambers empty except for a few small dark clots; muscular tissue flabby and pale on section everywhere. Valves: Left auricle-ventricular opening easily admits three fingers, valve leaflets freely movable and clear; right admits three fingers with



difficulty, valve leaflets same as left side; pulmonary valve competent with water, valve cusps normal; aortic incompetent by hydrostatic test, one cusp thickened and stiff and showing several calcareous vegetations, other cusps in same condition but process much less advanced; endocardium generally clear and apparently normal except for appearances noted. There was no particular enlargement of left side, but heart generally enlarged and soft. Lungs: Moderately pigmented, collapsed on section to some extent; moderate amount of fluid in both sides; congestion at bases behind; pieces floated when placed in water; crepitant throughout; moderate oozing on section of dark blood. Many soft adhesions (pleural) on left side between lobes of lung and also to chest wall. Anatomical diagnosis: General oedema including ascites, hydrothorax bilateral, hydropericardium; aortic regurgitation and fatty degeneration of heart muscles; passive congestion of liver, kidneys, and intestinal tract; pleurisy left side.

C. H. L.

*Aortic and mitral.*

S. W.; age, 43 years; nativity, Tennessee; admitted to United States Public Health and Marine Hospital, Memphis, Tenn., December 12, 1903; died January 16, 1903.

HISTORY.—Has had attacks of rheumatism several times during past four or five years. First noticed swelling of ankles eight months ago; cough has been troublesome ever since then. On admission to the hospital he complained of dyspnoea, especially troublesome at night; can only sleep in semirecumbent positions; dizziness and palpitation on slight exertion and precordial pain. On physical examination the apex beat was lowered and to the left corragan pulse was noted and murmurs indicating aortic and mitral insufficiency; slight swelling of the ankles was also noticed. Treatment consisted of rest in bed, digitalis, and strophanthus with heroin and morphia for dyspnoea and strychnia. Vomiting of blood occurred several times during the last week of his life, with four or five bloody stools on the day preceding death.

NECROPSY (18 hours after death).—Body well nourished; ankles oedematous; brain weight, 660 grams; veins congested, subarachnoid fluid increased (about 75 c. c.). Left lung: Weight, 820 grams; old pleuritic adhesions; partially hypostatic congestion. Right lung: Weight, 750 grams; adherent to the diaphragm. Heart: Weight, 580 grams; enlarged, fatty, and pale; aortic leaflets sclerotic; valve incompetent; mitral valve incompetent; cavities on left side enlarged and wall thinned. Liver: Weight, 1,750 grams; congested; gall bladder full. Mucous membrane of stomach and small intestines congested. Left kidney: Weight, 200 grams. Right kidney: Weight, 180 grams. Spleen: Weight, 180 grams; very dark and firm.

G. M. M.

*Aortic and mitral.*

M. T.; age, 54; born in Maryland; colored; entered hospital, Baltimore, Md., May 11, 1903; died July 20, 1903.

HISTORY.—Had been here several times with the same complaint the past four years. Case is plainly valvular disease of heart, mitral and aortic regurgitation, with loss of compensation, and consecutive incompetence of renal action.

The case followed the usual history of such cases; paracentesis of abdomen was done several times with temporary relief. He died from cardiac failure somewhat suddenly.

NECROPSY (4 hours after death).—Negro, gingerbread color, large—6 feet 1 inch in height; very muscular. Abdomen swollen; legs and feet oedematous, but not exceedingly so. On entering abdomen no peritoneal adhesions were found at seats of paracentesis. Bladder is somewhat distended. Intestines fairly full. Large intestines somewhat distended with gas. Small intestine not so distended. Liver comes down 4 cm. below edge of ribs. Thorax: Superficial veins are full of blood. Pericardium: Area of heart uncovered by lung enormously larger than normal—15 cm. in axis of body and 20 cm. in transverse direction; apex of heart presents about mid-axillary line; pericardium contains about 75 c. c. of serous fluid, clear. Left lung has one old pleuritic adhesion exceedingly tough; it is in front at lower extremity of lower lobe and is a band about 3 cm. long; this is long enough not to interfere with movements of lung. Right lung: Band of pleuritic adhesions near apex, tough and fibrous; several such bands; right lung shows adhesions to diaphragm old and firm, front and back of lowest part of lobe. Lungs are congested all over, and especially behind; no consolidation, however. On cutting vena cava, a large flow of dark blood took place, and 2,000 c. c. of this fluid was removed from the thoracic cavity. Heart very large, weighs 780 grams; aortic valve grossly incompetent; mitral also; by water



pressure; walls of heart very thick, measuring 2 cm.; mitral valve not diseased, but mitral orifice very much dilated, so that valves are incompetent; left ventricle distended and walls are thickened; right ventricle distended and walls are thin; both auricles are thin and cavities very much (left enormously) dilated; aorta immediately distal to aortic valves is atheromatous, with chalky concretions of large size; valves themselves are intact, but have the same concretions; their edges are rolled up. Abdomen: Gall bladder and transverse section of colon adherent by old and well-organized adhesions; upper part of kidney also adherent to liver by old adhesions; liver rather large and congested; nutmeg in appearance, dense and close; on section it is seen to be mottled—venous congestion—on the whole, hard and firm; gall bladder full of dark green bile. Liver weighs 2,460 grams. Spleen: Blue-slate color, firm, and on section shows normal consistency. Weighs 250 grams. Stomach empty. Not much fluid in abdominal cavity. Kidney on right side not bound to back, but is closely attached to lower border of liver, coming out with it. Suprarenal bodies smaller than normal. Right kidney large, weighs 240 grams; capsule not adherent; cortex red; passive congestion; pyramids well marked. Left kidney in normal position; large; capsule not adherent; passive congestion; cortex well marked and also pyramids; weighs 280 grams. Appendix in normal position; 7.5 cm. long; meso-appendix is very short and binds appendix down; the ends are clubbed; small, hard substance (enterolith) in it. Bladder distended; walls are abnormally thick; contents, ordinary, amber-colored urine. Sigmoid flexure contracted and empty. No other organs examined.

H. R. C.

*Mitral.*

C. J.; age, 42 years; colored; nativity, Mauritius; admitted to the United States Marine Hospital, San Francisco, Cal., November 25, 1902; died January 2, 1903.

HISTORY.—The patient stated that he had suffered from dyspnea for the past six months and that he had been expectorating blood for the last four days. He had also had severe pain over his heart and in the small of his back. He has no appetite, and during the night he feels cold and urinates frequently. The examination shows that the cardiac dullness is increased and a loud systolic murmur is present at the apex. This murmur is transmitted toward the axilla. The pulmonary second sound is accentuated; the pulse is 85 to the minute, full and compressible. There is dullness over both lungs and numerous mucous rales are heard upon auscultation. Temperature, 38.6° C; respiration, 30; breath, very fetid. The patient's condition improved for the first few weeks under the influence of heart tonics and stimulants. His lower extremities then became much swollen, but during Christmas week this swelling subsided and he was apparently doing well when on the morning of January 2, 1903, he died suddenly at 8.45 o'clock.

NECROPSY (6 hours after death).—Height, 169 cm.; body well nourished; post-mortem rigidity not well marked; serum escapes from the tissues upon section; thickness of abdominal wall, 3 cm.; it contains considerable fat. There is a small amount of serum in the abdominal cavity. The great omentum and the ascending colon are bound down to the abdominal wall posteriorly by strong adhesions. Brain: Weight, 1,360 grams; measurements, 17 by 15 by 4 cm.; tissue normal. The anterior mediastinum contains a quantity of fat. There is about 100 c. c. of straw-colored fluid in the pericardial sac. Heart: Weight, 700 grams; measurements, 14 by 13 by 9 cm.; thickness wall of right ventricle, 1 cm.; valves of right side normal; thickness of wall of left ventricle, 2½ cm.; the leaflets of the mitral valve are hard, roughened, gritty to the touch, and the left leaflet is bound down flat to the wall of the ventricle; aortic valve, normal. Right lung: Weight, 387 grams; measurements, 21 by 20 by 8 cm.; tissue, crepitant throughout; color on section, grayish brown. Left lung: Weight, 335 grams; measurements, 17 by 11 by 6 cm.; the base of the lung is adherent to the diaphragm for about 5 cm.; a small adhesion, 1 cm. in width, exists between the lobes of this lung; tissue, crepitant throughout; color, grayish brown; no tubercles in either lung. Spleen: Weight, 227 grams; measurements, 15 by 10 by 4 cm.; tissue cuts hard and the trabeculae are large and prominent; color of tissue, dark brown. Left kidney: Weight, 120 grams; measurements, 9 by 6 by 3 cm.; capsule strips easily; thickness of cortical portion, 5 cm.; color, red with fine white markings; there is a large quantity of connective tissue around the heads of the pyramids. Right kidney: Weight, 167 gm.; measurements, 12 by 7 by 3 cm.; tissue cuts hard; color and other characteristics similar to other kidney. Stomach measurements, 33 by 14 cm.; contents, partially digested gruel; color of mucous membrane, grayish red. Intestines normal. Liver: Weight, 2,115 grams; measurements, 28 by 17 by 10 cm.; tissue cuts hard; color, brown with white markings.

W. G. S.



J. B. C.; age, 33; nativity, Massachusetts; admitted to the United States Marine Hospital, Boston, Mass., November 28, 1902; died January 18, 1903.

PREVIOUS HISTORY.—Was treated in this hospital for heart disease only a short time before this admission.

PRESENT HISTORY.—Eleven days after his discharge patient was again admitted, suffering severely with all the signs of broken compensation of heart valves. Treatment was at once begun, digitalis being employed and being alternated with strophanthus. During his sickness he suffered from dyspnoea and oedema of the extremities. He died on the 18th of January, 1903.

NECROPSY (5 hours after death).—Rigor mortis moderate; anasarca marked. The amount of fluid in the pleural cavities could not be determined. The pericardium was adherent to the heart muscle. About 100 c. c. of a clear, light, straw-colored fluid was sponged from the peritoneal cavity. The right lung was strongly adherent to the parietal pleura. The left lung was partially adherent. The former weighed 780 grams, the latter 520 grams; hypostatic congestion was marked in the lower lobes of both lungs; the upper lobes were involved to a less extent; the lungs were otherwise normal. The post mediastinal glands were enlarged. The liver was a beautiful example of nutmeg liver of long standing. It weighed 1,250 grams. The spleen weighed 130 grams; the pancreas 90 grams. Both organs were apparently normal. The oesophagus, stomach, duodenum, and intestines were normal. The brain was normal.

HEART.—The mitral, aortic, tricuspid, and pulmonary valves were covered with deposits. The mitral valve admitted four fingers.

F. A. A.  
W. C. R.  
R. M. W.

#### *Mitral.*

T. R.; aged 44; born in Michigan; was admitted to the United States Marine Hospital, Chicago, Ill., September 15, and died September 19, 1902.

HISTORY.—Patient had been drinking heavily previous to admission. Had been addicted to free use of tobacco and alcohol; was admitted to this hospital in April and July of present year for treatment for mitral incompetency. During later period of treatment patient had two attacks of right-sided hemiplegia with motor aphasia, but without loss of consciousness. First attack was very transitory, all symptoms abating within fifteen minutes; second attack followed within an hour; severe symptoms were brief, but slight degree of paralysis of leg muscles remained until his death, and his mental faculties were noticeably enfeebled. On last admission had following symptoms: Face florid and oedematous; ears, hands, and feet cyanotic; ankles, edematous; dyspnoic (orthopnoea); heart sounds and pulse very feeble (imperceptible at wrist); respirations rapid and shallow; temperature, 36.2; systolic sound at apex replaced by loud blowing murmur; heart dilated; mucous rales throughout both lungs; urin very slight in quantity, contained excessive amount of albumin (about 10 per cent), granular hyaline casts, red blood corpuscles, and epithelial cells. Patient's stomach was intolerant of food or drink, vomiting immediately on ingestion of either, rendering rectal feeding and hypodermatic medication necessary. Almost complete anuria supervened and patient grew gradually worse until the end, despite continuous stimulation.

NECROPSY (9 hours after death).—Body is well nourished; height, 1.7 m., weight about 75 kilos. The face is florid, and the ears are slightly cyanotic; ankles oedematous; anterior aspect of body is pale, the posterior slightly livid. On section the skin of the trunk and lower limbs is seen to be oedematous, and there is a free oozing of dark fluid blood from the several blood vessels. The abdomen is only slightly distended. The omentum is translucent and contains little fat. The stomach is slightly dilated, and its mucous membrane is moderately congested; it contains about 500 c. c. of milky fluid. The pylorus is hypertrophied, of a cartilaginous hardness, but admits a finger. The jejunum and ileum are slightly congested and their coils distended. The appendix, 4 inches in length, is normal, lies free, has a mesentery half its own length, and points southward; it lies posterior to the caecum. The bladder is contracted and empty. The liver weighs 1,600 grams; its edges are sharp and its consistency is firm; the capsule strips off easily, exposing a yellow granular surface; on section this mottled yellow appearance is noted throughout the liver as if infiltrated with fat. The gall bladder is without adhesions, and contains about 20 c. c. of tarry bile, but no calculi. The common bile duct is previous. The spleen weighs 100 grams, and is slaty blue in color externally; on section it is dark red and friable. The kidneys are firm and grayish red in color; capsules strip off readily. Pyramids are easily differentiated from cortex. Right kidney weighs 160 grams;



left kidney, 150 grams. The pancreas is light gray in color, flattened, and weighs 50 grams. Chest: On removing the sternum, the striking features are the immense pericardial sac not covered by lung and the marked retraction of the lungs from the median line; unfortunately, in removing the sternum, the pericardium was cut and the fluid in the pericardium escaped. The heart is very flabby, and on removal collapsed like a placenta. Its weight is 500 grams, and its dimensions are 10 cm. transversely, and 12 cm. from apex to base. Both ventricles and left auricle are dilated. A small ante-mortem clot is present in right ventricle and a post-mortem clot weighing 5 grams in left ventricle. The mitral valves are thickened, opaque, and shrunken, the mitral orifice readily admitting two fingers. The tricuspid valves are unaltered. The aortic valves are competent. The aorta is smooth, no atheroma or ulceration being present. Lungs: The right lung weighs 830 grams, the left, 650 grams. The pleural cavities are obliterated by universal firm adhesions, separated only by force. The lungs are of a slaty-grayish color externally. On section they are oedematous and anthracotic; passive congestion is present. No tubercular foci, recent or old, can be found. The skull is fairly thick. The dura is thickened and adherent to vault. The pia is not injected. The brain is white, glistening, and oedematous. No pathological conditions can be found, despite a diligent search.

W. A. K.

L. P. H. B.

#### *Mitral.*

G. T.; age, 62; admitted to United States Marine Hospital, Baltimore, Md., December 29, 1902; died January 17, 1903.

**HISTORY.**—Has had rheumatism and epileptic fits for four years. Has lumbago and shortness of breath, the latter for some time. Passes his water three or four times during the day, the same at night. Feels "tight" about the sides and chest. Examination shows valvular disease of heart, mitral.

**TREATMENT.**—Heart tonics, strychnia sulphate, 0.003 gram t. i. d., before meals; spts. frumenti, 25 c. c. twice daily.

*January 1.*—Had temperature of 38° last night, believed to be due to malaria and quinine sulphate; 0.60 gram t. i. d. ordered.

*January 4.*—Temperature normal and quinine discontinued.

*January 8.*—Has difficulty in raising mucus from bronchi. Guaiacol carbonate, 0.18 gram t. i. d. in capsule ordered for this condition.

*January 15.*—Temperature suddenly went up to 39.9; pulse, 112; respiration, 42. Stimulants were increased.

*January 16.*—Notice there is a slight swelling about angle of right jaw, with tenderness over same area and extending down to clavicular region.

*January 17.*—There is extensive swelling and induration on right side of neck and face extending from upper margin of ear to below clavicle, and from in front of ear half way to median line back of neck. This swelling is hard and brawny to the touch.

Hot applications of one-half per cent solution of carbolic acid applied every three hours. Stimulants administered freely. Died at 8.30 p. m.

Culture taken from heart, liver, spleen, and omentum, negative. Culture from parotid gland showed pure streptococci infection. The most probable way of entrance was through the tonsils, though no sore throat was complained of at any time.

**NECROPSY** (15 hours after death).—Male, colored, medium height, good condition. Post-mortem rigidity not marked; has on right side of neck a large, hard, brawny, indurated swelling, extending from about 2 inches in front of angle of lower jaw to near median line behind; from clavicle and base of neck below to near upper border of ear above. Median incision: Subcutaneous adipose tissue abundant over thorax and abdomen. There is considerable oedema of connective tissue noticed about mid line of base of neck, and induration and thickening of tissue noticed over right clavicle, extending from median line outward toward point of shoulder. Pectoral muscles partly degenerated. Thorax contains a small amount of blood-tinged fluid. Left lung: Small, dark adhesions on anterior surface of upper lobe to costal pleura; whitish nodular elevations of lung about the same size on right; crepitation less deficient than right; costal pleura has organized areas of exudate; section of lung same as right. Right lung: Dark and small, slight, soft adhesions posteriorly; surface studded with granular, white, irregular bodies, the size of turnip seed; on anterior surface of lower lobe there is a small area (size of dollar) of granules (confluent); crepitation deficient in upper and lower lobes except at anterior margins; section shows infiltration of sanguineous fluid; right pleura shows whitish areas of organized exudate and whitish, tubercular-looking bodies irregularly dotted about. Pericardial sac contains small amount of clear fluid; the pericardial surface is smooth, white,



and glistening. Heart: Weight, 368 grams; small, paler than normal, and excess of adipose tissue on surface; tricuspid valves normal; endocardium normal; muscles of right ventricle much darker and more friable than normal, in fact, are very soft and easily broken down, showing incipient fatty degeneration; muscles of walls of left ventricle dark and thickened, soft and friable; mitral valve thickened, especially on margin and posteriorly; thickened areas are hard in character; aortic valves normal; calcareous deposits are noticed on the endothelial lining of aorta, and are removable by scraping with end of knife; anterior cardiac artery contracted and stenosed; posterior cardiac artery much enlarged; walls thickened and hardened. Abdomen: Omentum small and contracted; small amount of adipose tissue present; intestines distended, otherwise normal. Spleen: Weight, 155 grams; small; anterior surface is thickly dotted with small, white elevations, which appear rough to edge of knife and are detached with difficulty; section shows little blood, tissue soft and breaks down on slight pressure; capsule is loose and strips off easily. Right kidney: Weight, 185 grams; large; large superficial urinary cyst on anterior surface, pale, and capsule easily detached. Left kidney: Weight, 240 grams; large; numerous small urinary cysts show on surface; capsule detached less easily than right kidney; section shows acute congestion of cortex and medullary portion. Liver: Weight, 2,050 grams; large and congested; section shows presence of small amount of blood; tissues are soft, broken down easily on pressure; capsule is easily detached.

J. A. N.  
H. R. C.

#### *Mitral.*

T. H.; male; negro; age, 24 years; nativity, North Carolina; admitted to the United States Marine Hospital, Wilmington, N. C., April 3, 1903, having been transferred from Newbern, N. C.; died 3 p. m. April 20, 1903.

HISTORY.—About one month prior to admission, while handling heavy freight, patient stated that he felt suddenly ill as if overcome by exertion, and noticed an unusual amount of throbbing above the clavicle on the right side of neck. On the following morning he was spitting blood, and some three weeks later begun to have hemorrhages of bright blood.

Physical examination revealed pulmonary congestion, with diffused moist râles, and accelerated breathing. Heart hypertrophied. Marked bruit over semilunar valves. Irregularity of pulse and loss of synchronism. Urine heavily albuminous. Was suffering a great deal from cardiac asthma and general dropsy. Treatment was mainly diuretics and cardiac stimulants. He grew progressively worse and died on April 20, at 3 o'clock p. m.

NECROPSY (24 hours post-mortem).—Small-sized man, showing marked signs of anasarca and ascites. Considerable fluid, both blood and serum, escaped when chest was opened. Pericardial sac was filled with serous fluid tinged with blood. The heart was greatly hypertrophied and contained ante and post mortem clots. The semilunar valves were incompetent, but seemed to be healthy, except for two small vegetations. Mitral was diseased past function. Heart weighed 470 grams. Right lung weighed only 520 grams, contained two large hemorrhagic infarcts, but was otherwise healthy. Left lung normal, except in size; weighed only 380 grams; liver was adherent to diaphragm, being greatly enlarged, weighing 1,780 grams, was dark in color, hard and resistant to touch, and distinctly hyperæmic; spleen dark, hard, and shrunken; weighed 140 grams; left kidney weighed 230 grams, right 140 grams; capsules not adherent; naked eye appearances normal; right kidney had three sulci from 1 to 2 cm. in depth; other organs normal.

J. G.

#### *Fatty degeneration of myocardium, with hypertrophy and dilatation.*

D. K.; white; age, 77 years; nativity, Pennsylvania; admitted to the United States Marine Hospital, port of Cincinnati, Ohio, April 12, 1892, and died April 5, 1903.

HISTORY.—Patient admitted for fracture of left femur, intracapsular, which terminated in fibrous union allowing a fair use of injured extremity. Readmitted June 13, 1896, complaining of rheumatism, also suffering with a chronic bronchitis. Patient was given tonics containing ferri, quin. et stryn. phos., also given the salicylate of sodium. His condition slowly improved, being able to move about with little difficulty, and enjoying a fair degree of health until February 12, 1903, when patient had an attack of influenza. During this attack, weakness of cardiac muscle developed. Patient complained of shortness of breath, and pain in precordial area. The pulse was weak, compressible, and irregular in rhythm. On auscultation over the heart no murmurs were found, but the first and second sounds were very much alike, and foetal in character. After the administration of whisky and strychnine



sulphate 0.001 gram three times a day for several weeks, patient's condition improved and he was able to move around as usual.

*April 4, 1903.*—Patient again complained of dyspnoea, distress, and pain over the sternum. On examination, his pulse was rapid, arrhythmic, small volume, poorly sustained, and no perceptible thickening of the radials. Heart area was not defined because of corpulence of the patient, but impulse was marked over epigastrium. On auscultation there were no friction sounds or murmurs but a gallop rhythm, suggesting a reduplication of the first and second sounds. 15 c. c. whisky and 0.0022 strychnine sulphate were administered at once. At 6 p. m. ward call his condition had somewhat improved, dyspnoea was less, and patient was feeling better; the whisky and strychnine sulphate were repeated at 7 p. m.

*April 5.*—Without other warning death occurred at 6 a. m. this morning.

NECROPSY (10 hours after death).—Well-developed white man, gray hair, pale skin, marked corpulency; no hemorrhages or pigmentation observed; slight mottling of skin of dependent portions of the body; the penis was rudimentary and both testicles were greatly atrophied. Post-mortem rigidity is present, more marked in neck and upper extremities; panniculus adiposus was 2 inches thick and of deep yellow color; the eyes were closed and there was no exudation from mouth or nose. On opening the abdomen the peritoneum was found to be smooth, and no exudate of serum was present; omentum was moderately long and contained great abundance of adipose tissue. On opening the thorax the anterior lip of either lung was seen; the pericardium is surrounded by a thick layer of adipose tissue. The right lung was only partially collapsed. The pleura was smooth and everywhere nonadherent. The left lung was collapsed, the anterior lip of lower lobe was retracted and atrophied. The pleura was smooth and not adherent except near the apex posteriorly where a few tough slender fibrous adhesions were present. The lung tissue was normal in both lungs on section, and everywhere crepitant. The pericardial sac contained 100 c. c. of cloudy straw-colored fluid containing numerous flocculi. The serous lining of the sac was everywhere mottled and contained numerous hemorrhagic points throughout. The epicardium contained thickened opaque areas (the evidence of old inflammation), was covered here and there with fresh fibrous exudate, and presented the same hemorrhagic appearance as the lining of the sac. The heart was surrounded by adipose tissue, particularly in the auriculo ventricular septum. The muscle was flabby and the heart had apparently stopped in diastole. The right auricle and ventricle were dilated and contained a moderate amount of semi-clotted blood. The tricuspid orifice readily admitted 3 large fingers. The left side of the heart was practically empty and the mitral orifice readily admitted 2 fingers. The right ventricular wall was about 1 centimeter in thickness, and the left ventricular wall was about 2 centimeters in thickness. The total weight was 510 grams. The sinuses of the aorta were smooth, with the exception of a few small atheromatous patches, and both the aortic and pulmonary valves were competent by the water test. The endocardium was smooth in the right heart, but thickened at the base of the valve; in the left heart it was also smooth and apparently normal. The heart muscle cut easily, was flabby, and of a brown faded leaf appearance. The spleen weighed 205 grams; was very friable; the capsule was dark and smooth, with the exception of opaque patches here and there; on section the splenic tissue was soft, dark in color, contained considerable blood, and the trabeculae stood out plainly. The left kidney weighed 190 grams, the surface was mottled, the capsule stripped with difficulty, and the stellate veins were prominent; on section the cortex was thickened; the pelvis was roomy and contained some adipose tissue. The right kidney weighed 192 grams, the capsule was adherent, the stellate veins were prominent, and the surface was pale; on section the cortex was thickened, the tissue was pale, the pyramids were dark in color and congested, and the pelvis was roomy and contained fat. The liver weighed 1,500 grams, and was torn readily on removal; the surface was pale, mottled in appearance, hemorrhagic in places; the tissue cut very freely, and on section was yellowish-brown or "nutmeg" in appearance. The intestines presented a normal appearance, other than slight congestion throughout the ileum.

#### INFLAMMATION OF CONNECTIVE TISSUE, THORAX, LEFT.

L. A.; age, 34; white; nativity, Ohio; admitted to the United States Marine Hospital at Cincinnati, Ohio, April 29, 1903, and died May 4, 1903.

His family history is unimportant, his mother having died of enteric fever and all the other members are living and well. He gave a history of having had the usual diseases of childhood, also malaria eight years ago. He denied venereal disease and drug habits, but used tobacco and alcohol in moderation. The patient on entry com-



plained of headache, pain in the region of the left axilla, general malaise, great thirst, and obstinate constipation. His illness, of two days' duration, began with a severe chill, followed by fever and sweating. During this time he also had nausea and vomiting. Physical examination on admission showed a well-developed, well-nourished man suffering with a severe infection. Pulse, 100; temperature, 39.4 C.; respiration, 23 per minute. There was no enlargement of the lymphatics, but tenderness and slight induration was present in the left axilla on deep pressure. This area was somewhat flushed. No tenderness was present over the long bones. The skin was free from scars or hemorrhages, except an abraded surface over the carpo-phalangeal articulation of the index finger half the size of a dime, which was angry and contained a slight amount of sero-purulent fluid. No areas of lymphangitis were noticed except the flushed area in the left axilla. The face was flushed, covered with perspiration, and the expression was one of anxiety. The lips were dry and parched, the tongue was dry and covered with fur. The thorax was symmetrical, respiration was somewhat limited on the left side, and there was frequent cough attended with slight expectoration. A few subcrepitant râles were noticed in the left axillary region, otherwise the lungs presented nothing abnormal. Heart was normal. The abdomen presented no abnormalities. Calomel and soda, and an initial dose of quinine sulphate were administered.

*April 30.*—The patient rested badly during the night. The morning temperature was 39.6° C., pulse 94, and of fair volume. Pain in the left axilla was severe on movement or pressure, and there was some slight swelling and a yellowish red discoloration.

*May 1.*—Condition was unimproved; morning temperature 40° C., and axillary swelling was somewhat larger. An antiphlogistine preparation was applied throughout the day.

*May 2.*—Condition remained unchanged, except increased weakness. The thorax was now asymmetrical owing to a swollen area extending from the left axilla downward along the anterior border of the latissimus dorsi muscle. This area was hot, indurated, and of a yellowish red color. Moist bichloride packs were applied.

*May 3.*—The general condition was much worse. He had marked delirium, and restraint was necessary. The swelling extended downward as far as the iliac crest. Morphine sulphate was given hypodermically; he was then anesthetized, and a free incision was made over the middle of the swelling down to the ribs. Slight hemorrhage and oozing of dark serum followed, but no pus was present. The wound was lightly packed with moist bichloride gauze, and a similar dressing was applied over the entire left side of the thorax.

*May 4.*—General condition very grave. Temperature 39.6° C.; pulse 120, arrhythmic, and poorly sustained. A low muttering delirium was present, the facial expression was vacant and he did not recognize his surroundings. Urine was passed involuntarily. The wound was dressed and found to be clean. Stimulants and forced feeding were given throughout the day. He never entirely regained consciousness, sank rapidly, and died at 8 p. m.

**NECROPSY** (18 hours after death).—The body is that of a well-developed male, age, 34; not emaciated. The skin is somewhat mottled, free from scars and hemorrhages. Over the carpo-phalangeal articulation of the left index finger there is a small ulcerated area containing a slight amount of dark serous fluid. A clean operation wound, 2 inches long, is present beneath the left axilla. The entire left thorax is increased in size, the skin presents a yellowish red discoloration in this region. The eyes are partially closed, the lips are fissured and covered with sordes. The thorax is asymmetrical, owing to the swelling over the left side. The abdomen is markedly tympanitic. Panniculus adiposus moderate in amount. The subcutaneous tissues over the left thorax are markedly infiltrated with the products of inflammation. The deep lymph glands of the axilla are enlarged and partially broken down. The surrounding tissues are filled with a thick sero-purulent exudate. The infiltrated area extends from the axilla to the crest of the ilium below, anteriorly as far as the linea mammillaris and posteriorly to the scapular line. The abdominal cavity is free from fluid, the peritoneum is everywhere smooth, the appendix is normal, and the intestines are distended with gas. In the lower ileum there is an area of deep injection. On removing the sternum the pericardium presents. The lungs are collapsed. The pericardial sac contains 30 c. c. of clear straw colored fluid. The epicardium is everywhere smooth and glistening. The heart is surrounded with a moderate amount of fat. The heart muscle is contracted and firm; the total weight is 345 grams. The right auricle and ventricle each contains "chicken fat" clots, the cavities are not dilated, and the tricuspid orifice admits the tips of three fingers. The left auricle and ventricle each contains a small amount of dark blood clots, the cavities are not dilated, and the mitral valve is normal in size. The endocardium is



everywhere smooth and somewhat reddened at the mitral orifice. The right pleural cavity contains a small amount of bloody serum, the pleura is smooth and everywhere free from adhesions. The right lung is collapsed and everywhere crepitant. The left pleural cavity contains 50 c. c. of blood-tinged fluid, the parietal pleura is deeply congested and infiltrated with blood. The left lung is collapsed, crepitant, and on section exudes a small amount of bloody serum. The spleen weighs 400 grams, the capsule is opaque, inferior surface is of a dark bluish color. The cut surface is of a bright red color, the tissues are congested, soft and pulpy. The left kidney weighs 195 grams. The capsule strips readily. The stellate veins are very prominent. The cut surface is dark and deeply congested. The right kidney weighs 175 grams and presents the same appearance as the left kidney. The liver weighs 2,530 grams. The surface is mottled and of a yellowish red color. The cut section is yellowish brown, filled with blood and quite soft. The bladder is empty and presents nothing abnormal.

J. W. K.

#### DIABETES MELLITUS.

J. T.; age, 39; white; nativity, France; admitted to the United States Marine Hospital, San Francisco, Cal., July 10, 1902, and died October 2, 1902, at 3.50 p. m.

**HISTORY.**—April 15, 1902, he was admitted to the United States Marine Hospital, San Francisco, Cal., and remained until June 13, 1902. During that time his condition was as follows: He complained of frequent urination, headache, diminished vision, dark spots before the eyes, abnormal increase of appetite, and great thirst. Upon examination his skin was found to be dry and scaly, and he was poorly nourished. His heart and lungs were normal, and his stomach was somewhat dilated. He passed 4,520 c. c. of urine in the first twenty-four hours he was in the hospital. It contained 8.55 per cent. of sugar.

*April 28, 1902.*—He passed 7,200 c. c. of urine in twenty-four hours, percentage of sugar being somewhat diminished.

*May 17, 1902.*—He was much improved, but appetite still continued voracious.

*June 6, 1902.*—He was very greatly improved and the quantity of sugar passed was much decreased.

*June 13, 1902.*—He was discharged improved, at his own request.

*July 10, 1902.*—He was readmitted to the hospital, his condition was the same as above, but he complained of pain in his legs at night. During the time he was in the hospital the percentage of sugar and the quantity of urine eliminated was variable, as is best shown by the accompanying chart.

He gradually improved until August 28, 1902, when he left the hospital on pass. While out he engaged in a drunken brawl and returned with an incised wound on the left side of the forehead. The wound had been dressed and its edges coapted with silk sutures by a local dispensary. The wound was very obstinate to treatment and considerable surrounding tissue sloughed. One month after the occurrence of the injury, union began to take place, and by September 25, 1902, was complete.

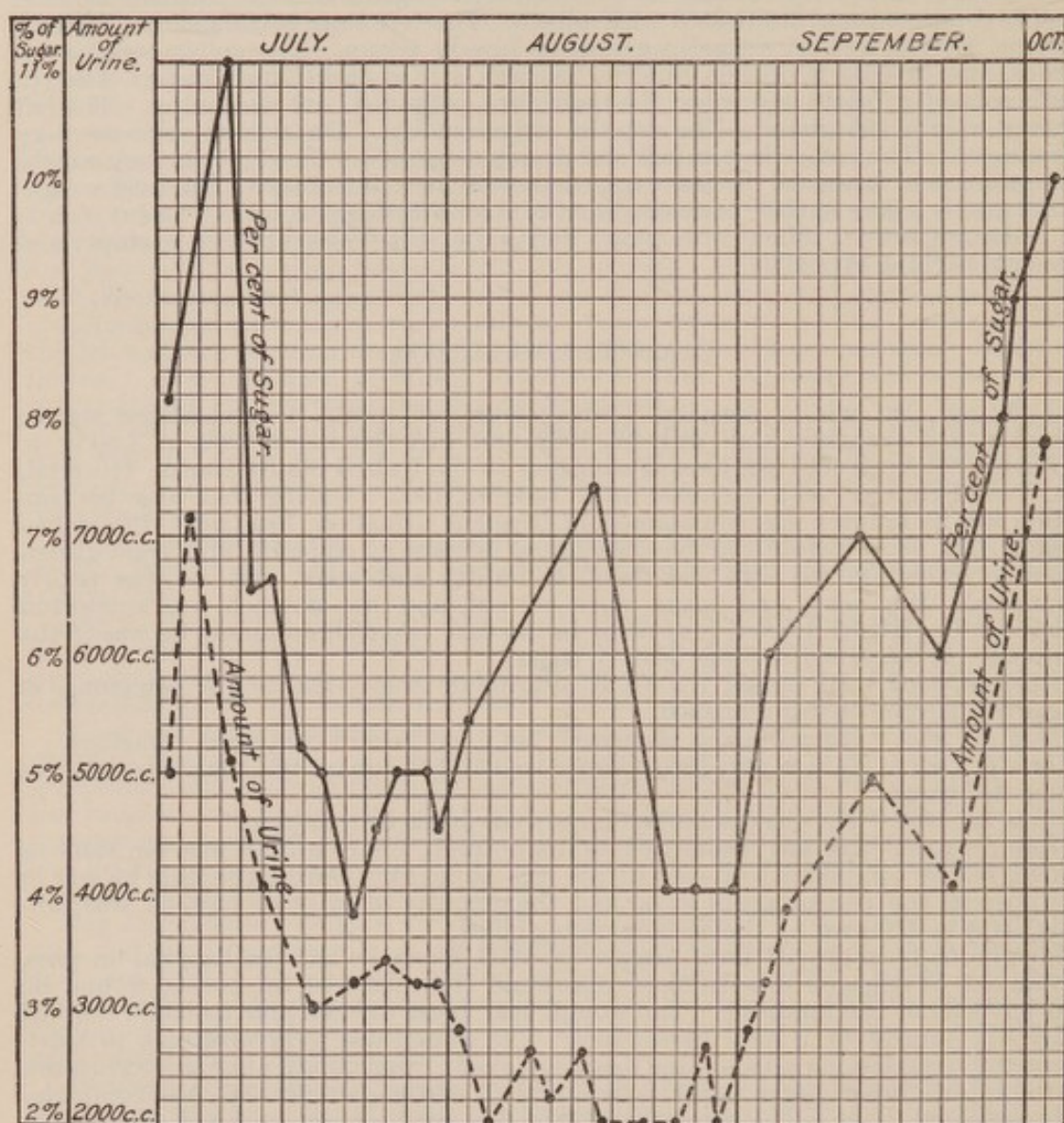
*September 28, 1902.*—The patient complained of pain, on pressure and movement, in the right triceps muscle. Redness and fluctuation were absent. The following day the pain and tenderness increased and the entire limb was swollen and oedematous.

*October 1, 1902.*—The above condition was exaggerated, and at 3 p. m. the patient rapidly passed into a semiconscious condition, and at 5 p. m. became delirious. At 7 p. m. he was slightly quieter, but very weak. At 9 p. m. he was very restless and delirious and was kept in bed with difficulty. His breath had a sweetish, fruit-like odor. The next morning the coma had increased, the abdomen was tympanitic, and the hands and feet were cyanotic and the limbs cold to the knee and elbow. At 3.50 p. m. he died very quietly.

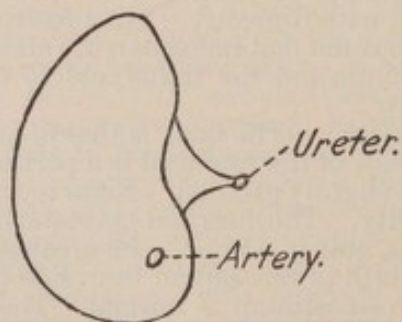
**NECROPSY** (18 hours after death).—The body is that of an emaciated man about 40 years of age. Upon the left side of the forehead is a partially healed wound 7 cm. in length. Beard and mustache slightly grizzled. Rigor mortis well marked, and there is the usual post-mortem lividity. The dura and pia mater show venous engorgement. The brain weighs 1,430 grams, and is normal. Its greatest length is 20 cm.; width, 12.5 cm.; thickness, 8 cm.; width of cerebellum from side to side, 11 cm.; antero-posterior, 6 cm. The anterior mediastinum is normal. The position of the thoracic contents is normal. The pericardium is slightly injected and contains the usual amount of fluid. The heart weighs 450 grams, and measures 10 by 9 by 3 cm., and is normal. The right lung is slightly adherent posteriorly, weighs 480 grams, and measures 14 by 13 by 6 cm.; the left lung weighs 480 grams and is 20 by 14 by 6.5 cm.; both are normal. The abdominal wall is 5 cm. thick. The intestines are of a



grayish color and filled with gas. The position of the abdominal contents is normal. The great omentum contains very little fat. The vermiform appendix is long and bound down to the head of the cæcum by firm adhesions. The liver measures 29



by 19 by 5 cm., weighs 2,007 grams, and is normal. The stomach was slightly dilated, length 21 cm.; its greatest diameter 11 cm.; coats are somewhat thinned and it contains a quantity of mucus. The spleen weighs 190 grams, and measures 9 by 6.5 by 1.5 cm. The pancreas is normal. The left kidney measures 13 by 7 by 3



cm., weighs 370 grams, and drips blood freely on section. The capsule is adherent. The renal artery does not enter at the hilum, but passes through the tissue on the posterior surface of the kidney and 1 cm. below the hilum.

There is marked increase of connective tissue, and the organ is very firm on sec-



tion. The right kidney weighs 260 grams, and measures 12 by 6.5 by 2.5 cm. Its capsule is not adherent, otherwise it is the same as the right. The supra renal capsules are normal. The bladder contains a small amount of turbid urine. Upon the posterior surface of the right arm is a brawny swelling and deep discoloration. Upon section of the skin there escapes a considerable quantity of serous fluid. On deeper section there is found, deeply situated in the triceps muscle, a phlegmon containing 100 c. c. of foul-smelling sanguinolent fluid.

W. C. R.

W. G. S.

## DISEASES OF THE KIDNEYS.

### *Pyonephrosis.*

D. H. F.; age, 54 years; nativity, New Jersey; admitted to marine ward, Hospital of St. Vincent of Paul, Norfolk, Va., June 1, 1903; died June 17, 1903.

HISTORY.—Family history, negative.

PERSONAL HISTORY.—Dengue, twenty years ago. Several attacks of intermittent fever. Gonorrhœa four times, followed by stricture, which was relieved by gradual dilatation nine years ago. Patient was in hospital in November last suffering from irregular fever and chills, and frequent micturition with dribbling of urine. This latter symptom has continued at intervals since leaving hospital, together with loss of weight and strength. For past three or four weeks he has had pains in knees and ankles.

PHYSICAL EXAMINATION.—Emaciated; skin sallow; tongue furred; no appetite; bowels loose. Heart and lungs, normal. Abdomen: Ill-defined tenderness in right lumbar region. Some tenderness of knees. Phimosis and hypospadias. Temperature, pulse, and respiration remained normal, except on June 2, temperature was 38.2 C.; on June 8 temperature 39.1 C.; pulse 90. Hiccough developed early and was a prominent symptom. Toward the end there was dyspnoea followed by coma.

NECROPSY (24 hours after death).—Height, 1.70 meters; skin sallow; rigor mortis marked, except slight in elbow joints; general nourishment, poor; pupils dilated. Heart (weight after opening), 300 grams; discolored firm clot in right auricle, extending into right ventricle and pulmonary artery; muscle substance was firm and normal in appearance; all valves competent; there was general arterio-sclerosis, especially of radial arteries, which were thickened, tortuous, and rigid. Nares, larynx, and trachea normal. Lungs: Left, weight, 840 grams; a few pleuritic adhesions of upper lobe anteriorly; small cavity (size of hazelnut) at apex, surrounded by cicatricial tissue, and numerous small miliary nodules; nodules apparently encapsulated. Right lung, weight, 900 grams; slight pleural adhesions laterally. Slight hypostatic congestion, otherwise normal. Peritoneum normal. Stomach: The mucous membrane was slightly reddened and swollen; pyloric and cardiac orifices normal; intestines and rectum normal. Liver shows slight congestion, otherwise normal; weight, 1,750 grams. Gall bladder and ducts normal. Pancreas normal; weight, 68 grams. Kidneys: Left, weight, 150 grams; capsule adherent and thickened. Kidney tissue contained numerous small abscesses, with atrophy of the cortex; ureter, normal size; right, 125 grams; there is marked dilatation of the pelvis and ureter, both of which are distended with purulent fluid; the kidney substance is atrophied, leaving but a shell of renal tissue. Bladder contains muco-purulent fluid; walls somewhat thickened and the organ slightly contracted; at the base folds of mucous membrane protrude. Urethra shows slight induration and thickening of the mucous membrane of the bulbo-membranous region, with very little contraction of urethral caliber. Prostate normal. Spleen, weight, 150 grams, normal. Other organs not examined.

J. B. S.

### *Granular kidney.*

J. F. W.; a male quadroon; age, 63; born in New York; was admitted to the United States Marine Hospital, Chicago, Ill., at 8 o'clock p. m., April 12, 1903, and died at 11.30 a. m., April 13, 1903.

HISTORY.—None was obtained from the patient because of his mental condition and great prostration. It was learned later that a physician had been treating him for enteric fever. Physical examination was negative. No œdema was present. Patient was somewhat dyspnoic. Toward morning he became unconscious, and, as he had voided no urine since his admission, he was catheterized at 8 a. m., and 775 c. c. of light straw-colored urine was obtained, which contained an abundance of albumen, but no



casts; its specific gravity was 1,010. Active stimulation was employed, but to no avail, and the patient died without recovering consciousness.

NECROPSY (9 hours after death).—Body well nourished; marked rigor mortis present; slight post-mortem lividity; no edema. A marked deformity of left hand was noted, viz, atrophy of thenar, hypothenar, and dorsal interossei muscles; there is also a linear palmar and dorsal scar between the fourth and fifth metacarpals extending to their bases, obviously the result of an incised wound which must have severed the ulnar nerve which innervates the groups of muscles designated above. The pericardial sac was normal and contained about 5 c. c. clear serum. Heart weighed 520 grams, the left ventricle was greatly hypertrophied (walls about 2 cm. thick), and somewhat dilated; the right ventricle was greatly dilated, walls thin and flabby; ante-mortem clots were present in all chambers of heart; the valves were apparently normal. Slight amount of clear fluid found in each pleura. Left lung weighed 1,050 grams; the right 1,070 grams. Very little hypostatic congestion present in dependent portions. Lungs very edematous throughout, presenting wet frothy surface upon section. No tubercle present. Liver weighed 1,650 grams, and presented no pathological features. Gall bladder was normal, contained about 10 c. c. of bile, but no calculi. The spleen weighed 130 grams; was dark blue in color with a mottling of reddish areas; its capsule was wrinkled; its structure unusually firm and resistant to section. The stomach and intestines appeared normal. The left kidney weighed 60 grams, was pale, granular, its capsule easily stripped off, and its surface was profusely studded with cysts, ranging in size from mere points to 1 cm. in diameter. On section these were found to contain urine. The cortex averaged about 3 mm. in thickness, but in the main could not be distinguished from the pyramidal portion, both being altered beyond recognition by a general sclerotic change and the formation of innumerable small cysts. The hilum contained considerable adipose tissue. The right kidney weighed 100 grams, was also pale, granular, its capsule not adherent, and similarly cystic. On section the cortex and pyramids were easily differentiated, but were very pale, and the cortex was about 5 mm. in thickness. Both kidneys were very firm and cut with difficulty. Bladder was contracted, and contained only a small amount of clear, straw-colored urine. Brain not examined.

L. P. H. B.  
C. E. B.

J. C., age, 49; nativity, Japan; admitted to the United States Marine Hospital, Boston, Mass., August 29, 1902, and died October 24, 1902.

FAMILY HISTORY.—Father and mother dead. Cause of death unknown.

PREVIOUS HISTORY.—Has had gonorrhea three times. About ten years ago was treated at the Newport, R. I., hospital for cerebral apoplexy. Patient denies having had syphilis. Formerly patient drank heavily, but of late has ceased. Had Bright's disease of kidneys since 1891.

PRESENT HISTORY.—Patient has considerable œdema of the limbs, and some of face. His skin is of a dusky hue. He has great dyspnoea. Patient was given 30 drops tincture of digitalis three times a day. His bowels were kept open with sulphate of magnesia, and patient kept in bed.

NECROPSY (6 hours and 40 minutes after death).—Rigor mortis present. Slight suggillations about the back and buttocks. The only distinguishing mark was that of an old dislocation of the elbow joint. The left plural cavity contained 200 c. c. of a turbid, amber-colored fluid. The right pleural cavity was empty. The pericardium contained 250 c. c. of a clear amber-colored fluid. There were no adhesions between the visceral and parietal layers of the serous coverings of the lungs or heart. The left lung weighed 750 grams and showed passive congestion which was more marked in the lower lobe. The right lung was œdematous throughout, bordering on hypostatic pneumonia. Its weight was the same as that of the left lung. The heart weighed 760 grams. The left ventricle contained both ante and post mortem clots. Its walls were hypotrophied. Both auricles contained a number of post-mortem clots. The mitral orifice was enlarged, admitting three fingers. The mitral valve was covered with calcareous deposits. The liver was in a state of fatty degeneration, weighing 1,230 grams. The connective tissue of the pancreas was increased; the organ weighed 130 grams. Both kidneys showed granular degeneration. The left kidney weighed 100 grams, its capsule stripping easily. The right kidney presented several small blebs on its superior surface. Its weight was the same as that of the left kidney. The spleen weighed 133 grams and was normal. The remaining organs and tissues were found to be normal.

W. K. W.  
R. M. W.



*Chronic nephritis—decapsulation of kidneys.*

W. K., white seaman; age, 43 years; a native of Ireland; entered the marine ward of the Buffalo Hospital of the Sisters of Charity on March 21, and died on the 14th of July, 1902.

**HISTORY.**—He states that he contracted syphilis some seventeen years ago, for which he has been frequently treated; other than this his personal history is negative, save that he has been addicted to use of alcohol. His family history is negative.

**PRESENT CONDITION.**—There is marked dyspnoea, puffed face, and swelling of the lower limbs. Heart: There is aortic insufficiency and a stenosis at the mitral orifice; the organ is enlarged, the apex beat at the right of the mamma; the action tumultuous, with increased blood pressure; urine has a specific gravity of 1,008, and is diminished in quantity; there are granular and hyaline casts, pus, and blood elements, albumen  $\frac{3.5}{100}$  per cent by volume; urea 10 grams per twenty-four hours. He states that the present attack followed a drinking bout, and was accompanied by headache and dizziness, with disturbances of vision. Diagnosis of chronic nephritis. Treatment to meet the symptoms, hot-air baths, wet and dry cupping, high cold enemata, and internal diuretics, stimulants, and milk diet. Under this regimen he commenced to improve, the quantity of urine voided increased from 200 to 750 c. c. per diem, the urea contents arose to 11.4 grams, and the general condition was much ameliorated.

*April 2.*—There occurred a relapse, the urine diminished to 240 c. c. and the urea to 6.4 grams per day, the dyspnoea and other symptoms reappeared, and slight ascites was observed.

*April 4.*—Under chloroform anesthesia, the right kidney was exposed by incision through the loin, brought into the wound and its capsule incised along the convex border, and detached from the organ over two-thirds of its surface; the organ was then attached by two tiers of chromicised catgut to the parietes in its old position.

*April 6.*—The improvement in his condition has been extraordinary; the urine has increased to 2,000 c. c., with the urea at 12.5 grams, and the specific gravity at 1,010; all symptoms are alleviated, and the amount of secretion is to him a matter of much amusement. All medication had been discontinued from the time of the operation.

*April 15.*—The improvement continues; urea output is 15 grams; the man is up and exercises with comfort; eats and sleeps well; there is still some dizziness, and the eyes are puffed.

*May 1.*—Urine voided in twenty-four hours 3,000 c. c., specific gravity 1,013, urea 18 grams. This was the best period of the case, and from this time there was a steady diminution in the volume, and in the amount of urea, until on June 7, there was an output of 6 grams in 300 c. c. of urine. Many of the symptoms have slowly reappeared, until he is now confined to the bed and suffers extremely.

*June 9.*—The left kidney was exposed, and its capsule peeled from two-thirds of its surface, the kidney then anchored in its normal position with catgut sutures. Chloroform anesthesia. He suffered considerably from shock, but hemorrhage from the denuded cortex was very slight, in marked contrast with that from the cortex of the right organ, which was very profuse for twenty-four hours. The kidney was found smaller and more sclerosed than the right, and there were several retention surface cysts.

*June 12.*—The improvement in his general condition is again marked. The urine measures 950 c. c., and the urea amounts to 12 grams.

*June 17.*—Urine 1,050 c. c., specific gravity 1,012, urea about 18 grams, his general condition is good, he is up and exercises, eats well, and sleeps fairly well. There are still some head symptoms, but there is no anasarca, and no ascites; the heart is still laboring.

*June 25.*—There is retrogression, the patient again confined to his bed, nausea and vomiting, dyspnoea and pulmonary stasis. Death ensued on July 14, 1902.

**NECROPSY** (10 hours post-mortem, and, by request, limited to the kidneys).—The right organ was found firmly bound in a mass of adhesions which formed for it practically a new capsule more closely adherent to the cortex than the capsule removed on April 14. Indeed, it was microscopically evident that the new tissue invaded the cortex, and that this highly functional portion of the organ had been seriously impaired through contraction of the adventitious tissue. There was no appearance of an increased blood supply to the kidney as claimed by Edebohls; on the contrary, it seemed highly improbable that any temporary vessels must have been obliterated as the capsular mass contracted. The left kidney also presented a mass of adhesions, binding it to the parietes. As in the right kidney, this new material formed practically a new capsule, but from its more recent formation was



more vascular, and had not compromised the cortex. The kidney was in the stage of contraction, small and hard. Comment in this case seems unnecessary; the utility of the operation of decapsulation is apparent, since from the condition when this procedure was undertaken it could only be a matter of temporary relief at best, and this was immediately afforded, the life of the individual having been prolonged thereby from April 14, to the time of his death, a not unimportant factor in its favor. As to the manner in which decapsulation influences the function of the kidneys, this case tends to show that it is the result more particularly of relief from capsular tension, since relapse in all symptoms began with the probable contraction of the fibroid tissue produced about the decapsulated portion of the organs. The improvement following the second decapsulation seems to support this view. Hemorrhage from the denuded right cortex was very profuse, and may have contributed to the great increase of urine following denudation, but this was not a factor in the second operation, in which also there followed a very decided increase of fluid and of urea. That the case was one unsuited for the application of the procedure, save as a dernier resort, owing to the complicating heart disease, is apparent; also the anatomic results from the procedure in this case would seem to discourage its application to indiscriminately chosen cases of chronic nephritis, which are still amenable to medication, while its application to cases of acute suppression of the urine from whatever cause must assure for it a permanent place in renal surgery.

E. W.

*Granular kidney.*

A. W.; age, 52; colored; nativity, Massachusetts; admitted to the United States Marine Hospital, San Francisco, Cal., February 17, 1903; died February 20, 1903.

HISTORY.—This patient has been an inmate of various marine hospitals for the past three years. He left this hospital December 22, 1902, in fair condition. He began to feel badly again about a week ago. Upon admittance his legs were oedematous and there was some ascites present. Mucous râles were heard over both lungs, and he had a bad cough. A systolic murmur was heard over the heart. He was dull and stupid and only answered questions when aroused. His urine was suppressed, but an examination made when he was last at the hospital showed a specific gravity of 1.010 and the presence of a large amount of albumen. Granular, hyaline, fatty, and epithelial casts were found with the microscope. His body was covered with dry crusts and scratch marks. Temperature, 37° C.; pulse, 72; respiration, 20. On the 18th the patient was worse. He was unable to retain anything on his stomach. His breathing was labored and stertorous, and his pulse weak and irregular. He became unconscious and frothy mucus constantly accumulated in his mouth. He lingered until the 20th and died at 8 a. m.

NECROPSY.—Body covered with fine discrete crusted eruption. Rigor mortis well marked. Subcutaneous fat present in moderate amount. Brain: Weight, 1,065 grams; the skullcap, brain case, the sinusses and vessels, and the brain and its membranes are negative. Thorax: The anterior mediastinum shows adhesions between the pericardium and the chest wall and the lower lobe of the left lung. The pericardial sac contains a large amount of dark serous fluid. The parietal pericardium is much thickened, and the visceral pericardium is covered with grayish exudate. Numerous bands of adhesion exist between the pericardium and the chest wall. Firm fibrous adhesions connect the left ventricle to the pericardial sac. The heart weighs 730 grams and measures 14 by 13 by 8 cm. Calcareous deposits are present at the openings of the coronary arteries. The mitral valve is much thickened and is slightly incompetent. The aortic valve is incompetent to the water test. The tricuspid and pulmonary valves are normal. The heart muscle is pale and very friable. A firm chicken-fat clot is present in the pulmonary artery. The left ventricle is 2½ cm. in thickness. A chicken-fat clot 17 cm. long taken from the innominate artery. Both pleural cavities contain a large amount of straw-colored fluid. The right lung weighs 527 grams and is oedematous in the lower and middle lobes. Crepitation is present throughout, though lessened in the two lower lobes. The left lung weighs 350 grams, presents adhesions between the lobes, and is somewhat oedematous below. The great vessels, nerve trunks, and diaphragm are normal. Abdomen: The omentum is somewhat retracted and contains a small amount of fat. The spleen weighs 82 grams and is of small size. The surface is very much wrinkled, and the color mottled. Section shows increased resistance and fibrous tissue. The right kidney weighs 95 grams. A small amount of perinephritic fat is present. The capsule strips with difficulty and leaves a rough granular surface. Cuts with increased resistance, and section shows a narrow cortex, with indistinct markings, pallor, and fibrous bands. In the pelvis is found a small concretion of the size of a grain of wheat. The left kidney



weighs 85 grams and is in a similar condition to that of the right organ, except for absence of concretions. The suprarenal capsules are normal. The urinary bladder contains a small amount of turbid urine. It exhibits a small cyst at the apex and considerable thickening of its walls. The organs of generation, rectum and duodenum, are normal. The gall ducts are patent. The liver weighs 1,700 grams and measures 23 by 15 by 6 cm. It is rather pale in color and shows several yellowish white areas. It cuts with increased resistance throughout and shows increase of connective tissue between the lobules. The stomach shows a normal condition of the internal surface, except for an increase of mucus. The pancreas, solar plexus, mesentery, small and large intestines, vermiform appendix, and the great vessels are normal. Anatomical diagnosis: Chronic pericarditis, with effusion; cardiac hypertrophy (left ventricle), mitral insufficiency, aortic insufficiency, atheroma of coronary arteries, pulmonary oedema, with pleural effusion; fibrosis of spleen, chronic interstitial nephritis, chronic cystitis, chronic hypertrophic cirrhosis of liver.

C. R.  
W. G. S.

*Granular kidney; uræmia.*

G. W. D.; age, 42 years; nativity, Missouri; was admitted to the United States Marine Hospital, port of St. Louis, Mo., June 14, and died July 14, 1902.

HISTORY.—On admission the patient was reticent and continued so during his stay in hospital. He sought relief from swelling of the feet and general weakness. His aspect was that of a profound kidney affection, and he seemed oppressed for breath and sluggish in movements. His skin had a decidedly jaundiced appearance. Temperature, 37.5° C.; pulse, 96; respiration, 28 per minute; both pulse and respiration were of fair quality. No cardiac or pulmonary lesion discovered. His urine for twenty-four hours amounted to 2,500 c. c., of 1.005 specific gravity; very pale in color, and showed albumin, some few tube casts, and blood corpuscles. Treatment consisted of digitalis, squills, and nux vomica, followed by iodide of potash. On June 19 an alarming unilateral epistaxis began, which could not be controlled by ergot or injection, and requiring Belloc's procedure to be repeated at intervals. Other treatment was abandoned until control of the hemorrhage was assured (July 1), and strychnine with bichloride of mercury, in small and frequent doses, substituted. July 10 mild delirium supervened, requiring constant watchfulness to prevent the patient running away. Died quietly at 4 a. m., July 14. Temperature not above 37.5° C.

NECROPSY (12 hours after death).—Body that of a white, adult male, muscular and fairly well nourished; skin jaundiced. Cadaveric odor pronounced. Rigor mortis absent. Post-mortem discoloration noticeable about the nose and cheeks. Abdomen somewhat distended, not tympanitic. On section the entire trunk was well lined with bright yellow fat, particularly in the mediastinum. Sternum unusually easy to cut, thin, and fragile. Right pleura obliterated by firm adhesion of lining to chest wall, left lung adherent posteriorly. Lungs: Left weighed 970 grams, right 1,100 grams; vessels somewhat atheromatous; otherwise normal. Heart: Pericardial sac fatty; heart somewhat enlarged, flabby, fatty; left ventricular wall hypertrophied; right wall somewhat thinner than normal; valves apparently normal; weight, 450 grams, no clots. Liver: Pale; weight, 1,750 grams; apparently normal. Gall bladder normal, moderately full of dark, fluid bile. Kidneys small, embedded in fat; weight, left 90 grams, right 100 grams; capsules strip readily and show a grayish, granular cortex somewhat contracted. Calices and infundibula apparently completely filled with fat. Right kidney exudes bloody serum on section and shows small abscess cavity. Pancreas of waxy hardness; weight, 60 grams. Spleen pale, very friable; weight, 250 grams. Stomach greatly dilated, and apparently that of an alcoholic. Intestines normal. Urethra patulous. Bladder small, walls thickened and moderately full of pale urine. Brain wet, somewhat soft; either side of median fissure anteriorly studded with small tubercular bodies; weight, 1,370 grams.

J. M. G.

HYPERTROPHIC CIRRHOSIS OF LIVER.

T. A.; age, 36 years; nativity Norway; entered St. Vincent's Hospital, Norfolk, Va., April 22, 1902; was transferred to United States Marine Hospital, Baltimore, Md., June 10, 1902; died July 9, 1902.

HISTORY.—Patient has been rather hard drinker of spirits for ten or twelve years. In United States Marine Hospital, Chelsea, Mass., 18 months ago—jaundice from "liver complaint;" never recovered completely, suffering from digestive trouble ever since. On admission (Norfolk) was much jaundiced; moderate anasarca of the lower extremi-



ties. Liver much enlarged, hard, smooth, not tender; enlargement regular. Spleen much enlarged. Urine—specific gravity, 1.012, later 1.006; albuminous; bile-stained; large daily amount—2,200 to 3,300 c. c. Temperature from 38.4° to normal. Pulse—84 to 60. The temperature was irregular throughout the disease, ranging from 38.8° to normal, seldom, however, over 38°, and below that figure for days together. Pulse generally slow—80 to 60, rising for a week before death to 88 and 90. Diarrhoea soon became a prominent symptom, there being from 10 to 18 stools per day. This was little controlled by diet or medicine. Never had any tenderness over liver, but in latter part of life—fourteen days—suffered much from a sharp, cutting pain, apparently in or under liver, which was brought on by moving.

NECROPSY (2 hours after death).—Hypostatic congestion about posterior surface of body. Spare man, heavily jaundiced, bronze rather than yellow. Anterior section practically bloodless, almost entire absence of subcutaneous fat. Intestines distended with gas; great omentum shows some fat. Appendix in normal place, turned downward and backward meso-appendix for half its length. Heart: Pericardium contains 30 c. c. serous fluid deeply stained with bile, also containing blood. The surface of pericardium and heart rough with flakes of fibrous material and adherent to each other. Surface of heart showed hemorrhages, small, under the visceral layer of pericardium, presenting the appearance of being bruised, especially about the apex and left side of left ventricle. Mediastinal glands much enlarged; heart smaller than normal (240 grams); aortic valves normal, also the mitral valves; endocardium smooth, shining, and somewhat yellow. Left lung: No adhesions; section of pleura somewhat cedematous; on part of left lower lobe, oedema, yellow in color; lung otherwise normal. Right lung: Some adhesions about the posterior portion, soft and recent; considerable hypostatic congestion of lower lobe, posterior part; otherwise normal. Liver: Dark in color, *olive green*, extending over as far as spleen and touching same; weight 2,395 grams; surface smooth, marked by lines of connective tissue radiating from above; hard on section, but does not creak; practically bloodless. Surface on section marbled, dark green islets in gray background; tough, tears with difficulty; presents the ordinary granulated appearance on tearing, but more marked. Gall bladder: Moderately distended with dark green bile; gall duct pervious and bile flows out on squeezing bladder. Right kidney: Enormously large, capsule not adherent; lobes well marked; weight 290 grams; surface markedly hyperæmic; blood vessels had a stellate arrangement. On section cortex thickened, pyramids and striations well marked; organ unusually bloody; portions of surface intensely yellow. Suprarenal capsules: Somewhat larger than normal, hyperæmic, yellow. Left kidney: Also large; weight 288 grams; lobes well marked; otherwise like right, except stellate arrangement of veins less pronounced; section same as on right side. Spleen: Has a small supernumerary spleen about 3 cm. long and 2 cm. broad; spleen very large, weight 1,080 grams; soft, not diffuent, very bloody, pulp easily washed out by stream of water. Stomach: Very large and empty; inner surface covered with decomposed blood nowise differing in appearance from the black vomit of yellow fever; no abrasions or ulcerations; small areas of congestion; the dark spots adhere to the mucous coat after rubbing, as in yellow fever. Duodenum seat of general punctate hemorrhage, presents the appearance of a skin rubbed with a stiff brush till it bleeds; no ulcerations and no abrasions. This peculiar appearance stops about 14 or 15 cm. below the pylorus. Intestines: Mainly empty; mucous membrane gelatinous and soft, not at all injected; the mesenteric glands enlarged, easily breaking down (caseous?). Colon: The mucous membrane is congested; no adhesions; generally a reddish color upon a slate ground. No other organs examined.

H. R. C.

## MALARIAL DISEASES.

### *Pernicious malarial fever.*

Wm. E.; Swedish; age, 45; transferred from American schooner *John H. Buttrick* to United States quarantine station, Savannah, Ga., July 4, 1902; died July 4, 1902.

HISTORY.—Previous to shipping on the *Buttrick* he had been for some time on the Panama coast, and in all probability received his infection there. The patient was moribund on arrival, and on that night some trouble was made out on the right side of chest, which was thought to be pneumonia. The temperature was 40, and the pulse 138 and small and irregular; hypodermics of brandy and strychnine were given. At 1 a. m. the patient was left to the care of the captain for the night, the prognosis being very grave. Early the next morning the case was removed to the station hospital and a more thorough examination made. The blood was found to be full of malarial organisms—both intra and extra corpuscular forms being present; there were



numerous small round organisms, heavily loaded with actively motile pigment granules, the plasmodium body proper being colorless and showing no trace of red cell structure. Crescents were also present, and many red cells contained small hyaline bodies with nonmotile pigment granules. The captain of the vessel stated that the patient had been taken sick about a week before his arrival here with fever, severe headache, and constant vomiting; that he had given him quinine, a purgative, and some Hoffman's anodyne.

NECROPSY (18 hours after death).—Body of white male, fairly well nourished, and deeply jaundiced. Post-mortem rigidity well marked, and hypostatic congestion present over lower portions of body. Skull cap normal, but strongly adherent to dura. Surface of brain congested, and serofibrinous effusion under pia mater, especially along the longitudinal fissure and on either side of it. Base of brain normal, as are also the cranial nerves, but copious serous effusion in spinal canal around the medulla oblongata. Ventricles not opened, and no sections made, brain being preserved entire. Anterior mediastinum normal. Pericardium normal. Heart very thin and flabby, and tears easily; valves normal. Left pleural cavity completely obliterated; lung badly torn in removal; lower lobe hypostatically congested. Lower portion of right pleural cavity filled in with a gelatinous effusion about half an inch thick, and middle lobe of lung firmly bound to chest wall by several thick, strong, fibrinous bands; two lower lobes of lung congested, do not collapse, and bloody, frothy fluid flows away on section. Gall bladder distended. Liver enlarged, and typically bronzed. Spleen greatly enlarged, and almost fluid, breaking down on removal. Kidneys enlarged, capsules strip easily, pyramids prominent, and cortical substance decreased in thickness. Stomach contains last nourishment given, chronic catarrh of fundus. Intestines normal. Pancreas normal. Great vessels normal. Suprarenal capsules not identified. Bladder contains about six ounces of urine.

W. J. L.

T. M.; age, 35 years; nativity, Ireland; admitted to the marine ward of the German Hospital, Philadelphia, Pa., October 20, 1902; died October 23, 1902.

HISTORY.—Nine days ago was seized with severe headache, which has since persisted; also had severe chill and sharp pain in left side. No expectoration, slight dyspnea. Since then he has had chills followed by profuse perspiration daily. He has been drinking a great deal during the last five days. Examination of the blood shows great numbers of intercellular ring forms, also finely granular forms, both intercellular and extracellular.

NECROPSY (29 hours after death).—Clinical diagnosis: Catarrhal pneumonia. Anatomical diagnosis: Pulmonary congestion, acute splenic tumor, hypertrophic cirrhosis of the liver, chronic nephritis, localized leptomeningitis. External appearance: Body is that of a well-developed male, height 1.83 meters. Post-mortem rigidity moderate. Post-mortem lividity in dependent portions. The calvarium was removed. The skull cap, brain case, sinuses, and vessels are normal. Over the motor area there was leptomeningitis, with some turbidity of pia arachnoid and a little exudation around the vessel. Cultures were taken from the right and left motor areas, and the bacillus coli communis isolated. Thorax: Anterior mediastinum normal; pericardium contains 75 c. c. of fluid; heart normal, weight 615 grams; the pleurae are glistening, transparent, and pale; on the left an adhesion at the anterior edge of the lower lobe, on the right an extensive adhesion between the upper and middle lobe; left lung, weight 920 grams, pigmentation marked. In the upper lobe there is an atelectatic area, also an area of absence of crepitation; at the apex there are two cicatrices several square centimeters in area; right lung, weight 1,210 grams, pigmentation marked. Slight cicatricial contracture at apex. The great vessels, nerve trunks, and diaphragm are normal. Abdomen: The omentum is of large size and fatty. The spleen is of normal shape, weight 710 grams. Kidneys: Right, weight 280 grams; color, pale reddish-brown, capsule strips easily; the pyramids are of small size; left, weight 270 grams; in other respects the same as the right; the suprarenal capsules and bladder are normal. Liver: Weight 2,010 grams; right lobe enlarged, consistency soft, capsule easily stripped off: the remaining viscera are normal.

F. I.

#### NEW GROWTH MALIGNANT.

##### *Carcinoma of stomach.*

P. H.; aged, 50 years; nativity, Missouri; was admitted to the United States Marine Hospital, St. Louis, Mo., October 29, 1902, and died January 27, 1903.

HISTORY.—The patient, an elderly negro man, doubtless much older than the age



given, had been under treatment at various times at this hospital for occasional pains in the abdomen, referable first to one, then to another point, though most frequently to the stomach. He was very thin and palpation of the abdominal contents was had with unusual facility. Nothing that could be felt, and nothing in his family history gave intimation of cancer until the diagnosis was arrived at by exclusion. Treatment was largely symptomatic. Death was from exhaustion, following two severe hæmorrhages from stomach on the last day.

NECROPSY (20 hours after death).—Body that of an elderly, extremely thin, intensely black, negro male; rigor mortis marked; body devoid of fat; internal organs normal except that the capsules of the liver, spleen, and kidneys were very closely adherent, and liver substance had a gritty feeling. Weights: Lungs, right, 115 grams, left, 287 grams; heart, 235 grams; liver, 1,220 grams; spleen, 115 grams; kidneys, right, 150 grams, left, 140 grams. The pyloric end of the stomach was occupied by a carcinomatous mass which had ulcerated on its internal surface, and had evidently been the source of the hæmorrhage. Stomach contained 1,220 grams of clotted blood.

H. C. W.  
J. M. G.

F. R.; age, 45 years; nativity, Germany; was readmitted to the United States Marine Hospital, St. Louis, Mo., on January 26 and died May 13, 1903.

HISTORY.—The patient had twice been under treatment at this hospital for obscure symptoms which had been recorded as indigestion, for want of a more exact title. On his last admission the symptoms of dysphagia, pain, vomiting of glairy mucus, and an increasing pallor indicated the above diagnosis. The treatment was largely empirical and supportive, as his condition on his last admission forbade operation. A persistent cough was modified by codeine. Pain was met with cocaine, Indian hemp, camphor, and opium, and by antifebrin with caffeine. Vomiting was relieved by carbolic acid and chloral, and much comfort was gained by the prolonged administration of methyl blue in 0.2 gram capsules, night and morning. An obstinate constipation, relieved by mild evacuants for some time, alternated with diarrhea, which became troublesome the last few days of life. At no time could blood be detected in the stools. Death was preceded by twenty-four hours coma. The temperature, pulse, and respiration record presented no features of interest, being almost normal.

NECROPSY (22 hours after death).—Body that of a middle-aged, white male. Intensely emaciated. The skin was extremely pallid. Rigor mortis absent. Chest organs markedly small. Right lung adherent to chest wall posteriorly; lungs otherwise normal; weight 400 grams; left lung congested, strongly adherent posteriorly to chest wall, and inferiorly to diaphragm, otherwise normal; weight 270 grams. Pericardium normal. Heart inclined to be fatty. Left ventricular wall somewhat hypertrophied; cavities empty; weight 210 grams. Liver small; capsule adherent; weight 1,150 grams. Gall bladder normal, distended with dark-green, very fluid bile. Spleen very dense, capsule adherent; weight 150 grams. Kidneys somewhat contractured. Capsules strip readily; no fat observable; weight, right 160 grams, left 130 grams. Stomach: Lesser curvature and posterior aspect so firmly attached to pancreas and diaphragm by adhesions as to be with difficulty detached. Immediately below the cardiac orifice the lesser curvature was occupied by a dense tumor which encroached upon the stomach to one-half its capacity. Stomach contained some undigested food and about 50 c. c. of grumous pus. Brain very soft; on either side of longitudinal fissure were rows of pearly formations indicating old exudatory process. Weight 1,310 grams. Skull abnormally thick in lateral aspects.

H. C. W.  
J. M. G.

J. B.; age, 43; nativity, England; admitted to the marine hospital, Mobile, Ala., August 1, 1902; died November 30, 1902.

FAMILY HISTORY.—Father living, health good. Mother died at age of 80 years. Five brothers living, health good.

PERSONAL HISTORY.—Has never had any venereal disease, but several attacks of malarial fever. Was in the hospital for two and one-half months of the year suffering from general anæmia; patient complains of great weakness; all food disagrees with him; vomits very frequently, though says he has never vomited any blood.

DIAGNOSIS.—Cancer of stomach with stenosis of pylorus.

August 29, 1902.—Gastroenterostomy was performed; the jejunum was joined to the stomach wound by a Murphy button, also using Lambert sutures. Patient never vomited after the performance of gastroenterostomy, and lived about four months after the operation. At time of operation the pyloric end of stomach and adjacent



structures were so involved as to preclude pylorictomy. Patient was entirely comfortable after operation, the "vicious circle" was never established, and no trouble was met from that source. The sutures were removed September 11, 1902.

October 11.—The patient complains of great pain, and tympanites exists. Scrotum greatly swollen. Asafetida by rectal injection and morphia hypodermically greatly diminished the pain, producing a good night's sleep. On November 19, patient states that he passed the Murphy button during the night, but this is not true, as shown by X ray. His diet was of the most nourishing character and stimulants were freely given. The patient finally died November 30, 1902.

NECROPSY (6½ hours after death).—Body that of a slightly built white male, greatly emaciated. Rigor mortis fairly well marked. Eyes open, pupils dilated; mouth open. No discharge from nose or mouth. Tattoo on outer aspect and middle and lower third of right arm of flags of the following nationalities: British, Russian, German, French, and United States. Tattoo at junction of upper and middle third of left forearm of flags as follows: Norwegian, Union Jack, and United States. On outer aspect of left forearm covering the entire extent is tattooed the figure of a woman, also a bracelet on left wrist. There is an ulcer on the upper margin of scrotum, and also one on external aspect of the left shin. A cicatrix exists on the left knee, left shin, and left heel, and a mark 1 inch below the occipital protuberance. Operation scar in median line about 2½ inches in length, commencing about an inch below the ensiform cartilage and ending an inch above the umbilicus. Left leg is much larger than the right. The body was opened by an incision from the chin to symphysis pubis. Abdominal cavity greatly distended and filled with fluid of amber color. Extensive adhesions exist on both sides between abdominal walls and stomach, and also between stomach and lungs. Pleuritic adhesions were so extensive as to require cutting. The diaphragm was attached between the eighth and ninth ribs. The pericardium contained about 30 c. c. of bloody fluid. The heart is small in size, with ante-mortem clot in both auricles. The valves of the heart are competent. Heart weighs 180 grams. Lungs are apparently normal; left lung weighs 600 grams, and the right lung weighs 750 grams. Spleen normal; its weight is 150 grams. The capsule of both kidneys peel easily. Left kidney contains a cyst about the size of a pea. The line of demarcation between the cortical and medullary substance is well marked and its weight is 110 grams; the line of demarcation between the cortical and the medullary substance of the right kidney is well marked and its weight is 130 grams. The urinary bladder is empty. The stomach contains about 64 c. c. of undigested food, also the Murphy button in cardiac end is greatly infiltrated with cancerous growth. Walls of stomach white in appearance. The liver is dark chocolate in appearance, very small and contracted; bleeds easily on section. Glisson's capsule is almost entirely obliterated externally, on account of the cancerous growth having extended from the stomach to the liver. Weight of liver is 800 grams. Gall bladder is contracted and contains about 4 c. c. of thick fluid. Cause of death, cancer of stomach.

W. P. M.

*Infiltrating cancer of pylorus and duodenum.*

H. F.; white; seaman; age, 44 years; entered the marine ward of the Buffalo Hospital of the Sisters of Charity on the 1st and died on the 10th of August, 1902.

HISTORY.—He has enjoyed very good health until some eight months ago, when symptoms of dyspepsia commenced, for which he sought relief at various ports, with but slight improvement. During the past two months he has had constant dyspepsia, with great gastric distress, and at times severe pain, always referred to the epigastrium, and some jaundice.

PRESENT CONDITION.—The patient is emaciated, the eyes are yellow tinted, the skin muddy, the tongue foul, the gums spongy. Inspection shows the abdomen distended and tympanitic, with large surface veins. Deep palpation elicits marked pain in the right epigastric region; the stomach is distended, with ptosis to the umbilicus, and there is an ill-defined thickening at the pylorus. Ewald's test breakfast is followed by 75 c. c. of fluid, which is free of hydrochloric acid, but which contains lactic and butyric acids. From the history and condition presented a diagnosis of carcinoma involving the duodenum and pylorus was made.

The operative procedures possible were drainage of the gall bladder for the relief of the symptoms due to the retention of the bile salts, and drainage of the dilated stomach by anastomosis with the small intestine.

After several days of preparatory treatment, and under ether anæsthesia, the gall bladder was exposed and attached to the abdominal wall, and free drainage established. The abdomen was then opened to the left of the median line, and the stomach carefully examined; it was found distended, and contained considerable fluid



material of acid odor; the pylorus was thickened. Anastomosis was then done, with the jejunum to the post gastric wall through the meso-colon, by means of the Murphy button.

Improvement was but slight, although the liver was relieved of large quantities of bile through the cystic fistula, and the stomach was apparently thoroughly drained into the intestine. He died from exhaustion one week after the operation.

NECROPSY (10 hours post mortem).—Body much emaciated, rigor not marked, skin yellow, some hypostasis of dependent parts of trunk. There is an open fistula leading into the gall bladder from which bile still flows; there is a healed incision 8 cm. long parallel to the free border of the left ribs, from which it is distant 2.5 cm. Abdomen opened by median incision; the contents are in good condition but deeply tinted yellow; the great omentum is adherent slightly to the parietal peritoneum at the site of the left incision. The bowel seems well contracted; the stomach is contracted and well drained through the Murphy button, which is still in place; the anastomosis is perfect, although there has been lack of inflammatory lymph; the gall bladder is empty, and still attached to the parietes by chronicised gut sutures, about which there is also lack of supporting lymph; there is no peritonitis; the liver is somewhat enlarged; the cystic duct is patent; the common duct is pressed upon by an enlarged lymph gland almost to obliteration of its lumen; the pylorus is the site of carcinomatous infiltration, which extends into the duodenum. The kidneys are macroscopically normal; the spleen is enlarged.

E. W.

*Sarcoma of stomach—multiple secondary sarcomata in all parts of the body.*

T. P.; colored; age, 40; admitted to United States Marine Hospital, Baltimore, Md., January 12, 1903; died February 4, 1903.

HISTORY.—Several of family dead, but from (to him) unknown causes. Was treated in this hospital from May 19 to July 14, 1901; diagnosis, scrofula. Said he had been reduced in flesh and strength for some time. First noticed swelling of both legs two weeks ago. Complained of feeling of faintness about stomach, and of having to urinate four or five times daily, and occasionally at night. Had cough, which was troublesome.

PHYSICAL EXAMINATION.—Is reduced very much in flesh. Scleræ are intensely jaundiced. Legs are œdematous and swollen. There is a large indurated scar the size of palm of hand on neck and underside of right inferior maxilla, and a branch from this scar extends across front of neck and ranges up to anterior surface of left maxilla. There are a number of smaller scars about right side of neck of the same nature. All these scars are keloid in character. The glands on left side of neck extending from below jaw to clavicular border are greatly enlarged and very hard to the touch and unyielding to pressure. On upper extremities, in axilla, on chest, abdomen, back, inguinal region, and lower extremities as far down as the knees, are hard nodular elevations of the skin, ranging in size from a buckshot to a pigeon's egg, and numbering some 200 or more. These elevations are quite apparent in many places to the sight. They are subcutaneous, in the subcutaneous connective tissue, and not adherent to the skin. Weight, 149½ pounds. Lungs: Respiration is impaired; râles on both inspiration and expiration, coarse and bubbling; dullness about base of both lungs and absence of respiratory murmurs. Stomach is dilated. Lower border of liver is palpable below ribs, and a tumor is made out in abdomen to the right of ensiform appendix. Examination of urine shows presence of large percentage of bile, no albumen, and patient is passing about 600 c. c. of urine daily, containing large amount of sediment. Examination of blood: Hæmoglobin, not estimated; red-blood corpuscles, 1,444,444; white-blood corpuscles not counted. Examination of sections of one of subcutaneous nodular tumors, removed under cocaine anaesthesia, shows it to be made up of fibrous tissue and cells characteristic of sarcoma.

TREATMENT.—Selected diet; potassium citrate 1 gram, in aqueous solution 4 times daily; Basham's mixture t. i. d.

January 31.—Weaker; nodules increasing in number and size. Strychnine sulphate 0.002 gram t. i. d.

February 3.—Very weak; takes very little nourishment; nodules over chest appear to be increasing rapidly in size. Left ear discharging pus.

February 4.—Very weak; pulse scarcely perceptible at wrist. Died at 8.30 p. m.

NECROPSY (20 hours after death).—Body of average size; male; colored; much emaciated. Nodules under skin previously described; some of them break down on pressure; others appear to be in condition of degeneration. There is extensive atrophy of chest and abdominal muscles. Anterior mediastinal space connective tissue



is filled with numerous hard white nodules, varying in size from a buckshot to a hazelnut. Thorax: Cavity contains 1,500 c. c. amber-colored fluid. Right lung: Weight, 550 grams; is compressed; front side and apex adherent in places to costal pleura; is small; crepitation is decreased; the surface shows a number of various-sized, hard, white nodules; on section blood flows freely, and is in the stage of congestion. Left lung: Weight, 570 grams; crepitation is about normal, and shows one small white nodule on posterior surface. Pericardium is adherent at base to diaphragm, and contains a large number of various-sized, hard, white irregular nodular growths; inner surface of pericardial sac is normal. Heart: Weight, 250 grams; is small, of pale appearance, and shows many hard, white nodular bodies growing on and in the muscles; about auriculo-ventricular margin or ring is a zone of apparently broken-down fatty tissue; between tricuspid and pulmonary valves is a large, hard, whitish mass deeply embedded in the myocardium; the heart muscle is dark and easily broken down on pressure. Valves are normal. Kidneys: Right, weight, 180 grams; average size; connective and fatty tissues about kidney are filled with numerous nodular growths the same as heretofore described in other parts of the body; capsule is easily detached; on section there is a moderate outflow of blood. Left: Weight, 180 grams; fatty and connective tissues about are filled with many nodular growths as described in right; capsule easily detached. Cortex of mottled appearance; on section there was free outflow of blood; cortex somewhat thickened. Stomach is greatly dilated and contains about 1 pint of partially digested food; on posterior inner surface, near pyloric orifice, is a large, hard, gray mass, cauliflower in shape, the size of an outspread hand, showing areas of slight suppuration; pyloric orifice is somewhat contracted. There is an enormous enlargement of all the mesenteric glands, some of them reaching size of a small egg, many of which are easily ruptured on pressure, yielding a gray, pus-like exudate. Liver: Weight, 1,980 grams; large; surface presents general mottled, nutmeg appearance. Scattered over the surfaces are numerous irregular nodular bodies, as described in other organs of body. On upper lateral surface of right upper lobe is a nodule the size of a hen's egg extending deeply into the liver tissue. Cut section shows many small nodular masses like those already described. Cut section also shows dark mottled appearance. Spleen: Weight, 100 grams; very small, much contracted and shrunken up; presents gray or slate-colored appearance; substance is notably friable and soft, and easily broken down.

J. A. N.

H. R. C.

## PNEUMONIA.

*Lobar, double.*

J. B.; age, 36 years; nativity, Tennessee; was admitted to the United States Marine Hospital, St. Louis, Mo., February 12 and died February 17, 1903.

HISTORY.—On admission patient was practically moribund. He had evidently been lying for some weeks neglected, as he was covered with filth and vermin, and suffering from lack of food. He declared he had been at work up to the day before his admission. Cough not pronounced; sputum very tenacious; temperature 39.6° C.; pulse 88, feeble; respiration 36, superficial. After a hot bath and a stimulating enema, which brought away a large quantity of feces, his thorax was enveloped in a "cotton jacket" and quinine sulphate given freely, with forced feeding and stimulation by whisky. This temporarily reduced his temperature. Iodide of potash to liquefy the retained sputum and stimulate the air cells, with quinine sulphate in small doses, whisky, and food served only to render him comfortable. He was evidently an old alcoholic and sank rapidly.

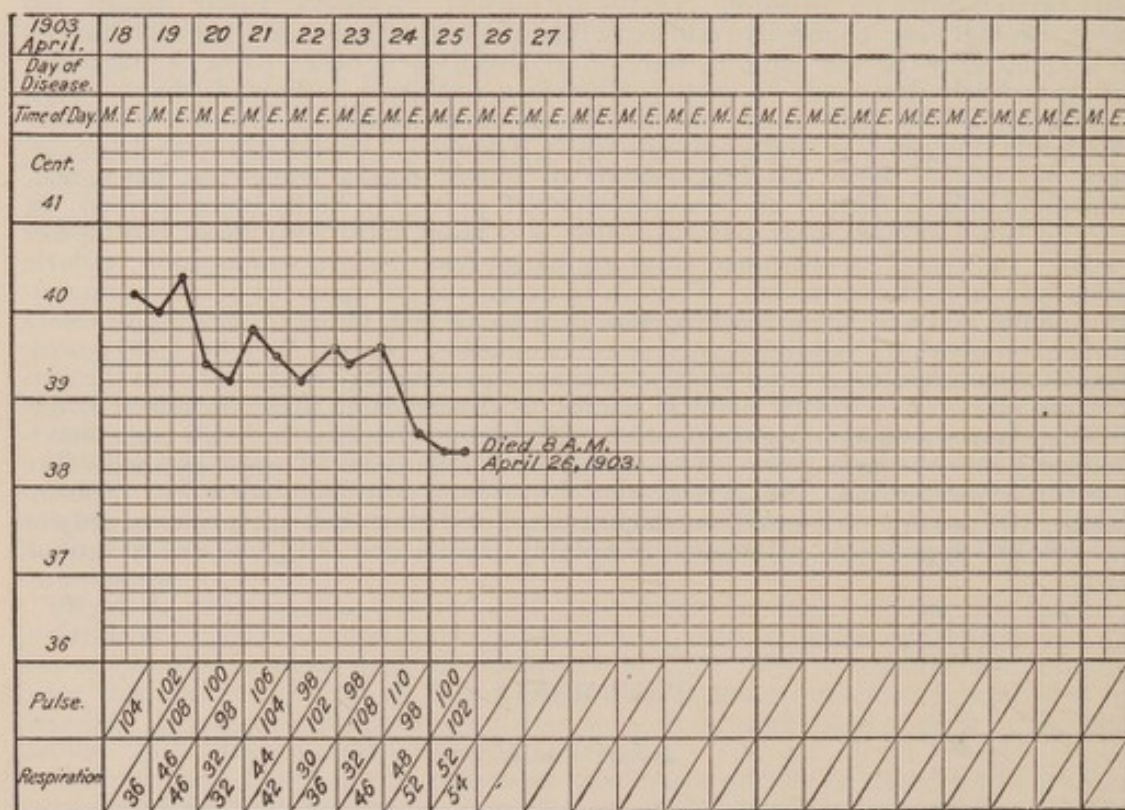
NECROPSY (13 hours after death).—Body that of a muscular, middle-aged, negro, male, extremely emaciated. Rigor mortis, marked; pleura almost obliterated with old adhesions. Lungs deeply pigmented—left congested, weight 315 grams; right 975 grams, hepatized throughout, and on section exuding pus. Pericardium somewhat cloudy in appearance; fluid normal. Heart somewhat smaller than usual, fatty, rather soft, valves normal, chicken-fat clots occupying both ventricles; weight 310 grams. Kidneys fatty, contracted, capsules adherent, pelves encroached upon by fatty deposit; weight, right 150 grams, left 160 grams. Liver dark in color, smooth, glistening, on section creaks under knife, weight 1,150 grams. Spleen apparently normal, weight 180 grams. Other viscera, normal. Brain congested and somewhat wet; weight 1,210 grams.

H. C. W.

J. M. G.



**HISTORY.**—Little information could be elicited from the patient on entering the hospital. He stated that he had been ill but a few days, though it was obvious he had been bedridden for some time. On admission the respiratory murmur was lost on both sides of the chest, except in the superior lobes. Temperature 40.2°C., pulse 104, jerking; respiration 36, superficial. Treatment consisted of a mild mercurial purge, with digitalis, strychnia with alcohol, ammonia, and hyoscyamus. Morphine and atropia were given hypodermically, from time to time, to insure sleep. Coma supervened, terminating, in twenty-four hours, in death.



H. C. W.  
J. M. G.



*Lobar, double.*

S. T.; age, 29 years; nativity, Tennessee; was admitted to the United States Marine Hospital, St. Louis, Mo., April 28, and died May 1, 1903.

HISTORY.—Little information could be extracted from the patient, he being mildly delirious on admission, other than that he had been quite well up to a few days previously, and had had a severe chill followed by a headache, pain in chest, and a very painful cough. On examination the respiratory murmur was almost lost on left side of chest.

Pulse 96, wiry; respiration, 36, labored, superficial; temperature, 39.6° C. Patient was given a hot bath, with a mild mercurial purge, placed in bed and a blister 10 by 10 cm. placed on left side. Small doses of quinine with iodide of potash and whisky were administered. Strychnine, atropia, and morphine, hypodermically, and aromatic spirits of ammonia were used to combat depression, which ended in death. "Cotton jacket" applied April 30.

NECROPSY (5 hours after death).—Body that of a young adult, dark mulatto, male, somewhat emaciated. Rigor mortis well established. Pericardium normal, containing 20 c. c. of fluid. Heart somewhat fatty; weight, 400 grams; valves normal. Lungs closely adherent in many places to chest wall; right nodular, superior lobe solidified at apex, and containing 3 pus cavities, each of 50 grams capacity, weight 820 grams; left solidified throughout, weight 1,690 grams. Bronchioles exude sero-purulent froth on section. Liver dense on section, surface somewhat roughened; weight, 2,550 grams. Kidneys loaded with fat encroaching on pelves, especially on left. Capsules strip readily; pelves contracted; weight, right, 260 grams; left, 250 grams. Spleen much congested, surface nodular, capsules thickened and very adherent; weight, 620 grams. Appendix normal. Mesenteric glands enlarged and cheesy. Other abdominal contents normal. Gall bladder distended with very dark green viscid bile. Brain somewhat wet, presents numerous enlarged Pacchionian bodies on superior aspect; weight, 1,250 grams.

H. C. W.  
J. M. G.

*Lobar.*

D. McM.; age, 45; nativity, Ireland; color, white; admitted to the United States Marine Hospital, San Francisco, Cal., May 2, 1903; died May 6, 1903.

HISTORY.—Three days ago the patient caught cold after a prolonged spree. He now has severe pain over his right lung, a bad cough, and rusty-colored sputum. Temperature 39.6°, pulse 126, respiration 40. He is extremely nervous, trembling violently, and his speech is rambling. There is dullness over the whole right lung, the vocal fremitus is increased, the respiratory sounds are diminished, a few râles are heard, and a friction sound is present in the mid-axillary region. The respiratory sounds are exaggerated over the left lung, but there is no evidence of consolidation. The patient did fairly well until May 5, the disease running its usual course. On that day he became delirious, and could with difficulty be kept in bed. His face and hands were cyanosed and marked dyspnoea was present. He continued to grow worse, and died at 5.45 a. m. the next day.

NECROPSY (10 hours after death).—Height, 173 cm. Tattoo crown on left forearm. Rigor mortis well marked. Brain: Weight, 1,370 grams; tissue apparently normal. Right pleura adherent to chest wall and the pericardium; right pleural cavity filled with fluid and a white fibrous exudate. Right lung: Weight, 1,580 grams, markedly infiltrated throughout; on section a purulent fluid exudes, and the tissue is of a grayish lead color. Left lung slightly adherent to apex, weight 650 grams, crepitant throughout; color of tissue on section is a bright red, and serous, bloody fluid exudes on pressure. Heart: Weight, 350 grams; measurement, 9 by 10 by 5 cm.; valves normal; there is a large clot in the right ventricle, and also a chicken-fat clot in the aorta. The muscular tissue is apparently normal. Spleen: Weight, 250 grams; color on section reddish brown; the connective tissue is increased around the blood vessels. Right kidney: Weight, 170 grams, capsule strips easily; there is considerable fat in the pelvis, and the cortical layer shows yellowish stratifications. Left kidney: Weight, 180 grams, the appearance of the tissue is similar to the right kidney. Bladder was distended with turbid urine. Stomach: The mucous membrane is of a grayish-white color. The appendix was 15 cm. in length, and the intestines normal. Liver: Weight, 2,950 grams, measurement 30 by 25 by 8 cm.; color, nutmeg in appearance; the tissue cuts with increased resistance. The gall bladder was distended with bile, and the ducts patent.

W. G. S.



*Lobar.*

L. C.; age, 24; nativity, Nova Scotia; was admitted to the marine ward, Addison Gilbert Hospital, Gloucester, Mass., May 6, 1903; died March 9, 1903.

**HISTORY.**—Patient had been sick on board his vessel for about two weeks, and was admitted to the hospital on the day of arrival of the vessel in port. He complained of cough and pain in the right side of chest. Physical examination showed decreased movement of the right side of the chest, with some dullness. There were moist râles. The left lung was normal. The heart's action was weak, the second sound not present. His condition grew rapidly worse, his pulse becoming weaker and more rapid, and his respirations more shallow until death.

**NECROPSY** (24 hours after death).—The body well developed and fairly well nourished; rigor mortis well marked; all normal excepting the following: Pleural cavity obliterated by adhesions on the right side. The right lung is œdematous and very much congested; a quantity of purulent material exuded from this lung on section. Left lung congested. Liver slightly enlarged and congested. Heart on section showing a high degree of recent inflammatory action, particularly about the aortic valve. Valves competent.

E. B. H.

*Lobar.*

J. L.; white; age, 57; nativity, New York; was admitted to the United States Marine Hospital, Chicago, Ill., on May 2, 1903, and died May 7, 1903.

**HISTORY.**—Patient said he had smallpox in infancy, acute articular rheumatism in 1866, enteric fever in 1868, intermittent malarial fever about 1870, and had for years been a very heavy drinker. He stated that on April 27, without premonitory symptoms, he was suddenly seized with severe sharp pain in region of right scapula. The next day he had chills, headache, and cough. On the 29th the pain left the scapular region and appeared about the right nipple; the patient became feverish, and cough continued. On admission patient's temperature was 40°; pulse 100; respirations 24; cheeks were flushed; respiratory excursion was somewhat restricted on right side; there was a slightly tympanitic quality of resonance over right lung; fine and medium mucous râles were heard over right chest, and crepitant râles during height of inspiration in region of right nipple. No friction-rub present. On May 3 patient was in less pain, sputum was clear and very viscid, not abundant, and in part appeared slightly rusty. Percussion note still tympano-resonant over right lung. On May 4 a friction sound was found over right lower lobe between anterior and posterior axillary lines. No dullness present, and no definite signs of pneumonia. On May 5 the patient began to have occasional periods of quiet muttering delirium, and pulse-respiration ratio became disturbed. Urinary analysis discovered presence of considerable quantity of albumen. Sputum was no longer viscid but sero-mucous in character. On May 6 occasional delirium was still present, pulse was rather weak, and impaired resonance was now noted over right lower lobe anteriorly, with dullness posteriorly, and high-pitched, dry, tubular breathing. Numerous mucous râles were present over remainder of right lung, and whistling râles over left lung. At noon (May 6) continuous delirium set in. General condition very unsatisfactory; patient was evidently suffering from severe toxæmia. On May 7 the patient was much worse. Temperature was 39.6°, pulse 140 and compressible, respirations 48 and labored on account of bronchial secretions. Patient was in a stuporous condition most of the time, and very weak; toward noon he became somewhat cyanotic, and gradually became weaker until death intervened at 1.15 p. m.

**TREATMENT.**—Patient was put on light, nourishing diet, and supportive treatment given at first was later changed to active stimulation, as the occasion arose. On May 6 he was given 700 c. c. normal salt solution subcutaneously, and oxygen was administered as soon as cyanosis occurred.

**NECROPSY** (27 hours after death).—Body that of a well-nourished male, and profusely pock-marked; post-mortem lividity and rigor marked; 10 c. c. turbid straw-colored serum was found in pericardial cavity. Over base of heart, and laterally and posteriorly over left ventricle, were old dense pericardial adhesions. The heart weighed 370 grams; its muscular tissue was dark and flabby, and considerable overlying fat was present. The anterior mitral leaflet was slightly shrunken; all other valves were normal. Two hundred c. c. of turbid fluid was found in right pleural cavity, and abundant recent adhesions were found laterally and posteriorly over lower portion of right lung. The right lung weighed 1,570 grams; the middle and lower lobes were in the stage of gray hepatization; the upper lobe was somewhat œdematous, and contained numerous tubercles and two cavities about three-fourths inch in diameter filled with grumous pus. The left lung weighed 670 grams; was



deeply congested and œdematous. At the apex were several contracted scars; no tubercles were noted. Rather firm adhesions were noted over lateral and posterior aspects of both lobes. The stomach contained coagulated milk, was deeply congested, and considerably elongated. The intestines appeared normal. The appendix was short (7.5 cm.), and suspended freely by its own mesentery. The gall bladder contained about 50 c. c. of thickened bile. The liver weighed 1,630 grams, was very fibrous and pale. No scars present. The spleen weighed 170 grams; the surface was mottled grayish and red, and was very firm in texture. The right kidney weighed 220 grams, was somewhat lobulated, easily decapsulated, and very dark blue and granular in appearance externally; on section was found deeply congested. Left kidney weighed 220 grams, and showed the same gross pathological conditions. The bladder was contracted and empty. The calvarium was of moderate thickness; the dura very strong and congested, and the pial vessels were all deeply injected. The brain weighed 1,495 grams, and showed no abnormalities except excessive congestion of all the blood vessels.

L. P. H. B.

C. E. B.

#### *Lobar.*

A. M.; colored; age, 52; nativity, New York; admitted to the United States Marine Hospital, San Francisco, Cal., January 19, 1903, died January 25, 1903.

**HISTORY.**—Family history, negative. Addicted to alcohol and tobacco. Had chancres three years ago, rheumatism, and malarial fever twenty years ago.

**PRESENT HISTORY.**—For three weeks he has had an ulcer upon the popliteal surface of the left leg, but this was nearly healed. Two days ago he was taken with a severe pain in his left breast and side, aggravated upon movement. He had a constant bitter taste in his mouth, and had diarrhea. Appetite good; no insomnia.

**EXAMINATION.**—Mouth and tongue dry and red, teeth bad. Lungs: Dullness over left apex with large mucous rales; inspiration very short, spasmodic and jerky; expiration prolonged and very faint. Heart action rapid but regular. Liver enlarged. Tenderness over upper part of abdomen, left breast, and side. Complains of frequent urination at night.

**SUBSEQUENT HISTORY.**—The patient's condition grew rapidly worse; cough and expectoration increased and temperature remained high. The area of dullness extended downward, involving entire left upper lobe. Death occurred at 6.15 p. m., January 25.

**NECROPSY.**—The body shows considerable emaciation; rigor mortis and post-mortem lividity present. Brain: On removing the calvarium the membranes appear normal. The brain substance is softer than normal, but otherwise and on section nothing abnormal can be demonstrated. Thorax: On opening the chest the left lung is seen to extend somewhat beyond the median line, retaining its contour rigidly, while the right collapses to some extent. The thymus gland is not demonstrable. The pericardium is thickened, congested, adherent to the left lung, and in places to the heart by separable adhesions. Its inner surface and the outer surface of the heart show large patches of inflammatory lymph. Its cavity contains an amount of cloudy yellowish fluid exudate. The heart exhibits considerable hypertrophy of the left ventricle, its wall measuring 2 cm. in thickness. The right ventricular wall measures three-fourths cm. in thickness. The mitral and tricuspid valves appear normal. The mitral orifice admits three finger tips; the tricuspid four fingers. The aortic and pulmonary valves are competent. The first portion of the aorta shows patches of atheromatous deposit. The right lung is of small size, mottled grayish blue, and bound by separable fibrinous bands to the pleura; similar adhesions are present in the interlobular fissures. The entire lung crepitates normally except in the lower portion of the middle lobe, where consolidation is present. Section reveals slight congestion throughout the upper and lower lobes, and in the lower portion of the middle lobe increased resistance and muco-purulent material. The left lung is of large size, pale in color, does not collapse, and is adherent to the chest wall throughout by separable fibrinous adhesions. The upper lobe and upper part of the lower lobe are noncrepitant, cut with increased resistance, and the cut surfaces exude a copious amount of yellow purulent matter; the tissue of these portions is very friable. The great vessels and nerves are normal. The diaphragm is normal, except for fibrinous adhesions to the bases of the lungs. The weights and measurements of the thoracic organs and brain are as follows: Brain—weight, 1,300 grams; dimensions, 17½ cm. long, 11 wide, 8 thick. Heart, weight 385 grams. Right lung, 490 grams; left lung 1,700 grams. Abdomen: The omentum is normal. The spleen is strongly adherent to the neighboring structures, is small, exhibits yellowish white areas, cuts with increased resistance, and shows increase of fibrous tissue; weight, 140 grams. The kidneys weigh 300 grams, are pale, show yellowish white depressed areas,



have adherent capsules, cut with increased resistance, show indistinct cortical markings, and increase of connective tissue and fat. The suprarenal capsules appear normal. The urinary bladder contains a small amount of turbid urine. The organs of generation are normal, except that the urethra shows two small ulcers about 4 cm. from the meatus. The rectum and duodenum are normal; also the stomach. The gall ducts are patent. The liver is slightly enlarged, and its surface shows yellowish depressed areas resembling scar tissue similar to those described on the spleen and kidneys. These extend beneath the surface in places, and are most marked on the lower portion of the right lobe. The liver weighs 1,730 grams, cuts with increased resistance over the depressed areas and lower part of right lobe. The pancreas, solar plexus, mesentery, vermiform appendix, small and large intestines, and great vessels are apparently normal.

ANATOMICAL DIAGNOSIS.—Pericarditis with effusion; hypertrophy of left ventricle; tricuspid insufficiency; dilatation (slight) of right ventricle; acute fibrinous pleuritis; lobar pneumonia; arterio sclerosis of aorta; fibrosis of spleen; chronic interstitial nephritis with fatty infiltration; ulceration of urethra; hyperthrophic cirrhosis of liver.

C. R.  
W. G. S.

*Lobar.*

W. F.; age, 47; nativity, Kentucky; admitted to the United States Marine Hospital, Cairo, Ill., April 27, 1903; died, 5 p. m., May 3, 1903.

CLINICAL HISTORY.—Patient was taken sick suddenly the day before at about 1 p. m. with a severe chill, followed by high fever and accompanied with pain in right side. On admission he was suffering with pain in side, respirations were rapid and shallow, pulse rapid and full. Face wore an anxious expression. Examination disclosed pneumonic consolidation of lower lobe of right lung, with an accompanying pleurisy. Heart was found to be normal in size and in its sounds. Patient improved somewhat for first two or three days, but left lung became involved and he died in spite of treatment.

NECROPSY (20 hours after death).—Body that of a fairly well-developed negro. General nutrition fair. Rigor mortis present. Pupils contracted. Heart slightly enlarged, otherwise normal; weight, 399 grams. About 50 c. c. fluid in pericardial sac. Ante-mortem clots found in ventricles. Right lung bound down by adhesions throughout most of its area. These adhesions were stronger about lower lobe. Whole lower lobe in state of red hepatization. Upper lobe congested slightly; weight, 1,254 grams. Left lung congested and verging on state of red hepatization, especially in upper lobe. Lower lobe was covered with thick, yellowish fibrinous mass, which, however, did not form adhesions to the chest wall; weight, 438 grams. Liver normal; weight, 2,451 grams. Spleen normal; weight, 228 grams. Right kidney normal; weight, 228 grams. Left kidney normal; weight, 242.25 grams. All other organs and tissues were apparently normal.

J. H. O.

*Lobar.*

E. C.; English; age, 24; transferred from British Steamship *Whitgift* to United States quarantine station, Savannah, Ga., April 13, 1903; died April 23, 1903.

HISTORY.—About ten days previous to his admission to station hospital, patient had a catarrhal attack, with cough and pain in head and chest. After two days' illness he recovered and was apparently in ordinary health until April 13, when at 4 a. m., while at the wheel, he was attacked with vertigo, followed by pain in back and sides. At 3.30 p. m. his temperature was 39.4 C. and pulse 120. During the entire course of the illness the temperature ranged between 38.6 C. and 41 C. and the pulse between 120 and 136; after the sixth day the pulse became so weak and irregular that it was usually impossible to count it. Respiration ranged between 34 and 64—the higher ranged during the last two days, when the upper right lobe had become affected. On the second day the chest symptoms became more marked; there was bloody sputum, and Fraenkel's pneumococcus was abundantly present. Diagnosis of lobar pneumonia, affecting lower left lobe, was made. The physical signs of pneumonia began to appear on the third day, confined, at first, to the posterior part of lower left lobe, but gradually extending until by the fifth day the entire lobe was solidified. The crepitant rale was missed, or not present in this lobe, but on the fifth day there was a chill, and the crepitant rale was present in lower right lobe, and this lobe soon presented the ordinary signs of hepatization. Delirium was marked from the fourth day of the disease, and it was only by con-



stant vigilance that the man was prevented from getting out of bed. Urine was albuminous from first day of illness. Treatment consisted of ice bags to head and chest and ice water sponging to reduce fever, together with an occasional dose of phenacetine and quinine. Whisky and milk were taken at regular intervals. Stimulants, strychnia, ether, etc., were used, under the skin, as indicated. Small doses of morphia were given at night. A cough mixture containing muriate and carbonate of ammonia was prescribed, but appeared rather to aggravate the symptoms and was stopped.

NECROPSY (7 hours after death).—Body that of well-nourished adult male. Post-mortem rigidity marked. Brain not examined. Pleural cavities contained no fluid; no adhesions; surfaces smooth. Lower lobe left lung in stage of gray hepatization; lower portion upper lobe congested. Lower lobe right lung in stage of red hepatization; middle lobe normal; upper lobe in stage of red hepatization. Pericardial sac contained about 50 c. c. of serum; heart itself normal and valves competent; right ventricle distended and left contracted, but both ventricles and auricles contained ante-mortem thrombi, strongly adherent to valves and heart muscle. Liver normal. Pancreas normal. Spleen enlarged. Kidneys congested. Stomach and large intestines distended with gas. Small intestines very much congested. Bladder and other organs examined and found to be normal.

W. J. L.

*Lobar.*

J. B.; white; age, 52; born in Ireland; was admitted to the United States Marine Hospital, Chicago, Ill., on April 28, 1903, and died May 4, 1903.

HISTORY.—Patient entered hospital suffering from acute inflammation of intestines. Under usual dietetic and medicinal treatment the patient rapidly recovered from his intestinal affection, and he was discharged recovered May 1 to be readmitted under new diagnosis. On April 30 patient had symptoms of bronchitis; on May 1 he reported sharp pains in left chest, the respiratory excursion of left side was diminished, bronchial secretions caused loud rhonchi, which completely obscured all auscultatory signs; high-pitched resonance was present over left lower lobe, and temperature became normal. By evening typical signs of acute pleurisy was present and patient's condition was notably asthenic. Patient was conscious and rational. Choreiform movements of the face and extremities, which had been present at time of admission, became more frequent and more pronounced. On May 2 patient's breathing was of a rattling character, due to bronchial secretions, which the patient could not expel. Rhonchi were so loud as to obscure all auscultatory signs. No pain present. Tympanitic resonance present over left lung. Patient was rational, but irritable, and growing weaker. Temperature was normal, pulse 114, respirations 36. Urinary analysis proved negative. On May 3 the patient grew rapidly worse, becoming apathetic about noon time. The temperature was still 37.2°, pulse 124, respirations 36. Breathing was gradually becoming more labored, due to the uncleared bronchi, but no cyanosis occurred. At 6 p. m. the patient was unconscious, the muscular twitching very pronounced; general condition grave. At 10 p. m. the patient was seen to be failing rapidly, was still unconscious; temperature 38.2°, pulse 110, respirations 40, and his general condition grave. The patient continued to grow weaker, and at 2.20 a. m. May 4, he died without regaining consciousness. The treatment was at first anodyne, expectorant, and stimulant. Later, as the nature of the case became more evident, stimulation was pushed as conditions required.

NECROPSY (18 hours after death).—Body is that of a rather poorly developed, poorly nourished white male. Chest asymmetrical. No œdema present and but little post-mortem lividity. Usual degree of rigidity. Five c. c. of clear, straw-colored fluid found in pericardial sac. Heart weighed 370 grams, the muscle tissue was dark and rather friable; the coronary arteries were greatly calcified, tortuous, and prominent. All the valves were normal, except the tricuspid, which were slightly sclerosed but apparently competent. About 400 c. c. of purulent fluid was found in each pleural cavity. There was an abundance of recent adhesions of both pleuræ, especially over the right lung. Both lungs were flecked with patches of fibrinous exudate. The right lung weighed 820 grams, was œdematous and somewhat congested. The left lung weighed 1,320 grams, the lower lobe showing red hepatization, the upper lobe somewhat œdematous, but otherwise normal. No tubercle present. The omentum was unusually small. The stomach was deeply congested, but otherwise normal. The spleen weighed 90 grams, was congested and friable. The right kidney weighed 70 grams, was dumb-bell shaped, due to complete destruction of the parenchyma of the organ, excepting at its poles, with the formation of fibrous tissue. At each pole there remained a single fairly normal pyramid with its surrounding



cortex. Capsule was adherent to degenerated portion of kidney. The left kidney weighed 260 grams, capsule not adherent; its parenchyma was normal in appearance. In the external border near the inferior extremity was a contracted scar, which was found to involve only the cortical portion. On the posterior surface of the superior extremity of this organ was found a small thin-walled cyst about the size of a large marrowfat pea; on incision it was found to involve the cortex, contained a very dark blue fluid, and seemed to be a broken-down hemorrhagic infarct. At the internal border of the left kidney near the lower extremity there entered the organ an inferior renal artery. The brain weighed 1,690 grams, the dura was somewhat thickened, and the pial and other blood vessels of the brain were deeply congested. Each lateral ventricle contained about 5 c. c. of clear fluid.

L. P. H. B.

C. E. B.

### *Lobar.*

J. C.; white; age, 35; born in Michigan; was admitted to the United States Marine Hospital, Chicago, Ill., April 25, 1903, and died April 28, 1903.

**HISTORY.**—Family history good. Said he had never been sick before, excepting an attack of gonorrhœa and bubo some years ago. Said he had been addicted to use of alcoholics for a number of years. For the past six months had been drinking heavily. Two weeks ago began to vomit frequently, had no appetite, and became very nervous. For several days previous to admission he had had slight chills and occasionally felt a little feverish. He had no cough nor pulmonary symptoms. His tongue was tremulous, pointed, bright red, and slightly coated. Physical examination revealed nothing to account for temperature (40.5°). Patient was extremely nervous and weak. On the 27th patient was delirious part of the time and complained in the morning of feeling sharp but not severe pains in left chest below and external to nipple. Physical examination elicited a distinct friction sound, limited to the vicinity of the sixth and seventh ribs in anterior axillary line on the left side. Patient coughed very seldom and raised no mucus. At 2 p. m. thoracic pain had increased, and accumulation of bronchial secretion produced noisy breathing and rhonchal fremitus over both lungs. Left upper lobe gave a slightly flattened percussion note; lower lobe somewhat hyper-resonant. Percussion note of right lung normal. Abundant coarse and medium mucous rales heard all over both lungs, particularly during expiration. Heart sounds entirely masked by rales. At 6 p. m. patient was quite unconscious and could be aroused only with great difficulty. No urine had been passed since 10.30 a. m., catheter was introduced at 9 p. m., but bladder was empty. At this time patient was very weak but was easily aroused and then quite rational. Sputum expectorated during the day was very scanty, pure white in color, and consisted of frothy mucus. At this time, too, the left upper lobe gave a notably dull percussion sound. As the night advanced the patient gradually grew weaker, and died at 12.25 a. m., April 28.

**TREATMENT.**—Was at first stimulant and sedative; after advent of pulmonary symptoms, anodynes and stimulants were administered freely.

**NECROPSY** (20 hours after death).—Body that of a muscular, well-developed, well-nourished male; considerable post-mortem rigidity present; lividity not very marked; no œdema present; 30 c. c. of slightly turbid fluid present in pericardium; pericardial sac normal in appearance. Heart weighed 420 grams; muscular tissue a little pale and somewhat friable. Heart overlaid with considerable fatty tissue. Ante-mortem and post-mortem clots present in all chambers. Wall of left ventricle a little hypertrophied. All valves seemed normal, except mitral, which were somewhat thickened and shrunken. The visceral pleura over anterior and lateral aspect of left upper and lower lobes was covered here and there with a thick layer of fibrin. Recent adhesions bound the left lower lobe to the diaphragmatic costal and mediastinal pleura. The left pleural cavity contained 320 c. c. of turbid, grayish-yellow fluid. Left lung weighed 1,300 grams; upper lobe completely consolidated (red hepatization); lower lobe congested (hypostatic). The right lung weighed 620 grams, was somewhat congested, but otherwise normal. No tubercle present. The omentum was broad and quite fatty. The liver weighed 2,650 grams; was firm, somewhat congested, edges were rather sharp. The gall bladder contained about 10 c. c. of bile; no calculi. The spleen weighed 225 grams, capsule was wrinkled, its convex surface was of a dark-bluish color, mottled with pinkish areas. On section it was found deeply congested and rather friable. The pancreas weighed 75 grams and was apparently normal. The right kidney weighed 210 grams, was distinctly lobulated, capsule not adherent, its exterior surface very pale, and on section was found deeply congested. Pyramids stood out distinctly. The left kidney weighed



220 grams, was also lobulated; capsule stripped off readily; external surface pale; on section the cortex was seen to be striated; pyramids prominent; entire parenchyma congested. Alimentary tract normal in appearance. Bladder was empty and contracted.

L. P. H. B.

C. E. B.

*Lobar.*

J. K.; white; age, 63; born in Ireland; was admitted to the United States Marine Hospital, Chicago, Ill., at about 3 p. m. April 13, 1903, and died within an hour.

HISTORY.—Brought to hospital in ambulance; was conscious and rational, but very weak, requiring assistance in walking to the office; was somewhat dyspnoeic, and said he was suffering from "asthma, rheumatism, and a hernia." As he was in a filthy condition, he was given a bath immediately after being assigned to the medical ward. The nurse stated that the bath seemed to refresh the patient, who walked to his bed with great ease. As soon as he lay down, however, the patient became very dyspnoeic and a few minutes later unconscious. Hypodermatic stimulation was begun by the medical officer who was immediately summoned, and found the patient cyanotic, breathing very irregularly, and with an irregular, weak pulse, which seemed on the point of cessation. The stimulation was unavailing and the patient died within a few minutes without regaining consciousness. No history had been obtained from the patient, but from his history taken on a previous admission to this hospital it is learned that the patient has long been a heavy drinker.

NECROPSY (28 hours after death).—Body well developed, extremely well nourished, in fact, corpulent. Lividity very slight. Medium degree of oedema present in lower third of both legs and in both feet. A complete oblique inguinal hernia was present on left side. Both pleurae were universally adherent (old adhesions). No tubercle present in either lung. Right lung weighed 1,780 grams, upper and middle lobes very bulky, firm, and airless; parenchyma friable and in transitional stage between red and gray hepatization; lower lobe showed hypostatic congestion in small degree. Left lung weighed 650 grams, and was congested and very oedematous. The pericardium contained 55 c. c. of turbid serum. The heart was very large and all chambers greatly dilated; excessive quantity of fat present in the interventricular and auriculo-ventricular grooves; heart walls hypertrophied, but muscular tissue very flabby, friable, and pale. Heart weighed 550 grams. Ante-mortem clots were present in all the chambers. There was relative and absolute incompetency of all the valves. The aortic valves were shrunken and contained large calcareous nodules. The mitrals were shrunken, distorted, and calcified, so that orifice must have been permanently patulous. The pulmonary valves were least affected of all; contained large calcified nodules, but leaflets were not so distorted. The tricuspid valves were shrunken and calcified, but not so greatly distorted as the mitrals. The coronary arteries were greatly calcified and extremely rigid. The aorta was stiff and calcareo-sclerotic, but no atheromatous areas were present. The liver was large, smooth, firm, but friable, and very yellow throughout; weighed 2,570 grams. The edges were rounded. The spleen weighed 150 grams, was slightly lobulated, deep-purplish blue in color; on section was found to be congested and quite fibrous. Right kidney weighed 220 grams; easily decapsulated; parenchyma congested. Left kidney weighed 270 grams, was somewhat lobulated; easily decapsulated, slightly granular in appearance. On section was seen to be deeply congested; parenchyma could not be differentiated as to cortex and pyramids. The tissues were very firm, apparently somewhat sclerotic. A small urinary retention cyst, diameter about 15 mm., found in lower portion of kidney. The alimentary tract was found somewhat congested but otherwise normal. The hernia was found to contain the descending colon, which possessed an elongated mesentery, but was otherwise normal. The omentum was very broad and extremely fatty. The appendices epiploicae were unusually developed, those found in the hernia being especially large. The arteries throughout the body, especially those of the kidney and the coronaries, were markedly sclerotic. Dura mater found very firmly adherent to calvarium. Pacchionian bodies numerous and well developed along the superior longitudinal sinus. Slight excess of cerebro-spinal fluid noted. All cerebral vessels were found congested, and on section the vessels could be plainly seen throughout the organ. Large vessels were plainly sclerotic and calcified. No hemorrhage or other pathological condition found. The brain weighed 1,450 grams.

L. P. H. B.

C. E. B.



*Lobar.*

H. S.; age, 52 years; nativity, Nova Scotia; admitted to the United States Marine Hospital, Boston, Mass., April 2, 1903; died April 5, 1903.

FAMILY HISTORY.—Negative.

PREVIOUS HISTORY.—Was treated in this hospital eighteen months ago for chronic rheumatism and was discharged improved.

PRESENT HISTORY.—Twelve days ago while on the "Banks" contracted a severe cold which was followed by cough and pain in the shoulders and back, increased on respiration; expression anxious, cheeks flushed; physical examination shows tubular breathing over left lower lobe, with dullness on percussion. Heart's action tumultuous and irregular, with loud blowing murmur systolic in time and best heard at apex, being transmitted toward the axilla. Respiration rapid and shallow; dry cough which gives much pain and discomfort. Liver and spleen apparently normal in size. Prescription of salts 40 c. c. and bath given.

April 3.—Prescription containing heroin 0.06; syr. scillæ 30; elix. aurantii q. s. ad. 250; M. Sig. teaspoonful three times a day. Cough improved. Temperature reduced by applications of ice bags.

April 4.—Patient appears comfortable. Heart's action somewhat more irregular.

April 5.—Last night patient had several fits of coughing and dyspnoea. Failed rapidly and died at 9.05 a. m. to-day.

NECROPSY (25 hours after death).—Body well developed and well nourished. Post-mortem rigidity well marked. Post-mortem lividity well marked posteriorly. Subcutaneous fat over abdomen moderate in amount as revealed by median incision. Position of abdominal contents normal. Obliterated umbilical vein found and severed. Pericardium contains 50 c. c. of straw-colored fluid. Heart enlarged and flabby. Dark coagulated blood escapes on section of large vessels. Weight of heart 430 grams. Right ventricle contains both post and ante mortem clots. Pulmonary valves normal. Left ventricle contains large ante-mortem clot. Aortic valves normal. Tricuspid orifice admits five fingers. Mitral orifice admits four fingers. There are a few calcareous deposits on mitral valves. Tricuspid valves apparently normal. Right lung weighs 1,130 grams; left, 1,450 grams. Right pleural cavity contains 30 c. c. of turbid serum; left, 75 c. c. of fluid of same nature, and there are many fresh adhesions on both sides. Posterior mediastinal glands enlarged. Right lung shows marks of ribs, the lower lobe crepitates; pits on pressure and upon section shows red hepatization; the upper lobe shows gray hepatization with distinct line of demarcation. A grayish, purulent secretion exudes from the cut surface of both lobes. Left lung: Lower lobe shows gray hepatization on section and upper lobe red hepatization. Liver, cirrhotic, weight 2,280 grams. Pancreas, normal, weight 85 grams. Both kidneys show considerable increase in connective tissue and capsules peel easily. Left kidney lobulated in appearance; weight, 230 grams. Right kidney weighs 250 grams. Ureters and bladder normal. Brain not examined.

C. H. D.  
W. C. R.  
R. M. W.

*Lobular.*

H. C.; age, 21 years; nativity, Kentucky; was admitted to the United States Marine Hospital, St. Louis, Mo., April 1; died April 11, 1903.

HISTORY.—On admission patient stated he had been quite well up to three days previously, when he was suddenly seized, while at work, with headache, which became so intense as to cause loss of consciousness. On examination little or nothing could be elicited from the patient himself as he was in a stupor, from which he was with difficulty aroused. Nothing definite was learned from auscultation or percussion, but from the appearance of the throat and conjunctivæ a diagnosis of influenza, an epidemic of which was prevailing, was made. A mild mercurial followed by a gentle saline purge was given, with salol and phenacetine at two-hour intervals; later, quinine in 0.33-gram doses was substituted. On April 3, the temperature had risen to 40.2 C., and the stupor having passed away, the increased frequency of pulse and respiration announced pneumonia lobular, right, with pleurisy. At this time lung involvement could be detected by physical examination. Salicylate of sodium, alternated with quinine, with milk, eggs, whisky, and small doses of strychnine, were given, with local application of a blister followed by the "cotton-jacket," but failed of more than rendering the patient comfortable.







*February 12.*—Upon a careful examination of nose and throat it was found that he has a deflected nasal septum and hypertrophy of the turbinated bones. Both tonsils are also enlarged and inflamed.

*February 17.*—He was sent to a specialist, who examined him carefully. The right tonsil is smaller in size than when he entered, but the left one is still enlarged. He has been placed upon general tonic treatment and will report again in a week.

*February 24.*—His nose and throat still bother him and he spends most of his time in bed. He eats and sleeps well and his bowels are regular.

*March 7.*—He still has trouble with his nose and throat, and for the last three days has complained of his inability to see anything with his left eye; eats and sleeps well and spends most of his time in bed. Bowels are regular.

*March 11.*—His left eye was examined by a specialist, and he states that there is evidence of embolism of the central artery; that hyperæmia of fundus and optic disk exist, and that there is total loss of vision in this eye. He complains of headache continually. Appetite poor and bowels irregular.

*March 16.*—He complains of considerable pain in eyes and brow, and is unable to see. He sleeps very badly; has good appetite and irregular action of his bowels.

*March 17.*—Eyes examined and no embolism found, but an optic neuritis that is clearing up. Mentality poor.

*March 26.*—The mental condition is bad; he answers questions correctly, but does not like to be disturbed; lying quietly on his bed, usually with his hands over his head. Complains of nothing except weakness at present, and has no pain in his head. Yesterday he complained somewhat of vertigo, but this was not marked. There are no symptoms of aphasia or deafness, nor is there paralysis. Pupils dilated.

*March 28.*—He spends most of his time sleeping, and resents being disturbed; says he can distinguish some light now. Appetite is very poor.

*March 31.*—His general condition is the same, but his mental condition is a little brighter. He spends most of his time in a semistupor. Appetite very poor, bowels irregular.

*April 9.*—His mental condition is much better and he is up and walking around. He still says he can not see. Eats and sleeps well and bowels regular.

*April 15.*—Was taken suddenly with very severe pain in his head, followed by unconsciousness; had numerous clonic spasms lasting two to five minutes, and following each other in rapid succession; biting his tongue so severely that a considerable hemorrhage occurred from it. He had involuntary passage of urine and feces. Pulse rapid and bounding; respiration Cheyne-Stokes. Lungs full of mucous râles.

*April 16.*—Enemas were given to produce evacuation of bowels, but they were retained and proved ineffective. The same treatment was continued on the 17th, and on the 18th was supplemented by the administration of three compound cathartic pills, the same being followed in the afternoon by two enemas of three quarts of water each, three hours apart, both retained.

*April 19.*—Bowels still remain obstinately constipated. Lungs cleared up; pulse rapid and more compressible; urine passed involuntarily; semiconscious, and tongue badly coated.

*April 20.*—Croton oil, one drop, given in the morning. Patient had a stool at 4 p. m. and several during the night—in fact, the oil continued to act until 8 a. m.

*April 21.*—Conscious this morning, and complains of headache and pain in the left elbow; lungs seem clear; pulse rapid and compressible; excessive thirst; tongue coated; pupils have been dilated and immovable since first entrance into hospital.

*April 23.*—Condition of patient is becoming worse; his pulse is very rapid and irregular; has more frequent attacks of clonic spasms; is unable to swallow much, and is unconscious; bowels move involuntarily.

*April 25.*—Died at 9.25 a. m. The urine was at all times negative. The temperature was normal until April 16, when it rose to 38.4 C., and continued above the normal until death occurred.

**NECROPSY.**—Height, 158 cm. Tattoo marks on left forearm, initial C. R. above an anchor, heart and cross. On left hand, anchor and maltese cross. Body emaciated; rigor mortis present. Brain: On removal of the calvarium the dura mater is seen to be thickened and adherent over the left inferior frontal convolution; on removing the dura mater the veins covering the brain are found to contain bubbles of gas; the weight of the brain is 1,522 grams. The measurements are 16 by 13 by 8 cm.; the cerebellum is injected; on section of the brain a new growth is found occupying the left inferior frontal convolution, measuring 1 by 3 by 5 cm.; this growth extends to and involves the optic commissure and optic tracts; the dura mater over this area is thickened and adherent; section of the pons Varolii and medulla oblongata reveals slight interstitial hemorrhage, greater on the right side. The tumor is firm and yellowish. Thorax: The right lung weighs 560 grams, and



is strongly adherent at its base posteriorly by fibrous bands; the lung crepitates except over the surface where the adhesions exist, there the crepitation is somewhat diminished, and on section shows congestion; the left lung weighs 580 grams; it is adherent posteriorly and inferiorly by easily separable fibrinous adhesions; crepitation is nearly absent in the lower lobe and the lower margin of the upper lobe; section of these portions is very bloody and exudes considerable pus, and pieces of the tissue sink in water; the heart weighs 330 grams; the right ventricle is filled with goose-fat clot, and its walls are thin and flabby; the walls of the left ventricle are somewhat thickened; the muscular substance of the heart is rather pale in color; all the cardiac valves are normal; the aorta contains a mixed clot, while the pulmonary artery contains a goose-fat clot; the pericardium contains a small amount of serous fluid, and is adherent to the left lung; at the base of the celiac axis occurs a calcareous plaque, otherwise the great vessels are negative, as well as the nerve trunks; the diaphragm is adherent to the bases of the lungs, especially to the left. Abdomen: The omentum shows considerable congestion; the peritoneum is smooth and shining and shows no adhesions; the spleen is of normal size, weighing 140 grams; section pale, and cuts with increased resistance; the right kidney weighs 110 grams and is of normal size; section pale yellowish in color and cortical markings very indistinct; the capsule strips readily; the left kidney weighs 125 grams, and is otherwise similar to the right organ; the right supra renal capsule is enlarged, thickened, and adherent to the liver; it cuts with increased resistance; the left one is apparently normal; the urinary bladder is empty; the prostate, seminal vesicles, testicles, and urethra are normal; the glans penis shows evidence of former extensive ulceration which has in part destroyed it; the rectum, duodenum, stomach, and gall ducts are normal; the liver weighs 1,380 grams; it shows strong adhesions laterally, its surface is mottled with yellowish areas, and on the lower margin a large depressed yellowish scar exists; adhesions between it and the right suprarenal are found; the gall bladder is distended with viscid bile and is strongly adherent to the hepatic flexure of the colon; section of the liver shows a mottled, yellowish-red appearance; the pancreas is surrounded by firm adhesions, to which the spleen is attached; the solar plexus, mesentery, small and large intestines and great vessels are normal; the vermiform appendix is club-shaped and is twisted upon itself; it is adherent behind the cecum.

ANATOMICAL DIAGNOSIS.—Cerebral syphilis with gumma formation and localized meningitis involving left inferior frontal convulsion and optic commissure and tracts; gas formation, or occurrence, in veins of dura mater; hemorrhage into pons Varolii and medulla oblongata; chronic fibrous pleuritis of right lung; lobar pneumonia of left lung; dilatation of right ventricle; hypertrophy (slight) of left ventricle; acute and chronic phrenitis; calcareous mass in wall of abdominal aorta; congestion of omentum; fibrosis of spleen (slight); fatty infiltration of kidneys; sclerosis of right suprarenal capsule; healed ulcer of glans penis; fatty infiltration of liver; fibrous adhesive bands between pancreas and spleen, on lateral surface of liver, between gall bladder and hepatic flexure of colon, and between liver and right suprarenal body; evidence of previous appendicitis.

C. R.  
W. G. S.

*Gumma of brain.*

F. C.; age, 24; a white American; was admitted to the marine division of the Buffalo Hospital of the Sisters of Charity on the 13th and died on the 18th of June, 1903.

HISTORY.—Has had the usual diseases of childhood; contracted syphilis eighteen months ago, for which he had treatment in this hospital and at the dispensary during March of this year. While in hospital in March his symptoms were very vague; he complained of some pain in the head, but this was never localized; he was excessively nervous, with distinct hysterical features, which were always accentuated in the presence of an audience; he was at times morose and moody; there were also hallucinations, as of voices behind his back or of strange noises in the steam radiator; there were no disturbances of vision nor of hearing, save as above, nor of taste; there were no changes in the general sensation; appetite was indifferent, tongue pale, bowels regular. At this time diagnosis of cerebral syphilis was made, and active antisyphilitic treatment instituted, with the result that the symptoms improved and he was discharged at his request.

PRESENT CONDITION.—The man is pale and there is an expression of great anxiety on his countenance; the pupils are somewhat dilated, the tongue moist and clean; there is no disorder of vision nor of taste; there are still noises in the ears, of which



he complains bitterly that they keep him from sleeping; the heart and lungs are normal, as also the urine; blood pressure, 155 mm. of mercury; all pain is referred to the front, radiating to the vertex. At times he has seizures, as of ticdouloureux; the hysterical features are present; there is a disposition to lachrymation when approached and a marked general tremor. At times he suddenly covers the face with his hands and cries aloud; there are intervals when he is free from any discomfort, and he eats moderately well. The diagnosis of cerebral syphilis, with no localizing signs, was made and appropriate treatment instituted with apparent improvement, the man being up and about the ward.

On the 18th, or five days after admission, the resident was hurriedly summoned to his bedside, and found that there was a total arrest of respiration, the lips and face and finger tips were deeply cyanosed, the pupils dilated; all respiratory effort was suspended, but the heart continued to pulsate strongly. Artificial respiration was at once commenced and continued for four hours, the heart invariably responding to the artificial stimulus, but ceasing upon its discontinuance; death resulted from asphyxia.

NECROPSY (16 hours later).—Body of young adult, rather spare; skin of face and trunk intensely cyanosed; pupils widely dilated; rigor mortis marked. Calvarium removed; vessels of scalp and diploe engorged; skull 8 mm. thick; meninges normal over vertex; the cerebrum removed, and an attachment of the cortex and membranes in a gummatous mass to the skull at the second occipital convolution found on the right side. This gumma was entirely cortical and of only one and a half centimeters in diameter. Careful incision of the brain gave no pathologic change save that the left corpus striatum was extensively hyaline and softened at points into a thick creamy fluid; the cerebellum was normal as were the origins of the pneumogastric and other cranial nerves. Other organs were normal, the lungs being normally contracted.

E. W.

D. M.; age, 19 years; nativity, Jamaica; admitted to the United States Marine Hospital, Boston, Mass., January 2, 1903; died January 3, 1903.

FAMILY HISTORY.—Father's death of unknown origin.

PREVIOUS HISTORY.—Negative.

PRESENT HISTORY.—For past month has had constant pain in head. At first it was referred to left side but gradually involved entire calvarium. The pain was most intense at the top of the head in the median line. It is described as a dull ache, with occasional exacerbations of a stabbing character. It is not influenced by cold weather, but is somewhat reduced in intensity by the local application of cold. The patient has some incoordination. Vision is not disturbed.

EXAMINATION.—There was no evidence of external injury. The pupils are of equal size and normal diameter. The speech is slow and slurring. The memory is poor but the thought seems very well connected. The heart beat is slow but regular (pulse 55 per minute). The abdomen was normal. Patient walks with a dizzy, staggering gait. The reflexes are exaggerated.

NECROPSY (13 hours after death).—Rigor mortis partially developed. Muscular development good. Body well nourished. The usual incision was made and the sternum removed. The left pleural cavity is entirely obliterated by adhesions of a moderate degree of firmness. The pericardium contained 100 c. c. of a clear, amber-colored fluid. The heart was about of normal size and weighed 410 grams. The ventricles contained a few ante-mortem clots. The right auricle also contained a few ante-mortem clots. The left auricle was empty. The valves of the heart were normal. The left lung weighed 330 grams, and was deeply engorged throughout. A cut section floated. The right lung weighed 300 grams and was slate color at its apex. It was slightly œdematous, otherwise normal. No tubercular deposits were found in either lung. The intestines were partly filled with feces and the veins were engorged. The mesenteric glands were considerably enlarged. The vermiform appendix was bound down by adhesions, but was otherwise normal. The gall bladder contained no stones. The liver weighed 1,800 grams and showed some congestion. It contained a white deposit about the size of a pea. Spleen weighed 110 grams, and was very small in size but showed no pathological change. Pancreas weighed 100 grams and was normal. Right kidney weighed 220 grams; left kidney weighed 210 grams; both kidneys were highly injected. The alimentary canal was apparently free from disease except that the solitary follicles were somewhat enlarged, and the mucous membrane was greatly congested. Three lumbricoid worms were found in the large intestines. Brain: The veins of the dura mater were deeply engorged; when the brain was raised, about 25 c. c. of a clear, amber-colored fluid



was found in the middle fossa of the skull; the brain weighed 1,380 grams; the lateral ventricles contained a considerable amount of clear, amber-colored fluid; a gumma, the size of a pigeon's egg, was found in the cerebellum.

CAUSE OF DEATH.—Syphilitic gumma of cerebellum.

F. A. A.  
W. C. R.  
R. M. W.

*Hemiplegia, right; acute pulmonary oedema.*

J. E.; colored; age, 37; admitted to United States Marine Hospital, Baltimore, Md., September 19, 1902; died January 26, 1903.

HISTORY.—Seven weeks ago, while sitting at table, became unconscious and fell; was carried on deck; has had no use of right arm and leg from that moment; has marked impediment and inarticulation of speech. A diagnosis of syphilis was made. He was put on mixed treatment, and 10 drops saturated solution potassium iodide, t. i. d., increasing one drop daily. On November 5, a good-sized fatty tumor was removed from right buttock.

December 17.—Examination of urine shows presence of albumin; infusion digitalis, 15 cc., t. i. d. ordered.

December 18.—Had severe attack of acute pulmonary oedema, coming on suddenly. Was relieved by hypodermics of 0.003 gram strychnine, 0.001 gram atropine, and 0.0015 gram digitalin. Strychnine sulphate, 0.003 gram t. i. d., and infusion digitalis were continued.

January 8.—Examination revealed a mitral systolic murmur, with blowing sound.

January 14.—Heart was very irregular in action; blowing systolic sound appears to be growing louder. Impulse of heart is greatly increased. Aortic sounds are indefinite and weak.

January 14.—Ordered nitroglycerin, .0007 gram t. i. d., and Basham's mixture t. i. d.

January 21.—More oedema of extremities. Urine shows increased amount of albumin.

Between January 12 and date of death had several attacks of acute pulmonary oedema, which were relieved by heart stimulants and diuretics. Died January 26, during attack of acute pulmonary oedema, superinduced on old condition of passive congestion of lungs.

NECROPSY (5 hours after death).—Body large; male; colored. Rigor mortis not marked. Oedema of lower extremities, penis, and scrotum; two large scars in left inguinal region; oedema of arm and hand of right side. Abdominal section: Subcutaneous connective tissue and muscles filled with blood-tinged fluid. In other parts of the body there is a somewhat less condition of anasarca. Thorax: Pleural cavity contains 1,250 c. c. clear, amber-colored fluid; costal pleurae, right and left, normal. Right lung: Small, contracted; absence of crepitation on pressure; free exudate of bloody fluid on section, absence of frothy exudate, cuts with considerable resistance. Left lung: Small, contracted; normal crepitation only in margin of lower lobe, hard and resistant on pressure; cuts with considerable resistance; exudate of blood a little frothy; tissues tough. Anterior margins of both lobes are in stage of acute congestion. Pericardial sac contains 30 c. c. of slightly amber-colored fluid; pericardium normal. Heart: Weight, 710 grams; large and pale. On posterior surfaces of right and left ventricles and right auricle are whitish, irregular areas of organized exudate; similar small areas also exist on anterior surface of right auricle; muscle fibers of the right auricle are paler than normal, and it contains a large post-mortem clot; valves normal; right ventricle contains small amount of blood and blood clot; muscle wall thicker than normal. Left auricle: On anterior surface of endocardial lining, extending upward  $1\frac{1}{2}$  inches from valves; near valve are some small irregular whitish elevations, which are detached by scraping with knife, and which are apparently areas of atheromatous degeneration. Left ventricle: Walls greatly thickened and softened, easily broken down on pressure; cavity contains blood and large organized blood clot; muscles are pale; ventral surface of valves shows areas of degeneration of endocardium 1 cm. in diameter, to which blood clot is apparently attached. Aortic valve, coapting margin contains moderate-sized areas of atheromatous degeneration. Spleen: Weight, 115 grams, very small, contracted; capsule closely adherent, on being detached carries fragments of tissue away; slight outflow of blood on section; cuts with slight resistance, is friable and easily broken down on pressure. Right kidney: Weight, 155 grams, small; capsule easily detached; surface presents mottled dark appearance, denoting congestion of cortex; section cortex tough, cuts with much resistance; broken down upon considerable pressure; blood flows freely from cut surfaces. Left kidney: Weight, 210 grams, large, pale; capsule easily detached; surface presents dark mottled appearance; on anterior central sur-



face an irregular area size of 50-cent piece, whiter than surrounding tissue, showing small areas bright red in color; section, blood flows freely; tissue cuts with marked resistance; broken down only by decided pressure; more friable than right; in margin of cortex and mid-tissue is a hard, white fibrous mass the size of a peanut. Liver: Weight, 1,720 grams, large; capsule somewhat closer adherent than normal; on being detached carries away small fragments of tissue; darker than normal; presents irregular mottled dark appearance; close examination shows many small mahogany-colored areas; section, slight outflow of blood; surface uniform mahogany color; tissue somewhat tougher than normal; the anterior margin of right lobe and quadrate lobe is harder and tougher than remainder of organ. Brain, hardened for twenty-four hours in 10 per cent formalin solution, showed extensive area of degeneration of left hemisphere, located in the motor region, internal and upward from the island of Reil, with long axis of degeneration parallel to long axis of hemisphere, resulting probably from plugging of branch of middle cerebral artery, or rupture of same.

J. A. N.  
H. R. C.

#### *Paraplegia.*

J. B.; age, 24 years; nativity, Missouri; was admitted to the United States Marine Hospital, St. Louis, Mo., December 21, 1901, and died October 11, 1902.

**HISTORY.**—Patient sought relief from a tumor of the left, first metacarpal bone, which interfered with his work. Failing to reduce the swelling by specific treatment, the distal half of the bone was excised and the hand dressed. The wound healed slowly, but satisfactorily, and, at his own request, he was discharged from the hospital with the injunction to report at frequent intervals for observation and continued treatment. This he failed to do. After an absence of several weeks the ambulance was summoned to bring him back to the hospital. On readmission he presented a picture of locomotor ataxia, with paralysis of bladder and rectum. His water was drawn twice daily and rectum emptied by large stimulating enemata on alternate days. Brisk treatment of mercurials by inunction, and by the mouth, with the iodide pushed to the verge of toleration, and moderate doses of strychnia, improved his condition until he gained control of his bladder and rectum. Despite the utmost care bed sores appeared over sacrum, which required daily dressing. September 15, an incorrigible diarrhea began, occurring at intervals and apparently uninfluenced by medication. The patient was completely helpless. Coma preceded the end.

**NECROPSY** (22 hours after death).—Body that of a young adult negro; much emaciated. Bed sores over sacrum and both hips. Rigor mortis marked. Intestinal fat normal. Heart somewhat pale; valves normal; weight, 225 grams. Lungs normal, except an area of infarction in superior lobe, right, and pigmentation of inferior left lobe; weight, right, 545 grams, left, 375 grams. Kidneys: Capsules strip readily, denuded surface of a deep boxwood color; pelvis of kidney encroached upon almost to obliteration; weight, right, 235 grams, left, 265 grams. Liver, smooth, glistening, of a deep boxwood color; divisions of lobes almost indistinguishable; somewhat hard on section; weight, with gall bladder, 2,700 grams. Gall bladder quite full of grumous, light-brown bile. Spleen very friable, boxwood color; weight, 505 grams. Mesenteric glands enlarged. Appendix 14 cm. in length, otherwise normal. Other abdominal viscera normal.

H. C. W.  
J. M. G.

#### TONSILITIS, ACUTE.

##### *Edema of lungs.*

H. B.; age, 24 years; nativity, Nova Scotia; admitted to the United States Marine Hospital, Boston, Mass., September 23, 1902, and died September 27, 1902.

**PREVIOUS HISTORY.**—Patient states that he has never had diphtheria, mumps, or any other serious illness.

**PRESENT HISTORY.**—Patient has been sick for six days, beginning with swelling of the gums, afterwards with swelling of the tonsils and neck. A physician in Gloucester treated the case for three days and pronounced the sickness acute tonsillitis.

*September 23, 1902.*—Wet cups were applied and a longitudinal incision was made in each tonsil, and the patient was directed to gargle his throat every fifteen minutes with a solution of ammoniated tincture of guaiacum in milk, and to take internally two teaspoonfuls of the same mixture. His temperature at 7.20 p. m. was 38° C.



*September 24, 1902.*—The patient appeared to be much better.

*September 26, 1902.*—The throat was examined in the morning and a search for pus was made, the tonsils being again lanced. The pulse was very weak and rapid. A hypodermic injection of strychnine sulphate was given at 10 p.m., and the patient passed a fairly comfortable night.

*September 27, 1902.*—The throat was examined in the morning and a search for pus again made, but without any satisfactory result. The pulse was quite strong but very rapid. There was less swelling in the submaxillary region and the breathing was not so rapid. The patient did not complain during the day. The bowels were freely open. At evening ward call he seemed about the same, but the pulse was small and rapid, although still quite strong. His temperature was 39.8° C. At 10.50 p. m. the patient was given his medicine and did not at that time complain of any discomfort. His temperature fell rapidly, and he died suddenly at 11.05 p. m.

**NECROPSY** (11 hours after death).—Rigor mortis well marked. Body well developed and nourished. The pericardial sac contained about 150 c. c. of clear amber-colored fluid. The heart weighed 470 grams. The muscle was somewhat paler than normal. There were numerous small patches of subserous hemorrhages, especially over the inner walls of the left ventricle. The pericardial covering of the right auricle was markedly inflamed and showed small patches resembling beginning ulceration. Several ante-mortem clots were found in the right ventricle. One large ante-mortem clot was found in the left ventricle. The aortic valves were apparently normal. The left lung was bound down by recent adhesions. On section it showed great congestion, even more than the right, the oedema being exceedingly marked. It weighed 830 grams. The right lung showed similar changes and weighed 860 grams. The liver weighed 1,570 grams and was much congested, presenting the appearance of a "nutmeg liver." The gall bladder contained about 10 c. c. of normal bile. Some large lymphatic glands were found near the point of exit of the cystic duct. The spleen was deeply congested and a cross section showed a mottled appearance, deeper in shade toward the periphery. Weighed 270 grams. The pancreas was apparently normal and weighed 80 grams. The left kidney weighed 260 grams, was much congested throughout, especially in the parenchyma. The capsule stripped easily. The larynx was removed next and found to be normal, with the exception of congestion in the upper part. There was no pus found in the pharynx. The oesophagus, stomach, and duodenum were normal. The stomach contained partially digested milk. The walls, especially over the greater curvature, showed great congestion. The small intestine showed marked congestion; the ileum, Peyer's patches, and solitary follicles were swollen and congested. They showed no ulceration and the colon was apparently normal.

W. K. W.  
R. M. W.

## TUBERCULOSIS.

### *Lungs.*

W. W.; age, 20 years; nativity, New South Wales; admitted to the United States Marine Hospital, San Francisco, Cal., October 31, 1902; died November 21, 1902.

**HISTORY.**—About six months before patient applied for treatment he began to feel badly; about the same time he was unable to obtain a proper amount of food for several days, began to lose flesh rapidly, coughed continually, raising a glairy mucus, became very weak, had dyspnoea on the slightest exertion, nearly every afternoon felt feverish, had shooting pains in both sides of chest, severe night sweats, appetite very poor.

**EXAMINATION.**—Body greatly emaciated, respiration very rapid and shallow, limited motion of chest during respiration. Percussion note dull over whole of right lung, left lung not quite so bad, however; major portion of left lung very dull, a few small areas give some resonance. Râles of every description heard over the entire area of both lungs. Tubercle bacilli were not discovered in sputum. Heart very rapid and weak. Tenderness over lower border of liver. For several days patient's condition remained about the same, then he seemed suddenly to improve, his face began to fill out, he was bright and cheerful, walked about the grounds, continued to cough, but had much less pain and dyspnoea, appetite was good, examination of lungs showed condition unchanged; patient continued to improve till day of death. At 6 p. m. on day of death patient felt very well; at 8 p. m. he walked about the room and was suddenly seized with a sensation of weakness; he succeeded in getting back to his bed, and when seen five minutes later was lying down, gasping for breath. The heart was very rapid and weak, radial pulse showed little more than a flutter; patient said he had no pain, simply an awful sensation of weakness; his extremities



were cold and his face was covered with cold perspiration. He was given stimulants, but they had no effect, and in less than half an hour he died.

NECROPSY (14 hours after death).—Male, 165 cm. high. Post-mortem rigidity well marked. Body pale and emaciated. On opening the abdomen everything appeared normal except the liver, which was found to extend down to the umbilicus in the median line, and four fingers' breadth below right costal arch. The stomach had been pushed down into the left inguinal region. The great omentum was attached to the gall bladder. On opening the skull the superficial vessels of brain showed some engorgement. Brain substance softer than normal. Weight of brain, 1,350 grams; length, 17 cm.; breadth, 13 cm. There is a quantity of fat around the heart; weight of heart, 350 grams; valves appear normal. Lungs are of a grayish green color; do not crepitate; on section a greenish pus exudes; both lungs filled with a cheesy tubercular substance; both lungs show large and small cavities throughout. Weight of right lung, 1,400 grams; weight of left lung, 1,320 grams. Spleen weight, 340 grams; length, 10 cm.; width, 6 cm.; color on section, pale brown. Weight of left kidney, 160 grams; length, 11 cm.; breadth, 5 cm.; thickness, 3 cm. Capsule strips easily. Cortical layer one-half cm. thick; cloudy swelling is present. Pyramids prominent; blood exudes freely on section. Right kidney—weight, 170 grams; condition about the same as that found in left. Stomach 26 cm. long, contains about one-half pint of semiliquid material; portion of posterior wall, 5 by 4 cm., is very thin. Appendix normal. Liver—weight, 1,850 grams; breadth, 20 cm.; length, 25 cm., thickest part of right lobe, 8 cm. On section tissue appears normal; capsule strips easily. Intestines show no ulcers.

W. R. M.

W. G. S.

G. R. T.; age, 35 years; nativity, Finland; admitted to the United States Marine Hospital, Boston, Mass., December 26, 1902; died January 16, 1903.

FAMILY HISTORY.—Negative.

PREVIOUS HISTORY.—Was in this hospital for five weeks for ulcerative laryngitis, and was discharged on October 7, 1902, improved.

PRESENT HISTORY.—When patient returned to his vessel after this treatment at the hospital he felt fairly well for three weeks, after which time he began to have severe paroxysms of coughing in which he coughed up thick greenish lumps. Complains of no night sweats. Patient has lost in weight and has little appetite and feels quite weak. His power of phonation has almost gone.

PHYSICAL EXAMINATION.—An area of dullness over the right lung just to the right of the mammary line and above the nipple. On auscultation dry râles were heard over the areas of both lungs, but more pronounced over the right lung. The heart sounds were partly masked by the chest sounds, but the beat was very rapid and quite irregular. Patient sank from the time of his admission to the hospital and died January 16, 1903, after a number of hours of unconsciousness. The urine showed granular and hyaline casts and albumin.

NECROPSY (20 hours after death).—After the usual incision the sternum was removed. There was 110 c. c. of a clear, pale, straw-colored fluid in the pericardium. The bronchial and cervical glands were enlarged. The mesentery was matted with tubercular deposits. The pleural cavities were practically dry. The left lung was consolidated and filled with miliary tubercles. It weighed 1,000 grams. The right lung was consolidated and showed a number of small cavities and a number of miliary tubercles. It weighed 1,080 grams. The heart was normal and weighed 370 grams. The liver was apparently normal and weighed 1,920 grams. The spleen was normal and weighed 180 grams. Kidneys: The right kidney was firm and showed on section some increase of connective tissue in the medullary portion. The same changes were present in the left kidney. These weighed respectively 160 and 170 grams. The stomach was normal and contained 200 c. c. of partly digested food. Intestines: One partially healed ulcer was found in the ilium. The larynx showed extensive ulceration of vocal cords and arytenoid cartilages. The brain weighed 1,420 grams, and was apparently normal; 5 c. c. of fluid was found in the ventricles.

F. A. A.

W. C. R.

R. M. W.

J. M.; age, 22 years; nativity, Tennessee; was admitted to the United States Marine Hospital, St. Louis, Mo., July 12, and died October 21, 1902.

HISTORY.—On admission the patient was exhausted by dysentery, night sweats, and cough; pulse, 96, thready; respiration, 23; temperature, 39° C. The case presented the usual features of emaciation, exhaustion, irregular fever, and persistent diarrhea,



with profuse expectoration, and died from exhaustion. The treatment consisted of forced feeding with stimulants and astringents. The temperature varied between 36.3° C. and 39.5° C., while the pulse and respiration gradually accelerated.

NECROPSY (21 hours after death).—Body that of a young, adult, intensely black negro; extremely emaciated; rigor mortis marked; body entirely devoid of fat; pericardium normal, containing 25 c. c. of straw-colored serum. Heart normal; valves competent; weight, 320 grams. Lungs adherent to chest wall throughout by fibrinous bands; much congested; solidified almost throughout and studded with nodules; frequent pus cavities. Weight: Right, 1,440 grams; left, 910 grams. Kidneys rather small; capsules adherent; otherwise normal. Weight: Right, 140 grams; left, 165 grams. Liver normal; capsules adherent; weight, 1,370 grams. Gall bladder moderately full of viscid bile. Spleen small, nodular; capsule adherent; weight, 180 grams. Mesenteric glands enlarged, cheesy. Bladder normal. Urethra pervious.

H. C. W.

J. M. G.

J. A. T.; age, 60; nativity, Mexico; color, white; admitted to United States Marine Hospital, Fort Stanton, N. Mex., May 13, 1902; died May 22, 1902. Diagnosis, tubercle of lung.

PREVIOUS HISTORY (taken from clinical notes of medical officer in command, Baltimore).—No family history given. Sick four months with asthma and rheumatism, pains in hips, arms, and shoulders. Cough in morning. Spits considerable hard phlegm and has dyspnea. Appetite good, bowels irregular, urine scanty. Severe frontal headache experienced. Recovered from rheumatism. Readmitted March 11; diagnosis, valvular disease of heart (tricuspid regurgitation) and chronic nephritis. His condition continued slowly to improve until the time of leaving, May 11, 1902. A number of examinations were made for tubercle, but the result was negative until April 25, some time after which date he was recommended as a suitable one for transfer to Fort Stanton, by his attending physician. Discharged May 7, improved, unfit for duty.

Examination at Fort Stanton elicited the following: Family history negative. Previous diseases malarial fever and rheumatism. Present disease of eighteen months' standing. Has had hemorrhages, night sweats, fever, loss of weight, and cough and expectoration. Has curved finger nails and typical line around gums; marked emaciation; dyspnea; limited motion of left chest; increased vocal fremitus over both lungs; dullness in right lung from apex to second rib; dullness in left lung from apex to second rib and over whole extent posteriorly; typical crackling rales in right upper lobe; same in left lung nearly throughout, with bronchophony and bronchial breathing. Heart action rapid but no valvular lesion discovered. This patient rapidly collapsed, suffering extremely with dyspnea and intercostal neuritis. The sputum became streaked with blood. A remarkable variation of the temperature was observed May 21. At 8 a. m. it was 45° C. and at 9.30 a. m. it was 34, with extreme dyspnea. A little later the temperature rose to 37. May 22, cough and dyspnea became much worse and the throat was very painful. Death occurred at about 4 p. m., the respiration continuing for a short time after the pulse had ceased to be perceptible.

NECROPSY.—Rigor mortis and post-mortem lividity marked; some emaciation; commencing decubitus over right trochanter; muscles well developed. Calvarium removed. The dura is congested externally and is adherent along the longitudinal fissure. At many points around the arteries are seen very numerous white nodular bodies, irregular in distribution and extending forward and backward as far as the fissure of Rolando. The pia over this area is greatly congested. The base of the brain is congested and shows scattered nodules all over pia. The weight of the brain is 1,490 grams. The lateral ventricles contain a moderate amount of bloody fluid. The overlying tela choroidea superior shows a mass of small nodules which are gelatinoid on section. The pia over the hippocampus major and of all three horns, and the basal nuclei are congested. The cord, on section below the medulla, appears to be normal. The hypophysis cerebri is of the size of a navy bean and on section appears normal. The tongue is short, thick, flabby and coated; the pharynx is congested with adenoid growths; the tonsils are normal; the thyroid cartilage is ossified; the mucous membrane of the larynx, trachea, and epiglottis is highly congested. The esophagus is negative. The anterior mediastinum shows enlarged and caseous lymph glands. The costal cartilage of the first rib is ossified. The thymus gland is not demonstrable. The pericardium is free anteriorly, and its cavity contains a moderate amount of clear straw-colored fluid. The heart weighs 450 grams and is enlarged and broadened. The apex is made up of the right ventricle, which is infiltrated with fat. The aortic and pulmonary valves are competent. The mitral



valve admits three finger tips loosely. The tricuspid admits five finger tips loosely and the valve is thickened and shortened. The right ventricle contains a large goose-fat clot. The left ventricle has slightly thickened walls and its capacity is increased. The same obtains in the right ventricle but to a greater extent. The right auricle is dilated, and the myocardium of the entire heart is flabby, that of the interventricular septum showing fibrosis. Beneath the anterior cusp of the aortic valve is seen a large calcareous plaque. Goose-fat clots are present in the aorta and pulmonary artery. At the beginning of the left coronary artery, in the intima, there is another calcareous plaque. The right lung extends across the median line and the right pleural cavity is obliterated. The peribronchial lymph glands are enlarged and caseous. The weight of the right lung is 1,040 grams; it floats and crepitates feebly except at the apex; section shows frothy fluid throughout and many encapsulated cavities in the right apex; the lobar fissures are obliterated; there is much coal pigment and the internal border is emphysematous; there are scattered nodules throughout, especially in the upper lobe; œdema is present in the base. The left lung is greatly retracted and there are strong fibrous adhesions all over. The posterior mediastinal glands are enlarged and caseous. The weight of the left lung (including the parietal pleura and part of the diaphragm) is only 540 grams; it floats by the base only. The dimensions in inches are as follows: Length,  $8\frac{1}{2}$ ; width at base, 4; at central portion,  $3\frac{1}{4}$ ; at apex, 2; thickness,  $1\frac{3}{4}$ . The lung is bound down so strongly as to make it necessary to remove with it the parietal pleura and a part of the diaphragm. Covering the apex the pleura is greatly thickened and presents numerous calcareous masses. The parietal pleura averages one-half inch in thickness. The apex and upper lobe do not crepitate, the apex being a mass of scar tissue. From the apex a long cavity, or rather sinus, extends downward, surrounded by a mass of scar tissue of stellate form, joining below a system of small cavities of great length extending to the base. This fibrosis and cavity formation occupy the entire lung except a small portion of the base where there is some crepitation. The thoracic aorta and the arch exhibit large calcareous plaques. The nerve trunks are normal. The diaphragm is adherent to the bases of the lungs. It extends to the fourth rib on the right side, and to the fifth on the left. The omentum is retracted to the left, and bound to the peritoneum by band-like adhesions. The peritoneal cavity contains a moderate amount of clear straw-colored fluid. The spleen weighs 140 grams; it is scarred externally, cuts with slightly increased resistance, and has prominent malpighian bodies. The kidneys weigh 370 grams; the left is the larger; both are smooth externally; are pale and cut with slightly increased resistance; have adherent capsules which strip with difficulty and leave rough granular surfaces, and have prominent stellate veins; the cortex is diminished in thickness and contains fat. The suprarenal capsules are normal. The urinary bladder, organs of generation, rectum, duodenum, stomach, and gall ducts are normal. The gall bladder is adherent to the hepatic flexure of the colon. The liver weighs 1,860 grams, is enlarged, and shows areas of fibrous tissue. The gall bladder extends about 1 inch below its lower border. The liver cuts with increased resistance and shows centers of lobules darker than periphery. The pancreas and solar plexus are normal. The mesentery contains enlarged and caseous glands. The small and large intestines and vermiform appendix are normal. The abdominal aorta contains calcareous plaques.

**ANATOMICAL DIAGNOSIS.**—Decubitus, chronic meningitis, passive congestion of brain, chronic pharyngitis, tracheitis and laryngitis, ossification of thyroid cartilage, tubercular adenopathy, cardiachy pertrophy and dilatation, tricuspid insufficiency, atheroma, chronic fibrous pleuritis, chronic pulmonary tuberculosis, atrophy of left lung, chronic phrenitis, chronic peritonitis, chronic bright's disease, cirrhosis and passive congestion of liver.

H. K. P.  
C. R.  
P. M. C.

H. B.; age, 25; nativity, Germany; color, white; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., May 1, 1902; died May 9, 1902.

**HISTORY.**—This patient was a discharged sailor from the United States Navy. He came to Fort Stanton through misinformation as to the classes of persons legally entitled to treatment by the Marine-Hospital Service. His condition when he applied for admission was so serious and hopeless that it would have been brutality to have turned him out to shift for himself in a country like this about Fort Stanton. His statements as to his service having been borne out by his papers from the Navy Department, he was accordingly admitted as a patient, and authority was requested of the Bureau to continue him as a regular patient. After his admission a physical examination was postponed for several days, owing to his great weakness. The fam-



ily history was negative, as was also the personal history. The immediate disease began about eighteen months earlier. Fever, night sweats, hemorrhages, and loss of weight were experienced. When physically examined weakness was so extreme that only auscultation was resorted to. The right lung appeared to be infected throughout, and the left lung in its upper half. Considerable dyspnoea was present. Diarrhea gave much inconvenience nearly all the time. All symptoms gradually increased in severity, and the fatal termination occurred May 9, 1902.

NECROPSY (18 hours after death).—May 10. Marked emaciation; slight rigor mortis; pupils dilated; oedema of the left hand only. Throat: Several tubercular points at base of epiglottis. The vocal cords somewhat thickened, but no tubercular ulcerations are noticed. Thorax: The second costal cartilages are ossified; the thymus gland is present, small in size, and normal in appearance; the anterior mediastinum contains enlarged and caseous lymph glands. The heart weighs 270 grams; its external appearance is normal; a goose-fat clot is adherent to the pulmonary artery; the aorta contains dark post-mortem clots; around the mitral valve are several points of vegetation; an ante-mortem clot is present in the left ventricle; the aortic and pulmonary valves are competent to the water test; the mitral orifice admits three finger tips; the tricuspid admits four finger tips; atheromatous points are seen near the beginning of the aorta. The pericardial cavity contains a moderate amount of clear straw-colored fluid. The right pleural cavity is entirely obliterated. The right lung weighs 970 grams; the upper lobe is thickly infiltrated with hard, yellow, caseous nodules; the lower and middle lobes show marked hypostatic congestion. The left lung weighs 1,040 grams; the pleural layers are adherent about the upper lobe; the lower lobe is free anteriorly, but adherent laterally and posteriorly. There is a large cavity in the apex, and small consolidated areas throughout the lung. The cut section is very bloody and frothy. The great vessels and the nerve trunks are normal. The diaphragm is adherent to the base of the right lung.

Abdomen: The omentum, spleen, suprarenal capsules, and urinary bladder are normal. The stomach, duodenum, rectum, gall ducts, liver, pancreas, and solar plexus are normal. The mesentery contains enlarged lymph glands. The small and large intestines, vermiform appendix, and great vessels are normal. The kidneys are enlarged, congested, capsules not adherent, and with somewhat indistinct cortical markings. The left testicle shows a hydrocele of the tunica vaginalis; otherwise the organs of generation are normal.

Anatomical diagnosis: Tubercular laryngitis, ossified costal cartilages, tubercular lymphadenitis, cardiac vegetations, atheroma, chronic fibrinous pleuritis, chronic pulmonary tuberculosis, hypostatic pulmonary congestion, chronic phrenitis, hydrocele of left testicle, passive congestion of kidneys.

C. R.

P. M. C.

T. N.; age, 46 years; colored; nativity, Virginia; admitted to the United States Marine Hospital, Cincinnati, Ohio, March 3, 1903; died April 6, 1903.

HISTORY.—On admission he complained of a dry cough, pain in the back, and general debility. He stated in his family history that his mother and one brother were living and well; that his father died from "bladder trouble," and two sisters had died, cause unknown. He had been treated in this hospital for myalgia from December 11, 1902, to January 8, 1903, having been discharged recovered on the latter date. He did not remember having had the diseases of childhood, but gave a history of pneumonia, syphilis, and gonorrhea. Stimulating expectorants were administered, also quinine sulphate, 1.32 grams daily, but the latter had no effect on his temperature.

Physical examination on March 21 showed a fairly well-developed man, somewhat emaciated; no hemorrhages or areas of abnormal pigmentation of the skin; no enlargement of the lymphatic glands; no tenderness over the long bones, and no icterus or cyanosis. Facial expression dull and heavy; pupils equal and react to light and accommodation. Lips parched, and tongue covered with thick fur. The thorax was symmetrical, but the supra clavicular spaces were depressed. Respiratory excursion was noted at both bases. On percussion over the right supra and infra clavicular areas the note was higher in pitch (approaching tympanitic) and more resistant. On auscultation over this area the inspiration was higher in pitch and roughened, expiration was prolonged and approached tubular in character. Vocal and tactile fremitus were increased. Nothing abnormal was noted in the cardiac area other than increased frequency of the heart's action. Splenic dullness extended to within three fingers' breadth of costal border; liver dullness normal. Examination of abdomen was negative. Examination of urine was negative. Throughout his illness he complained of little or no pain, no troublesome cough, and had practi-



cally no expectoration. The sputum was examined daily for two weeks, from March 21, without finding the tubercle bacillus. Examination of the blood was made April 2 for malarial plasmodia but was negative, and there was no leucocytosis at that time. From this time he failed rapidly, the pulse became rapid, irregular, of small volume, and poorly sustained. Cardiac stimulants were given for the failing heart, but no improvement followed, and he died at 5.45 a. m., April 8, 1903.

**NECROPSY** (8 hours after death).—Body much emaciated. The skin presents no areas of pigmentation or hemorrhages. There is no enlargement of the superficial lymphatic glands. The eyes are partially open, and there is no exudation from the mouth or nose. The supra and infra claviclar spaces are depressed, the sternal angle is narrow and the abdomen is scaphoid. Rigor mortis is well marked. On removal of the calvarium and opening the dura mater a slight amount of serous fluid escapes; the vessels of the dura are partially filled with blood. On either side of the longitudinal sinus the pia mater is thickened and contains granular areas, more particularly along the upper end of the calloso-marginal fissure. The membranes at the base are apparently normal. On opening the abdominal cavity the partially distended intestines present in the opening, the peritoneum is smooth and glistening, except in the region of the gall bladder, where it is bile stained. There is no free fluid in the retro-vesical space, the appendix is normal and points toward the spleen. On removal of the sternum the anterior margin of both lungs appears partially distended and the pericardium is hidden by a mass of areolar tissue. There is no free fluid in the pericardium, the lining is everywhere adherent to the epicardium (the result of an old inflammation) and on separation is rough and opaque in appearance. The epicardium is also roughened and opaque, due to the presence of a fine fibrous exudate. The heart is flabby, the right heart is practically empty and the left ventricle and auricle are distended with dark-blood clots. The tricuspid orifice readily admits three fingers, the mitral orifice two. The endocardium is smooth and apparently normal in all the chambers. The heart weighs 300 grams, the right ventricular wall measures 0.8 cm., and the left ventricular wall 1.7 cm. in thickness. The muscle is pale and flabby. The wall of the aorta contains numerous fine atheromatous patches. The right pleural cavity is almost entirely obliterated, dense adhesions binding the visceral and parietal pleura together. The different lobes of the lung are firmly bound together by the thickened pleura. The upper lobe is partially consolidated and the entro-lung tissue is studded with miliary tubercles, yellowish in color in the apex but not caseous. The left pleural surfaces are adherent, particularly at the base and slightly so in the region of the apex. There is no free fluid. On section the surface is dark in color, exudes a frothy serum, and pearly tubercles are everywhere apparent. A cut section from the apex floats in water. The spleen weighs 470 grams; the lower border is well up behind the costal border; the capsule is opaque, bluish white in color, and on section the tissue is firm, dark red, congested, and contains numerous miliary tubercles. The left kidney weighs 180 grams, the surface is pale and smooth, the capsule strips readily. On section the cortex is slightly thickened, the surface is pale and occasional pearly tubercles are seen. The right kidney weighs 165 grams, and presents the same appearance as the left. The liver weighs 1,660 grams, the capsule is smooth, and the liver surface contains tubercles here and there. The cut surface is dark in color and contains an occasional tubercle. The urinary bladder is normal in appearance. The intestines present no abnormalities.

J. W. K.

W. P.; age, 29 years; nativity, Wisconsin; admitted to United States Sanatorium February 13, 1903; died February 20, 1903.

**HISTORY.**—Patient said that mother died twelve years ago of asthma, but from history of symptoms it is not improbable that she suffered from phthisis pulmonalis. Family history otherwise negative. Patient had enjoyed good health until a year ago, when he began to cough, and had several attacks of hemoptysis. Since that time he has had a short hacking cough and a few attacks of hemoptysis. Recently he began to feel much worse. Complained of severe pain in right chest, intense frontal headaches, and increasing severity of cough. Appetite was fair; bowels regular; sleep disturbed by cough; occasional night sweats during past month. Said he had lost 30 or 40 pounds during past year. Patient was so feeble at the time of his arrival at the sanatorium that a physical examination was delayed, and finally, three days after admission, he was so weak that the examination was carried only to the extent of absolute necessity. The right lung was apparently badly diseased, there being physical signs of a cavity occupying the space normally filled by upper lobe. The left lung was more or less involved throughout, the upper lobe being worse than the lower. Heart's action rapid and forcible; systolic murmur heard at apex. Specimen



of sputum examined contained comparatively few tubercle bacilli. Examination of the urine was negative. Patient progressively failed; cough was severe; expectoration profuse; sleep disturbed, pronounced dyspnoea; poor appetite; bowels irregular. Death occurred February 20, 1903, 6.30 a. m.

NECROPSY REPORT (8 hours after death).—Post-mortem rigidity marked. Pronounced hypostatic congestion. Hair sandy and scanty. Vaccination mark on left arm. Pupils equally and moderately dilated. Body apparently well nourished. Body heat not entirely dissipated. On opening the abdomen the liver was seen to extend 75 cm. below the margin of the ribs; exteriorly pale and mottled; on section lobules were distinctly outlined; interior pale and apparently fatty. Bile duct patulous. No calculi in gall bladder; weight, 1,980 grams. Spleen pale and soft; nothing abnormal was apparent on section. Malpighian bodies fairly distinct; weight, 165 grams. Both kidneys were apparently normal. No evidences of congestion or structural changes. Pyramids distinct. Right kidney weighed 140 grams; left kidney weighed 180 grams. Both suprarenal capsules were apparently normal. Colon was somewhat reduced in caliber. Cæcum very much distended. Vermiform appendix was entirely attached by normal peritoneum to cæcum, with the exception of last one-half inch. Stomach and small intestines apparently normal. Bladder contracted and walls thickened as the result of an old inflammation. Prostate and testicles were apparently normal. Right lung entirely destroyed by suppuration. The cavity caused by absence of the lung contained about 300 c. c. of pus. Left lung bound by adhesions that yielded quite readily. Entire organ was studded with tubercles, but contained no cavities. The lower lobe was more crepitant than the upper. Externally the heart was apparently normal. Mitral valve was thickened, contracted, and there were numerous atheromatous patches on its surfaces.

E. J. S.

P. M. C.

C. H.: age, 50 years; nativity, Germany; color, white; admitted to United States Marine-Hospital Sanatorium, Fort Stanton, N. Mex., November 27, 1902. Died December 7, 1902.

HISTORY.—Family history was negative as far as patient knew. Gave history of being jaundiced fifteen years before. Concerning his present illness he stated that for past four weeks he had been coughing and expectorating very much; that for the last few years he had been troubled with a hacking cough. At the time of admission he had a diarrhoea; loss of appetite; had lost 40 pounds from normal weight; had constant cough; expectorated muco-purulent sputum; had night sweats and some dyspnoea.

Examination November 29, 1902, revealed the following condition: Patient stated that he felt short of breath, was weak, appetite poor, slept poorly, bowels regular, coughed some, expectorated considerably.

INSPECTION.—Mucous membranes pale; emaciation marked; thorax fairly well proportioned; musculature very small; panniculus adiposus absent; skin dry and inelastic; clavicles prominent, the right more than the left; abdomen level with the ribs; respiration rapid; expansion limited entirely to right side. Left side of thorax more prominent, full and bulging, than the right. Palpation: Vocal fremitus greater over the right chest. Mensuration: Chest mobility 4 cm. (82 cm. to 86 cm.). Percussion: Dullness over right lung anteriorly from apex to nipple. Flat tympany over the left from apex to base. Auscultation: Right lung; bronchial breathing with snoring and crackling râles over upper lobe; breathing in the rest of lung roughened, vesicular with a few crackling râles and clicks. Left lung; amphoric breathing from apex to base, front and back except at base posteriorly. Vocal resonance was almost absent over entire left lung and increased over upper two-thirds of right lung. Heart: Apex pulsation not visible; epigastric pulsation visible; heart sounds very faint as heard over left side, but loud and distinct over right side; pulmonary second sound accentuated; pulse small and frequent. Sputum was mucopurulent, contained a few tubercle bacilli, no other micro-organisms found. Examination of urine was negative.

December 2, at 2 p. m., patient was seized with an attack of dyspnoea and complained of left side. Was given strychnia (0.002 grams) hypodermatically, and felt easier in a few minutes.

December 7.—Patient had been delirious at this time for four days. Face was congested. Respiration very labored. Patient died at 9 p. m.

NECROPSY (16 hours after death).—Slight oedema of hands and feet; hypostasis over back; panniculus adiposus absent; left side of thorax is more prominent than right and bulges, especially in lower half. Abdomen: On section wall is found thin and the muscles small; omentum poor in fat; abdominal contents moist. Left kid-



ney: Weight, 125 grams; fatty capsule almost entirely absent; kidney small and firm; fibrous capsule thickened and adherent in places; connective tissue of parenchyma increased. Right kidney: Weight, 125 grams; in all respects same as left. Suprarenals: Longer than normal, but otherwise apparently normal. Liver: Weight, 1,550 grams; feels rather firm; connective tissue in Glisson's capsule increased; gall bladder normal. Spleen: Weight, 213 grams; connective tissue of parenchyma increased. Intestines: Upper part of jejunum was congested and contained one small ulcer; ileum contained many small ulcers involving the mucosa and submucosa. Appendix, 8 cm. long, of small caliber, and contained two small ulcers. Bladder, small and contracted. Prostate, vesiculæ seminales, and testes apparently normal. Diaphragm: On the left side comes down to the ninth rib in the nipple line and to the tenth rib in the anterior axillary line. On the right side it comes down to the lower edge of the fifth rib in the nipple line. Thorax: Heart considerably larger than patient's right fist; both ventricles dilated and filled with currant-jelly clots; mitral valves thickened, sclerotic, and incompetent; above the aortic semilunar valves were atheromatous plaques. The coronary arteries were especially sclerotic near their origin above the semilunar valves. Weight of heart, 315 grams. Upon opening the thorax the left lung was found collapsed, contracted, and firm. The pleural cavity was distended with gas under some pressure, for upon entering the pleura it escaped with a hiss. The pleural cavity also contained about a liter of a purulent greenish yellow fluid. The left lung upon section was found consolidated, contained no air, and had a small cavity in the apex. Right lung: Anthracosis more marked than normal; lower lobe air-containing, with many scattered tubercles; middle lobe same as lower lobe; upper lobe partially air-containing, with considerable infiltration and areas of consolidation.

SUMMARY OF PATHOLOGICAL FINDINGS.—Tuberculosis of lungs and pleuræ; pyopneumothorax of left side of some duration; mitral insufficiency and stenosis. Arterio sclerosis: Ulceration of intestines and appendix.

J. W. T.  
P. M. C.

A. W.; age, 27 years; nativity, Ohio; color, white. Admitted to the United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., January 14, 1902. Died January 27, 1903.

HISTORY.—Entered Marine Hospital at Cleveland, Ohio, December 11, 1901, complaining of cough and loss of weight. Family history negative as to tuberculosis, except that one uncle died of tuberculosis of the lungs. Patient gave history of typhoid fever three years before. That in the preceding June he contracted a hard cold with cough. Cough increased in severity from June to July 20, 1901, during which time he lost 6 pounds in weight. Then he improved and gained, and on December 11 weighed 150 pounds. Had slight night sweats, slight pains in chest, and some dyspnoea upon severe exertion.

Physical examination January 15, 1902, showed the right infraclavicular space depressed, percussion note comparatively dull over entire right upper lobe. Left lung resonant throughout. Small moist rales were heard over right upper lobe and dry rales at the base of the right lung laterally; also a few moist rales at base of left lung anteriorly. Cog-wheel respiration over both lungs.

Examination of the urine was negative.

Sputum contained numerous short thick tubercle bacilli.

April 24.—Body weight, 166 pounds.

May 19.—Discharged against most earnest advice, much improved.

June 4.—Readmitted. Physical examination showed in the right lung many crackling and large moist rales in the upper two-thirds anteriorly and upper one-half posteriorly. The left apex showed slight infection not previously noticed. Body weight, 152 pounds. For next few months general condition improved, but physical signs showed an increase in lung involvement.

During October, 1902, was operated for fistula in ano without an anesthetic and made a good recovery.

January 9, 1903.—Patient was feeling very well; nutrition good. Examination showed lung expansion to be 5 cm. Right lung comparatively dull from apex to base anteriorly; bronchial breathing anteriorly from apex to second intercostal space; crackling rales from apex to base front and back; occasional friction rub in the interscapular space; bronchophony from apex to third rib. Left lung showed a few fine moist rales and roughened breathing with prolonged expiration in apex. Heart: Apex beat 4 cm. below and 1 cm. outside nipple. A double murmur is heard over apex and base of heart. Best heard over mitral region.

January 17, 1903.—Patient was suddenly taken with severe hemoptysis while doing light work in the dining room.

January 19.—Patient had a second severe hemorrhage. 1,000 c. c. of nitrogen



were passed into the right pleural cavity according to the method of Murphy. Some difficulty was experienced in the injection of the gas and no more would enter. Patient did very well for a few days, but on the morning of January 27 blood began to pour from the patient's mouth and in a few minutes he expired.

NECROPSY (28 hours after death).—Rigor mortis present throughout; ears cyanotic; dried blood around mouth, nose, chin, and neck; panniculus adiposus fair in amount; musculature medium; hypostasis over back of body and legs; right side of thorax more prominent than left. Suspensory bandage over thighs; feet extended. Abdomen on section showed subcutaneous fat of light orange color and fair in amount; muscles of wall well developed and reddish brown in color; abdominal contents slimy and moist; organs about gall bladder stained with bile; liver border 5 cm. below costal margin in right nipple line; gall bladder much distended with bile; great omentum adherent to parietal peritoneum in left iliac region; omentum and mesentery fairly rich in fat; intestines and mesentery show venous congestion. Liver: Weight, 2,010 grams; on section showed nutmeg appearance. Gall bladder contained about 200 c. c. of bile; cystic and common ducts patent. Spleen: Weight, 320 grams; large, soft, friable, and on section gelatinous in appearance. Right kidney: Weight, 160 grams; macroscopically negative. Left kidney: Weight, 180 grams; pelvis contained considerable fat; otherwise normal. Suprarenals not enlarged, macroscopically normal. Stomach dilated, contained about 400 c. c. of blood, some of which was fluid and mixed with stomach contents, and some in large clots containing many small air bubbles. Wall of stomach was covered with a thick tenacious mucus. Intestines showed passive congestion and two small ulcers in the caecum. Bladder, prostate, seminal vesicles and testicles macroscopically normal. Thorax: Right lung; weight, 1,040 grams; lung semicollapsed; fragile adhesions between visceral and parietal pleura laterally and posteriorly. At the apex were many strong tough adhesions. On section a series of small cavities surrounded by firm consolidated lung and thickened pleura was seen. The visceral pleura at the apex was from one-eighth to three-fourths inch thick. The lower two lobes contained consolidated areas and scattered tubercles. The bronchi throughout were filled with blood. Left lung; weight, 880 grams; visceral pleura adherent to pericardium over an area of one square inch; upper lobe consolidated in apex with consolidated areas and scattered tubercles throughout remainder of lobe; large bronchi filled with blood. Heart; weight, 270 grams, somewhat larger than patient's right fist. Right ventricle filled with currant-jelly clots; walls slightly thickened. Left ventricle also filled with currant-jelly clots; sclerotic areas above aortic semilunar valves; mitral valves sclerotic, contracted, and thickened.

SUMMARY OF PATHOLOGICAL FINDINGS AS FOUND MACROSCOPICALLY.—Tuberculosis of both lungs, and pleurae, with slight involvement of pericardium. Valvular disease of the heart. Arterio sclerosis. Venous congestion of liver and intestines, ulcers in caecum and dilatation of stomach. Immediate cause of death, asphyxiation by filling of bronchi with blood due to pulmonary hemorrhage.

J. W. T.  
P. M. C.

Attention is drawn to the retrogression in this case, dating from the time he left the sanatorium against our earnest protest in April, 1902.

T. P.; age 33 years; nativity, New York; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., September 9, 1902; died September 18, 1902.

HISTORY.—Family history negative. Patient had spit up considerable blood five years ago, but can not say whether it came from lungs or stomach. Has had enteric fever. Has had epigastric pain and tenderness for two years. Acknowledges the habit of drinking large quantities of alcoholic beverages. Vomited considerable blood in May last. Began to cough about the same time. Expectorates large quantities of thick yellowish material. Appetite poor; bowels regular; does not sleep well; has night sweats, and feels very miserable.

Physical examination shows dyspnoea, slight cyanosis of lips, face, and fingers; tongue coated. Expansion is limited. Cardiac pulsation visible. Auscultation shows numerous crepitant rales in both lungs from apex to base. Body weight, 123½ pounds; normally 145 pounds. Urine apparently normal. Rest, stimulants, and forced feeding were prescribed, but patient gradually failed.

September 13, 1902.—Pulse weak and rapid. Cyanosis of face and slight delirium.

September 18, 1902.—Death occurred at 12.30 a. m., due apparently to heart failure.

NECROPSY (10 hours after death).—Rigor mortis marked. Considerable hypostatic congestion. Small amount of heat in abdomen. Hair brown. Slight beard. Hair on abdomen and pubis of the female type. Vaccination marks on both arms. Fairly well nourished as to musculature and panniculus. On opening abdomen, liver was found to be adherent to abdominal wall and diaphragm, its margin extend-



ing 7 cm. below the border of the ribs. Transverse colon forms a loop extending below umbilicus. Intestines apparently contracted. Lower border of stomach extends to level of umbilicus. Liver pale, grates under knife; connective tissue evidently increased; outline of lobules very distinct; where adherent to diaphragm there was a small area of cicatricial tissue 1 cm. in width and the same in depth; weight 1,685 grams. Gall bladder and ducts normal. Spleen of firm consistency; apparently normal; weight 215 grams. Adrenals apparently normal. Capsule left kidney strips easily and organ appears normal; weight 145 grams. Capsule of right kidney somewhat adherent; organ firm under the knife and connective tissue probably increased; weight 130 grams. Stomach dilated, filled with water and curdled milk; mucous membrane congested, apparently atrophied and thinned; corrugations not very evident. Mesenteric and retroperitoneal glands apparently normal. Pancreas apparently normal. There were a few ulcers in ileum, otherwise intestines presented no abnormalities. Bladder contracted to about one-half normal size; walls thickened. Prostate, urethra, and testicles apparently normal. Pericardial fluid 30 cc. in amount; turbulent. Heart apparently enlarged. Right ventricle contained large ante-mortem clot; walls thickened. Left ventricle hypertrophied; mitral valve thickened, roughened, and incompetent; aortic valve normal. Left lung adherent at apex and posteriorly, congested, apparently distended, and was anthracotic; small tubercles extend from apex to base. Right lung adherent at every point; small tubercles throughout; very firm and congested. Larynx apparently normal.

E. K. S.  
P. M. C.

P. W.; age, 42 years; nativity, New York; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., July 30, 1902; died September 18, 1902.

**HISTORY.**—Family history negative. Had had malaria and pleurisy. Was an habitual drinker. Present illness began seven months previous to admission with cough which was soon followed by profuse expectoration; shortness of breath, especially on exertion; fair appetite; bowels regular; no night sweats; had cramps in legs. Physical examination indicates involvement of right lung upper lobe and also of left upper lobe; sputum contains many tubercle bacilli; heart normal; urine normal; weight, 94 pounds; patient progressively failed.

*August 21, 1902.*—Has had some diarrhea and sputum is streaked with blood.

*September 16, 1902.*—Quite weak and complains of pain in abdomen.

*September 18 1902.*—At 2.05 p. m. patient sat up in bed to drink when he suddenly choked and fell back cyanotic. Following the use of stimulants there was some apparent temporary improvement, but he soon sank and died at 2.45 p. m.

**NECROPSY** (24 hours after death).—Body greatly emaciated; rigor mortis slight; marked depression of chest wall over left upper lobe of lung; tattoo mark on right forearm (P. C. 5-pointed star); body heat absent; no vaccination mark; hair, beard and mustache gray; pupils equal, moderately dilated; muscles decidedly atrophied; alveolar processes in region of molars necrotic on both sides; an opening near right molars extended into nasal cavity; larynx eroded; several ulcers on its mucous membrane; pericardium contained 150 c. c. clear straw-colored fluid. Heart walls thin and flabby; valves normal; weight, 210 grams. Ascending arch of aorta contained many calcareous plaques. There was also one in the pulmonary artery. Both lungs adherent to chest wall and to mediastinum. Right lung had a large cavity in apex with miliary tubercles throughout rest of lung. Left lung had large cavity in upper lobe with miliary tubercles in other portion. Lower portion of both lungs crepitant. Omentum, devoid of fat, was adherent to lower margin of liver, which extended a little below the costal margin and adherent to intestines in region of appendix; 600 c. c. clear straw-colored fluid in peritoneal cavity. External surface of ileum covered with miliary tubercles. Intestines bound in many places by what were apparently old adhesions. Colon reduced about one-half in size. Miliary tubercles on sigmoid flexure. Liver adherent to diaphragm and peritoneum; organ apparently pale and fatty; lobules well marked; weight, 1,870 grams. Gall bladder distended; duct patent; no calculi. Spleen adherent to omentum; capsule thickened in places; organ anemic, otherwise apparently normal. Suprarenal capsules apparently normal. Left kidney contained several small cysts; very firm on section; glomeruli not very distinct; capsule thickened and adherent. Right kidney contained no cysts; not so firm on section as left; capsule thickened and adherent. Bladder, prostate, urethra, and testicles apparently normal. Mucous membrane of ileum ulcerated in many places. Cæcum was one mass of ulceration. Mucous membrane entirely destroyed and walls thickened. Colon contained several small ulcers and the sigmoid flexure was in the same condition as the cæcum.

E. K. S.  
P. M. C.



G. L.; age, 40 years; nativity, Sweden; color, white; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., February 14, 1902; died January 5, 1903.

**HISTORY** (taken in San Francisco).—Family history negative as to lung diseases and tuberculosis. Uses alcohol and tobacco moderately. Previous illnesses have been yellow fever, influenza, gonorrhea, and chancroid. He says that two months ago he began to cough, the cough has grown worse, and his sputum is now thick and white; has lost in weight; has had no hemorrhages; has had occasional night sweats; bowels regular, appetite good. Tubercle bacilli and staphylococci present in sputum.

**PRESENT STATUS.**—(Upon admission at Fort Stanton, February 14, 1902.)

**INSPECTION.**—Right chest is slightly depressed. Palpation: Vocal fremitus is greater over right side. Percussion: Marked dullness and tenderness over right upper lobe front and back. Auscultation: Right lung contains crackling râles from apex to base anteriorly and over upper half posteriorly where there is evidence of a cavity. Bronchial breathing well marked in upper lobe. Left lung contains a small number of typical râles in apex and about the cardiac region. Heart apparently normal. Subsequent clinical history at Fort Stanton.

*February 19.*—Began to complain that throat was very sore.

*February 26.*—Had a considerable hemorrhage from the lungs.

*March 7.*—Complains of pleuritic pain at base of right lung on breathing.

*May 21.*—Weight, 142 pounds.

*June 4.*—Last night raised from lungs about half a cupful of blood.

*June 18.*—Had another hemorrhage during the night.

*July 10.*—Weight, 137½ pounds. General condition improved. Physical signs (râles) less extensive.

*September 12.*—Voice is husky; lack of resonance over right lung; left lung clear of râles; right lung has a few moist râles over entire upper lobe; bronchial breathing and bronchophony over upper half of upper lobe; body weight, 132½ pounds.

*October 29.*—Sputum contains moderate number of tubercle bacilli; apparently pure infection.

*October 30.*—General condition much worse.

*November 12.*—Has never been able to hear in left ear since early childhood when he had scarlet fever. For last three days has had continual buzzing in right ear, and can hear very little, and then only loud noises. Can not hear tick of watch when pressed against either ear. Both drums perforated. Eustachian tubes patent.

*December 20, 1902.*—General condition worse; cough excessive; no appetite; has fever from 4 to 8 p. m.

*December 30.*—Breathing is very labored; can swallow only liquids; obstruction in larynx; voice diminished to whisper.

*January 5, 1903.*—Died at 5.15 a. m.

**NECROPSY** (4½ hours after death).—Rigor mortis beginning in muscles of mastication; body heat present over abdomen; hypostasis over back of body and limbs; panniculus small; musculature small. Abdomen: On section subcutaneous fat is very scant; abdominal cavity is comparatively dry; jejunum is filled with feces; transverse colon is filled with gas and hard scybala; appendix normal; liver congested; cystic duct patent. Spleen, connective tissue increased. Kidneys, fatty capsules diminished; fibrous capsules peel easily; both kidneys slightly congested. Adrenals apparently normal. Thorax: both pleurae adherent to thoracic wall. Pericardium contains 30 c.c. of straw-colored fluid. Tongue, soft palate, and post wall of pharynx, neck organs, lungs, and heart were removed together from body. At each side of the base of the epiglottis was an ulcerated pus-secreting surface. Larynx true and false vocal cords were ulcerated away. Trachea and bronchi apparently normal. Right lung: In upper lobe at apex was a large smoothed walled cavity traversed by thrombosed blood vessels. Cavity size of small apple in upper part of interior lobe. The middle and lower lobes contained many scattered tubercles. Left lung: Cavity size of walnut in apex; scattered tubercles throughout remainder of upper and lower lobes. Heart: About size of patient's right fist; mitral valve slightly thickened; at commencement of aorta just above the semilunar valves were several sclerotic plaques. Urinary bladder, prostate, vesiculae, seminales, testicles, and penis apparently normal. Weight of organs: Spleen, 150 grams; liver, 1,690 grams; left kidney, 170 grams; right kidney, 180 grams; heart, 300 grams.

**SUMMARY OF PATHOLOGICAL FINDINGS:** Tuberculous laryngitis; ulceration of pharynx (tuberculous), tuberculosis of lungs with excavation; tuberculous pleuritis; sclerosis of aortic arch and mitral valve.

J. W. S.  
P. M. C.



W. R. L.; age, 44 years; nativity, North Carolina; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., April 9, 1901; died November 22, 1902.

**HISTORY.**—Family history negative. During the blizzard in New York, 1886, suffered considerable exposure, that was followed by influenza, and has since always contracted "cold" easily. Says he has never completely recovered. One year before admission cough came on and has continued. Has lost 14 pounds in weight; has pain in chest; thick purulent expectoration; night sweats; poor appetite; regular bowels. Physical examination indicates involvement of practically all of right lung and the upper lobe of left. At first patient seemed to improve.

*October 12, 1901.*—Râles only heard prominently in right lung below nipple and in central portion of left lung. Only a few occasional scattered râles are heard over other portion of lungs.

*July 3, 1902.*—Seemed to be failing; general condition, worse; weight, 106½ pounds, a loss of 17 pounds since admission; cough severe, with profuse expectoration. About August 1, 1902, he began to be annoyed by frequent painful urination, and had some pus in the urine. Microscopical examination shows pus cells and a few hyaline casts; no tubercle bacilli.

*October 1, 1902.*—Having passed no urine for twenty-four hours the patient was anaesthetized, and after considerable effort the urethrotome was passed by the obstruction in region of prostate gland and the bladder entered. The following day even a filiform bougie could not be introduced. Passed considerable mucus, pus, and blood. About one month before death patient passed what seemed to be an urethral calculus about 10 cm. in length, and urinated more freely afterwards. Calculus was composed of mucus and pus, with urates.

**NECROPSY** (18 hours after death).—Extremely emaciated. Rigor mortis moderated. Tattoo mark, anchor on left forearm. Abdominal fat absent. Liver is very small, and has an irregular, nodular field; left lobe adherent to diaphragm; grates under the knife, and connective tissue apparently increased. Gall bladder small and ducts patulous. Spleen is adherent to diaphragm and intestines; capsule torn off in removal, pale in structure with increase of connective tissue. Suprarenal capsules apparently normal. Left kidney small in size; firm under knife, and apparently atrophied. Pelvis of right kidney is distended with pus, and numerous abscess cavities existed, one-half of the kidney structure having been destroyed. The bladder wall is firm and irregular, about 2 cm. in thickness, and has a capacity of only 150 c. c. Around entrance to the prostatic urethra there are numerous calcareous concretions. The prostate gland was practically destroyed by an abscess, only a thin shell lined with calcareous material being present. A stricture girt on middle of pendulous portion of urethra. Testicles apparently normal, no glandular enlargement. Both pleural cavities obliterated by adhesions. Upper lobe of the right lung had been destroyed by a cavity, and the lower lobe was filled with miliary tubercles. The left lung is in practically the same condition as the right. Lower lobe contains numerous small cavities.

E. K. S.  
P. M. C.

J. M.; age, 36 years; nativity, Canada; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., May 5, 1902; died October 22, 1902.

**HISTORY.**—Patient was first admitted to this sanatorium on September 22, 1900, and discharged improved on April 30, 1901, at his own request. Six weeks before his admission he had contracted "cold" from exposure and tubercle bacilli were demonstrated in his sputum. There was apparently involvement of only the right upper lobe. Physical examination at time of his discharge indicated slight improvement in the infected area. Upon readmission, after one year's residence, principally in Colorado, both lungs were found to be involved, especially in their apices. Appetite poor.

*June 24.*—There was slight hemorrhage and about this time night sweats began to occur. Temperature increased about 1° centigrade each night.

*July 29.*—Physical examination indicated no particular change in the lungs, but there had been a loss of 5 pounds in weight since admission.

*August 20.*—Patient had a severe pulmonary hemorrhage, reoccurring on the following day.

*August 23.*—Another severe hemorrhage occurred. Murphy's nitrogen inflation of left plural cavity was employed, six litres being used. No further hemorrhages occurred.

*October 16.*—Patient had been gradually failing, has anorexia, irregularity of bowels,



and there is some abdominal edema. Moist rales are heard over both lungs. On the morning of October 22 the patient was comatose and at 10 a. m. he died.

NECROPSY (24 hours after death).—Body much emaciated; rigor mortis marked; pronounced hypostatic congestion. Removal of sternum showed mediastinal glands enlarged. Pericardium contained 200 c. c. of yellow fluid with a few flocculi. Heart enlarged, weighing 350 grams; mitral valve thickened, sclerotic contraction and insufficient. Other valves apparently normal. Left lung adherent at base; the lower part of upper lobe was studded with miliary tubercles. Weight, 720 grams. Right lung adherent from base to apex, completely obliterating the pleural cavity. It contained large caseous masses with some connective tissue, and many points of anthracosis with calcification and solidification. The liver was small, contracted, weighing 1,000 grams, firm on section, and presented a nutmeg appearance with increase of connective tissue. Spleen was congested and on section the follicles were prominent. Weight, 180 grams. Right kidney had nonadherent capsule, and on section was firm and somewhat contracted, at the upper end of which there was a small abscess, about 1 cm. in diameter, filled with rather gelatinous pus. Left kidney was in the same condition as the right; weight, 160 grams. The small intestines were normal; colon was considerably contracted; appendix normal. Stomach was filled with brownish fluid and the walls were covered with what appeared to be effused blood resulting from capillary hemorrhage. Pancreas was normal, weighing 130 grams. Peritoneal and retro peritoneal glands were not enlarged. Bladder apparently normal, except some edema of walls. Testicles apparently normal.

J. W. L.  
E. K. S.  
P. M. C.

M. H.; age 24 years; nativity, Norway; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., November 22, 1902; died April 18, 1903.

HISTORY.—Family history negative. Some eighteen years ago had an attack of dyspnoea in Calcutta, and the same thing occurred in Philadelphia ten years ago. About four years ago began coughing. No night sweats; cough not severe; expectoration scanty; appetite poor; had lost considerable flesh until one year ago, when he entered the United States Marine Hospital, New York, since which time he has gained 15 pounds. Present weight; 119 pounds normal, 160 pounds. Has had occasional small hemorrhages; some fever; throat sore; can not drink fluid in the ordinary manner, because it returns through his nose; has to drink "a swallow" at a time.

Physical examination reveals relaxation of soft palate and ulceration of uvula. Both lungs are involved from base to apex. More evidence of consolidation on right side. General condition poor. Pulmonary second sound of heart accentuated. Tubercle bacilli present in sputum apparently pure. Urine examination negative.

January 19, 1903.—Had a moderate pulmonary hemorrhage at 11 p. m. and another the following morning at 8 o'clock.

March 13, 1903.—Reexamination gives evidence of cavities in both lungs. Appetite poor. Bowels inclined to be constipated. His decline was gradual but constant. The throat symptoms became more pronounced. Swallowing was attended with more difficulty and finally could not be accomplished.

NECROPSY (24 hours after death).—Rigor mortis moderate; emaciation extreme; abdomen retracted. Extremity of cartilage tenth rib, right side, very prominent. Pupils of moderate size, equal. Lips and teeth covered with sordes. Finger tips cyanoti. Tattoo marks; right forearm, "Goddess of Liberty erect on winged earth," back right wrist "clasped hands over heart."

Pericardial sac contained about 15 c. c. of clear serous fluid; membrane apparently normal. Heart weighed 250 grams; internal surface of aorta was covered with atheromatous patches. There were also atheromatous patches at junction of chordae tendinae with mitral valve. No evidence of mitral insufficiency; other valves apparently normal. Both pleural cavities were obliterated by very firm adhesions between lung and chest wall. On removal of the left lung a cavity was found at the apex occupying about one-half of the upper lobe. The remainder of the lobe was in a state of gray consolidation. The lower lobe was infiltrated with tubercles except along the margin where there was a small amount of apparently normal lung tissue. The right lung was in practically the same condition except that the cavity in the upper lobe was not more than 3 cm. in diameter. There was a calcified nodule about 15 cm. in diameter at base of right lung close to the diaphragm. All the abdominal organs were bound by numerous old adhesions. Liver weighed 1,080 grams, and was of normal appearance on section. Lobules were distinct; no evidence of increase in connective tissues. Gall bladder distended with black fluid bile; no calculi; ducts patent. Capsule of spleen was torn in removal. The interior of organ was appar-



ently normal; weight, 170 grams. Right kidney weighed 160 grams; left, 175 grams; both apparently normal. Bladder distended with urine; on the outer surface were small calcified nodules, evidently the relics of former ulcers but the internal surface had not been invaded, as it was apparently normal. Prostate gland, penis, and testicles apparently normal. Intestines were a mass of adhesions; colon was contracted at intervals; appendix apparently normal. The internal surface of the intestines presented no evidence of previous disease.

E. K. S.  
P. M. C.

S. N.; age, 33 years; nativity, Sweden; admitted to United States Marine Hospital Sanatorium February 21, 1903; died March 3, 1903.

**HISTORY.**—About five years ago patient had an attack of pleurisy and he began to cough rather more than two years ago. He had night sweats occasionally for past year and one-half. At present he feels weak and feeble; appetite is fair; sleeps well; cough troublesome at night; the voice is almost lost, can not speak above a whisper.

Physical examination indicated involvement of the entire left lung and the upper lobe of right lung. Pulmonary second sound of heart accentuated. Sputum was muco-purulent, and contained many tubercle bacilli. Urine was apparently normal. Temperature on admission was considerably above normal and continued in the neighborhood of 39°C, each night. The decline was rapid. Delirium ensued and patient died March 3, 1903.

**NECROPSY** (36 hours after death).—Blond, blue eyes; pupils dilated equally. Flag and initials "S. N. S." tattooed on right forearm. Panniculus and musculature reduced to minimum. Post-mortem saggulation very pronounced. Rigor mortis still present. Pericardium contained about 150 c. c. of pale straw-colored fluid. Right ventricle of the heart was enlarged and its walls were rather thin. Right auricle was dilated and its wall was also thin. Pulmonary semilunar valves apparently normal. Tricuspid valve had a sclerotic patch on one cusp, causing an apparent insufficiency. Left side apparently normal. Weight, 340 grams. Left lung adherent to chest wall from apex to third rib. On removal and section a cavity was found in upper lobe near apex 5 cm. in diameter. The entire lobe was honeycombed with cavities of various sizes. Lower lobe infiltrated with miliary tubercles. Right lung contained many small cavities in the apical region from 1 to 2 cm. in diameter. The entire lobe was consolidated. In the lower lobe there was some passive congestion and numerous small tuberculous nodules. The larynx internally was one mass of tuberculous ulceration. The vocal cords were destroyed.

Liver considerably enlarged. On section blood issued freely from cut surface. Lobules distinct, but pale in appearance. Weight, 2,350 grams. Gall bladder distended with fluid bile; ducts patulous. Spleen was somewhat congested. Malpighian bodies distinct. Weight, 280 grams. Each kidney was of the same weight, 180 grams, and they appeared to be normal. Bladder, urethra, penis, and testicles were apparently normal. A few small ulcers were found in the ileum and three were found in the colon. Brain weighed 1,380 grams, and seemed to be normal.

P. M. C.  
E. K. S.

E. R.; age, 29 years; nativity, Sweden; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., July 6, 1902; died January 21, 1903.

**HISTORY.**—Family and previous history, negative. Some fourteen months ago patient began to cough and to expectorate muco-purulent material; had sweats occasionally at night, also some diarrhea. He was weak and feverish; had some pain in left chest which was aggravated on coughing and by exertion. He had occasional attacks of dyspnoea; appetite good; said that he had gradually lost weight since cough began. He had one light attack of hæmoptysis. Physical examination revealed cyanosis of face and extremities. Tubercular involvement of both lungs. Tubercle bacilli in sputum. Heart apparently normal. Examination of urine was negative.

*September 23, 1902.*—An abscess on right side of anus opened and discharged freely. Two days later, under anaesthesia, the abscess freely opened and under proper care gradually healed. With the healing of the abscess patient seemed to gradually improve; some gain in weight; said that he was feeling better.

*January 21, 1903.*—Had a sudden attack of pain in left axillary region, accompanied by dyspnoea and rapid loss of consciousness. Respiration gradually failed. Pulse became rapid and feeble. Physical signs were indicative of left pneumo-thorax. Œdema of right lung rapidly supervened. Radial pulse could not be detected; face became cyanosed, respiration more labored, and death occurred at 8.45 a. m.

**NECROPSY** (26 hours after death).—Post-mortem rigidity moderate and hypostatic



congestion pronounced; mucous fluid issuing from nose and mouth. Vaccination mark present near left shoulder. Tattoo marks: on left forearm, dagger piercing heart, with combination anchor and chain; base of right thumb, anchor and chain; right forearm, anchor and chain. Thick mucous fluid issuing from meatus urinarius. Both feet oedematous. Body well nourished. On opening the thorax the parietal pericardium was found to be so firmly attached to the visceral that it seemed to form a part of the heart wall. The heart was not enlarged and all the valves were apparently normal.

Left plural cavity was filled with air, and the lung was found to be collapsed. The lung was adherent at base and apex; the intervening portion was comparatively free, so that it was compressed against the spinal column and mediastinum. There were numerous small tubercular cavities in both lobes, which were more numerous and larger in the upper lobe. Right lung was held by numerous firm pleural adhesions at base. There were numerous tubercles in all the lobes. Abdominal cavity filled with greenish-yellow serous fluid. Liver enlarged and congested; lobules very distinct; no apparent increase of connective tissue. There were numerous adhesions at diaphragm. Weight, 2,040 grams. Spleen was somewhat congested, otherwise apparently normal; weight, 320 grams. Right kidney weighed 120 grams; left, 200 grams. Both were congested, but the pyramids were distinct. Intestines bound by numerous adhesions, but no ulceration was found. Bladder, prostate, penis, and testicles apparently normal.

E. K. S.

P. M. C.

W. H. W.; age, 49 years; nativity, Indiana; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., September 2, 1902; died March 28, 1903.

**HISTORY.**—Family history negative. Previous to present illness always enjoyed good health with one exception. Some five years ago had an illness extending over a period of four months. Had cough and slight expectoration. Cough ceased with termination of sickness, but says that strength never entirely returned.

*July 2, 1902.*—After a trip from Cuba, involving considerable exposure, he was admitted to United States Marine Hospital, Boston, Mass. Complained of pain in right chest aggravated by cough or deep respiration. Had also anorexia, also insomnia, because of pain and dyspnea.

*August 5, 1902.*—Tubercle bacilli were found in his sputum. At date of admission to United States sanatorium he was quite feeble, cough was severe, expectoration copious. Rested comfortably only when lying on left side. Considerable dyspnea; ankles oedematous; right knee slightly swollen. Physical examination was unsatisfactory because of condition, but there were indications of involvement of both apices. Sputum was muco purulent. Few tubercle bacilli were present. Examination of urine was negative.

*October 10, 1902.*—Patient had an epileptic seizure at 9.10 a. m.; regained consciousness at 9.40 a. m. Claimed that fit was caused by coughing, but it was a repetition of similar previous attacks.

*October 22, 1902.*—Has had some gastric disturbance for past month, but at present feels much better than for some time past. Cough and expectoration lessening, appetite good, sleeps well, oedema of extremities gone.

*December 27, 1902.*—Eats well and has gained in weight.

*January 29, 1903.*—Had another epileptic attack; not very severe. Has failed somewhat during past month.

*March 4, 1903.*—Was seized with a violent chill resembling a clonic spasm. Pain in legs and abdomen, nausea and vomiting. Pain in leg, hip, and lumbar region continued, and a little later he was attacked with severe pain in costal margin of right side. He had irregular pains in various portions of the body, resembling those due to neuritis. There was loss of appetite and gradual failure with no improvement in symptoms referable to the right chest.

**NECROPSY** (24 hours after death).—Post-mortem rigidity fairly pronounced. Slight hypostatic congestion. Emaciation rather marked. Skullcap and sinuses were normal; dura mater normal; careful examination of brain was made, but no abnormalities were discovered. Weight, 1,300 grams. Pericardium contained about 30 c. c. pale serous fluid, apparently normal. Heart weighed 240 grams, and contained ante and post mortem clots. The valves were normal. On the right side was a pyopneumothorax. The lung was adherent at the base and free at apex, with the result that the lung had been compressed downward. The opening in lung was not discoverable. There was about 500 c. c. of very foul-smelling pus in the cavity. Section of the right lung failed to reveal any very extensive tubercular involvement. The left lung was crepitant throughout, and was apparently not infected. The external surface of liver



presented a peculiar appearance because of pressure of diaphragmatic muscles, especially well developed, caused by the pneumo-thorax, which produced very noticeable sulci on upper border of the right lobe. Organ was large, weighing 1,825 grams, and was gritty under the knife. Spleen was a trifle enlarged and somewhat congested; weight, 270 grams. Kidneys were small and rather tough under the knife; weight of right, 145 grams; left, 165 grams. Suprarenal capsules apparently normal. Stomach and intestines present no abnormalities. Bladder, prostate, urethra, and testicles apparently normal.

P. M. C.

W. W.; age, 27 years; nativity, Finland; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., October 4, 1901; died October 5, 1902.

HISTORY: Family history negative. Patient was always hearty until winter previous to admission, when he began to cough and expectorate thick yellowish fluid. Upon severe exertion sputum was occasionally stained with blood. Decided shortness of breath, no pain in chest, slight sweats at night. Thinks he has lost 10 pounds in weight. Appetite fair. Bowels regular. Tubercle bacilli present in sputum. Physical examination indicated slight involvement of upper lobe right lung and that entire left lung was involved, more especially at apex.

January 9, 1902.—It is recorded that there were no positive râles in right lung and that there was improvement in the signs in the left.

July 2, 1902.—Not much change in physical signs. Weight has been steadily decreasing for some time, at present 115 pounds.

September 4, 1902.—Physical examination indicates increased area of infection in both lungs, weight 107½ pounds.

September 15, 1902.—Urine found to contain much albumen and a few hyaline casts; 800 c. c. in twenty-four hours.

October 5, 1902.—At 2 a. m. patient was found to be breathing with great difficulty and was cyanotic. He said that something had broken in his right side. The physical signs of purumothorax were present. Pulse very feeble. Death occurred at 3.10 a. m.

NECROPSY (7 hours after death).—Hypostatic congestion marked. Rigor mortis pronounced. Hair scant. Tattoo mark right wrist "W. W. T. L." Echymotic spots, back right hand. Right side of thorax bulging, tympanitic. Abdomen distended, tympanitic in front, flat at sides. Scrotum congested. Right leg, thigh, and foot swollen, pitting on pressure. Left leg and foot not so badly swollen. Feet and hands cyanotic. Moderate amount of panniculus and musculature. Abdominal cavity filled with milky fluid. Omentum contained a small amount of fat and was very pale. Stomach apparently normal. Intestines normal. Appendix normal. Liver weighed 1,870 grams; firm on pressure and on section presented the appearance of hypertrophic cirrhosis. Cystic duct patulous. Spleen apparently normal, weight 165 grams. Right kidney large, pale, capsule adherent in places, glomeruli indistinct, weight 240 grams. Left kidney same, weight 225 grams. Bladder, prostate, urethra, and testicles apparently normal. Pericardium contained 100 c. c. clear fluid. Heart flabby, valves normal, except that the mitral was somewhat thickened. Right lung firmly compressed against spinal column, except at base and apex, where it was held by small but firm adhesions. The pleura seemed otherwise normal. There were small tubercles in upper and middle lobes. In upper lobe there was a cavity about 5 cm. in diameter, and in the lower lobe there was one cavity about 1 cm. in diameter; weight 630 grams. Left lung adherent anteriorly and posteriorly. In the upper lobe there was a cavity which occupied nearly its entire portion. Miliary tubercles filled the lower lobe; weight 1,025 pounds.

J. W. L.

E. K. S.

P. M. C.

E. L.; age, 28 years; nativity, Sweden; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., February 22, 1900; died November 14, 1902.

HISTORY.—Patient gave history of having been well until a cough began two months before admission. Had a bad cough with night sweats; some pain in both sides of chest; daily rise of temperature; gradual loss of weight; tubercle bacilli in sputum. Said he had a hemorrhage from lungs about four months ago, followed by no symptoms that attracted his attention. Physical examination indicated involvement of left apex with possible involvement of upper right lobe; heart apparently normal; urine normal. Patient began to improve after admission, and increased in weight for some six or eight months; night sweats disappeared and cough became much less frequent.



*June 26, 1901.*—Examination indicated some improvement in left lung, while the infection in right lung seemed to be increasing. This improvement was temporary, because at the next examination the entire left lung was apparently affected. From this date patient's decline was gradual but constant. There were gastric and intestinal disturbances; cough became worse, night sweats returned, and the temperature began to make daily exacerbations. He died November 14, 1902.

**NECROPSY** (18 hours after death).—Emaciation extreme; rigor mortis marked; hypostatic congestion over back and limbs. On removal of sternum the thoracic viscera were in normal position. Pericardium contained about 50 c. c. of a blood-stained fluid. Right ventricle of heart contained ante-mortem clot and was somewhat dilated; sclerotic patches in aorta around openings to coronary arteries; left ventricle also contained ante-mortem clots; mitral valve apparently normal; right pleural cavity nearly obliterated by adhesions. Right lung tuberculous throughout; upper lobe contained cavity 5 cm. in diameter. Left pleural cavity much the same as right. Left lung was one complete cavity from apex to base, the wall consisting of thickened pleura and consolidated lung tissue. Liver greatly increased in size, firm on section, and the vessels were well filled with blood, lobules presenting nutmeg appearance; weight, 2,090 grams. Spleen was large and pale, gelatinous on section; large white sago-like bodies in interior; no evidence of amyloid degeneration by the iodine test; weight, 300 grams. Left kidney firm on section, gelatinous in appearance; the fibrous capsule was adherent in places; weight, 175 grams. Right kidney same as left, except smaller; weight, 135 grams. Gastric and intestinal mucous membrane congested; no ulceration. Retro-peritoneal glands apparently normal. Bladder, prostate, urethra, and testicles apparently normal.

J. W. T.  
E. K. S.  
P. M. C.

**G. R.**; age, 31 years; nativity, Indiana; admitted to United States Marine Hospital Sanatorium, Fort Stanton, N. Mex., November 12, 1901; died September 1, 1902.

**HISTORY.**—Patient was treated for tubercle of lung at Evansville, Ind., nine months prior to admission to the sanatorium; family and previous history unknown; upon admission there was roughened breathing over entire right lung, with also apparent slight involvement of the left; heart normal; sputum contained a few tubercle bacilli; urine, normal; appetite, fair; bowels, regular; slight varicocele left side; February 6, 1902, had an attack of acute pleurisy left side.

*April 26, 1902.*—Had a moderate pulmonary hemorrhage.

*May 9, 1902.*—Examination indicated that patient's condition had been gradually deteriorating. He is losing weight and dyspnoea is increasing. From the above date patient's decline was constant.

**NECROPSY** (12 hours after death).—Body much emaciated; slight hypostatic congestion; rigor mortis not marked; panniculus almost absent; chest resembles in shape that of a woman; left side of chest retracted; heart in normal position. On opening the pericardium it was found to contain 20 c. c. of turbid fluid. Heart very pale; ante-mortem clots in both sides; valves normal; weight, 220 grams. Larynx eroded and covered with tubercles. Right pleural cavity obliterated by adhesions. Upper lobe of lung almost entirely destroyed; lower lobe filled with miliary tubercles. Capacity of left pleural cavity much impaired by adhesions. There was a small cavity in the upper lobe which emitted a most disgusting odor on section. Many small tubercles in left lower lobe; weight, 880 grams. Liver presented a nutmeg appearance and there was a free exudation of blood on section; no tubercles discovered; gall duct patent; weight, 1,470 grams. Spleen apparently normal as to color and size. On section follicles fairly visible; weight, 220 grams. Left kidney covered with some fat; capsule not adherent; small cyst, 2 cm. in diameter, apparently filled with urine; weight, 130 grams. Right kidney smaller and much the same, except it contained no cyst; weight, 110 grams. Intestines seemed small in caliber and the colon was much contracted. Mesentery contained many small tubercles. Bladder, prostate gland, urethra, and testicles apparently normal.

J. W. T.  
E. K. S.  
P. M. C.

**P. J.**; male; white; age, 34 years; nativity, West Indies; was admitted to the United States Marine Hospital at Wilmington, N. C., on December 5, 1902; died April 12, 1903; was furnished transportation to Fort Stanton in August, 1901, where he remained until the following December, when he left against advice, after marked improvement. During the past three years has had some dyspnoea, and last June he noticed



swelling of the lower extremities. Shortly afterwards his face and hands began to swell.

**PHYSICAL EXAMINATION.**—Had lost 30 pounds during the past six months. The lower extremities were very oedematous, also the penis and scrotum. Heart sounds normal. Pulse regular but of increased tension. Beginning degeneration at the apices of both lungs. Urine heavily charged with albumen, 7 grams to the liter.

**TREATMENT.**—Basham's mixture, with additional diuretics when necessary.

*March 16, 1903.*—Indigestion, vomiting and diarrhea persistent.

**TREATMENT.**—Palliative until death, on April 12, 1903.

**NECROPSY** (30 hours post-mortem.)—Body greatly emaciated; rigor mortis marked. Nothing abnormal about the brain. Heart weighed 240 grams. Valves all competent. Left lung was adherent posteriorly and to the diaphragm, and congested at base; contained a cavity about 3 cm. in diameter, filled with light greenish pus, situated near base of upper lobe; numerous small cavities in lower lobe; weight, 620 grams. Right lung adherent at apex; upper section revealed hyperæmia and congestion; there were a few hard calcareous deposits, indicating seat of an old tuberculosis; at base were patches of recent tubercular deposit; weight, 585 grams. Liver greatly enlarged; weight, 1,820 grams, very dark and much discolored, nearly black posteriorly, anteriorly pale and mottled; section showed discoloration extending throughout liver substance in patches; substance markedly fatty. Spleen: Weight 280 grams; firm and notably resistant to knife. Left kidney in color, slaty gray—almost blue; capsule adherent; cortex barely discernible; parenchyma hard to touch, waxy in hue and texture, with a few spots of normal color scattered here and there; weight, 220 grams. Right kidney weighed 225 grams; morbid condition the same as that in the left. Other organs normal.

J. G.

N. C.; age, 51 years; nativity, Greece; admitted to the United States Marine Hospital, San Francisco, Cal., January 8, 1903; died February 13, 1903.

**HISTORY.**—Stated he had suffered from Panama fever five months ago; gonorrhœa seven months ago, and from pain in the stomach for the last two weeks, with daily vomiting. Had loss of appetite, constipation, and constant cramping, colicky pain in the stomach and back, worse after eating. Vomited matter is mostly mucus. Tongue covered with a yellowish coating. The abdomen is tender on pressure, but no rose spots exist. Lungs, heart, liver, and spleen apparently normal. The condition of the patient became gradually worse, and no treatment proved of any value. A surgical operation was decided upon and performed on January 22, 1903. He was placed upon the table and anesthetized, chloroform being used. An incision was made in the median line from the umbilicus to the pubes, and his peritoneal cavity opened. It was found full of fluid, brownish in color, and full of plastic lymph, flocculi, etc. All of the mesenteric glands were enormously enlarged, some almost occluding the lumen of the gut. The intestines were matted together by adhesions, and were adherent to the abdominal wall in various places. The wound was closed in layers, as nothing could be done, and he was put to bed. He recovered from the anesthesia with a great deal of nausea, vomiting considerably. His pulse was very bad during the operation and later, and he was given several doses of strychnia. It required morphia and atropia to give him a quiet night.

*January 28.*—He still complains of pain in his abdomen, and some nausea. He can eat nothing. His bowels moved once yesterday. He slept fairly well at night.

*February 5.*—His condition is worse. He is unable to take any nourishment and can keep nothing on his stomach. He sleeps very little at night. There is a constant gurgling of gas in his bowels, and can not pass his feces without an enema.

*February 12.*—He is gradually growing worse. He can take no nourishment and is getting thinner and weaker every day, since he vomits everything he takes into his stomach. Sleeps very little. His bowels move only when he is given an enema, and his abdomen is distended with gas.

**NECROPSY** (10 hours after death).—Body greatly emaciated. Post-mortem lividity and rigor mortis well marked. Tattoo designs on both forearms. In the median line of the abdomen the scar from the recent laparotomy is seen, perfectly healed. Brain: On removing the calvarium, the condition of the skull cap, of the sinusses and vessels, and the brain and its membranes is found to be normal. Thorax: On exposing the anterior mediastinum the right lung is seen to extend beyond the median line, and the pericardial cavity contains a small amount of yellowish fluid. The heart weighs 205 grams. The coronary arteries are very tortuous and hard. The muscular substance of the heart is soft and friable; the left ventricular walls measure 2 cm. and the right three-fourths cm. The pulmonary artery contains a large goose fat



clot. The first portion of the aorta shows a small amount of calcification. All the valves and orifices appear normal. The right lung is somewhat emphysematous at its anterior and interior border and extends across the median line; it is free from adhesions, crepitates, and is normal on section. Its weight is 485 grams. The left lung weighs 420 grams, its pleural surfaces are adherent by separable adhesions in various places, especially about the apex, and crepitates except in the apex, where several hard nodules are felt. On section these are seen to be yellowish areas, cutting hard, and having caseous centers. The remainder of the lung is free from these areas. The great vessels (except the aorta previously described), the nerve trunks, and the diaphragm are normal. Abdomen: The omentum contains very little fat, but shows a number of small yellowish caseous nodules. The spleen is enlarged and strongly adherent posteriorly; it weighs 190 grams, is pale in color, and cuts with increased resistance. Section reveals an excess of fibrous material and thickening of the capsule. The intestines protrude and the general peritoneal cavity contains a large amount of serous fluid and masses of inflammatory lymph. The right kidney weighs 135 grams, and on its upper and outer aspect there is a large cyst measuring 6 cm. in its longest diameter. This cyst, on section, is found to connect with the pelvis of the kidney, and contains urine. The capsule strips easily. The kidney cuts with some increase of resistance, and the cortical markings are somewhat indistinct, the rest of the cut surface being rather pale in color. The left kidney weighs 113 grams. Its surface exhibits several small uriniferous cysts, not communicating with the pelvis, and the organ otherwise is in a similar condition to that of the right kidney. The suprarenal capsules are apparently normal, as are also the urinary bladder, organs of generation, rectum, and duodenum. The stomach exhibits decided thickening of the pyloric extremity, which is connected to the left lobe of the liver by fibrous bands. The gall ducts are patent, but the gall bladder, liver, and hepatic flexure of the colon are strongly matted together by fibrous bands. The abdominal surface of the diaphragm is studded with small, firm nodules. The pancreas and solar plexus are apparently normal. The mesentery contains a large number of greatly enlarged and hardened lymph glands, some of which are caseous. Between the mesentery and intestines occur strong bands of adhesion. The walls of the small and large intestines contain several transverse infiltrated and ulcerated areas, and both large and small contain semiliquid fecal matter having a very offensive and sickening odor. The vermiform appendix is short, curled upon itself, hard and rigid, and has a mesentery of its own. Its wall is greatly thickened. The lumen is patent except in the distal third, where it is filled with caseous material. It cuts with considerable resistance and shows a great thickening of the fibrous investment.

The gall bladder is distended with viscid bile. The liver weighs 1,330 grams. There are strong fibrous adhesions between the liver, gall bladder, and hepatic flexure of the colon, and between the left lobe and the pylorus. The left lobe is atrophied, whitish in color, and studded with hard nodules of various sizes. The undersurface is deeply stained with bile. The left lobe cuts like cartilage, and is seen to consist of a number of round, hardened, whitish-yellow nodules, firmly adherent to each other by similar tissue, which does not show any normal hepatic tissue macroscopically. The rest of the liver is somewhat pale in color, cuts with slightly increased resistance, is bile stained, and shows the centers of the lobules to be darker than the periphery. The great vessels are apparently negative.

**MICROSCOPICAL EXAMINATION.**—Stained sections from the left lobe of the liver exhibit areas of tubercle formation, between which are dense masses of connective tissue. Normal liver cells are only seen occasionally in small groups, having been replaced by fibrous tissue. The portal vessels show great thickening of their walls. Sections of the kidneys show proliferation of connective tissue cells between the tubules and elsewhere, atrophy of glomeruli and tubules with distension of some, areas of round-cell infiltration, and thickening of the walls of the arteries. Sections of the spleen show great increase of connective-tissue cells in the capsule, trabeculae, and around the blood vessels. Cross sections of the vermiform appendix show enormous proliferation of the cells of the fibrous coat. The lining epithelium is practically replaced by a zone of round-cell infiltration.

**ANATOMICAL DIAGNOSIS.**—Atheroma of coronary arteries and first portion of aorta; chronic unilateral pleuritis (left); chronic pulmonary tuberculosis; tubercle of the omentum; chronic splenitis; tubercular peritonitis; granular contracted kidney with cyst formation; chronic inflammation of the pylorus; chronic tubercular phrenitis; tubercle of the mesentery; tubercular ulceration of the intestines; chronic appendicitis; tubercle of the left lobe of the liver with incipient cirrhosis of the other portion.

C. R.

W. G. S.



M. B.; age, 48 years; a native of the United States; was admitted to the marine ward of the Buffalo Hospital of the Sisters of Charity on the 9th of January, and died April 7, 1903.

**HISTORY.**—There is no family history; he states that he has suffered from asthma for several years; that the present attack was preceded by a very severe cold, and that he has had some fever.

**PRESENT CONDITION.**—Auscultation shows a well-marked constriction of the tubes in both lungs, numerous moist and whistling rales; the right mid lobe is the seat of a bronchopneumonia; the percussion note is, however, but slightly raised in pitch; apices are relatively normal; sputum is copious, clear, and frothy, and contains numerous cocci in groups, but no diplococci nor tubercle bacilli; temperature 37.5, pulse 100.

Treatment directed to the relief of the spasmodic attacks, and antisepsis through the inhalation of atomized acetozone solution.

*January 12.*—There is some improvement of symptoms; examination shows increased solidification of the right mid lobe; throughout the lung there are numerous loud, moist rales; the sputum shows to-day the tubercle bacillus.

*February 1.*—The right middle lobe shows some improvement; the lower lobe is edematous; the sputum contains numerous tubercle bacilli and staphylococci; temperature shows commencing sepsis.

*February 12.*—The left apex is found slightly dull on percussion, a prolonged expiration, and a few fine rales; there is some general improvement; appetite good, no sweating.

On the 15th there is slight hemorrhage from the left apex.

On the 25th the infiltration of the left upper lobe is found to have been extremely rapid, disintegration is pronounced, the sputum is loaded with staphylococci and many tubercle bacilli; there are occasional hemorrhages. There is an undoubted purulent infiltration of the upper left lobe, but the man is too enfeebled to perform thoracotomy. On the 15th of March there is free drainage of the lobe through the tubes, as much as 5 ounces of pus in the twenty-four hours being expectorated.

*March 20.*—The condition of the right mid lobe is found improved; there is a faint vesicular breathing; the other lobes give a puerile condition; there is no function in the left lung; there is a penetration of the left chest wall between the fourth and fifth ribs with some emphysema of the cellular tissue; incision at this point shows only a connection with a cavity drained through the tubes. Emaciation and prostration extreme, and death occurred on April 7 from exhaustion.

**NECROPSY** (4 hours after death).—Body greatly emaciated; slight rigor mortis; no hypostasis; there is considerable emphysema of the left chest wall. Incision shows the abdominal contents of normal appearance; spleen slightly enlarged; liver normal; kidneys normal. The right pleura is firmly adherent over the middle lobe; the upper and lower lobes are normally contracted on opening the thorax; the middle lobe is the seat of a purulent bronchopneumonia; the upper is tubercular; there is marked interlobular pleuritis; the left pleura is thickened, attached to the anterior chest wall at the third interspace, and contains 150 c. c. of pus; the lung tissue is compressed and undergoing disintegration.

E. W.

J. S.; age, 25 years; a native of Guam, was admitted to the United States Marine Hospital, San Francisco, Cal., November 2, 1902; died November 9, 1902.

On admission the patient was semidelirious and answered questions poorly, so little history was obtained. He stated, however, that he had been ill 21 days, and had been spitting blood for the past 8 days.

On examination the patient was dull and apathetic and the body much emaciated. Examination of chest showed dullness on percussion over the entire right side of the chest, and over the same area could be heard subcrepitant and mucous rales. The respirations were shallow and jerky, and there was an absence of respiratory sounds over the entire right lung. His temperature was 39° C., pulse 140, respiration 48. He was ordered a pneumonia jacket, and strychnine and whisky. On the 5th his condition was much the same; he had a hacking cough, a fluttering pulse, and expectorated a bloody tenacious mucus, and his condition continued to grow steadily worse until his death on the morning of the 9th.

**NECROPSY** (13 hours after death).—The body is that of a poorly nourished male of very dark skin; post-mortem rigidity well marked; no post-mortem lividity; length 152 cm. Examination of the head showed the calvarium of usual thickness, and the membranes of the brain appeared normal except that the pia appeared injected. The brain was fairly firm, weighed 1,450 grams, and appeared normal on section. On opening the pleural cavity there was about 250 c. c. of clear fluid in the left pleural



cavity, and the left lung was somewhat adherent above. The right lung was firmly adherent throughout. The right lung measured 26 cm. in length, and was solid throughout. The pleura was thickened. On section the whole lung was studded with small cavities filled with a yellow muco-purulent material and there were numerous cheesy areas. What little lung tissue remained was hepatized. The left lung had the pleura thickened, and measured 22 cm. in length. There were numerous solid areas in the upper lobe, and the lower lobe crepitated, as well as the lower portion of the upper lobe. Section showed numerous cheesy areas and a few small cavities, the lower portions being oedematous, but otherwise normal. The pericardium appeared normal and contained about 5 c. c. of a clear straw-colored fluid. The heart appeared large and flabby, and weighed 380 grams. On section it contained post-mortem clots and a few ante-mortem ones. The endocardium appeared normal. The walls of the left ventricle were 1.5 cm. thick, and the right ventricle 0.5 cm. thick. The left ventricle measured 7 cm. and the right 6 cm. The valves appeared normal. On opening the abdominal cavity there was no fluid present, and the peritoneum appeared normal. The liver weighed 1,450 grams; surface examination negative. The gall bladder contained only a very small quantity of bile. On section the liver was firm and somewhat nutmeg in appearance. The right kidney weighed 200 grams; capsule strips with difficulty. Section appears very dark and injected and the cortex is mottled. The left kidney weighs 250 grams, capsule strips freely, and section appears the same as right, but less marked. The pancreas weighed 120 grams and appeared normal. The suprarenal capsules appeared normal. The gastro-intestinal canal was negative, except that the mucous membrane of the lower portion of the small intestine was studded with small tubercles. The spleen weighed 290 grams; was dark and firm on section. The bladder was normal.

A. R. T.

W. G. S.

*Perforation of intestine-peritonitis.*

T. W.; age, 33 years; nativity, Arkansas; was admitted to the United States Marine Hospital, port of St. Louis, Mo., September 9, and died September 23, 1902.

HISTORY.—On admission the patient presented the usual signs of tuberculosis, emaciation, anorexia, dyspnoea, and harrassing night cough. Pulse 86, wiry; respiration 21, superficial; temperature 38° C. He attributed his illness to obstinate constipation, which was also a feature. His treatment was purely symptomatic and supportive. Immediately upon entering the hospital his abdomen became tightly distended, and, in compliance with his urgent request, was tapped, producing a few drops of intensely fetid, very thick pus. This procedure seemed to relieve him much. He died of exhaustion next day.

NECROPSY (22 hours after death).—Body that of a very black adult male negro, much emaciated. Rigor mortis well marked. Pericardium normal. Lungs nodular throughout. Right, hemorrhagic on section; weight, 310 grams. Left, superior lobe, cavity about 60 c. c. capacity; walls slightly gritty on section; filled with pus; weight, 610 grams. Heart: Walls soft and spongy; valves normal; both ventricles filled with firm ante-mortem clots; weight, 210 grams. Liver very hard; creaks under knife; weight, 1,480 grams. Abdomen greatly distended; marked absence of adominal fat; contains about 1,000 c. c. of intensely fetid feco-purulent matter. Stomach normal. Small intestines matted throughout with inflammatory exudations; on section showing hemorrhagic points throughout. Appendix enlarged, sodden, and breaking down, but no perforation visible. Large intestine exhibits frequent ulcerations throughout, with two perforations in transverse colon anterior aspect, near ileocaecal valve; 2 cm. each in diameter, same side, 4 cm. apart. Mesenteric glands very much enlarged and congested. Spleen normal. Kidneys, capsules adherent, otherwise normal; weight, left, 125 grams; right, 155 grams.

H. C. W.

J. M. G.

J. T.; age, 44 years; nativity, Georgia; was admitted to the United States Marine Hospital, port of St. Louis, Mo., August 16, and died August 29, 1902.

HISTORY.—On admission the patient was practically moribund, emaciated to a shadow, though apparently free from pain. He complained of a cough which he attributed to catching cold about two months previously. Temperature 38° C.; pulse 116, feeble; respiration 27, superficial. The case possessed no feature of interest other than the completely quiet and restful aspect of the case, the patient passing his time in an apparently pleasant doze until the end. Treatment was purely sustaining and symptomatic, with easily digested food in abundance.



NECROPSY (14 hours after death).—Body that of an exceedingly emaciated adult male mulatto. Rigor mortis fairly well established. Right lung adherent throughout; nodular; superior lobe dark-gray in color; filled with cheesy deposit floating in pus; weight, 930 grams. Left lung free from adhesion except anteriorly. In center of superior lobe cavity of about 45 grams capacity filled with muco-purulent fluid; nodular; weight, 480 grams. Bronchi thickened and exuding pus on section. Heart rather pale, slightly dilated, otherwise normal; weight, 250 grams. Liver normal.

H. C. W.

J. M. G.

M. B.; white; age, 21; born in Wisconsin; admitted to United States Marine Hospital, Chicago, Ill., October 1, 1902, and died October 23, 1902.

His father died when patient was 3 years old. His mother married again and has six children. All are healthy. Patient used alcohol and tobacco in moderation. He followed the lakes for four years. Denied venereal infection. Four months ago he began to have a cough. This increased in severity, and two weeks before admission he was obliged to quit work.

Patient was a lanky youth with long thin neck and long thorax. He was sallow and greatly emaciated. The cough was brazen, expectoration muco-purulent and profuse, and he had a stabbing pain on coughing. Temperature on admission 39; pulse 90; respiration 26. Percussion revealed marked dullness above and below the clavicles and over the right lung. Resonance over the left lung was greater.

The respiration was blowing in character over both apices and fainter over the right lung. The heart sounds were normal.

During the first week of his sojourn in the hospital his strength was fair, permitting him to go into the open air nearly every day; his appetite good, and disposition cheerful. His temperature averaged from 37.5° a. m. to 39° p. m. About the twelfth day a diarrhoea began, and continued, notwithstanding various remedies and carefully selected diet. The temperature oscillated between 36° a. m. and 40° p. m. The night sweats recurred, the brazen voice became gradually lost, and the asthenia profound. He died October 23.

NECROPSY (18 hours after death).—Body that of a man 5 feet 11 inches in height; weight, about 120 pounds; greatly emaciated; cadaveric rigidity marked, slight lividity posteriorly. Long neck and long thorax. The adipose tissue is very slight. Larynx: The mucous membrane is pale. The left arytenoid cartilage has a gnawed appearance. Pleural cavities: No fluid in either. A few adhesions posteriorly on left side; almost general adhesions on right side. Pericardial cavity: Has 100 cc. serum. Abdominal cavity: No fluid. Lungs: Right lung weighs 1,950 grams; is solidified and of an almost cartilaginous consistency; externally it is irregular, blackish-red, and is studded with caseous foci. On section the upper lobe is seen to be honey-combed with cavities; the cut surface is studded with caseous foci and several abscesses are cut into. There are several cavities in the lower lobe of the right lung. The left lung weighs 1,000 grams. Its apex has several cavities and there are also numerous caseous foci. The congestion is slight as compared to the right. Heart: Weight 240 grams. The right ventricle is slightly hypertrophied. The tricuspid, aortic, and pulmonary valves are normal. The mitral slightly thickened. The pericardium and endocardium, pale and smooth. The fat is almost gelatinous. Stomach: The mucous membrane is pale but rugose. Intestines are collapsed. Beginning in the jejunum erosions transverse to the long axis of the intestine are found. They become more numerous toward the cæcum and change from the longitudinal to almost circular. In the latter they are gnawed-looking and are eroded down to the muscular coat. These areas are deeply congested. The mesenteric glands are greatly enlarged and caseous. The appendix is 3.75 cm. long, otherwise uninteresting. Liver: Weight, 1,900 grams. Is smooth externally and dark on section and firm; gall bladder is empty. Spleen: Weight, 400 grams. Consistency firmer than usual and blackish-red in color. Kidneys: Weight, 380 grams. Capsules strip easily; pyramids well marked. Bladder: Contracted.

ANATOMICAL DIAGNOSIS.—Pleuritis, disseminated tuberculosis of both lungs, with abscess cavities, pneumonic consolidation right lung; tuberculosis of larynx; tuberculosis of small intestines.

W. A. K.

C. E. B.

J. McN.; patient white; age 40; born in New York; was admitted to the United States Marine Hospital, Chicago, Ill., October 23, 1902; died June 22, 1903.

HISTORY.—Family history negative, except that mother probably had tuberculosis.

PAST HISTORY.—Patient's general health had been good up to March, 1901, at which time tuberculosis developed in lungs and patient was sent to the sanatorium



in Fort Stanton, N. Mex., where he remained till June, 1902. His condition having improved, he returned to the Great Lakes.

**PRESENT CONDITION.**—Patient has a cough, muco-purulent expectoration, at times bloody, and an intolerant stomach. Is fairly well nourished; face florid and full. The supra and infra claviclar spaces are slightly depressed, though this is not well marked. On percussion there is noted relative dullness over the upper lobe of each lung. Auscultation reveals blowing expiratory sounds over both upper lobes, but few râles. Temperature 37°, pulse 102, and respirations 26.

*October 26.*—Microscopic examination of sputum showed several tubercle bacilli to a field.

*December 26.*—Since last note patient has complained at intervals of dyspnoea, cough, one or two night sweats, and diarrhea with bloody stools. He complains at present of soreness about the rectum, with painful defecation.

*January 8, 1903.*—Ischio-rectal abscess ruptured, discharging creamy flocculent pus.

*February 16.*—Up to this time patient has done fairly well, range of temperature has been between 37° and 38°; to-day it is 39° C. Had slight attack of hemoptysis, and a severe headache. Ischio-rectal abscess continues to discharge.

*February 28.*—Complains of pleuritic pains in right side.

*March 18.*—Since last note patient has complained at intervals of pains in chest and abdomen, and diarrhea. He reports profuse cephalic nocturnal sweats.

*March 24.*—For past week patient has had considerable hectic fever.

*May 21.*—Patient continues to complain at times of irritable stomach, cough, and pleuritic attacks. Diarrhea with pus and blood in stools. Night sweats. Fistula is still discharging. Has quite a severe attack of dyspnoea.

*May 25.*—There has been some improvement. Patient complains of having vomited considerable bile-stained fluid. Is cold over body and extremities. Temperature 37.8°, pulse 90, respirations 30.

*June 10.*—Since last note patient has progressed as usual. He complains of increased pleuritic pains in right side.

*June 13.*—Patient is growing weaker. Diarrhea is aggravated; pus in stools; pleuritic pains continue, and dyspnoea is marked, requiring the use of oxygen.

*June 19.*—Slight improvement.

*June 21.*—Patient is growing weaker; his pulse is 146 and very feeble; respirations, 36; dyspnoea marked; temperature, 36.8° C. Is in a moribund condition.

*June 22.*—Patient gradually grew weaker during the night, his cough was distressing, and respirations embarrassed; cardiac action grew weaker, and at 7 a. m. he died.

**TREATMENT.**—Light nourishing diet; stimulants, anodynes, and counterirritants used as occasion required. On account of the patient's physical condition only palliative surgical treatment could be accorded to the ischio-rectal abscess, a slight incision being made for drainage.

**NECROPSY** (13 hours after death).—Body that of a poorly nourished male; post-mortem rigidity medium; post-mortem suffusions marked in dependent portions of body; no œdema present; a fistula discharging pus present to the left of anus. Thorax: Universal adhesions, both recent and old, throughout both pleural cavities; right lung weighed 1,350 grams; upper portion of upper lobe occupied by large and small cavities, one containing about 50 c. c. of grayish-green grumous pus; left lung weighed 1,360 grams; upper portion of upper lobe likewise filled with numerous cavities of various sizes; both lungs were profusely studded with tubercles and caseating foci, and were markedly anthracotic; the bronchial glands were similarly invaded by tubercles and matted together. The heart weighed 350 grams; contained both white and red clots; all the valves were normal and competent; cardiac muscle pale and slightly friable. The aorta presented a few small fibrous patches. Abdomen: The liver weighed 1,900 grams; presented a few miliary tubercles here and there, but otherwise normal; the right lobe was adherent to the pyloric end of the stomach. The gall bladder contained about 30 c. c. normal bile, but no calculi; was adherent to the transverse colon. Spleen weighed 210 grams; capsule was wrinkled, and externally was pale blue in color, mottled with red; on section was rather firm; no tubercles noted. The pancreas weighed 60 grams, and to all appearances was normal. The right kidney weighed 190 grams; its capsule was not adherent, and on section it appeared normal. The left kidney weighed 200 grams; its capsule was non-adherent, and on section the organ showed nothing abnormal. The small intestine presented numerous ragged tuberculous ulcers with suppurating bases; the peritoneal surface of the ulcers presenting numerous miliary tubercles. The mesenteric glands were all more or less enlarged, indurated, and tubercular. There was no general peritoneal tuberculosis. The bladder was partially contracted and contained about 50 c. c. of urine.

L. P. H. B.  
C. E. B.



J. C.; mulatto; age, 21 years; nativity, Virginia; admitted to marine ward, St. Vincent Hospital, Norfolk, Va., June 12, 1902; died July 6, 1902.

**HISTORY.**—Family history negative. Good health, except occasional attacks of malaria. About a year ago contracted soft chancre followed by suppurating bubo. Three months ago, from undue exposure, patient suffered with "cold" and had a dry hacking cough. This was followed by gastric disturbance, loss of flesh and strength, and a more troublesome cough with abundant expectoration.

**Symptoms on admission:** Emaciation with marked pallor and anemia of mucous membranes; skin moist; tongue slightly furred; bowels regular. General glandular enlargement, and scar in left groin from suppurating bubo. Temperature 40° C.; pulse 140; respirations 40.

**PHYSICAL SIGNS.**—**Inspection:** Chest long and flat; the spaces above and below the clavicles were sunken, and the scapulae were prominent. **Palpation:** Diminished expansion, marked over right apex, and increased vocal fremitus. **Percussion:** Tympanitic sound over right infraclavicular region. **Auscultation:** Vesicular murmur diminished over surface of right lung. Cavernous breathing in right infraclavicular space, with large gurgling râles. Mucous râles are heard over both lungs. Heart action rapid, otherwise normal.

*June 13.*—Cough troublesome. The expectoration is greenish in color, nummular, heavy, sinks in water, and is loaded with tubercle bacilli. Patient perspires profusely every night and is too weak to sit up.

*June 20.*—High intermittent fever, reaching 39.3° to 40° C., with other symptoms continuing.

*June 30.*—Patient much weaker, suffers from nausea, and refuses nourishment.

*July 6.*—Died at 8.50 a. m.

**NECROPSY** (4 hours after death).—Post-mortem lividity none; rigor mortis slight; general nourishment poor; pupils normal. **Heart:** Weight (after opening) 224 grams; contains dark fluid blood and post-mortem clot in left ventricle. Valves competent, walls rather thin, otherwise normal. Pericardial sac contains 50 c. c. of straw-colored fluid. Arteries and veins normal. **Respiratory organs:** Nares, larynx, and trachea normal. **Lungs:** Left, weight 352 grams; upper lobe feels hard and firm and is filled with miliary caseous nodules. The upper surface of lower lobe contains a few small yellow caseous-looking masses; pleural cavity normal. Right, weight 608 grams; has cavity size of large orange, with ulcerating walls, in upper lobe near apex. Remainder of lung contains smaller cavities situated between caseous masses; throughout the lower lobe are bands of fibrous tissue with cheesy masses. **Stomach and intestines** normal. **Liver:** Color normal; weight 1,132 grams. **Pancreas:** Normal, weight 96 grams. **Kidneys:** Left, weight 160 grams; right, weight 163 grams; somewhat pale in color, otherwise normal. **Appendix** normal. **Ureters, bladder, and prostate** normal. **Suprarenal bodies** normal. **Spleen:** Weight 128 grams, normal.

J. B. S.

P. W.; age, 53 years; nativity, Ireland; admitted to United States Marine Hospital, Detroit, Mich., May 31, 1900; died July 19, 1901.

**HISTORY.**—The records of this hospital show that the patient was admitted April 22, 1895, under the diagnosis of debility, and was discharged recovered in a few days.

*December 30, 1895.*—He was again admitted for tubercle of lung and remained here during the winter. He has been able to work during the summers, but his winters have since been spent in some of our lake hospitals. Since the date of his last admission his failure has been progressive. The symptoms and signs have been as follows: Cough with muco-purulent expectoration; tubercle bacilli in sputum; pain in both sides of chest, aggravated by deep inspiration and coughing; loss of appetite; diarrhea, and gradual loss of flesh and strength. The physical examination showed: Depression in infra and supraclavicular spaces, with diminished respiratory movements, increased vocal fremitus, and dullness over upper lobes of both lungs; bronchial respiration and subcrepitant râles in the same areas, and friction sounds at bases of both lungs. Heart apparently normal, as were the abdominal viscera. A short time previous to his death albumen and hyaline casts were found in the urine. Death seemed to be due to toxæmia, probably following a mixed infection in the lungs.

**NECROPSY** (18 hours after death).—Body fairly nourished. Abdominal fat 2 cm. in thickness. The intestines were very generally united by adhesions, evidently the result of an old peritonitis. Omentum glued to intestines, and an attempt to remove intestines failed because of adhesions. After much labor the cæcum was reached and the appendix (a small fibrous cord) was found imbedded in a mass of fat and adhesions. Spleen firmly bound down by connective tissue, was 10 cm. by



6 cm. in diameter; weight, 160 grams; was quite firm under knife. Left kidney: malpighian bodies normal; capsule strips readily; surface finely mottled red and white; many pyramids obliterated and place taken by connective tissue; weight 175 grams; diameter, 11 cm. by 5 cm. Right kidney same condition as left; weight, 125 grams. Bladder almost empty; contained about 5 c. c. of milky urine. Prostate normal. Urethra, seminal vesicles, testicles, spermatic cord, and penis normal. Liver weighed 1,480 grams; capsule lacerated in removal; pulp, dark red and firm, rather dry; gall bladder and ducts normal. Left lung floats; weight, 500 grams. Pleural adhesions at all points; deeply anthracosed and studded with small tubercles. Heart, weight, 260 grams; post-mortem but no ante-mortem clots in the cavities. All valves normal. Right pleural cavity obliterated by adhesions. Right lung same as left; weight, 720 grams.

E. K. S.

F. R.; male, white; age, 43 years; nativity, Chile; admitted to the United States Marine Hospital, Wilmington, N. C., June 25, 1902.

HISTORY.—Family history unknown. Patient had noticed a slight cough for about three years; caught a "heavy cold" four months prior to admission, when he began to raise considerable sputum, occasionally streaked with blood. Had syphilis six years ago.

PHYSICAL EXAMINATION.—Marked dullness in upper lobe left lung; consolidation in upper third right lung.

NECROPSY (16 hours after death).—No rigor mortis. Body greatly emaciated. Nothing abnormal about brain except somewhat anæmic. Heart: Pericardial sac contained 35 c. c. pale, watery fluid. Heart weighed 290 grams after opening; walls thin, valves sufficient. Left lung: Nearly destroyed by tubercular invasion and unremovable. Right lung: Weight 860 grams; bound to diaphragm; large cavity in apex; rest of lung seat of general tubercular infiltration. Liver: Weighed 1530 grams; showed fatty degeneration usually found in tubercular cases. Gall bladder contained about 25 c. c. of thin fluid. Right kidney weighed 130 grams; cortical substance thin; otherwise normal. Left kidney smaller than the right, weighed 125 grams; in same condition as the right. Spleen weighed 450 grams; slaty blue externally; internally very dark, pultaceous, with numerous hemorrhagic infarcts. Other organs normal.

J. G.

N. T.; aged 49 years; nativity, Denmark; admitted to the United States Marine Hospital, San Francisco, Cal., October 28, 1901; died October 26, 1902.

HISTORY.—On the day before the patient was brought to this hospital he was knocked down by a runaway horse at the corner of Sansome and Market streets in this city, and his left leg was badly injured. Examination showed a transverse fracture of both bones of the leg just above the ankle; an irregular cut 10 cm. long extended across the foot and ankle, and there was a long jagged hole on the outside of the leg communicating with the fracture. The wounds were cleaned and the fracture placed in splints. The ends of the broken bones became united, but the wounds never completely healed; necrosed bone was removed on a number of occasions, but sinuses would invariably remain after the healing of the wound caused by the operation. Abscesses formed frequently and had to be opened. Although there was no history of syphilis, the patient was given iodide of potassium and his general health improved for a time, but there was little improvement in the healing process. On September 15 the patient was given ether and an incision was made over the anterior part of the lower end of the leg and upper part of the foot. The astragalus was found to be badly diseased, the bone tissue being soft like cheese, the lower 5 cm. of the tibia and fibula were in the same condition. The leg was therefore amputated at the junction of the upper and middle thirds by the anterior posterior flap method. The arteries were found to be very soft and to tear easily. About this time it was noticed that the patient had a slight cough and there was some dullness over the apex of the right lung. The wound caused by the amputation did not heal, the flaps sloughed, and abscesses formed in the tissues. He finally died from exhaustion at 4.15 p. m., October 26, 1902.

NECROPSY (18 hours after death).—Height 160 cm. There are three vaccination marks upon the left arm and a scar 2 cm. wide on the left forearm. The stump of the left leg is brawny and indurated; the bone is necrotic, and there is a sinus 10 cm. long on the inner side. Pus exudes freely upon section, and there are multiple abscesses on the inner aspect of the knee joint, extending upward to the middle third of the thigh. There is a pustular eruption on the chest. Post-mortem lividity and rigor mortis are well marked. The cerebral membranes show slight engorgement.



On removal of brain a quantity of cerebro-spinal fluid escapes. The cerebrum weighs 1210 grams, the cerebellum 380 grams. The brain tissue is apparently normal. The pericardial sac contains 10 c. c. of clear fluid. Heart weight, 410 grams; measurements, 11½ cm. by 8 cm. by 4 c. m.; there is a small amount of fat on the surface of the heart. The mitral and tricuspid valves present numerous small vegetations, but the other valves are normal. The heart muscle is soft and friable. Left lung, weight 300 grams; it is firmly adherent to the chest wall, the tissue shows marked anthracosis, and there is at the apex a scar 3 cm. long. The surface is studded with many tubercles about 1 cm. in diameter, and near the apex, deeply situated, is a larger one about 4 cm. in diameter. Right lung, weight 570 grams; the tissue shows marked anthracosis, and there is a large tubercle 2 cm. in diameter, and a scar 5 cm. in diameter near the apex; the base of the lower lobe is filled with tubercles. The visceral pleura is thickened posteriorly.

The abdominal wall is 1½ cm. thick. The position of the abdominal contents is normal. The omentum shows the usual amount of fat. It is adherent to the cæcum. The appendix is normal. The spleen weighs 250 grams; tissue normal. The perinephritic fat is abundant. Left kidney, weight 160 grams; measurements, 11½ cm. by 5 cm. by 4 cm.; its capsule is adherent, and its substance is friable; the tissue shows marked fatty degeneration. Right kidney, weight 150 grams; shows fatty and cystic degeneration. The bladder is empty. The stomach is dilated; its walls are thin; it contains a quantity of partially digested food. The intestines are normal. Liver, weight 2028 grams; color pale brown; there is a white scar on the anterior surface of the left lobe. The liver measures 25 cm. from side to side, and 15 cm. from before backwards; its tissue shows fatty degeneration. The gall bladder is empty, and the biliary ducts are patent.

W. G. S.

*Tubercular leptomeningitis.*

S. S.; age, 41; nativity, Norway; color, white; admitted to the United States Marine Hospital, San Francisco, Cal., April 6, 1903; died April 30, 1903.

HISTORY.—Family history negative. The previous personal history and the history of the present sickness were obtained from the surgeon on board the vessel on which the patient was employed, the mental condition of the latter being such that he was unable to answer interrogations. Five years ago he contracted a hard chancre. The present sickness was first noticed one week ago, when a cold was caught, followed later by pains in the chest and stomach, also vomiting. He was taken from the vessel to the Marine Hospital in the ambulance. On admission, slight tympanites was present, but no rose spots or gurgling were found. The lungs, heart, liver, and spleen were apparently normal. The tongue was coated and there was constipation. Moderate fever persisted. The man was ten days ashore at Panama before sailing on his last voyage, and therefore the possibility of yellow fever infection was considered, but careful examination excluded it. There was no typical pulse and temperature rate, albuminuria, or jaundice, the skin was dry, and the blood examination was negative. After several days the existing constipation was finally relieved and the bowels kept in good condition by means of enemata. The tongue remained coated with a thin white coat in the center, with red edges, and was tremulous.

April 9.—There is slight temperature, regular pulse of modern rhythm, and constipation; is delirious and has to be fastened in bed.

April 11.—Urine is passed in the bed involuntarily; bowels are freely moved by means of anæmas; he lies most of the time with eyes partially closed and eyeballs turned upward; emits occasional faint groans.

April 15.—Condition slightly improved, though not materially different or altered.

April 19.—Urine and feces passed in bed involuntarily; there is no change in the mental condition; the physical condition is improved; confined to bed by having one foot secured.

April 23.—There is no change whatever; the urine and feces continue to be voided involuntarily in bed.

April 24.—Mucous râles are heard over the right lung; has frequent attacks of clonic spasms all over the body; he is becoming weaker, and is apparently blind; condition remained the same until April 29.

April 30.—Has become much weaker; no change otherwise. Died at 2.45 p. m.

The patient was kept on specific treatment, on account of the history and cerebral symptoms.

NECROPSY.—Body emaciated and shows rigor mortis and post-mortem lividity posteriorly. Brownish discoloration size of half dollar on the chest over the right third rib. Small anchor tattooed on back of right hand. Greenish patches of discoloration on either side of abdomen. Brain: On removing the calvarium the vessels of



the dura were seen to be congested, and the veins of the pia mater were engorged. The base of the brain was bathed in serous fluid in amount somewhat in excess of the normal. The brain weighed 1,380 grams. The entire surface of the pia mater was studded with numerous miliary yellowish nodules; these were especially prominent over the base of the brain. The substance of the right caudate nucleus was very soft and gelatinous in character. The remaining portions of the brain were apparently normal. Thorax: The anterior mediastinum was normal, and no evidence of the thymus gland. The pericardium was strongly adherent to the right lung, and its cavity contained a moderate amount of serous fluid. The heart weighed 217 grams. Its muscular substance was normal. Chicken-fat clots were present in the aorta and pulmonary artery. All the valves were normal. The layers of the right pleura were adherent throughout. In the right chest wall occurred a calcareous nodule of bean size. The weight of the right lung was 1,500 grams. The right lung was much congested, except in the upper lobe, where slight crepitation could be elicited. Section revealed large amount of sero-purulent fluid, especially in the lower lobes. The left lung was strongly adherent at its base to the diaphragm, and crepitation here was much diminished. On section the lower lobe was seen to be in similar condition to those of the right lung. The bronchial glands were enlarged and hemorrhagic. The great vessels and nerve trunks were normal. The diaphragm was adherent to the bases of the lungs. Abdomen: The omentum was negative. The spleen weighed 80 grams and cut with increased resistance, the section showing increase of interstitial tissue. The kidneys and suprarenal capsules were normal. The urinary bladder contained a small amount of turbid urine. The organs of generation, rectum, duodenum, stomach, and gall ducts were normal. The liver showed on its surface many yellowish white areas, and cut with increased resistance, the section exhibiting increase of fibrous tissue. The pancreas, solar plexus, and mesentery were normal. The small intestines were normal. The large intestines contained masses of hardened fecal matter. The vermiform appendix was normal, also the great vessels.

ANATOMICAL DIAGNOSIS.—Tubercle of the cerebral pia mater and arachnoid; degeneration and softening of the right caudate nucleus; acute pericarditis; acute fibrinous pleuritis, right; chronic fibrous pleuritis, left; calcareous deposit in right chest wall; right lobar pneumonia; acute and chronic congestion of left lower lobe; enlarged and hemorrhagic bronchial glands; acute and chronic phrenitis; chronic splenitis; chronic hepatic cirrhosis.

C. R.  
W. G. S.

#### *Tuberculosis of sacrum.*

J. W.; colored; age 21; born in North Carolina; entered United States Marine Hospital, Baltimore, Md., March 17, 1902; died September 6, 1902.

CLINICAL HISTORY.—Scars on right hip and thigh as from old (tubercular?) disease of hip joint. Had hip disease in childhood. Now has a sinus over crest of right ilium, which on exploration goes down to the anterior surface of the body of the sacrum to denuded bone. Attempt was made to remove this, but it was very extensive, and it failed. The patient ran the usual course of those suffering from this disease, with profuse and long-continued suppuration. A large abscess formed and was opened and drained in the left iliac region, just above Poupart's ligament. It evidently was from the same focus, in the sacrum. At no time did he show any symptoms of lung complication, although physical examination showed signs of deposit in the right apex. Died of exhaustion (extensive anasarca) September 6, 1902.

NECROPSY (24 hours after death).—Thin, spare boy, about 18 years old; much emaciated; abdomen and feet swollen; also legs swollen to ankles; sinus in left iliac region and right hip. Subcutaneous fat absent; abdominal wall in mid line 0.5 cm. thick; considerable peritoneal fluid, clear serum. Small intestines distended with gas, mainly empty; omentum without fat. Pericardium contains clear fluid, 75 c. c. Right lung: Main pocket of fluid in pleural cavity, in front and below. Lung and diaphragm adherent over anterior part and postero-lateral part of chest wall; considerable hypostatic congestion at back part; apex contains some tubercular nodules with consolidation. Left lung: Closely adherent at upper part, also posterior and lateral part of chest wall. Very much compressed by fluid, located in front; adhesions fairly firm and left lung less consolidated than right; same condition, but less degree, as right. Pleural cavity contains large amount of fluid, clear serum; amount estimated at 1,700 c. c. Liver: Very large, overlapping spleen and down to umbilicus, its weight being 2,825 grams; adherent to diaphragm. Liver hard; peritoneum not adherent; firm on cross section, bloodless, and smooth surface on tearing.



Tests show marked amyloid degeneration. Gall bladder moderately full of yellow bile. Spleen: Large, slate-colored; few scars found on surface; weight, 315 grams; soft, but not diffuent. Right kidney: Overlapped by liver, weight being 190 grams; lobulations being well marked; capsule not adherent to surface; surface marbled, purple and white; cortical section thickened and striation well marked. Left kidney: Darker than right; capsule not adherent; surface like right one, as is section; weight, 235 grams. Both show patches of amyloid infiltration. Appendix: Normal position; somewhat closer to median line, turned outward; about the size of a goose quill; length, 15 cm. Sigmoid flexure of colon: Where descending colon crosses brim of pelvis, closely adherent to side, there being no mesocolon up to near bend. The seat of adhesions considerably bound to anterior wall of abscess cavity, which was drained by sinus in left iliac region. This abscess behind iliac muscle extends up the muscle nearly to diaphragm, running under the left common iliac artery at the upper part of sacrum. The sinus over left iliac crest leads also to sacrum and connects with same cavity as the sinus on the other side; large part of bone bare and carious. Colon, where adherent to abscess wall, shows patches of congested mucous membrane, soft, thin, and extremely hyperæmic, but no abrasions.

H. R. C.

*Miliary tuberculosis.*

G. P.; age, 40 years; colored; native of Kentucky; was admitted to the United States Marine Hospital, Evansville, Ind., June 10, 1902, and died July 9, 1902.

The patient on admission was suffering from anasarca and a remittent type of fever. The swelling of feet and abdomen commenced about a month before admission. No family history of tuberculosis could be obtained, but he gave a history of syphilis contracted about seven years before.

On account of the fluid in the thoracic and abdominal cavities, it was impossible to make a careful examination of the organs. The heart was normal, and there were neither casts nor albumen in the urine. He had no cough, nor did he complain of any symptoms pointing to the lungs, and his appetite was good throughout his illness.

Under treatment, the dropsy gradually disappeared, but the remittent fever continued. Two days before death a profuse diarrhea set in, which could not be controlled, and the patient gradually became worse, and died while in a comatose condition.

NECROPSY.—The thoracic cavity contained a small quantity of fluid, and both lungs were bound down by old adhesions and infiltrated with tubercle; heart normal; the abdominal cavity contained about a liter of straw-colored fluid, and the organs, with the exception of the kidneys, were infiltrated with tubercle; the kidneys were slightly congested, but otherwise normal; the brain was normal.

B. W. B.

J. C.; age, 27; nativity, West Indies; admitted to United States Marine Hospital, Boston, Mass., October 23, 1902, and died November 21, 1902.

FAMILY HISTORY.—Father died of renal calculus; mother living and in good health; four brothers and four sisters living; one brother dead, cause of death unknown.

PREVIOUS HISTORY.—Had gonorrhœa ten years ago.

PRESENT HISTORY.—Present illness began twelve days ago with pain in the abdomen, loss of appetite and constipation. The tongue is coated, and the abdomen is swollen and hard, giving dullness on percussion in the flanks. The note of dullness does not change with the position of the patient. There is a heart murmur heard best at the siphoid appendix.

TREATMENT.—The bowels were freely moved by salts and enemata. In the last stages of his illness strong stimulants were employed, but without avail.

NECROPSY (24 hours after death).—Rigor mortis absent. The usual median incision revealed numerous cheesy tubercular deposits on the peritoneum and omentum, which were matted together. The abdominal wall was 7 cm. thick and the peritoneal cavity contained 225 c. c. of clear straw-colored fluid. The pericardium contained 100 c. c. of similarly colored fluid. The right pleural cavity contained 50 c. c. of a clear fluid and the left 1,000 c. c. of fluid of the same character. The heart was apparently normal, an ante-mortem clot occupying the right auricle. The heart's weight was 270 grams. The right lung weighed 610 grams; the left 510 grams, and was normal. The brain was apparently normal, and weighed 2,230 grams. The spleen weighed 200 grams. All the abdominal organs contained tubercular deposits except the right kidney, and were strongly adherent and removed only with great difficulty. There was an organic stricture of the urethra.

W. K. W.  
R. M. W.



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STATISTICS OF MARINE HOSPITALS AND  
RELIEF STATIONS.

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STATISTICS OF MARINE HOSPITALS  
KINGSTON



## STATISTICS OF THE UNITED STATES MARINE HOSPITALS AND RELIEF STATIONS.

The following statistical tables are self-explanatory:

TABLE I.—COMPARATIVE TABLE OF NUMBER TREATED—1868 TO 1903.

The following tabular statement will serve to illustrate its growth since the reorganization of the Marine-Hospital Service in 1871:

*Operations of the Marine-Hospital Service from July 1, 1868, to June 30, 1903.*

Fiscal years.	Number of places at which re- lief was furnished.	Number of sick and disabled seamen furnished relief.
Prior to reorganization:		
1868 .....	64	11,535
1869 .....	64	11,356
1870 .....	74	10,560
After reorganization:		
1871 .....	72	14,256
1872 .....	81	13,156
1873 .....	91	13,529
1874 .....	91	14,356
1875 .....	94	15,009
1876 .....	94	16,808
1877 .....	100	15,175
1878 .....	210	18,223
1879 .....	210	20,922
1880 .....	210	24,860
1881 .....		32,613
1882 .....		36,184
1883 .....		40,195
1884 .....		44,761
1885 .....		41,714
1886 .....		43,822
1887 .....		45,314
1888 .....		48,203
1889 .....		49,518
1890 .....		50,671
1891 .....		52,992
1892 .....		53,610
1893 .....		53,317
1894 .....		52,803
1895 .....		52,643
1896 .....		53,804
1897 .....		54,477
1898 .....		52,709
1899 .....		55,489
1900 .....		56,355
1901 .....		58,381
1902 .....		56,310
1903 .....		58,573



TABLE II.—EXHIBIT OF OPERATIONS OF THE SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1903.

Ports.	Total number of sea-men treated.	Patients in hospital July 1, 1902.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Remain-ing in hospital June 30, 1903.	Number of days relief in hospital.	Number of sea-men furnished office relief.	Number of times office relief was furnished.	Number of persons examined physically, including pilots.	Amount expended.	Tonnage tax collected.
Grand total.....	58,573	862	12,705	13,567	12,124	541	902	383,389	45,006	72,087	4,337	\$1,096,434.49	\$883,434.77
Alexandria, Va.....	6	1	5	6	6	1	106	407	41	65	186.25	49.29	
Albany, N. Y.....	79	2	38	38	37	1	407	191	190	191	920.00	1,315.93	
Apalachicola, Fla.....	237	1	45	47	46	1	1	592	240	483	1,115.00	845.99	
Ashland, Wis.....	283	1	42	43	40	1	2	528	70	105	1,312.55	11,286.93	
Ashtabula, Ohio.....	96	1	25	26	25	1	36	16,904	1,200	1,659	22,103.57	53,192.85	
Astoria, Oreg.....	1,671	43	428	471	405	30	36	365	61	69	878.60	507.06	
Baltimore, Md.....	82	2	19	21	21	1	181	75	107	192	841.30	202.19	
Bangor, Me.....	181	1	4	4	4	1	46	313.48	41	46	313.29	193.29	
Barnstable, Mass., and subports.....	41	1	4	4	4	1	37	51	37	51	519.66	3.51	
Bath, Me.....	111	1	4	4	4	1	46	313.48	41	46	313.29	193.29	
Beaufort, N. C.....	37	1	8	9	7	1	198	1	1	1	224.00	106.77	
Beaufort, S. C.....	8	1	3	3	3	1	46	129	120	123	253.64	483.40	
Belfast, Me.....	125	38	615	653	591	26	36	16,971	1,801	2,916	5	26,390.41	101,534.20
Bismarck, N. Dak.....	2,454	1	8	9	7	1	1	1	1	1	210.54	262.89	
Boothbay Harbor, Me.....	10	1	8	9	7	1	1	1	1	1	224.00	106.77	
Boston, Mass.....	10	1	8	9	7	1	1	1	1	1	224.00	106.77	
Books, Marine Hospital-Service.....	10	1	8	9	7	1	1	1	1	1	224.00	106.77	
Bridgeton, R. I.....	10	1	8	9	7	1	1	1	1	1	224.00	106.77	
Bridgeton, Conn.....	10	1	8	9	7	1	1	1	1	1	224.00	106.77	
Bristol, R. I.....	10	1	8	9	7	1	1	1	1	1	224.00	106.77	
Brownsville, Tex.....	10	1	8	9	7	1	1	1	1	1	224.00	106.77	
Brunswick, Ga.....	208	42	49	51	46	3	22	927	157	182	1,465.55	4,826.97	
Buffalo, N. Y.....	2,723	17	462	479	437	25	17	7,019	2,244	3,493	13,534.52	26,390.41	
Burlington, Iowa.....	13	1	12	12	11	1	1	301	1	1	257.85	220.71	
Burlington, Vt.....	1	1	1	1	1	1	1	49	575	751	10,075.51	106.47	
Cairo, Ill.....	822	8	239	247	229	5	13	3,942	14	17	345.70	5.00	
Cambridge, Md.....	26	1	11	12	11	1	1	123	5	5	571.00	358.22	
Castine, Me.....	5	1	101	106	100	4	2	1,945	796	1,135	3,964.65	6,927.66	
Cedar Keys, Fla.....	323	5	101	106	100	4	2	1,945	796	1,135	3,964.65	6,927.66	
Charleston, S. C.....	902	5	101	106	100	4	2	1,945	796	1,135	3,964.65	6,927.66	
Chattanooga, Tenn.....	10	1	8	8	8	1	1	102	2	2	301.20	26,122.40	
Chicago, Ill.....	3,043	23	566	589	536	23	30	14,517	2,454	3,185	26,122.40	12,979.45	
Cincinnati, Ohio.....	798	14	277	291	266	10	15	6,645	507	689	15,511.21	500.67	
Cleveland, Ohio.....	2,302	26	446	472	428	19	25	13,633	1,830	2,686	367.15	81.12	
Coos Bay, Oreg.....	16	1	2	2	2	1	1	31	14	23	367.15	81.12	
Corpus Christi, Tex.....	89	1	2	2	2	1	1	89	89	144	300.00	300.00	
Crisfield, Md.....	89	1	2	2	2	1	1	89	89	144	300.00	300.00	







TABLE II.—EXHIBIT OF OPERATIONS OF THE SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1903—Continued.

Ports.	Total number of sea-men treated.	Patients in hospital July 1, 1902.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Remain-ing in hospital June 30, 1903.	Number of days relief in hospital.	Number of sea-men furnished office relief.	Number of times office relief was furnished.	Number of persons physically examined, including pilots.	Amount expended.	Tonnage tax collected.
Marblehead, Mass.	84	19	19	19	16	3		343	65	70	21	\$709.00	\$59.43
Marquette, Mich.	78	14	14	14	14			5,052	1,452	1,771	12	11,793.53	
Marshfield, Oreg.	1,901	9	440	449	427	14	8	122	21	27	18	441.17	
Memphis, Tenn.	29	8	8	8	7	1		3,715	788	1,331	85	6,741.25	
Menominee, Mich.	976	10	178	188	175	5	8	8,903	1,059	3,122	38	14,678.40	11,800.07
Milwaukee, Wis.								130	80	153	12	534.04	
Miscellaneous	1,377	26	292	318	289	4	25	107	86	164		437.99	1,302.96
Mobile, Ala.	91	11	11	11	10		1					926.10	20.88
Nashville, Tenn.	8	1	1	1	1								
Natchez, Miss.													
Newark, N. J.	91	5	5	5	5								
New Bedford, Mass.													
Newburyport, Mass.	375	35	35	35	31	2	2	320	340	687	17	991.51	
Newbern, N. C.	53	3	39	42	36	2	4	1,025	11	19		1,529.00	1,723.92
New Haven, Conn.	102	19	19	19	17	1	1	333	83	97		1,228.25	217.59
New London, Conn.	1,931	25	411	436	371	26	39	11,983	1,495	2,232	100	22,522.19	61,473.76
New Orleans, La.	44	6	45	51	41	4	6	932	44	60	30	319.20	
Newport, Ark.	79								28	29		1,725.35	171.99
Newport, R. I.	114								114	134		218.84	9,316.83
Newport News, Va.													58.02
Newport, Vt.													303,606.09
New York, N. Y.	4,540	109	1,020	1,129	1,020	47	62	39,471	3,411	5,523	715	55,199.85	2,401.02
Norfolk, Va.	1,920	12	314	326	312	7	7	4,317	1,594	2,017	143	9,750.05	
Nome, Alaska											1		
Ogdensburg, N. Y.	55	1	8	9	9			221	46	133		589.35	1,187.49
Oswego, N. Y.	80		7	7	7			140	73	134		373.70	897.93
Paducah, Ky.	183								183	597		596.35	
Pensacola, Fla.	97	3	94	97	93	2	2	1,757				2,870.50	19,466.31
Perth Amboy, N. J.													1,417.95
Philadelphia, Pa.	1,537	19	345	364	336	15	13	6,822	1,173	1,827	270	16,787.22	73,302.36
Pittsburg, Pa.	1,343	6	286	292	271	12	9	6,796	1,051	1,229	18	11,584.39	
Plattsburg, N. Y.													3,800.13
Plymouth, N. Y.	57												10.44
Ponce, P. R.	144		9	9	8		1	246	48	76		203.50	
Port Huron, Mich.	891	24	270	294	264	10	20	111	136	275		450.00	
Portland, Me.	579	6	138	144	139	1	4	9,860	597	906	56	14,138.41	23,423.43
Portland, Oreg.	31		12	12	10		2	2,704	435	914	31	6,941.14	
Portsmouth, N. H.								150	19	19		3,351.40	751.56







TABLE II.—EXHIBIT OF OPERATIONS OF THE SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1903—Continued.

Ports.	Total number of sea-men treated.	Patients in hospital July 1, 1902.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Remain-ing in hospital June 30, 1903.	Number of days relief in hospital.	Number of sea-men furnished office relief.	Number of times office relief was furnished.	Number of persons examined physically, including pilots.	Amount expended.	Tonnage tax collected.
Cape Charles Quarantine.....	5	.....	1	1	.....	.....	1	1	4	7	2	.....	.....
Cape Fear Quarantine.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	.....
Delaware Breakwater Quarantine...	4	.....	4	4	4	.....	.....	78	.....	.....	.....	.....	.....
Gulf Quarantine.....	2	.....	2	2	2	.....	.....	.....	.....	.....	.....	.....	.....
Port Townsend Quarantine.....	2	.....	2	2	.....	.....	1	17	.....	.....	.....	.....	.....
San Diego Quarantine.....	1	.....	1	1	1	.....	.....	37	.....	.....	.....	.....	.....
San Francisco Quarantine.....	19	.....	19	19	14	.....	3	500	.....	.....	.....	.....	.....
Savannah Quarantine.....	7	.....	4	4	2	2	.....	42	3	4	.....	.....	.....



TABLE III.—SUMMARY OF PHYSICAL EXAMINATIONS MADE BY OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE DURING THE FISCAL YEAR ENDED JUNE 30, 1903.

Summary of examinations and causes of rejection.	Total.	Pilots.	Revenue-Cutter Service.	Life-Saving Service.	Merchant marine.	Coast and Geodetic Survey.	Light-House Service.	Post-Office Department.	New York Custom-House.	Civil Service Commission.	Foreign seamen.	Public Health and Marine-Hospital Service.
Summary of examinations:												
Total number examined.....	4,337	1,525	884	1,226	426	63	3	18	115	3	69	5
Number passed.....	4,016	1,445	763	1,175	382	51	3	17	110	3	63	4
Number rejected.....	321	80	121	51	44	12	....	1	5	....	6	1
Causes of rejection:												
Albuminuria.....			4	1								
Alcoholism.....					1							
Amputation, right leg.....			1									
Anchylosis of joints.....			1									
Anæmia.....			2									
Bright's disease.....					1							
Bronchitis.....			1									
Cataract.....			1									
Color blindness.....		48	8	2	10	1						
Conjunctivitis.....			1									
Deafness.....				2								
Debility.....												
Defective teeth.....			4									
Defective vision.....		32	15	2	11	1						
Deformity, index finger.....			1									
Diarrhea.....				1								
Disability claim.....				1		1						
Dysentery.....											1	
Epilepsy.....				1								
Gonorrhea.....			7		2	1					1	
Heart disease—												
Valvular—												
Mitral.....			6	10	2	1			1			1
Aortic.....					1							
Disordered action.....			7	4	1	1						
Hypertrophy.....			1	1								
Fatty degeneration.....					1							
Hernia.....			6			1			2		1	
Hydrocele.....			2									
Inflammation of—												
Lymphatic glands.....			1									
Rectum.....				1								
Tonsils.....			2									
Influenza.....				8								
Malarial fever, intermittent.....					2							
Melancholia.....				1								
Nasal polypus.....				1								
Parasitic diseases—												
Favus.....			1									
Scabies.....			3									
Tricophyton tonsurans.....				4								
Phimosis.....					1							
Piles.....			2	1	1						1	
Poor development.....			7	4	1							
Pleurisy.....					1							
Refused examination.....			1									
Rheumatism.....				1								
Rheumatic fever.....					1							
Soft chancre.....			2									
Spinal curvature.....			1									
Stricture of urethra.....			2								1	
Suppurating sinus of sacrum.....					1							
Sycosis.....			1									
Syphilis—												
Primary.....			4									
Secondary.....			7		2	4			1		1	
Sprain, ankle.....				3								
Tubercle.....			1		1							
Ulcer of—												
Penis.....			3		1							
Skin.....			1									
Varicose veins.....			1						1			
Varicocele.....			12	2	2	1						
Vesical calculus.....			1									
Failed to report.....								1				
Total.....		80	121	51	44	12	....	1	5	....	6	1



TABLE IV.—STATEMENT, BY DISTRICTS, OF THE NUMBER OF PATIENTS TREATED DURING THE YEAR ENDED JUNE 30, 1903.

District.	Total cases.	Pa-tients in hos-pital July 1, 1902.	Ad-mitted during the year.	Total num-ber cases treated in hos-pital.	Discharged.	Died.	Pa-tients in hos-pital June 30, 1903.	Number of days relief in hospital.	Num-ber of seamen fur-nished office relief.	Num-ber of times office relief was fur-nished.
Total.....	58,573	862	12,705	13,567	12,124	541	902	383,389	45,006	72,087
Atlantic .....	20,391	347	4,364	4,711	4,244	195	272	133,405	15,680	23,679
West Indies.....	220	4	69	73	67	.....	6	1,372	147	202
Gulf .....	7,022	80	1,162	1,242	1,108	47	87	33,850	5,780	10,692
Ohio .....	5,123	40	1,182	1,222	1,129	35	58	26,311	3,901	5,999
Mississippi .....	4,723	42	1,134	1,176	1,099	35	42	18,025	3,547	4,742
Great Lakes.....	13,671	126	2,656	2,782	2,542	107	133	60,926	10,889	16,338
Pacific .....	6,863	215	2,008	2,223	1,824	109	290	106,079	4,640	9,747
Pacific islands .....	520	8	97	105	87	9	9	2,746	415	677
The quarantine sta-tions .....	40	.....	33	33	24	4	5	675	7	11

TABLE V.—RATIO OF PATIENTS TREATED IN HOSPITAL IN EACH DISTRICT.

District.	Per cent of patients treated in hospital.	District.	Per cent of patients treated in hospital.
Atlantic .....	23.10	Great Lakes .....	20.35
West Indies.....	33.18	Pacific.....	32.37
Gulf.....	17.67	Pacific islands.....	20.19
Ohio .....	23.85	The quarantine stations .....	82.50
Mississippi .....	24.89		

TABLE VI.—AVERAGE DURATION OF TREATMENT IN HOSPITAL IN EACH DISTRICT.

District.	Average number of days' relief furnished to each patient.	District.	Average number of days' relief furnished to each patient.
Atlantic .....	28.36	Great Lakes .....	21.90
West Indies.....	20.47	Pacific.....	48.16
Gulf.....	27.14	Pacific islands.....	26.15
Ohio .....	21.53	The quarantine stations.....	20.42
Mississippi .....	15.30		







DISTRICT OF THE ATLANTIC—Continued.									
Diseases.	Number of cases.								Total treated in hospital and dispensary.
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	
NEW GROWTH, MALIGNANT .....	2	4	2	1		3			6
Sarcoma .....								3	3
Carcinoma .....		5	2	1	1	1		1	6
Epithelioma .....		2			2			6	8
Squamous carcinoma .....		1	1						1
Condylomata .....								6	6
Venereal warts .....								13	13
Anæmia .....		2		2				19	21
Purpura .....		1		1				4	5
Diabetes mellitus .....		2			1		1	6	8
Congenital malformations .....		1	1					1	2
Debility .....	1	8	5	3			1	110	119
Old age .....	1		1						1
Local Diseases .....									
DISEASES OF THE NERVOUS SYSTEM.....	56	85	24	33	14	15	55	394	535
Of the nerves—									
Inflammation—									
Neuritis .....		18	9	5	2		2	24	42
Multiple neuritis .....		3		3					3
Of the spinal cord and membranes, cord—									
Degeneration—									
Of lateral columns .....		3			1		2	4	7
Of posterior columns .....	4	1		2		1	2	2	7
Of the brain and its membranes, membranes—									
Inflammation of dura matter .....		1	1						1
Hemorrhage .....	1	2			1		2		3
Of the brain and its membranes, brain—									
Sclerosis .....	2						2		2
Softening .....								3	3
Hemorrhage .....		3				2	1	3	6
Hyperæmia .....		1		1					1
Anæmia .....								2	2
Functional nervous disorders with other diseases of undetermined nature—									
Bulbar paralysis .....								1	1
Apoplexy .....		5		3		2			5
Paralysis .....		8		3		2	3		8
Paraplegia .....	2				1		1		2
Hemiplegia .....	9	3		2	2	4	4	2	14
Local paralysis .....	1			1				1	2
Incomplete paralysis .....	1				1			3	4
Paralysis agitans .....								1	1
Spasm .....								1	1
Torticollis .....								6	6
Epilepsy .....		1		1				7	8
Vertigo .....		1	1					12	13
Headache .....								49	49
Anæsthesia .....								2	2
Neuralgia .....	2	15	9	7	1			226	243
Aphasia .....	1	1		2					2
Hiccough .....								1	1
Nervous weakness .....		3	1	2				33	36
Mental diseases—									
Mania .....	11	1	1				11	1	13
Melancholia .....	12	2					14	6	20
Dementia .....	7	8	1	1	3	2	8	1	16
Mental stupor .....		3	1		1		1	1	4
General paralysis of the insane .....	3	1				2	2		4
Delusional insanity .....		1			1			2	3
DISEASES OF THE EYE .....	5	32	20	11	1	1	4	157	194
Conjunctivitis, catarrhal, acute .....		9	7	2				97	106
Ecchymosis of conjunctiva .....		1		1				1	2
Optic neuritis .....								1	1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE ATLANTIC—Continued.

Diseases.	Number of cases.							
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.
<b>DISEASES OF THE EYE—Continued.</b>								
Keratitis .....	2			1			1	4
Ulceration of cornea .....		6	3	2			1	1
Opacity of cornea .....		1		1				
Scleritis .....		1	1					
Iritis .....	1	7	6	2				23
Glaucoma .....	1						1	1
Edema of conjunctiva .....		3	2	1				
Chronic hyperemia of conjunctiva .....								1
Degeneration of conjunctiva .....								1
Atrophy and degeneration of optic nerve or papilla .....								1
Retinitis .....		1		1				
Lenticular cataract .....	1	1				1	1	
Amblyopia, functional night blind- ness .....		1	1					1
Muscae volitantes .....								1
Ametropia .....								7
Diplopia .....								1
Dacryo-cystitis, chronic .....								1
Obstruction of nasal duct .....		1			1			2
Blepharitis marginalis .....								6
Sty .....								4
Abscess of eyelid .....								2
Edema of eyelid .....								1
<b>DISEASES OF THE EAR .....</b>		7	3	4				132
Inflammation of the external meatus—								
Acute .....		2		2				17
Chronic .....								1
Abscess .....								8
Accumulation in external meatus of wax or epidermis .....		1	1					42
Inflammation of the middle ear—								
Nonsuppurative .....		3	2	1				28
Suppurative .....								19
Ulceration of membrana tympani .....								2
Perforation of membrana tympani .....		1		1				3
Obstruction of Eustachian tube .....								4
Tinnitus .....								2
Deafness .....								6
<b>DISEASES OF THE NOSE .....</b>		3	1	2				100
Inflammation of soft parts .....		3	1	2				97
Abscess .....								1
Inflammation of framework—								
Necrosis .....								1
Perichondritis .....								1
Diseases of septum .....								35
Epistaxis .....								4
Inflammation of the accessory sinuses .....								1
Inflammation of the naso-pharynx .....								30
<b>DISEASES OF THE CIRCULATORY SYSTEM ..</b>	14	109	19	66	5	27	6	134
Pericarditis .....		1	1					
Endocarditis .....		4		2		2		
Valvular disease—								
Aortic .....	3	13		8	1	6	1	14
Mitral .....	5	25		20	1	9		58
Aortic and mitral .....	2	18		13	1	4	2	
Inflammation muscular substance .....								1
Hypertrophy of heart .....	1			1				2
Dilatation of heart .....	1	2		1		1	1	2
Angina pectoris .....		2		2				
Disordered action of the heart—								
Abnormal rapidity .....		1		1				10
Irregularity .....								9
Arteritis—								
Degeneration of arteries .....		2			1	1		2
Arterio-capillary fibrosis .....		2		1		1		











TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE ATLANTIC—Continued.

Diseases.	Number of cases.							
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.
<b>DISEASES OF THE URINARY SYSTEM—Con.</b>								
Retention of urine .....		3	2				1	9
Incontinence of urine .....								6
<b>DISEASES OF THE GENERATIVE SYSTEM</b> .....	15	303	188	106	8	3	13	1,129
Urethritis .....								38
Gleet .....								38
Abscess of the urethra .....	2	1	2	1				3
Ulcer of the urethra .....								1
Stricture of urethra, organic .....	1	51	12	37	1	1	1	124
Urethral fistula .....		3		2	1			3
Extravasation of urine .....		2				1	1	2
Inflammation of the prostate .....		1	1					1
Acute .....		1	1					2
Chronic .....								2
Prostatorrhœa .....								5
Abscess of the prostate .....		1	1					1
Hypertrophy of the prostate .....		3		1		1	1	11
Calculus .....								1
Posthitis .....		1		1				4
Phimosis .....		1			1			8
Paraphimosis .....		3	2	1				4
Inflammation of the glans .....		1	1					30
Abscess of penis .....								2
Ulcer of penis .....	8	41	30	15	2		2	133
Edema of penis .....								3
Soft chancre .....	2	119	85	30	2		4	513
Soft chancre of the scrotum .....								1
Abscess of the scrotum .....		1	1					1
Pruritus of the scrotum .....								1
Inflammation of the spermatic cord .....								4
Hydrocele of the spermatic cord .....		1	1					1
Varicocele .....		8	3	3	1		1	43
Hydrocele of tunica vaginalis .....	2	10	9	2			1	36
Inflammation of the testicle .....		5	4	1				17
Acute orchitis .....		38	27	11				90
Epididymitis .....		10	8				2	
Atrophy of testicles .....								3
Spermatorrhœa .....								7
Impotence .....								3
Inflammation of the ovary .....		1		1				1
Sterility .....								1
Inflammation of male breast .....								1
<b>DISEASES OF THE ORGANS OF LOCOMOTION.</b>	5	106	63	33	7	1	7	574
Inflammation of the bones—								
Osteitis .....		5	2	2			1	4
Periostitis .....		6	4	1			1	9
Chronic abscess of bone .....		1	1					1
Caries .....		1	1					1
Necrosis .....	2	13	7	5	2		1	10
Ununited fracture or false joint .....		2		1			1	
Inflammation of joints—								
Acute synovitis .....	1	13	9	5				39
Chronic synovitis .....		4		4				
Ankylosis .....		1			1			4
Dislocation of articular cartilage .....		1		1				2
Caries of the spine .....	1						1	1
Psoas, lumbar, and other abscesses .....		6		2	1	1	2	
Posterior curvature of spine .....		1			1			1
Inflammation of muscles .....								1
Suppuration of muscles .....		1		1				3
Myalgia, lumbago .....		39	30	9				457
Inflammation of fasciæ .....		1			1			
Inflammation of tendons .....	1		1					3
Inflammation of sheaths of tendons .....								6
Thecal abscess .....		1	1					1
Ganglion .....		1	1					1
Inflammation of bursa—								
Acute .....		8	5	2	1			18
Chronic .....								1
Abscess of bursa .....								4



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE ATLANTIC—Continued.

Diseases.	Number of cases.							
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Total treated in hospital and dis- pensary.
<b>DISEASES OF THE ORGANS OF LOCOMO- TION—Continued.</b>								
Bunion .....								3
Bursal cyst .....								7
Deformity of great toe, hallux valgus .....		1	1					1
Flat foot .....								2
<b>DISEASES OF THE CONNECTIVE TISSUE ....</b>	7	87	63	22		2	7	249
Inflammation .....	2	31	23	5		1	4	94
Abscess .....	5	52	37	17			3	148
Gangrene .....		1				1		1
Edema .....		2	2					7
Hemorrhage of connective tissue .....		1	1					1
<b>DISEASES OF THE SKIN .....</b>	18	147	102	55	2		6	895
Erythema .....	1		1					9
Rosacea .....								1
Urticaria .....		2	2					22
Prickly heat .....								4
Eczema .....		21	5	16				160
Impetigo .....		3	3					6
Prurigo .....								1
Lichen .....		1		1				4
Psoriasis .....		1		1				17
Sudamina .....								2
Herpes .....		1		1				36
Zona .....		3	3					6
Pemphigus .....		1	1					2
Dermatitis herpetiformis .....		1	1					2
Acne .....								31
Sycosis .....	1	2	1	2				7
Seborrhoea .....								1
Ichthyosis .....		1		1				1
Ephelis .....								1
Area .....								1
Chilblain .....		3	2	1				3
Frostbite .....		5	5					25
Ulcer .....	13	55	44	21			3	191
Boil .....	2	16	12	5			1	216
Gangrene .....								1
Carbuncle .....		11	7	3			1	41
Whitlow .....	1	12	10	2			1	53
Onychia .....		4	3	1				18
Tylosis .....								5
Corn .....		2	1		1			5
Cheloid .....		1			1			1
Wen .....		1	1					11
Hyperidrosis .....								1
Bromidrosis .....								1
Pruritus .....								7
Lupus .....								1
Rhinoscleroma .....								1
Ringworm .....								2
<b>Injuries .....</b>	<b>5</b>	<b>23</b>	<b>20</b>	<b>5</b>	<b>1</b>	<b>2</b>		<b>90</b>
<b>GENERAL INJURIES .....</b>								
Effects of heat—								
Burns and scalds .....	3	2	3		1	1		85
Heat stroke .....	1	3	3	1				3
Sunstroke .....		1	1					1
Effects of cold .....		2	2					2
Multiple injury .....	1	11	8	3		1		12
Exhaustion .....		3	2	1				3
Shock .....		1	1					1
<b>LOCAL INJURIES .....</b>	<b>42</b>	<b>576</b>	<b>397</b>	<b>172</b>	<b>11</b>	<b>6</b>	<b>32</b>	<b>1,642</b>
Contusion of nerves .....								1
Contusion of kidney .....		1		1				1
Contusion of muscles .....	1			1				2
Strain of muscles .....		4	4					57



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE ATLANTIC—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
LOCAL INJURIES—Continued.									
Rupture of muscles.....								2	2
Contusion of skin.....								2	2
Abrasion of skin.....	2	4	1	3	1		1	14	20
Wound of skin.....		2	2					4	6
Burn or scald of skin.....	1	12	8	2		1	2	23	36
Frostbite.....		27	21	6				19	46
Effects on the skin of irritants or cor- rosives.....		1		1					1
Wound of mucous membrane.....								1	1
Contusion of scalp.....		2	1	1				3	5
Wound of scalp.....		19	15	4				68	87
Contusion of skull.....								1	1
Fracture of the vault of skull.....		3	2	1				1	4
Fracture of the base of skull.....		1				1			1
Concussion of brain.....		5	4	1					5
Contusion of face.....	1	4	4		1			7	12
Wound of face and mouth.....	1	6	6		1			62	69
Fracture of facial bones.....	4	6	5	4			1	4	14
Injury of alveoli and teeth.....								1	1
Burn or scald of mouth.....								2	2
Contusion of eyelid.....								5	5
Wound of eyelid.....								2	2
Chemical injury of eye.....								1	1
Subconjunctival hemorrhage.....								1	1
Wound of conjunctiva.....		2	1		1				2
Contusion of eyeball.....								1	1
Foreign bodies in the conjunctiva or cornea.....		1	1					26	27
Wound of eyeball.....		3		3				3	6
Contusion of pinna.....								1	1
Wound of pinna.....		1	1					5	6
Rupture of membrana tympani.....		1	1					1	2
Foreign body in external meatus.....								2	2
Contusion of neck.....		2	2					2	4
Wound of neck.....		2	1	1				3	5
Foreign body in the food passages.....								1	1
Contusion of chest.....	2	15	13	3	1			77	94
Fracture of ribs.....		27	18	8			1	25	52
Wound of parietes of chest.....								2	2
Penetrating wound of pleura or lung.....								1	1
Gunshot wound.....		2				2		2	4
Contusion of back.....		20	15	3			2	42	62
Sprain of back.....		11	11					33	44
Wound of back.....								7	7
Concussion of cord.....		3	3						3
Contusion of abdomen.....		3	2	1				3	6
Wound of parietes of abdomen.....		2	1			1		3	5
Contusion of the pelvis.....	1	3	2	2				1	5
Contusion of the perinæum, scrotum, or penis.....								1	1
Wound of the male urethra, perinæum, scrotum, testis, or penis.....								3	3
Fracture or dislocation of pelvic bones.....		1		1					1
Contusion of testicle.....		4	2	2				2	6
Contusion of upper extremities.....	3	35	19	16	1		2	97	135
Sprain of shoulder.....								4	4
Sprain of elbow.....		2		2				3	5
Sprain of wrist.....	1	7	4	4				41	49
Sprain of hand.....		1	1					3	4
Sprain of lower extremities.....								60	60
Sprain of fingers.....		4	2	2				4	8
Wound of upper extremities.....	3	95	60	31		1	6	551	649
Fracture of clavicle.....	1	3	2	2				3	7
Fracture of scapula.....		4	4					3	7
Fracture of humerus.....	1	4	4		1				5
Fracture of bones of forearm—									
Radius.....	1	10	7	4				8	19
Ulna.....		3	3					3	6
Both bones.....		2	1	1				2	4



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE ATLANTIC—Continued.

Diseases.	Number of cases.							
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.
<b>LOCAL INJURIES—Continued.</b>								
Fracture of upper extremities.....								12
Fracture of carpus, metacarpus, or phalanges.....	1	7	4	2	1		1	14
Dislocation of clavicle.....		1		1				2
Dislocation of humerus.....		8	7	1				10
Dislocation of radius and ulna.....		1	1					4
Dislocation of phalanges of thumb.....		1			1			2
Dislocation of phalanges of fingers.....								2
Contusion of lower extremities.....	4	51	36	16	1		2	95
Sprain of hip.....		2		2				3
Sprain of knee.....	1	1	1	1				8
Sprain of ankle.....		19	11	4	1		3	28
Sprain of foot.....								4
Sprain of lower extremities.....								39
Wound of lower extremities.....	3	46	36	12			1	117
Wound of joint, lower extremities.....		1	1					1
Fracture of femur.....	3	12	11				4	15
Fracture of patella.....	1	3	2	1			1	4
Fracture of tibia.....	1	9	8	2				10
Fracture of fibula.....	2	9	9	2				11
Fracture of tibia and fibula.....	3	15	5	9			4	20
Fracture of bones of foot—								
Of the metatarsus.....		4	4					4
Of the phalanges of the toes.....		2	2					2
Dislocation of foot.....		4	1	2			1	4
Dislocation of metatarsus and phalanges.....		1	1					1
Malingery.....		9	3	6				9

## DISTRICT OF THE WEST INDIES.

TOTAL CASES.....	4	69	44	21	2		6	147	220
General Diseases.....	1	28	20	7	1		1	46	74
Rubella.....								1	1
Influenza.....		3	2	1				1	4
Mumps.....								1	1
Diphtheria.....		1	1						1
Enteric fever.....		2	2						1
Malarial fever—									
Intermittent.....		10	10					8	18
Remittent.....		1	1					1	2
Tubercle.....		2		1	1				2
Syphilis, secondary.....		1		1				9	10
Gonorrhea.....		5	3	1			1	15	20
Alcoholism.....								1	1
Rheumatism.....	1	3	1	3				19	23
Local diseases.....									
DISEASES OF THE NERVOUS SYSTEM.....		1	1					3	4
Of the brain and its membranes, brain, anæmia.....		1	1						1
Functional nervous disorders with other diseases of undetermined nature, neuralgia.....								3	3
DISEASES OF THE EYE.....		1	1					6	7
Conjunctivitis.....		1	1					5	6
Sty.....								1	1
DISEASES OF THE CIRCULATORY SYSTEM.....		1		1				1	2
Disordered action of the heart, irregularity.....								1	1
Varix.....		1		1					1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE WEST INDIES—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE RESPIRATORY SYSTEM..								4	
Inflammation of mucous membrane of larynx, catarrhal, acute.....								1	1
Bronchitis, catarrhal, acute.....								3	3
DISEASES OF THE DIGESTIVE SYSTEM .....		8	5	3				27	35
Caries of dentine and cementum.....								1	1
Abscess of dental periosteum.....								3	3
Caries of the alveoli.....								2	2
Toothache.....								3	3
Inflammation of the pharynx, ca- tarrhal .....								1	1
Inflammation of the stomach, ca- tarrhal .....		1	1					3	4
Indigestion.....								3	3
Inflammation of the intestines—									
Enteritis .....		1	1						1
Typhlitis .....		1		1					1
Catarrhal.....								2	2
Hernia .....		1		1				1	2
Constipation .....								1	1
Colic .....		1	1					1	2
Diarrhea .....		2	2					5	7
Inflammation of the liver, acute.....		1		1				1	2
DISEASES OF THE ORGANS OF LOCOMO- TION.....		3	2	1				7	10
Inflammation of the bones, periostitis.								1	1
Inflammation of joints, acute synovitis		1		1					1
Dislocation of joint (shoulder).....		2	2					1	3
Myalgia, lumbago.....								5	5
DISEASES OF THE CONNECTIVE TISSUE ....	1	2	3					4	7
Abscess.....	1	2	3					4	7
DISEASES OF THE LYMPHATIC SYSTEM ....		3	1	1	1			3	6
Inflammation of lymph glands .....		3	1	1	1			3	6
DISEASES OF THE URINARY SYSTEM .....		1		1					1
Inflammation of bladder, acute.....		1		1					1
DISEASES OF THE GENERATIVE SYSTEM ...	1	11	4	4			4	9	21
Stricture of urethra, organic .....		2	1	1					2
Phimosis .....	1			1					1
Soft chancre.....		9	3	2			4	7	16
Inflammation of the testicle, acute orchitis.....								2	2
DISEASES OF THE SKIN.....		1	1					9	10
Erythema .....		1	1						1
Prickly heat.....								1	1
Eczema.....								1	1
Ulcer.....								7	7
Injuries .....	1	9	6	3			1	16	26
LOCAL INJURIES.....	1	9	6	3			1	16	26
Fracture of facial bones.....		1		1					1
Contusion of eyelid .....		1		1					1
Foreign bodies in the conjunctiva or cornea.....								1	1
Wound of neck.....		1	1						1
Contusion of back.....		1	1						1
Contusion of upper extremities .....		3	2	1				1	4
Sprain of shoulder .....								1	1
Wound of upper extremities .....		1	1					6	7
Contusion of lower extremities .....	1			1				3	4
Sprain of knee.....		1	1						1
Sprain of ankle.....								3	3
Wound of lower extremities .....		3	2	1				1	4
Fracture of tibia and fibula .....		1					1	1	2



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GULF.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
TOTAL CASES .....	80	1,162	750	346	12	47	87	5,780	7,022
General Diseases.....	30	503	308	169	4	18	34	2,093	2,626
Smallpox.....								4	4
Measles.....		3	3						3
Dengue.....								7	7
Influenza.....		28	22	5		1		120	148
Mumps.....		1	1					2	3
Diphtheria.....		1	1						1
Cerebro-spinal fever.....		1	1						1
Simple continued fever.....		2	2						2
Enteric fever.....	3	15	16	1		1		2	20
Dysentery.....		12	7	2		2	1	36	48
Malarial fever:									
Intermittent.....	7	129	111	17		4	4	337	473
Remittent.....	1	58	52	5			2	85	144
Erysipelas.....	1	2	2	1				2	5
Pyæmia.....		1	1						1
Septicæmia.....		1	1						1
Tubercle.....	2	24		19		7		47	73
Syphilis:									
Primary.....		9	2	6			1	34	43
Secondary.....	9	85		80	1	1	12	331	425
Gonorrhœa.....		38	19	15	1		3	553	591
Diseases dependent on animal parasites:									
Tricocephalus dispar.....								4	4
Taenia solium.....								2	2
Taenia mediocanellata.....	1	1	1			1			2
Taenia saginata.....								3	3
Phthirus inguinalis.....								1	1
Cysticercus tenuicollis.....								2	2
Sarcoptes scabiei.....		1	1					12	13
Culex teniorhynchus.....								1	1
Diseases dependent on vegetable para- sites:									
Trichophyton tonsurans.....		1	1					32	33
Tinea circinata.....								2	2
Tinea versicolor.....								3	3
Effects of animal poison:									
Decayed and poisonous food.....		1	1					2	3
Effects of vegetable poisons:									
Opium.....		3	2				1	2	5
Rhus toxicodendron.....								2	2
Effects of inorganic poisons: Lead.....		1		1					1
Effects of the presence of foreign bodies.....								6	6
Effects of heat.....		5	5					1	6
Effects of chemical agents.....		1					1	4	5
Alcoholism.....	2	13	14				1	15	30
Rheumatic fever.....		9	6	3				10	19
Rheumatism.....	3	45	30	10	1		7	358	406
Gout.....		1		1				2	3
Cyst:									
Mucous.....								1	1
Sebaceous.....								7	7
New growth, nonmalignant:									
Lipoma.....		1	1					2	3
Fibroma.....		2	2						2
Papilloma.....								11	11
Pterygium.....								5	5
New growth, malignant:									
Sarcoma.....		1					1		1
Carcinoma.....		2			1	1		1	3
Myxœdema.....								1	1
Anæmia.....		3	1	2				8	11
Diabetes mellitus.....	1			1					1
Diabetes insipidus.....								1	1
Debility.....		2	1				1	32	34



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GULF—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
Local Diseases.....									
DISEASES OF THE NERVOUS SYSTEM.....	6	27	12	14	1	1	5	249	282
Of the nerves—									
Inflammation, neuritis.....	1	8	5	4				7	16
Of the spinal cord and membranes, membranes—									
Inflammation—									
Of dura mater.....	1					1			1
Hemorrhage.....		1	1						1
Of the spinal cord and membranes, cord—									
Degeneration of lateral columns..	1						1		1
Of the brain and its membranes, brain—									
Associated nuclear paralysis.....								1	1
Hemorrhage.....	1	3		2			2		4
Anæmia.....								4	4
Functional nervous disorders, with other diseases of undetermined na- ture—									
Paralysis—									
Hemiplegia.....	2	7		6	1		2	11	20
Local paralysis.....								3	3
Incomplete paralysis.....								1	1
Spasm.....		1	1					1	2
Epilepsy.....								2	2
Vertigo.....								3	3
Headache.....								4	4
Neuralgia.....		5	5					189	194
Nervous weakness.....		1		1				23	24
Mental diseases, delusional insanity ..		1		1					1
DISEASES OF THE EYE.....		15	9	2	1		3	67	82
Conjunctivitis, catarrhal, acute.....		5	3	1			1	48	53
Keratitis.....		2	2					1	3
Ulceration of cornea.....								1	1
Iritis.....		5	4				1		5
Choroiditis.....		1					1		1
Atrophy and degeneration of optic nerve or papilla.....		1		1				1	2
Lenticular cataract.....								5	5
Amblyopia, functional night blind- ness.....		1			1				1
Ametropia.....								1	1
Asthenopia.....								2	2
Sty.....								1	1
Abscess of eyelid.....								5	5
Trichiasis.....								2	2
DISEASES OF THE EAR.....		3	2	1				71	74
Inflammation of the external meatus:									
Abscess.....								13	13
Accumulation in external meatus of wax or epidermis.....								30	30
Inflammation of the middle ear—									
Nonsuppurative.....								16	16
Suppurative.....		3	2	1				9	12
Ulceration of membrana tympani..								1	1
Perforation of membrana tympani..								1	1
Tinnitus.....								1	1
DISEASES OF THE NOSE.....								13	13
Inflammation of soft parts.....								13	13
Diseases of septum.....		2	1	1				5	7
Inflammation of the accessory sinuses.		2	1	1				2	4
Inflammation of the naso-pharynx.....								3	3
DISEASES OF THE CIRCULATORY SYSTEM...	3	18	5	8		6	2	43	64
Pericarditis.....		1	1					1	2
Valvular disease—									
Aortic.....		1				1		2	3
Mitral.....		3		1		2		16	19
Aortic and mitral.....	2	4		4		2			6



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GULF—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE CIRCULATORY SYSTEM—									
Continued.									
Hypertrophy of heart.....	1			1					1
Dilatation of heart.....		1				1			1
Syncope.....		1	1						1
Disordered action of the heart—									
Abnormal slowness.....								2	2
Abnormal rapidity.....		1	1					11	12
Irregularity.....								8	8
Arteritis—									
Degeneration of arteries.....		3		1			2		3
Arterio-capillary fibrosis.....		1		1					1
Phlebitis.....		1	1					1	2
Varix.....		1	1					2	3
DISEASES OF THE RESPIRATORY SYSTEM..									
Hay fever.....	4	77	56	17	1	6	1	461	542
Inflammation of mucous membrane of larynx—								1	1
Catarrhal, acute.....								8	8
Catarrhal, chronic.....								1	1
Bronchitis—									
Catarrhal, acute.....		43	34	8		1		420	463
Catarrhal, chronic.....		1		1				4	5
Spasmodic asthma.....	1	4		4			1	10	15
Hemorrhage of lung.....	1			1					1
Hæmoptysis.....		1	1					1	2
Pneumonia.....		21	16	2		3		2	22
Broncho-pneumonia.....		1	1						1
Chronic interstitial inflammation.....	1	1			1	1			2
Phthisis—									
Acute.....		2		1		1		1	1
Chronic.....								1	1
Pleurisy, acute.....	1	3	4					12	16
DISEASES OF THE DIGESTIVE SYSTEM.....									
Inflammation of the lips.....	11	101	72	21		8	11	1,101	1,213
Inflammation of the mouth.....								1	1
Ulceration of the mouth.....		1	1					9	9
Caries of dentine and cementum.....								1	1
Inflammation of the dental periosteum.....								40	40
Abscess of dental periosteum.....		1					1	2	3
Inflammation of gums and alveoli.....								4	4
Suppuration of alveoli.....								2	2
Ulceration of gums and alveoli.....		3	3					6	9
Caries of the alveoli.....								1	1
Toothache.....								10	10
Sore throat.....		2	2					22	22
Ulceration fauces.....		1		1				19	21
Inflammation of the tonsils—									
Follicular.....		3	3					27	30
Suppuration.....								11	11
Elongated uvula.....								5	5
Salivation.....								5	5
Inflammation of the pharynx, ca- tarrhal.....		1	1					18	19
Inflammation of the stomach, ca- tarrhal.....		13	10	3				20	33
Ulceration of the stomach, superficial.....		3	3						3
Stricture pylorus.....		1				1			1
Indigestion.....	1	3	3	1				294	298
Loss of appetite.....								4	4
Inflammation of the intestines—									
Enteritis.....		7	4	2		1		13	20
Typhlitis.....	1	5	3				3	1	7
Colitis.....		1					1	1	2
Catarrhal.....								6	6
Fæcal accumulation.....		1	1					2	3
Hernia.....	2	12	10	1			3	122	136
Obstruction of the intestines.....		1	1						1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GULF—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE DIGESTIVE SYSTEM—Con.									
Intestinal dyspepsia.....								7	7
Constipation .....		1		1				269	270
Colic .....		1	1					10	11
Diarrhea .....	2	9	8	1			2	86	97
Inflammation of the rectum .....								1	1
Periproctitis, abscess .....	1	3	1	2			1	2	6
Fissure of the anus .....								2	2
Fistula in ano.....	1	5	5	1				3	9
Prolapse of the rectum.....		1	1					1	2
Piles—									
Internal.....		4	3	1				16	20
External .....	1	2	1	2				29	32
Inflammation of the liver—									
Acute .....		5	1	3		1		10	15
Acute abscess .....	1					1			1
Chronic .....	1					1			1
Hyperemia of the liver .....		5	4	1				11	16
Hypertrophy of the liver.....								2	2
Jaundice .....		3	2			1		5	8
Inflammation of hepatic ducts and gall bladder.....								2	2
Inflammation of the peritonæum .....		2				2			2
Dropsy .....		1		1					1
DISEASES OF THE LYMPHATIC SYSTEM ....									
Inflammation of lymph glands.....	4	57	42	12			7	59	120
Suppuration.....	4	49	36	1			7	58	111
		8	6	2				1	9
DISEASES OF THE URINARY SYSTEM.....									
Acute nephritis .....	1	18	5	12		2		82	101
Bright's disease .....		3	2	1				4	7
Chronic nephritis .....	1	7		6		2		7	15
Pyelitis.....								1	1
Calculus in kidney .....								1	1
Nephralgia.....								3	3
Suppression of urine .....								2	2
Hæmaturia.....								1	1
Hæmoglobinuria.....		1	1						1
Inflammation of bladder, acute.....		4	2	2				59	63
Calculus of bladder .....								3	3
Irritability of bladder.....		3		3					3
DISEASES OF THE GENERATIVE SYSTEM ...									
Urethritis .....	11	125	85	40	1	1	9	287	423
Gleet .....								4	4
Hæmorrhage of the urethra .....								4	4
Stricture of urethra, organic .....		1	1						1
Urethral fistula .....	1	16	8	7			2	46	63
Extravasation of urine.....		2	2						2
Prostatarrhoea.....		1				1			1
Hypertrophy of the prostate .....								1	1
Phimosis .....								2	2
Paraphimosis.....	1	7	6	1			1	4	12
Inflammation of the glans penis .....		1	1					1	2
Ulcer of penis .....								1	1
Soft chancre.....	5	27	21	8	1		2	64	96
Inflammation of the scrotum .....	4	47	30	18			3	102	153
Inflammation of the spermatic cord .....		1	1					1	2
Hydrocele of the spermatic cord.....								1	1
Varicocele.....								2	2
Hydrocele of tunica vaginalis .....								9	9
Inflammation of the testicle .....		1	1					4	5
Acute orchitis .....		2	2						2
Epididymitis.....		15	8	6			1	36	51
Spermatorrhœa.....		4	4					2	6
Metrorrhagia.....								3	3
DISEASES OF THE ORGANS OF LOCOMOTION ..									
Caries .....	2	22	18	3			3	74	98
Necrosis .....		1	1					1	2
		2	2						2



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GULF—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE ORGANS OF LOCOMO- TION—Continued.									
Inflammation of joints.....		1					1		1
Acute synovitis.....		6	5	1				1	7
Ankylosis.....								1	1
Caries of the spine.....	1	1	1				1		2
Suppuration of muscles.....								2	2
Myalgia, lumbago.....		6	4	1			1	55	61
Inflammation of tendons.....		1		1					1
Inflammation of sheaths of tendons.....								1	1
Thecal abscess.....	1	1	2					6	8
Ganglion.....								4	4
Inflammation of bursæ, acute.....		2	2					3	5
Deformity of toe.....		1	1						1
DISEASES OF THE CONNECTIVE TISSUE.....	2	33	24	8		1	2	98	133
Inflammation.....		11	6	5				43	54
Abscess.....	2	20	17	3			2	54	76
Gangrene.....		1	1						1
Edema.....		1				1		1	2
DISEASES OF THE SKIN.....	1	41	29	11			2	281	323
Erythema.....		1		1				1	2
Urticaria.....								10	10
Prickly heat.....								6	6
Eczema.....		5	3	2				111	116
Impetigo.....								3	3
Pityriasis rubra.....								2	2
Psoriasis.....								2	2
Herpes.....								10	10
Zona.....		3	3					4	7
Acne.....								5	5
Seborrhœa.....								1	1
Frostbite.....								39	39
Ulcer.....	1	12	10	1			2	79	92
Boil.....		9	7	2				54	63
Carbuncle.....		5	5					6	11
Whitlow.....		3	1	2				24	27
Onychia.....								7	7
Corn.....								9	9
Wen.....		1		1				5	6
Pruritus.....								2	2
Lupus.....		2		2				1	3
Injuries.....									
GENERAL INJURIES.....		6	3		1	1	1	25	31
Effects of heat—									
Burns and scalds.....		1			1			25	26
Sunstroke.....		2	1			1			2
Multiple injury.....		3	2				1		3
LOCAL INJURIES.....	5	114	78	28	3	3	7	771	890
Rupture of vein.....		1	1						1
Contusion of muscles.....								1	1
Strain of muscles.....								15	15
Abrasion of skin.....		2	1				1	11	13
Wound of skin.....		1		1				26	27
Burn or scald of skin.....		1	1					39	40
Burn or scald of mucous membrane.....								3	3
Contusion of scalp.....								1	1
Wound of scalp.....		3	2	1				16	19
Contusion of skull.....								3	3
Fracture of the vault of skull.....		1				1			1
Contusion of face.....		1	1					5	6
Wound of face and mouth.....		6	5	1				6	12
Fracture of facial bones.....		2	2						2
Dislocation of nasal cartilages.....								1	1
Contusion of eyelid.....								2	2
Wound of eyelid.....								1	1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GULF—Continued.

Diseases.	Number of cases.							
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.
LOCAL INJURIES—Continued.								
Chemical injury of eye.....		1	1					1
Wound of conjunctiva.....								1
Contusion of eyeball.....								2
Foreign bodies in the conjunctiva or cornea.....								2
Contusion of neck.....								7
Contusion of chest.....		3	2	1				34
Dislocation of costal cartilages.....		1	1					1
Fracture of ribs.....	1	4	4	1				3
Contusion of back.....		5	2	1			2	24
Sprain of back.....		2	1		1			55
Wound of back.....		3	3					1
Contusion of abdomen.....								1
Contusion of pelvis.....								3
Contusion of testicle.....								3
Contusion of upper extremities.....		6	3	3				46
Sprain of shoulder.....								17
Sprain of wrist.....		1	1					3
Sprain of upper extremities.....								56
Sprain of thumb.....								1
Wound of upper extremities.....	3	30	23	9		1		249
Wound of joint, upper extremities.....								1
Fracture of clavicle.....		2	1	1				
Fracture of scapula.....		1		1				
Fracture of humerus.....		2		2				
Fracture of bones of forearm—								
Radius.....		2		2				
Ulna.....		2		1		1		
Both bones.....		1	1					3
Fracture of carpus, metacarpus, or phalanges.....		1					1	2
Dislocation of clavicle.....								2
Dislocation of humerus.....		2	2					1
Contusion of lower extremities.....		6	6					36
Sprain of knee.....								7
Sprain of ankle.....		1	1					7
Sprain of lower extremities.....								21
Wound of lower extremities.....		6	3	1			2	49
Separation of epiphyses.....		1	1					
Fracture of femur.....		3	1	1			1	
Fracture of tibia.....		2	2					
Fracture of fibula.....		1	1					
Fracture of tibia and fibula.....	1	6	4	1	2			
Fracture of bones of foot, phalanges of the toes.....								2
Dislocation of patella.....								1
Dislocation of tibia.....		1	1					
Dislocation of metatarsus and pha- langes.....								1

## DISTRICT OF THE OHIO.

TOTAL CASES.....	40	1,182	752	339	38	35	58	3,901	5,123
General Diseases.....	13	481	289	143	16	19	29	1,411	1,915
Smallpox.....		14	7	1	6			13	27
Cowpox.....		3	2	1				98	101
Influenza.....		37	33	2	1	1		78	115
Mumps.....		2	2					1	3
Diphtheria.....		1	1						1
Enteric fever.....	2	37	32	2	1	2	2	1	40
Dysentery.....		23	16	5			2	26	49
Malarial fever:									
Intermittent.....	1	63	52	9		1	2	320	384
Remittent.....		21	19	1			1	17	38
Phagedæna, sloughing phagedæna.....		1	1						



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE OHIO—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
Erysipelas.....		12	7	2	.....	1	2	4	16
Tubercle.....	6	44	3	27	4	11	5	63	113
Syphilis:									
Primary.....	1	12	6	6	.....	.....	1	21	34
Secondary.....	1	82	5	69	1	.....	8	218	301
Gonorrhea.....		17	11	5	.....	.....	1	363	380
Diseases dependent on animal parasites:									
Sarcoptes scabiei.....		1	1	.....	.....	.....	.....	5	6
Taenia solium.....		2	2	.....	.....	.....	.....	.....	2
Diseases dependent on vegetable para- sites, trichophyton tonsurans.....								3	3
Effects of animal poisons, bite of insect.....								2	2
Effects of vegetable poisons, rhus toxico- dendron.....								2	2
Effects of the presence of foreign bodies.....		3	3	.....	.....	.....	.....	1	4
Alcoholism.....		21	19	.....	1	.....	1	21	42
Rheumatic fever.....		34	28	2	.....	.....	4	15	49
Rheumatism.....	2	37	28	9	1	1	.....	300	339
Gout.....								1	1
Cyst, sebaceous.....								1	1
New growth, nonmalignant:									
Lipoma.....								2	2
Osteoma.....		1	1	.....	.....	.....	.....	.....	1
Papilloma.....		1	1	.....	.....	.....	.....	10	11
Adenoma.....		1	1	.....	.....	.....	.....	.....	1
New growth, malignant, carcinoma.....		2	1	.....	.....	1	.....	.....	2
Anæmia.....		2	2	.....	.....	.....	.....	5	7
Diabetes mellitus.....								1	1
Diabetes insipidus.....								3	3
Debility.....		7	4	3	.....	1	.....	26	33
<b>Local Diseases.....</b>									
<b>DISEASES OF THE NERVOUS SYSTEM.....</b>	5	20	8	11	.....	1	5	102	127
Of the nerves, inflammation, neuritis.....		4	1	2	.....	.....	1	3	7
Of the spinal cord and membranes, cord—									
Inflammation, diffuse.....		1	.....	.....	.....	1	.....	.....	1
Degeneration of posterior columns.....	1	3	.....	3	.....	.....	1	4	8
Of the brain and its membranes, brain—									
Hemorrhage.....	1	.....	.....	1	.....	.....	.....	.....	1
Hyperæmia.....		1	1	.....	.....	.....	.....	.....	1
Functional nervous disorders with other diseases of undetermined na- ture—									
Paralysis—									
Paraplegia.....								1	1
Hemiplegia.....	2	2	1	.....	.....	.....	3	8	12
Local paralysis.....								2	2
Epilepsy.....		1	.....	1	.....	.....	.....	4	5
Vertigo.....								6	6
Headache.....								14	14
Neuralgia.....		5	5	.....	.....	.....	.....	49	54
Nervous weakness.....	1	3	.....	4	.....	.....	.....	9	13
Hiccoughs.....								1	1
Mental diseases, melancholia.....								1	1
<b>DISEASES OF THE EYE.....</b>		7	3	1	1	.....	2	49	56
Conjunctivitis.....		2	1	1	.....	.....	.....	38	40
Keratitis.....								1	1
Iritis.....		3	2	.....	.....	.....	1	5	8
Lenticular cataract.....		2	.....	.....	1	.....	1	3	5
Sty.....								1	1
Trichiasis.....								1	1
<b>DISEASES OF THE EAR.....</b>		3	.....	1	1	.....	1	19	22
Inflammation of the external meatus—									
Acute.....								1	1
Abscess.....		1	.....	.....	.....	.....	1	.....	1



DISTRICT OF THE OHIO—Continued.

[illegible]



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

DISTRICT OF THE OHIO—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE DIGESTIVE SYSTEM—Con.									
Ulceration of pharynx .....								3	3
Inflammation of the stomach, catar- rhal .....		12	11			1		85	97
Ulceration of the stomach .....		1	1						1
Dilatation of the stomach .....								1	1
Indigestion .....		10	5	4			1	180	190
Pyrosis .....		1		1					1
Gastralgia .....		1		1				3	4
Loss of appetite .....								1	1
Inflammation of the intestines—									
Enteritis .....		35	27	7			1	3	38
Typhlitis .....		3	2				1	6	9
Colitis .....		2	2					5	7
Catarrhal .....								28	28
Hernia .....		3	2	1				59	62
Obstruction of the intestines .....		1	1						1
Intestinal dyspepsia .....								3	3
Constipation .....		1	1					77	78
Colic .....		1	1					8	9
Diarrhea .....		18	16	2				99	117
Periproctitis .....	1	1	1		1				2
Abscess .....		2	2					2	4
Fistula in ano .....		7	2	4	1			3	10
Prolapse of the rectum .....		2	1	1					2
Piles—									
Internal .....		1		1				23	24
External .....		3	2	1				22	25
Mixed .....		1	1					3	4
Inflammation of the liver, acute .....		1	1					39	40
Hyperemia of the liver .....		2	2					7	9
Jaundice .....	1	4	3	1		1		6	11
Inflammation of hepatic ducts and gall bladder .....		2	2					4	6
Biliary colic .....								2	2
Dropsy .....	1					1			1
DISEASES OF THE LYMPHATIC SYSTEM .....									
Abscess of spleen .....	2	28	16	12		1	1	74	104
Inflammation of lymph glands .....		1				1			1
Suppuration .....	2	25	15	11			1	71	98
Hypertrophy of lymph glands .....								2	2
Inflammation of lymphatics .....		2	1	1				1	1
DISEASES OF THE THYROID BODY .....									
Goiter .....								1	1
DISEASES OF THE URINARY SYSTEM .....									
Acute nephritis .....	1	20	5	11	2	2	1	49	70
Bright's disease .....		2	1	1				6	8
Chronic nephritis .....	1	4		3	2			4	9
Granular kidney .....		4		1		2	1		4
Pyelitis .....		1	1					1	1
Movable kidney .....		1		1					1
Phosphaturia .....								2	2
Inflammation of bladder—									
Acute .....		6	2	4				28	34
Subacute .....		1	1						1
Calculus of bladder .....		1		1					1
Incontinence of urine .....								8	8
DISEASES OF THE GENERATIVE SYSTEM .....									
Urethritis .....	1	108	72	34	2		1	247	356
Gleet .....		1		1				5	6
Hemorrhage of the urethra .....								3	3
Stricture of urethra, organic .....		12	4	8				1	1
Urethral fistula .....		2	1	1				15	27
Inflammation of the prostate—									
Acute .....		1		1					1
Chronic .....	1			1					1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE OHIO—Continued.

Diseases.	Number of cases.							
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.
<b>DISEASES OF THE GENERATIVE SYSTEM—Continued.</b>								
Hypertrophy of the prostate .....								2
Posthitis.....								3
Phimosis.....		6	6					3
Paraphimosis.....		2	2					2
Inflammation of the glans penis .....								6
Ulcer of penis .....	33	18	14	1				85
Soft chancre.....	37	29	7				1	82
Abscess of the scrotum .....								1
Varicocele.....								6
Hydrocele of tunica vaginalis.....								5
Inflammation of the testicle .....	1	1						1
Acute orchitis.....	9	9						16
Epididymitis.....	2	1			1			1
Impotence.....								8
Inflammation of the uterus.....								2
Displacements and distortions of the uterus.....	1	1						
Amenorrhœa.....								2
Leucorrhœa.....								1
Abscess of areola.....	1			1				1
<b>DISEASES OF THE ORGANS OF LOCOMOTION.</b>	1	28	23	3			3	134
Necrosis.....		2	2					2
Inflammation of joints, acute syno- vitis.....		2		2				2
Psoas, lumbar, and other abscesses.....		1					1	1
Myalgia, lumbago.....		23	20	1			2	131
Ganglion.....								1
Bunion.....	1		1					1
<b>DISEASES OF THE CONNECTIVE TISSUE</b> .....		32	27	3	1	1		45
Inflammation .....		12	9	1	1	1		6
Abscess.....		20	18	2				39
<b>DISEASES OF THE SKIN</b> .....	2	33	23	8	1		3	204
Urticaria.....								6
Prickly heat.....								2
Eczema.....		4	1	2			1	73
Lichen.....								3
Psoriasis.....								2
Sudamina.....								1
Herpes.....		1			1			8
Zona.....								3
Pemphigus.....								1
Dermatitis herpetiformis.....								1
Acne.....								10
Frostbite.....		3	1	2				2
Ulcer.....	2	18	14	4			2	61
Boil.....		1	1					14
Carbuncle.....		2	2					8
Whitlow.....		1	1					2
Onychia.....		2	2					
Corn.....								1
Hyperidrosis.....								1
Bromidrosis.....								1
Pruritus.....		1	1					2
<b>Injuries</b> .....								
<b>GENERAL INJURIES</b> .....		13	6	6		1		24
Effects of heat—								
Burns and scalds.....		9	4	4		1		23
Heat stroke.....		3	1	2				
Effects of cold.....		1	1					
Stretching of lumbar plexis.....								1
<b>LOCAL INJURIES</b> .....	12	179	126	53	4	3	5	335
Contusion of muscles.....								1
Strain of muscles.....								2







TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE MISSISSIPPI—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
Measles.....		3	3					1	
Rubella.....		1	1						1
Influenza.....		24	22	2				94	118
Mumps.....								2	2
Enteric fever.....		13	8	3		1	1		13
Dysentery.....		19	15	3			1	15	34
Malarial fever:									
Intermittent.....	4	163	152	8	2	1	4	426	593
Remittent.....	2	44	41	1		2	2	1	47
Erysipelas.....		2	2					2	4
Septicæmia.....		1				1			1
Tubercle.....		24		13	5	3	3	19	43
Syphilis:									
Primary.....	1	26		25	1		1	28	55
Secondary.....	1	69		62	5	2	1	267	337
Gonorrhea.....		16	9	7				317	333
Diseases dependent on animal parasites:									
Tænia solium.....		1	1					2	3
Phthirus inguinalis.....								2	2
Sarcoptes scabiei.....		1		1				10	11
Diseases dependent on vegetable parasites:									
Trichophyton tonsurans.....		2		2				6	8
Tinea circinata.....								6	6
Effects of vegetable poisons:									
Tobacco.....								3	3
Rhus toxicodendron.....								2	2
Effects of inorganic poisons:									
Lead.....		1	1						1
Mercury.....		1		1					1
Effects of the presence of foreign bodies.....								1	1
Effects of cold.....		1	1						1
Alcoholism.....		21	19	2				17	38
Rheumatism.....	7	70	47	23			6	351	428
Cyst, mucous.....		1	1					1	2
New growth, nonmalignant:									
Fibroma.....								1	1
Papilloma.....		1	1						1
New growth, maglignant:									
Epithelioma tongue and pharynx.....		2			2			2	4
Carcinoma.....		3				2	1		3
Squamous carcinoma.....		1					1		1
Anæmia.....								7	7
Idiopathic anæmia.....		2		2					2
Purpura.....		1		1					1
Leucocythæmia.....		1				1			1
Debility.....		10	6	2	1	1		95	105
Old age.....		2		1		1			2
Local Diseases.....									
DISEASES OF THE NERVOUS SYSTEM.....									
Of the nerves, inflammation, neuritis.....	7	22	13	10	2		4	32	61
Of the spinal cord and membranes, cord—		1	1						1
Degeneration, of posterior col- umns.....	1			1					1
Of the brain and its membranes, membranes—									
Inflammation, of dura mater.....		1	1						1
Of the brain and its membranes, brain—									
Softening.....		1			1				1
Hemorrhage.....	1						1		1
Functional nervous disorders with other diseases of undetermined nature—									
Apoplexy.....		1					1		1
Paralysis—									
Hemiplegia.....	2	2	2	1			1		4
Local paralysis.....		1			1				1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE MISSISSIPPI—Continued.

Diseases.	Number of cases.							
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.
<b>DISEASES OF THE NERVOUS SYSTEM—Con.</b>								
Functional nervous disorders, etc.—Continued.								
Incomplete paralysis.....		1					1	1
Torticollis.....								3
Epilepsy.....	1	1		2				2
Headache.....								1
Neuralgia.....	2	9	8	3				24
Nervous weakness.....		1		1				4
<b>Mental diseases—</b>								
Melancholia.....		2		2				
Mental stupor.....		1	1					
<b>DISEASES OF THE EYE.....</b>	1	14	8	6			1	39
Conjunctivitis.....	1	5	5	1				27
Ulceration of cornea.....		1		1				2
Opacity of cornea.....		1		1				
Iritis.....		2	1				1	
Oedema of conjunctiva.....								2
Lenticular cataract.....								1
Hyalitis.....		3		3				1
Panophthalmitis.....		1	1					2
Neuralgia of eyeball.....								1
Blepharitis marginalis.....		1	1					
Sty.....								3
<b>DISEASES OF THE EAR.....</b>		4	3	1				17
Inflammation of the external meatus—								
Acute.....		2	2					2
Abscess.....								1
Accumulation in external meatus of wax or epidermis.....								7
Inflammation of the middle ear—								
Nonsuppurative.....		2	1	1				4
Suppurative.....								2
Deafness.....								1
<b>DISEASES OF THE NOSE.....</b>								9
Inflammation of soft parts.....								9
Diseases of septum.....		1					1	3
Epistaxis.....								2
Inflammation of the accessory sinuses.....		1					1	
Inflammation of the naso-pharynx.....								1
<b>DISEASES OF THE CIRCULATORY SYSTEM ..</b>	1	20	2	13	3	2	1	41
Endocarditis.....								1
Valvular disease—								
Aortic.....		3		1	1	1		5
Mitral.....		6	1	4			1	19
Tricuspid.....		1		1				1
Degeneration of heart, fatty.....		3		2		1		1
Hypertrophy of heart.....								1
Dilatation of heart.....		1		1				2
Irregularity.....								7
Arteritis, degeneration of arteries.....		2		1	1			
Phlebitis.....		1		1				1
Varix.....	1	3	1	2	1			4
<b>DISEASES OF THE RESPIRATORY SYSTEM.....</b>		72	44	16	3	9		268
Hay fever.....								1
Inflammation of mucous membrane of larynx—								
Catarrhal, acute.....								3
Catarrhal, chronic.....								
<b>Bronchitis—</b>								
Catarrhal, acute.....		36	32	3	1			237
Catarrhal, chronic.....		5	1	2	1	1		
Spasmodic asthma.....		3		2	1			6
Pneumonia.....		15	6	2		7		
Abscess of lung.....		1				1		



DISTRICT OF THE MISSISSIPPI—Continued.

[illegible]



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

DISTRICT OF THE MISSISSIPPI—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE URINARY SYSTEM—Con.									
Inflammation of bladder, acute .....		8	2	5			1	30	38
Irritability of bladder.....								6	6
Retention of urine .....								1	1
DISEASES OF THE GENERATIVE SYSTEM...									
Urethritis .....	2	82	41	36	4	2	1	149	233
Gleet .....		1		1				2	3
Abscess of the urethra .....		2	2					2	2
Stricture of urethra, organic .....	1	14	8	4	2	1		19	33
Urethral fistula.....								1	1
Inflammation of the prostate—									
Acute .....		1				1			1
Chronic .....								2	2
Hypertrophy of the prostate .....								3	3
Posthitis .....								1	1
Phimosis .....		5	3	1	1				5
Paraphimosis.....								1	1
Inflammation of the glans penis .....		2	1	1					2
Ulcer of penis .....		1	1					3	4
Soft chancre.....	1	35	9	25	1		1	99	135
Hydrocele of the spermatic cord .....		1	1					1	2
Hydrocele of tunica vaginalis.....		1		1				1	2
Inflammation of the testicle, acute									
orchitis.....		14	13	1				12	26
Epididymitis .....		4	3	1					4
Abscess of testicle .....		1		1					1
Stricture external os cervix.....								1	1
DISEASES OF THE ORGANS OF LOCOMOTION.									
Inflammation of the bones, periostitis.	1	13	11	1	1		1	85	99
Necrosis .....		1	1					1	2
Inflammation of joints—									
Acute synovitis .....		1	1						1
Chronic synovitis .....	1						1		1
Myalgia, lumbago.....		10	8	1	1			82	92
Inflammation of tendons.....		1	1					1	1
Inflammation of bursæ, acute .....								1	1
DISEASES OF THE CONNECTIVE TISSUE .....									
Inflammation .....		13	5	7		1		15	28
Abscess.....		6	5			1		7	13
Edema.....		7		7				7	14
								1	1
DISEASES OF THE SKIN.....									
Roseola .....	2	29	19	8			4	146	177
Urticaria .....		1	1						1
Prickly heat.....								6	6
Eczema .....								2	2
Pityriasis rubra.....		3	2				1	29	32
Herpes.....		1	1					1	1
Zona.....		2	2					5	6
Dermatitis herpetiformis .....		1		1				2	4
Sycosis.....								1	1
Area .....								1	1
Ulcer .....	1	9	6	2			2	50	60
Boil .....		4	3	1				35	39
Carbuncle .....		3	2	1				7	10
Whitelow .....	1	1	1	1				4	6
Onychia .....		2	1	1				1	3
Corn .....								1	1
Pruritus .....								1	1
Mycosis fungoides.....		1					1		1
Rhinoscleroma .....		1		1					1
Injuries .....									
GENERAL INJURIES.....									
Effects of heat—		10	8	2				7	17
Burns and scalds .....		5	3	2				7	12
Heat stroke .....		4	4						4
Multiple injury.....		1	1						1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE MISSISSIPPI—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
LOCAL INJURIES.....	4	180	120	53	5	1	5	290	474
Wound of veins.....								1	1
Contusion of muscles.....		1	1						1
Strain of muscles.....		7	4	3				6	11
Abrasion of skin.....								1	1
Wound of skin.....								2	2
Burn or scald of skin.....		4	3				1	2	6
Frostbite.....		13	9	2	2			6	19
Burn or scald of mucous membrane.....		1		1					1
Contusion of scalp.....								2	2
Wound of scalp.....		9	4	5				19	28
Contusion of skull.....		2	2						2
Fracture of the vault of skull.....		1				1			1
Contusion of face.....		8	7	1				5	13
Wound of face and mouth.....		5	4	1				7	12
Fracture of facial bones.....		4	3	1				1	5
Wound of eyelid.....		1	1						1
Contusion of eyeball.....		1	1						1
Foreign bodies in the conjunctiva or cornea.....								2	2
Contusion of chest.....		5	3	1			1	8	13
Fracture of ribs.....		1		1					1
Wound of parietes of chest.....		1		1					1
Penetrating wound of pleura or lung.....		3	2	1					3
Contusion of back.....		4	3	1				5	9
Sprain of back.....		6	5	1				9	15
Contusion of abdomen.....		1		1				2	3
Wound of parietes of abdomen.....		2		1			1		2
Wound of the male urethra, perinaeum, scrotum, testis, or penis.....								1	1
Contusion of testicle.....								2	2
Contusion of upper extremities.....		9	5	4				29	38
Sprain of shoulder.....		1	1					3	4
Sprain of elbow.....								1	1
Sprain of wrist.....								9	9
Sprain of fingers.....								3	3
Wound of upper extremities.....	1	26	21	6				86	113
Fracture of clavicle.....		1		1				1	2
Fracture of bones of forearm— Ulna.....		1		1					1
Both bones.....		4	3	1				1	5
Fracture of carpus, metacarpus, or phalanges.....		1			1			1	2
Dislocation of humerus.....		2	2						2
Contusion of lower extremities.....		15	11	3	1			28	43
Sprain of knee.....		1		1				3	4
Sprain of ankle.....		9	8				1	12	21
Sprain of foot.....		2	2					3	5
Wound of lower extremities.....	2	23	11	13			3	28	53
Wound of joint, lower extremities.....								1	1
Fracture of femur.....	1	1	2						2
Fracture of tibia.....		1	1						1
Fracture of fibula.....		2	1	1					2
Malingering.....		1			1				1

## DISTRICT OF THE GREAT LAKES.

TOTAL CASES.....	126	2,656	1,761	730	51	107	133	10,889	13,671
General Diseases.....	34	918	546	287	21	44	54	4,117	5,025
Smallpox.....	1	13	8		3	1	2	3	17
Cowpox.....								265	265
Chicken pox.....		1	1					1	2
Measles.....		6	6					8	14
Rubella.....		1	1						1
Scarlet fever.....		1	1						1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GREAT LAKES—Continued.

Diseases.	Number of cases.							
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Total treated in hospital and dis- pensary.
Influenza.....		68	59	6	1	2		215
Whooping cough.....		1	1					1
Mumps.....	1	2	3					4
Diphtheria.....		4	3				1	5
Simple continued fever.....		2	1	1				11
Enteric fever.....	9	185	132	24	1	17	20	53
Choleraic diarrhea.....		1	1					2
Dysentery.....	3	9	7	5				19
Malarial fever:								
Intermittent.....	3	25	22	3			3	149
Remittent.....		8	6	1			1	8
Erysipelas.....	1	8	7	1			1	7
Septicæmia.....		3	3					3
Tetanus.....								1
Tubercle.....	5	81	5	55	5	15	6	80
Syphilis:								
Primary.....	1	12	1	11			1	127
Secondary.....	1	71	14	54	1	1	2	748
Gonorrhea.....	1	105	58	45	1		2	1,260
Diseases dependent on animal parasites:								
Taenia solium.....		6	5	1				18
Oxyuris vermicularis.....								1
Pediculus vestimenti.....								2
Phthirus inguinalis.....								1
Sarcoptes scabiei.....		5	5					91
Diseases dependent on vegetable parasites:								
Trichophyton tonsurans.....								7
Tinea circinata.....								8
Effects of animal poisons.....		2	2					2
Decayed and poisonous food.....		3	2	1				3
Effects of vegetable poisons:								
Opium.....								1
Tobacco.....		3	1	1			1	4
Rhus toxicodendron.....		1	1					4
Effects of inorganic poisons:								
Lead.....		3	3					3
Mercury.....		1		1				1
Effects of the presence of foreign bodies.....		1	1					2
Effects of mechanical injuries.....								1
Effects of heat.....								1
Effects of chemical agents.....		1		1				1
Alcoholism.....		91	72	11	2	2	4	103
Delirium tremens.....								1
Rheumatic fever.....	3	33	23	11			2	7
Rheumatism.....	4	124	76	44	1		7	625
Gout.....		1		1				3
Cyst:								
Mucous.....		1	1					2
Sebaceous.....								3
New growth, nonmalignant.....		3	2			1		3
Fibroma.....		1				1		2
Papilloma.....								25
Adenoma.....		1	1					1
Condyloma.....								5
Pterygium.....								2
New growth, malignant:								
Carcinoma.....	1	6		2	2	2	1	6
Epithelioma.....		1	1					1
Squamous carcinoma.....		3			2	1		3
Anæmia.....		3	1	2				4
Diabetes mellitus.....		1			1			13
Diabetes insipidus.....		6	2	3		1		7
Congenital malformations.....		2	2					1
Debility.....		8	5	2	1			202
<b>Local Diseases</b> .....								
<b>DISEASES OF THE NERVOUS SYSTEM</b> .....	10	45	19	21	2	4	9	249
Of the nerves, inflammation—								
Neuritis.....								6
Multiple neuritis.....								1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GREAT LAKES—Continued.

Diseases.	Number of cases.							
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.
<b>DISEASES OF THE NERVOUS SYSTEM—Con.</b>								
Secondary degeneration of brachia ..		1					1	1
Of the spinal cord and membranes, cord, inflammation.....		1		1				1
Degeneration—								
Of anterior cornua .....		1		1				1
Of posterior columns.....	4	1			1		4	9
Of the brain and its membranes, mem- branes—								
Inflammation of dura mater .....		1		1				1
Hemorrhage .....	1						1	1
Of the brain and its membranes, brain, hemorrhage.....	1	1				2		2
Functional nervous disorders with other diseases of undetermined nature—								
Apoplexy .....		1				1		1
Paralysis .....		3		2			1	3
Hemiplegia .....	1	2	2				1	10
Local paralysis .....								3
Incomplete paralysis.....								4
Bed sores.....		1	1					1
Chorea .....		1			1			2
Spasm .....		4	3	1				8
Facial spasm .....								1
Epilepsy.....	1	3		3			1	8
Vertigo .....		3	2	1				14
Headache.....		2	2					26
Hyperesthesia .....								1
Neuralgia .....		16	9	7				131
Hysteria.....								1
Nervous weakness .....		2		2				41
<b>Mental diseases—</b>								
Mania .....	1					1		1
Melancholia.....	1	1		2				2
<b>DISEASES OF THE EYE.....</b>								
Conjunctivitis.....	1	21	16	5			1	96
Conjunctivitis, catarrhal: Acute.....		2	1	1				28
Keratitis .....								36
Ulceration of cornea .....	1	3	3	1				1
Opacity of cornea .....								7
Iritis .....		8	6	1			1	11
Choroiditis .....		1	1					1
Retinitis.....		1		1				1
Lenticular cataract.....								1
Capsular cataract.....								1
Panophthalmitis .....		1	1					1
Amblyopia .....								1
Temporary blindness.....								2
Ametropia .....								1
Presbyopia .....								1
Dacryo-cystitis, chronic.....		3	2	1				1
Abscess lacrymal sac .....		1	1					2
Epiphora .....								1
Blepharitis marginalis .....								2
Sty .....								6
Abscess of eyelid .....		1	1					1
<b>DISEASES OF THE EAR.....</b>								
Inflammation of the external meatus—		11	6	5				75
Acute .....		1	1					7
Chronic .....								1
Abscess .....								4
Hæmatoma of the auricle .....								2
Accumulation in external meatus of wax or epidermis.....								14
Inflammation of the middle ear—								
Nonsuppurative .....								11
Suppurative.....		8	5	3				26



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GREAT LAKES—Continued.

Diseases.	Number of cases.							
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.
<b>DISEASES OF THE EAR—Continued.</b>								
Inflammation of the middle ear—Con.								
Perforation of membrana tympani.		2		2				1
Tinnitus.								4
Deafness.								5
<b>DISEASES OF THE NOSE.</b>								
Inflammation of soft parts.		1	1					47
Diseases of septum.		1	1					47
Deviations.							1	54
Epistaxis.							1	1
Inflammation of the accessory sinuses.		1					1	1
Inflammation of the naso-pharynx.								52
<b>DISEASES OF THE CIRCULATORY SYSTEM.</b>								
Pericarditis.	9	76	14	48	1	13	9	131
Endocarditis.		2	2					3
Valvular disease—								1
Aortic.	2	11		9		2	2	14
Mitral.	5	33		26	1	6	5	42
Aortic and mitral.		6		3		2	1	6
Hypertrophy of heart.	1	1	1	1				3
Dilatation of heart.								1
Angina pectoris.		1		1				1
Disordered action of the heart, irregu- larity.		1		1				28
Arteritis, degeneration of arteries.		1				1		1
Aneurysm of arteries.		3		1		1	1	3
Obstruction of arteries.		1				1		1
Thrombosis.								1
Phlebitis.		2	2					2
Varix.	1	14	9	6				31
Disease of coronary arteries.								1
Nævus.								1
<b>DISEASES OF THE RESPIRATORY SYSTEM.</b>								
Hay fever.	9	204	130	53	4	19	7	1,042
Aphonia.								4
Inflammation of mucous membrane of larynx—								1
Catarrhal, acute.		4	2	1	1			29
Tracheitis.								11
Bronchitis—								
Catarrhal, acute.	2	65	55	11			1	819
Catarrhal, chronic.	3	24	10	16			1	66
Spasmodic asthma.	1	17	4	10	1	2	1	37
Congestion of lung.		3	2	1				16
Hemorrhage of lung, hæmoptysis.		1					1	1
Pneumonia.	1	48	27	6		14	2	4
Broncho-pneumonia.		1	1					
Phthisis—								
Acute.		2		1	1			1
Chronic.								1
Tubercular.								1
Emphysema.		2		2				1
Pleurisy, acute.	2	33	27	4	1	3		49
Empyema.		3	2				1	1
Hydrothorax.		1		1				
<b>DISEASES OF THE DIGESTIVE SYSTEM.</b>								
Ulceration of the lips.	12	312	262	40	5	6	11	1,900
Inflammation of the mouth.		1	1					8
Ulceration of the mouth.								7
Caries of dentine and cementum.								2
Abscess of dental periosteum.								9
Inflammation of gums and alveoli.								4
Suppuration of alveoli.		3	3					3
Ulceration of gums and alveoli.								3
Toothache.								5
Inflammation of the tongue.								11
Ulceration of the tongue.								4



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GREAT LAKES—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE DIGESTIVE SYSTEM—Con.									
Sore throat .....								58	58
Ulceration of palate.....								3	3
Inflammation of the tonsils—									
Follicular .....		24	22	1	1			94	118
Suppuration.....		12	12					23	35
Hypertrophy of tonsils .....		1	1					2	3
Elongated uvula .....								1	1
Salivation .....								1	1
Inflammation of the pharynx.....		1	1						1
Catarrhal.....		2	1	1				34	36
Follicular .....		1	1						1
Stricture, cesophagus.....	1					1			1
Inflammation of the stomach, catar- rhal .....	2	25	26				1	128	155
Ulceration of the stomach.....								1	1
Superficial .....		6	2	3	1			3	9
Hemorrhage of the stomach.....		1	1						1
Dilatation of the stomach.....								3	3
Indigestion.....	1	29	19	8		1	2	400	430
Pyrosis .....								20	20
Vomiting.....								1	1
Gastralgia .....								6	6
Loss of appetite .....								43	43
Inflammation of the intestines—									
Enteritis .....		39	37			1	1	21	60
Typhlitis .....	1	14	13			1	1	10	25
Colitis .....		2	2						2
Catarrhal.....								4	4
Hernia .....	3	18	19		2			127	148
Affection of hernial sacs .....		1		1					1
Obstruction of the intestines .....								1	1
Intestinal dyspepsia.....		1	1					3	4
Constipation .....		3	3					353	356
Colic .....		6	6					23	29
Diarrhea .....	2	55	50	4		1	2	303	360
Inflammation of the rectum .....		2		2					2
Periproctitis.....		4	1	3					4
Abscess.....	1	6	2	3			2	2	9
Ulceration of rectum.....		1	1					3	4
Fissure of the anus.....		1	1					2	3
Fistula in ano.....	1	9	5	5				14	24
Piles—									
Internal.....		7	7					26	33
External .....		11	7	3	1			60	71
Mixed .....		1		1				4	5
Pruritus ani.....		1	1					7	8
Inflammation of the liver, acute.....		2	1	1				4	6
Hyperæmia of the liver .....		4	2	2				22	26
Atrophy of the liver.....		1				1			1
Hypertrophy of the liver.....		1					1		1
Jaundice .....		7	6	1				22	29
Inflammation of hepatic ducts and gall bladder.....		3	3					3	6
Calculi .....		2	2						2
Biliary colic.....		1		1				6	7
Inflammation of the peritoneum.....		1	1						1
Dropsy .....		2	1				1		2
Inflammation of pancreas.....		1	1						1
DISEASES OF THE LYMPHATIC SYSTEM...	1	78	55	21			3	133	212
Splenitis.....								1	1
Inflammation of lymph glands.....	1	60	43	18				120	181
Suppuration .....		15	10	2			3	5	20
Hypertrophy of lymph glands .....		2	1	1				5	7
Inflammation of lymphatics .....		1	1						1
Suppuration.....								2	2
DISEASES OF THE THYROID BODY.....		2		2				8	10
Inflammation .....								1	1
Goitre .....		2		2				7	9



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GREAT LAKES—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE URINARY SYSTEM.....									
Acute nephritis .....	2	37	13	14	2	4	6	146	185
Bright's disease .....		4	1	3				10	14
Chronic nephritis .....	2	7		6		2	1	15	24
Abscess, perinephritic .....		4				2	2		4
Pyelitis .....		1					1		1
Calculus in kidney .....		1			1			4	5
Calculus in ureter .....		1	1					3	4
Nephralgia .....								1	1
Suppression of urine .....		2	2					2	4
Hæmaturia .....								1	1
Lithuria .....		3		2			1	3	6
Inflammation of bladder—		1	1					5	6
Acute .....		8	7	1				85	93
Chronic .....								2	2
Calculus of bladder .....		3		1	1		1	2	5
Retention of urine .....		2	1	1				1	3
Incontinence of urine .....								12	12
DISEASES OF THE GENERATIVE SYSTEM ...									
Urethritis .....	3	132	88	39	2	1	5	648	783
Gleet .....								4	4
Ulcer of the urethra .....								27	27
Stricture of urethra, organic .....		1						1	1
Extravasation of urine .....		27	14	12		1		112	139
Inflammation of the prostate, chronic ..		1	1						1
Prostatarrhœa .....								1	1
Hypertrophy of the prostate .....								13	13
Prostitis .....								2	2
Phimosis .....		10	9				1	9	19
Paraphimosis .....		3	2	1				7	10
Inflammation of the glans penis .....		1	1					2	3
Ulcer of penis .....		12	7	3			2	58	70
Soft chancre .....	1	17	10	7			1	290	308
Chordee .....								1	1
Abscess of the scrotum .....		1		1					1
Oedema of scrotum .....		1	1					1	2
Pruritus of the scrotum .....								1	1
Inflammation of the spermatic cord ..								2	2
Hydrocele of the spermatic cord .....		3	3					3	6
Varicocele .....	1	14	8	7				34	49
Hydrocele of tunica vaginalis .....		8	6	2				21	29
Inflammation of the testicle .....		1			1			3	4
Acute orchitis .....		19	15	2	1		1	32	51
Chronic orchitis .....		2	1	1					2
Epididymitis .....		3	2	1				4	7
Spermatorrhœa .....								10	10
Impotence .....								2	2
Inflammation of the ovary .....		1	1						1
Inflammation of the fallopian tube ...	1		1						1
Inflammation of pelvis, pelvic cellu- litis .....		1		1					1
Inflammation of the uterus .....		3	3					1	4
Displacements and distortions of the uterus .....		1	1						1
Inflammation of the vulva .....		1	1						1
Menorrhagia .....								2	2
Leucorrhœa .....		1	1					3	4
Abortion .....		1		1					1
Mastitis .....								1	1
DISEASES OF THE ORGANS OF LOCOMOTION ..									
Inflammation of the bones—	4	91	66	20	5		4	340	435
Osteitis .....								1	1
Periostitis .....								8	8
Caries .....		5	3	1	1				5
Necrosis .....		12	9	1	1		1	12	24
Ununited fracture or false joint .....		2	1	1					2
Inflammation of joints—									
Acute synovitis .....		10	7	2	1			8	18
Chronic synovitis .....		2	1	1					2



DISTRICT OF THE GREAT LAKES—Continued.									
Diseases.	Number of cases.								Total treated in hospital and dispensary.
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.	
DISEASES OF THE ORGANS OF LOCOMOTION—Continued.									
Ankylosis .....		1	1					1	2
Dislocation of articular cartilage .....								1	1
Caries of the spine .....		1					1		1
Inflammation of muscles .....		3	3					2	5
Suppuration of muscles .....		1			1				1
Myalgia, lumbago .....	2	40	32	9			1	274	316
Inflammation of fasciæ .....		1	1						1
Contracture of fasciæ .....	1			1					1
Inflammation of tendons .....		1	1					3	4
Inflammation of sheaths of tendons .....		1	1					5	6
Thecal abscess .....		4	2	1			1	1	5
Ganglion .....		1	1					1	2
Inflammation of bursæ, acute .....		3		2	1			9	12
Abscess of bursæ .....		2	2						2
Bunion .....								4	4
Bursal cyst .....								4	4
Flat foot .....	1			1				4	5
Deformity of great toe .....		1	1					2	3
DISEASES OF THE CONNECTIVE TISSUE .....	1	66	52	13	1	1		155	222
Inflammation .....		26	22	2	1	1		69	95
Abscess .....	1	39	29	11				83	123
Œdema .....								3	3
Emphysema .....		1	1						1
DISEASES OF THE SKIN .....	3	89	59	25		3	5	599	691
Erythema .....	1		1					7	8
Urticaria .....		1		1				14	15
Prickly heat .....		1		1				4	5
Eczema .....		6	3	3				167	173
Impetigo .....		3	2				1	18	21
Pityriasis rubra .....		1	1					1	2
Prurigo .....		1		1				2	3
Psoriasis .....		1		1				15	16
Herpes .....								19	19
Zona .....		2	1				1	5	7
Pemphigus .....								1	1
Dermatitis herpetiformis .....		1	1					2	3
Acne .....								34	34
Sycosis .....		2	2					36	38
Seborrhœa .....		1	1					2	3
Area .....								1	1
Frostbite .....		6	6					3	9
Alopecia .....								1	1
Ulcer .....	1	39	24	12		3	1	123	163
Boil .....		6	4	2				104	110
Carbuncle .....	1	4	4	1				5	10
Whitlow .....		5	4				1	20	25
Onychia .....		4	1	2			1	5	9
Corn .....								5	5
Horn .....								1	1
Wen .....		4	4					2	6
Adenoma sebaceum .....		1		1					1
Pruritus .....								2	2
Injuries .....									
GENERAL INJURIES .....									
Effects of heat—	1	39	25	11		4		81	121
Burns and scalds .....		18	12	4		2		74	92
Heat stroke .....		11	11						11
Sunstroke .....		1	1					1	2
Effects of chemical irritants and corrosives .....								3	3
Multiple injury .....	1	8	1	6		2		2	11
Suffocation .....		1		1				1	2
LOCAL INJURIES .....									
Contusion of nerves .....	36	533	409	126	8	8	18	1,068	1,637
Contusion of muscles .....								1	1
								4	4



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GREAT LAKES—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
LOCAL INJURIES—Continued.									
Strain of muscles.....		5	4	1				2	7
Rupture of muscles.....								1	1
Contusion of skin.....								3	3
Abrasion of skin.....		1	1					13	14
Wound of skin.....		2		1	1			9	11
Burn or scald of skin.....	1	8	8				1	27	36
Frostbite.....								1	1
Abrasion of mucous membrane.....		1	1						1
Contusion of scalp.....		2	1	1					2
Wound of scalp.....		21	16	5				45	66
Fracture of the vault of skull.....		5	2	2		1		5	5
Fracture of the base of skull.....		5	2	1		2		1	6
Concussion of brain.....		6	4	2					6
Contusion of face.....		6	5	1				14	20
Wound of face and mouth.....		11	9	1	1			26	37
Fracture of facial bones.....	1	15	11	3		1	1	9	25
Injuries of alveoli and teeth.....								1	1
Dislocation of lower jaw.....		1	1					1	2
Contusion of eyelid.....								1	1
Wound of eyelid.....		1	1					3	4
Contusion of eyeball.....		1		1				4	5
Foreign bodies in the conjunctiva or cornea.....		3	2	1				41	44
Wound of eyeball.....		3	1	2				3	6
Wound of pinna.....								3	3
Rupture of membrana tympani.....		1	1					2	3
Contusion of neck.....		4	1	2			1	1	5
Wound of neck.....								1	1
Foreign body in the air passages.....								1	1
Foreign body in the food passages.....								1	1
Contusion of chest.....		29	21	8				30	59
Dislocation of costal cartilages.....								2	2
Fracture of ribs.....	1	16	13	4				36	53
Fracture of sternum.....		1		1				1	2
Contusion of back.....	1	20	14	7				22	43
Gunshot wound.....		1		1				2	3
Sprain of back.....	1	15	12	3	1			46	62
Dislocation of spine.....		2		2					2
Contusion of abdomen.....		3	3					2	5
Wound of parietes of abdomen.....								2	2
Wound of viscera.....		1	1						1
Contusion of the pelvis.....		1	1						1
Contusion of the perinaeum, scrotum, or penis.....		1		1					1
Wound of the male urethra, perinaeum, scrotum, testis, or penis.....		3	3					4	7
Wound of rectum.....		1		1				1	2
Rupture of urethra.....		1	1						1
Fracture or dislocation of pelvic bones.....		3	1			2			3
Contusion of testicle.....		3		3				5	8
Contusion of upper extremities.....		35	28	5	2			96	131
Sprain of shoulder.....		2	2					3	5
Sprain of elbow.....								4	4
Sprain of wrist.....	2	5	6	1				18	25
Sprain of upper extremities.....								41	41
Sprain of thumb.....								2	2
Sprain of fingers.....		1	1					4	5
Wound of upper extremities.....		52	43	6		1	2	229	281
Fracture of clavicle.....		3	2	1				4	7
Fracture of scapula.....		2	2						2
Fracture of humerus.....	1	8	6	3				3	12
Fracture of bones of forearm—									
Radius.....	1	8	4	4			1	9	18
Ulna.....	1	2	3					3	6
Both bones.....		3	2	1				4	7
Fracture of carpus, metacarpus, or phalanges.....	2	6	5	3				23	31
Dislocation of clavicle.....		5	2	3				2	7
Dislocation of humerus.....	1	4	3	2				2	7



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE GREAT LAKES—Continued.

Diseases.	Number of cases.							
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.
<b>LOCAL INJURIES—Continued.</b>								
Dislocation of radius and ulna .....		4	3	1				1
Dislocation of phalanges of thumb.....								2
Dislocation of phalanges of fingers.....								5
Dislocation of elbow.....								1
Contusion of lower extremities.....	7	76	65	16			2	71
Sprain of lower extremities.....								30
Sprain of knee.....		7	2	3	1		1	6
Sprain of ankle.....	6	25	21	6	2		2	26
Sprain of foot.....		5	3	2				4
Internal derangement of joints.....								2
Wound of lower extremities.....	3	48	40	8			3	75
Fracture of femur.....	2	2	3				1	
Fracture of patella.....		1	1					
Fracture of tibia.....		4	3	1				3
Fracture of fibula.....	1	11	9	2			1	13
Fracture of tibia and fibula.....	2	4	3	2		1		6
Fracture of bones of foot—								
Of the metatarsus.....		3	1	1			1	1
Of the phalanges of the toes.....	1	2	2				1	1
Dislocation of patella.....		1	1					1
Dislocation of tibia.....		1	1					1
Dislocation of metatarsus and phalanges.....	1		1					

## DISTRICT OF THE PACIFIC.

TOTAL CASES .....	215	2,008	1,044	732	48	109	290	4,640	6,863
General Diseases.....	139	839	357	329	17	73	203	1,622	2,601
Smallpox.....		2	2						2
Cowpox.....								2	2
Measles.....		15	13				2	3	18
Influenza.....		39	33	4	2			90	129
Mumps.....		1	1					1	2
Diphtheria.....		2	2					1	3
Simple continued fever.....		1	1						1
Enteric fever.....	2	41	34	1		2	6	7	50
Dysentery.....	1	11	6	5			1	9	21
Beriberi.....		6	3	1		2		1	7
Malarial fever:									
Intermittent.....	2	36	34	2			2	50	88
Remittent.....		7	7					3	10
Erysipelas.....	1	6	6				1	6	13
Pyæmia.....		4	2	2				6	10
Tubercle.....	110	257	9	133	10	57	158	39	406
Syphilis:									
Primary.....		7	1	6				62	69
Secondary.....	5	63	2	47	2	3	14	292	359
Gonorrhœa.....	7	132	54	77		1	7	592	732
Diseases dependent on animal parasites:									
Amœba coli.....		1				1			1
Tœnia solium.....								5	5
Tœnia mediocanellata.....		1		1				1	2
Oxyuris vermicularis.....								2	2
Phthirus inguinalis.....								3	3
Trichinæ spiralis.....		1	1						1
Sarcoptes scabiei.....		1	1					22	23
Acanthia lectularia.....		2	2						2
Diseases dependent on vegetable parasites:									
Achorion schönleini.....								4	4
Trichophyton tonsurans.....		4	4					8	13
Tinea circinata.....		1	1					2	3
Microsporon furfur.....								3	3
Effects of animal poisons, decayed and poisonous food.....		2	1	1				3	5



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

DISTRICT OF THE PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
Effects of vegetable poisons:									
Opium.....		1		1				3	4
Tobacco.....		1	1						1
Rhus toxicodendron.....								2	2
Effects of inorganic poisons:									
Mercury.....		2	2					2	4
Sulphuric acid.....								1	1
Effects of the presence of foreign bodies..		1	1					3	4
Effects of heat.....		1					1	10	11
Scurvy.....		6	6						6
Alcoholism.....	3	39	33	5	1	2	1	39	81
Rheumatic fever.....	1	27	18	7			3	7	35
Rheumatism.....	5	91	63	27	1	1	4	292	388
Osteoarthritis.....	1						1	2	3
Cyst:									
Mucous.....								2	2
Sebaceous.....		4	2	2				7	11
Bursal.....		1		1					1
Chalazion.....								3	3
New growth, nonmalignant:									
Lipoma.....		1	1					2	3
Papilloma.....		1	1					9	10
Adenoma.....		2	2						2
Pterygium.....								1	1
New growth, malignant:									
Sarcoma.....		2		1		1			2
Carcinoma.....		5	2		1	1	1	1	6
Squamous carcinoma.....		1		1				1	2
Anæmia.....		5	2	2			1	9	14
Diabetes mellitus.....		2				2		1	3
Congenital malformations.....		1	1						1
Debility.....	1	2	1	2				9	12
Local Diseases.....									
DISEASES OF THE NERVOUS SYSTEM.....	15	58	14	26	17	7	9	94	167
Of the nerves, inflammation—									
Neuritis.....	1	11	5	5	2			10	22
Multiple neuritis.....		4	1	1	1		1		4
Of the spinal cord and membranes, membranes—									
Inflammation of dura mater.....		1			1			1	2
Of the spinal cord and membranes, cord, degeneration—									
Of anterior cornua.....	3	1		1	3				4
Of lateral columns.....		1			1				1
Of posterior columns.....	1	3		3			1	1	5
Of the brain and its membranes, brain—									
Hemorrhage.....	2	2		2	2				4
Anæmia.....		1		1					1
Bulbar paralysis.....		1				1			1
Functional nervous disorders with other diseases of undetermined na- ture—									
Apoplexy.....		2				2			2
Paralysis—									
Hemiplegia.....	1	4		1	3		1		5
Local paralysis.....		1		1				1	2
Incomplete paralysis.....								4	4
Spasm.....		1		1				1	2
Torticollis.....								1	1
Epilepsy.....		2					2	2	4
Vertigo.....								1	1
Headache.....		1		1				16	17
Neuralgia.....		6	3	3				43	49
Hiccough.....		3	3					2	5
Nervous weakness.....	1	4	1	3		1		5	10
Mental diseases—									
Mania.....	2	3	1		2	1	1		5
Melancholia.....	1	1		1			1	6	8
Delusional insanity.....	3	5		2	2	2	2		8



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE EYE .....	1	13	6	2	4	....	2	54	68
Conjunctivitis .....		2	2					28	30
Conjunctivitis, catarrhal, acute .....		1					1		1
Keratitis .....		1	1						1
Ulceration of cornea .....		1		1				1	2
Opacity of cornea .....								1	1
Scleritis .....								2	2
Synechia .....								1	1
Iritis .....	1			1				7	8
Myosis .....								1	1
Congestion of optic disc .....								1	1
Retinitis .....		1			1				1
Lenticular cataract .....		5	1		3		1	1	6
Amblyopia .....								1	1
Hemianopsia .....								1	1
Blepharitis marginalis .....								4	4
Sty .....								3	3
Abscess of eyelid .....		1	1					2	3
Ptosis, paralytic .....		1	1						1
DISEASES OF THE EAR.....		7	5	1		1		50	57
Inflammation of the external meatus—									
Acute .....								3	3
Abscess .....		1		1				3	4
Accumulation in external meatus of wax or epidermis .....		1	1						
Inflammation of the middle ear—								28	29
Nonsuppurative .....								4	4
Suppurative .....		4	4					8	12
Ulceration of membrana tympani .....								2	2
Deafness .....								2	2
All structures.....		1				1			1
DISEASES OF THE NOSE.....		4		4				15	19
Inflammation of soft parts .....		4		4				15	19
Diseases of septum .....		2	1	1				16	18
Deviations .....		1	1						1
Inflammation of the accessory si- nuses .....		1		1				1	2
Inflammation of the naso-pharynx.....								15	15
DISEASES OF THE CIRCULATORY SYSTEM..	8	37	4	29	1	3	8	74	119
Pericarditis.....								1	1
Valvular disease—									
Aortic .....	1	8		8			1	4	13
Mitral .....	5	14		12		3	4	29	48
Mitral and aortic.....	1	2		2			1		3
Myocarditis .....								3	3
Degeneration of heart, fatty .....								1	1
Angina pectoris .....								3	3
Disordered action of the heart—									
Abnormal rapidity .....		2		2				11	13
Irregularity .....								2	2
Aneurism of arteries .....		1					1	2	3
Obstruction of arteries, thrombosis.....								1	1
Varix.....	1	10	4	5	1		1	17	28
DISEASES OF THE RESPIRATORY SYSTEM ..	3	104	65	32	1	7	2	313	420
Hay fever.....								1	1
Inflammation of mucous membrane of larynx—									
Catarrhal, acute.....		1	1					11	12
Catarrhal, chronic .....		1	1					3	4
Paralysis of vocal cords.....								1	1
Bronchitis—									
Catarrhal, acute.....		28	21	7				242	270
Catarrhal, chronic.....		5	1	4					5
Spasmodic asthma .....		4	1	2	1			3	7
Congestion of lung .....								1	1
Pneumonia.....	3	45	33	7		7	1	7	65



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE RESPIRATORY SYSTEM—									
Continued.									
Phthisis—									
Acute .....		1		1				1	2
Tubercular .....								1	1
Emphysema .....		2	1	1					2
Pleurisy, acute .....		17	6	10			1	42	59
DISEASES OF THE DIGESTIVE SYSTEM.....									
Inflammation of the lips.....	7	200	135	55	1	6	10	533	740
Ulceration of the lips.....								3	3
Inflammation of the mouth .....		1	1					2	2
Ulceration of the mouth .....								1	1
Caries of dentine and cementum.....								12	12
Necrosis of cementum .....								1	1
Inflammation of the dental periosteum.....		2		2				1	3
Abscess of dental periosteum.....	1	5	5	1				5	11
Inflammation of gums and alveoli.....								4	4
Ulceration of gums and alveoli.....								1	1
Necrosis of dental periosteum.....		1	1					2	3
Toothache.....								5	5
Ulceration of the tongue.....								2	2
Sore throat .....		6	3	3				29	35
Inflammation of the tonsils—									
Follicular .....		16	13	3				40	56
Suppuration.....		8	6	2				11	19
Hypertrophy of tonsils.....		1		1				4	5
Dry mouth .....								1	1
Inflammation of the pharynx—									
Catarrhal.....		1		1				14	15
Granular .....								5	5
Follicular .....								3	3
Dysphagia.....								1	1
Inflammation of the stomach, ca- tarrhal .....		11	4	7				37	48
Ulceration of the stomach .....		1					1		1
Hemorrhage of the stomach .....		1				1		1	2
Indigestion.....	3	9	7	4		1		117	129
Nausea .....								1	1
Vomiting.....		1	1						1
Gastralgia.....		1		1				6	7
Loss of appetite .....								1	1
Retching .....								1	1
Inflammation of the intestines—									
Enteritis .....		18	12	3		2	1	5	23
Typhlitis .....		8	6	1		1		3	11
Catarrhal.....								1	1
Fistula of the intestines.....		1		1					1
Fecal accumulation.....		2	1			1		1	3
Hernia .....		52	40	8	1		3	67	117
Constipation .....	1	3	2	2				60	64
Colic .....								2	2
Diarrhea .....		7	5	2				33	40
Periproctitis: Abscess .....		3	1	1			1	2	5
Ulceration.....		2	1	1				2	4
Fistula in ano.....		4	3				1	2	6
Prolapse of the rectum.....		2	1				1	1	3
Piles—									
Internal.....		4	3	1				18	22
External .....		8	5	2			1	9	17
Mixed .....	2	3	3	2				3	8
Pruritis ani.....								1	1
Inflammation of the liver—									
Acute .....		1	1					4	5
Chronic .....		5	4				1		5
Jaundice .....		8	3	5				8	16
Biliary colic.....								2	2
Inflammation of the peritonaeum .....		4	3	1					4



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE LYMPHATIC SYSTEM....	1	36	18	18	.....	.....	1	55	92
Inflammation of lymph glands.....	.....	26	17	9	.....	.....	.....	54	80
Suppuration.....	1	10	1	9	.....	.....	1	.....	11
Hypertrophy of lymph glands.....	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE URINARY SYSTEM.....	2	29	3	18	1	5	4	52	83
Acute nephritis.....	.....	4	.....	2	.....	2	.....	5	9
Bright's disease.....	.....	9	.....	9	.....	.....	.....	13	22
Chronic nephritis.....	1	6	.....	2	.....	3	2	.....	7
Granular kidney.....	.....	1	.....	1	.....	.....	.....	.....	1
Movable kidney.....	.....	2	.....	1	.....	.....	1	.....	2
Pyelitis.....	.....	1	1	.....	.....	.....	.....	.....	1
Haematuria.....	.....	1	.....	1	.....	.....	.....	1	2
Inflammation of bladder—	.....	.....	.....	.....	.....	.....	.....	.....	.....
Acute.....	.....	4	2	2	.....	.....	.....	28	32
Chronic.....	1	.....	.....	.....	.....	.....	1	.....	1
Irritability of bladder.....	.....	.....	.....	.....	.....	.....	.....	1	1
Incontinence of urine.....	.....	1	.....	.....	1	.....	.....	4	5
DISEASES OF THE GENERATIVE SYSTEM....	1	93	50	37	.....	1	6	378	472
Gleet.....	.....	1	.....	1	.....	.....	.....	42	43
Abscess of the urethra.....	.....	.....	.....	.....	.....	.....	.....	1	1
Stricture of urethra, organic.....	.....	21	4	13	.....	1	3	43	64
Inflammation of the prostate.....	.....	.....	.....	.....	.....	.....	.....	4	4
Hypertrophy of the prostate.....	.....	.....	.....	.....	.....	.....	.....	2	2
Posthitis.....	.....	.....	.....	.....	.....	.....	.....	1	1
Phimosis.....	.....	3	2	1	.....	.....	.....	2	5
Paraphimosis.....	.....	2	2	.....	.....	.....	.....	.....	2
Inflammation of the glans penis.....	1	1	2	.....	.....	.....	.....	1	3
Ulcer of penis.....	.....	2	.....	2	.....	.....	.....	15	17
Soft chancre.....	.....	37	24	11	.....	.....	2	208	245
Hydrocele of the spermatic cord.....	.....	2	.....	1	.....	.....	1	.....	2
Hæmatocele of the spermatic cord.....	.....	.....	.....	.....	.....	.....	.....	1	1
Varicocele.....	.....	9	8	1	.....	.....	.....	15	24
Torsion of spermatic cord.....	.....	.....	.....	.....	.....	.....	.....	4	4
Hydrocele of tunica vaginalis.....	.....	1	.....	1	.....	.....	.....	5	6
Inflammation of the testicle.....	.....	1	1	.....	.....	.....	.....	9	10
Acute orchitis.....	.....	10	5	5	.....	.....	.....	15	25
Epididymitis.....	.....	3	2	1	.....	.....	.....	1	4
Spermatorrhea.....	.....	.....	.....	.....	.....	.....	.....	6	6
Impotence.....	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of mammary gland.....	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE ORGANS OF LOCOMOTION.	3	36	22	12	.....	.....	5	115	154
Inflammation of the bones—	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osteitis.....	.....	1	.....	1	.....	.....	.....	3	4
Periostitis.....	.....	4	1	3	.....	.....	.....	5	9
Necrosis.....	.....	7	7	.....	.....	.....	.....	3	10
Ununited fracture or false joint.....	.....	1	.....	.....	.....	.....	1	.....	1
Inflammation of joints, acute syno- vitis.....	1	4	4	1	.....	.....	.....	10	15
Ankylosis.....	1	1	.....	.....	.....	.....	2	3	5
Dislocation of articular cartilage.....	.....	1	1	.....	.....	.....	.....	.....	1
Bow-leg.....	.....	.....	.....	.....	.....	.....	.....	1	1
Psoas, lumbar, and other abscesses.....	.....	1	.....	.....	.....	.....	1	.....	1
Myalgia, lumbago.....	1	7	4	3	.....	.....	1	72	80
Inflammation of fasciæ.....	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of tendons.....	.....	1	.....	1	.....	.....	.....	.....	1
Contraction of tendons.....	.....	1	1	.....	.....	.....	.....	.....	1
Inflammation of sheaths of tendons.....	.....	.....	.....	.....	.....	.....	.....	4	4
Thecal abscess.....	.....	.....	.....	.....	.....	.....	.....	1	1
Ganglion.....	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of burse—	.....	.....	.....	.....	.....	.....	.....	.....	.....
Acute.....	.....	3	3	.....	.....	.....	.....	8	11
Chronic.....	.....	.....	.....	.....	.....	.....	.....	1	1
Bunion.....	.....	.....	.....	.....	.....	.....	.....	1	1
Bursal cyst.....	.....	1	.....	1	.....	.....	.....	.....	1
Flat foot.....	.....	3	1	2	.....	.....	.....	.....	3
DISEASES OF THE CONNECTIVE TISSUE....	1	49	30	16	1	.....	3	83	133
Inflammation.....	1	15	10	5	.....	.....	1	23	39
Abscess.....	.....	32	19	11	1	.....	1	60	92



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
DISEASES OF THE CONNECTIVE TISSUE—Con.									
Gangrene .....		1					1		1
Edema .....		1	1						1
DISEASES OF THE SKIN.....									
Erythema .....	3	67	46	21	1		2	217	287
Urticaria .....								2	2
Prickly heat.....								10	10
Eczema .....		8	4	4				3	3
Impetigo .....		6	5	1				50	58
Lichen .....								4	10
Psoriasis .....								1	1
Herpes .....		1		1				6	6
Zona .....		3	2	1				18	19
Pemphigus .....								6	9
Acne .....								2	2
Gutta rosea.....								8	8
Sycosis .....								1	1
Seborrhœa .....								4	4
Alopecia .....								1	1
Chilblain .....		1	1					1	1
Ulcer .....	3	24	16	8	1		2	69	96
Boil .....		16	12	4				70	86
Carbuncle .....		2	1	1				4	6
Whitlow .....		5	4	1				9	14
Onychia .....								6	6
Wen .....		1	1						
Milium .....								1	1
Hyperidrosis .....								3	3
Lupus .....								1	1
Injuries .....									
GENERAL INJURIES.....									
Effects of heat—	1	19	13	5		1	1	16	36
Burns and scalds .....	1	12	11	2				32	45
Heat stroke .....		3	1	2					3
Sunstroke .....		1		1					1
Multiple injury .....		3	1			1	1		3
Shock .....								1	1
LOCAL INJURIES.....									
Wound .....	30	415	276	125	5	5	34	699	1,144
Rupture of vein .....		1	1						1
Wound of lymph glands.....								1	1
Contusion of muscles.....								4	4
Strain of muscles.....		1	1					1	1
Strain of tendons.....								1	2
Wound of tendons.....								2	2
Abrasion of skin.....								1	1
Wound of skin .....								5	5
Burn or scald of skin.....	1	6	7					4	4
Frostbite .....								18	25
Wound of mucous membrane.....		1		1				1	1
Contusion of scalp.....								1	1
Wound of scalp.....		19	8	9		1	1	2	2
With injury to the aponeurosis.....								28	47
With injury to the bone.....								2	2
Fracture of the vault of skull .....		1				1		1	1
Concussion of brain .....		4	4					1	5
Contusion of brain .....		1	1						1
Contusion of face.....		3	2	1				7	10
Wound of face and mouth .....		5	4	1				31	36
Fracture of facial bones.....	3	7	7	2			1	1	11
Wound of eyelid .....		2	1	1				2	4
Wound of conjunctiva .....								1	1
Contusion of eyeball .....		1	1					1	2
Foreign bodies in the conjunctiva or cornea.....								8	8
Wound of eyeball.....		4	2	2				3	7



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE PACIFIC—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
LOCAL INJURIES—Continued.									
Rupture of membrana tympani .....								1	1
Wound of neck .....								3	3
Contusion of chest .....		7	5	2				35	42
Fracture of ribs .....	1	17	10	7			1	6	24
Wound of parietes of chest .....								5	5
Gunshot wound .....		3	1	1	1				3
Contusion of back .....		13	9	4				37	50
Sprain of back .....	1	7	5	2	1			32	40
Wound of back .....		4	1	2		1		1	5
Fracture of spine .....		2				1	1		2
Fracture of sacrum .....		1		1					1
Concussion of cord .....		1					1		1
Contusion of abdomen .....								1	1
Wound of parietes of abdomen .....								9	9
Contusion of the pelvis .....		1	1					1	2
Wound of the male urethra, perinaeum, scrotum, testis, or penis .....		1		1				9	10
Contusion of testicle .....		1		1				2	3
Contusion of upper extremities .....	2	23	15	9			1	74	99
Sprain of shoulder .....								3	3
Sprain of elbow .....								2	2
Sprain of wrist .....		4	4					12	16
Sprain of upper extremities .....								34	34
Sprain of thumb .....								3	3
Sprain of fingers .....	1	1	2					1	3
Wound of upper extremities .....	1	51	36	15			1	262	314
Wound of joint, upper extremities .....		2		2					2
Fracture of clavicle .....		8	6	2				3	11
Fracture of scapula .....		3	2	1					3
Fracture of humerus .....		3	3					1	4
Fracture of bones of forearm—									
Radius .....		14	6	4			4	4	18
Ulna .....	1	2	2	1				2	5
Both bones .....		3	1	2				2	5
Fracture of carpus, metacarpus, or phalanges .....		7	6				1	12	19
Dislocation of clavicle .....		6	2	3			1	1	7
Dislocation of humerus .....		8	6	1	1			1	9
Dislocation of phalanges of thumb .....		1	1					1	2
Dislocation of phalanges of fingers .....		2	1	1				4	6
Contusion of lower extremities .....	5	65	48	18	1		3	67	137
Sprain of hip .....		1		1					1
Sprain of knee .....	1	5	5	1				2	8
Sprain of ankle .....	1	9	6	1	1		2	9	19
Sprain of lower extremities .....		22	15	7				44	66
Internal derangement of joints .....								1	1
Wound of lower extremities .....		22	14	6			2	54	76
Wound of joint, lower extremities .....		1		1					1
Fracture of femur .....	2	5	3	1			3		7
Fracture of cervix femoris .....	1	2		2			1		3
Fracture of tibia .....	1	8	3	2			4		9
Fracture of fibula .....	1	5	3	1		1	1	3	9
Fracture of tibia and fibula .....	6	12	12	3			3		18
Fracture of bones of foot—									
Of the metatarsus .....		3	1	1			1	1	4
Of the phalanges of the toes .....								1	1
Dislocation of femur .....	1	1	2						2
Dislocation of patella .....		1		1					1
Dislocation of kneejoint, compound .....		1					1		1

## DISTRICT OF THE PACIFIC ISLANDS.

TOTAL CASES .....	8	97	68	18	1	9	9	415	520
General Diseases .....	3	27	17	5	1	4	3	102	135
Dengue .....		4	4					1	5
Simple continued fever .....		2	2					6	8



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE PACIFIC ISLANDS—Continued.

Diseases.	Number of cases.							
	Remaining in hospital from previous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hospital at close of year.	Treated at dispensary.
Enteric fever.....		5	4			1		5
Dysentery.....								2
Malarial fever, intermittent.....		1	1					3
Erysipelas.....								1
Tubercle.....	2	1				3		3
Syphilis, secondary.....		3		3				12
Gonorrhea.....	1	4	2	1			2	47
Diseases dependent on animal parasites:								
Pediculus capitis.....								1
Sarcoptes scabiei.....								1
Phthirus inguinalis.....								1
Effects of mechanical injuries.....								2
Alcoholism.....		1					1	
Rheumatic fever.....		1		1				
Rheumatism.....		4	4					20
New growth, nonmalignant:								
Fibroma.....								1
Papilloma.....								2
Enchondroma.....								1
Epulis.....								1
New growth, malignant, carcinoma.....		1			1			
Anæmia.....								1
Debility.....								2
<b>Local Diseases.</b> .....								
<b>DISEASES OF THE NERVOUS SYSTEM.</b> .....	1		1					15
Functional nervous disorders with other diseases of undetermined nature—								
Paralysis, hemiplegia.....								1
Headache.....								8
Neuralgia.....	1		1					6
<b>DISEASES OF THE EYE.</b> .....								2
Conjunctivitis.....								2
<b>DISEASES OF THE EAR.</b> .....								2
Inflammation of the external meatus, acute.....								2
<b>DISEASES OF THE CIRCULATORY SYSTEM.</b> .....		3				3		6
Valvular disease—								
Aortic.....		1				1		2
Mitral.....		2				2		4
<b>DISEASES OF THE RESPIRATORY SYSTEM.</b> .....		7	5	1			1	26
Bronchitis—								
Catarrhal, acute.....		1	1					24
Catarrhal, chronic.....		1		1				
Spasmodic asthma.....		1					1	2
Pneumonia.....		3	3					
Pleurisy, chronic.....		1	1					
<b>DISEASES OF THE DIGESTIVE SYSTEM.</b> .....		7	5	1		1		79
Caries of dentine and cementum.....								5
Sore throat.....								6
Inflammation of tonsils, follicular.....								3
Hypertrophy of tonsils.....								1
Inflammation of the pharynx, catarrhal.....								6
Inflammation of the stomach, catarrhal.....		3	2	1				5
Hemorrhage of the stomach.....								1
Indigestion.....								24
Inflammation of the intestines, enteritis.....		1	1					
Hernia.....								2
Constipation.....		1	1					7
Colic.....		1	1					



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE PACIFIC ISLANDS—Continued.

Diseases.	Number of cases.							
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.
<b>DISEASES OF THE DIGESTIVE SYSTEM—CON.</b>								
Diarrhea .....								18
Inflammation of the liver, abscess .....		1				1		1
Jaundice .....								1
<b>DISEASES OF THE LYMPHATIC SYSTEM.....</b>		4	2	2				3
Inflammation of lymph glands.....		2	1	1				3
Suppuration .....		2	1	1				2
<b>DISEASES OF THE URINARY SYSTEM.....</b>		1				1		2
Bright's disease, chronic nephritis .....		1				1		1
Lithuria .....								2
<b>DISEASES OF THE GENERATIVE SYSTEM.....</b>		4	3	1				36
Gleet .....								2
Stricture of urethra, organic.....								3
Inflammation of the prostate, acute.....		1	1					1
Ulcer of penis .....								1
Soft chancre.....		2	1	1				23
Edema of scrotum .....								2
Varicocele.....		1	1					1
Inflammation of the testicle .....								1
Acute orchitis .....								3
<b>DISEASES OF THE ORGANS OF LOCOMOTION..</b>	1	3	4					17
Inflammation of the bones, periostitis.....		2	2					2
Necrosis .....		1	1					1
Inflammation of muscles.....								1
Myalgia, lumbago.....	1		1					13
Inflammation of bursæ, acute.....								1
Flat foot.....								1
<b>DISEASES OF THE CONNECTIVE TISSUE.....</b>		6	5	1				10
Inflammation .....		2	2					2
Abscess.....		3	3					10
Edema.....		1		1				1
<b>DISEASES OF THE SKIN.....</b>		4	3	1				36
Prickly heat.....								3
Eczema.....		1	1					6
Herpes .....		1	1					1
Ulcer .....		1	1					11
Boil .....		1		1				8
Whitlow.....								2
Onychia .....								2
Pruritus .....								1
Condyloma .....								2
<b>Injuries .....</b>								1
<b>GENERAL INJURIES .....</b>								1
Effects of heat, burns and scalds .....								1
<b>LOCAL INJURIES .....</b>	3	31	23	6			5	75
Effects on the skin of irritants or cor- rosives.....								1
Wound of scalp .....		1	1					7
Contusion of face .....		2	1				1	1
Wound of face and mouth .....		1		1				2
Contusion of eyelid .....								1
Wound of eyelid .....								1
Foreign bodies in the conjunctiva or cornea.....		1		1				1
Wound of eyeball.....		1	1					1
Contusion of chest .....		2	2					2
Dislocation of costal cartilages.....		1					1	1
Fracture of ribs .....		1	1					1
Contusion of back.....	1	1	1					1
Sprain of back .....		1	1					3
Wound of back.....		1					1	1



TABLE VII.—TABULAR STATEMENT, BY DISTRICTS, OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1903—Continued.

## DISTRICT OF THE PACIFIC ISLANDS—Continued.

Diseases.	Number of cases.								
	Remaining in hos- pital from previ- ous year.	Admitted during the year.	Recovered.	Improved.	Not improved.	Died.	Remaining in hos- pital at close of year.	Treated at dispen- sary.	Total treated in hospital and dis- pensary.
LOCAL INJURIES—Continued.									
Contusion of abdomen .....		1		1				1	2
Contusion of testicle .....								2	2
Contusion of upper extremities .....		2	2					2	4
Sprain of upper extremities .....								5	5
Sprain of wrist .....								4	4
Sprain of thumb .....								1	1
Wound of upper extremities .....		3	1	2				26	29
Fracture of clavicle .....		2	2						2
Fracture of humerus .....		1	1						1
Fracture of bones of forearm, radius ..	1		1					1	2
Fracture of carpus, metacarpus, or phalanges .....								1	1
Dislocation of phalanges of fingers ..		1		1					1
Contusion of lower extremities .....		1	1					2	3
Sprain of knee .....	1		1					1	2
Sprain of ankle .....		2	2					3	5
Wound of lower extremities .....		1	1					5	6
Wound of joint, lower extremities .....								2	2
Fracture of femur .....		1	1				1		1
Fracture of tibia .....		1	1						1
Fracture of fibula .....		1					1		1
Fracture of tibia and fibula .....		1	1						1

## DISTRICT OF THE QUARANTINE.

<b>TOTAL CASES</b> .....	33	19	4	1	4	5	7	40
<b>General Diseases</b> .....	30	20	2	1	3	5	1	31
Smallpox .....	21	1	2			5		21
Mumps .....	4	4						4
Enteric fever .....	1				1			1
Yellow fever .....	1	1						1
Beriberi .....	1				1			1
Malarial fever:								
Intermittent .....							1	1
Remittent .....	1				1			1
Tubercle .....	1			1				1
<b>Local Diseases</b> .....								
<b>DISEASES OF THE CIRCULATORY SYSTEM</b> ..	1		1					1
Valvular disease, mitral .....	1		1					1
<b>DISEASES OF THE RESPIRATORY SYSTEM</b> ..	1				1			1
Pneumonia .....	1				1			1
<b>DISEASES OF THE DIGESTIVE SYSTEM</b> .....							3	3
Caries of dentine and cementum .....							1	1
Inflammation of tonsils, follicular ..							1	1
Piles, external .....							1	1
<b>DISEASES OF THE URINARY SYSTEM</b> .....	1		1					1
Inflammation of bladder, acute .....	1		1					1
<b>DISEASES OF THE GENERATIVE SYSTEM</b> ..							1	1
Inflammation of the testicle, acute orchitis .....							1	1
<b>Injuries</b> .....								
<b>LOCAL INJURIES</b> .....							2	2
Wound of upper extremities .....							1	1
Fracture of tibia and fibula .....							1	1



TABLE VIII.—TABULATED STATEMENT, BY DISTRICTS, OF CAUSES OF MORTALITY AMONG PATIENTS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1903.

Cause of death.	Total.	Districts.								
		Atlantic.	West Indies.	Gulf.	Ohio.	Mississippi.	Great Lakes.	Pacific.	Pacific islands.	Quarantine stations.
Total deaths from all causes .....	541	195	.....	47	35	35	107	109	9	4
FROM DISEASES.....	506	187	.....	43	31	34	95	103	9	4
FROM INJURIES.....	35	8	.....	4	4	1	12	6	.....	.....
<b>General Diseases</b> .....	260	83	.....	18	19	16	44	73	4	3
Smallpox .....	3	1	.....	.....	.....	1	1	.....	.....	.....
Measles .....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Influenza .....	3	.....	.....	1	.....	.....	2	.....	.....	.....
Whooping cough .....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Enteric fever.....	45	21	.....	1	2	1	17	2	.....	1
Epidemic diarrhea.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....
Dysentery.....	2	.....	.....	2	.....	.....	.....	.....	.....	.....
Beriberi.....	3	.....	.....	.....	.....	.....	.....	2	.....	1
Malarial fever:										
Intermittent.....	11	4	.....	4	1	1	.....	.....	.....	1
Remittent.....	3	1	.....	.....	.....	2	.....	.....	.....	.....
Erysipelas.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Septicæmia.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Tubercle.....	142	45	.....	7	11	3	15	57	4	.....
Syphilis, secondary .....	8	1	.....	1	.....	2	1	3	.....	.....
Gonorrhea.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Diseases dependent on animal parasites:										
Amœba coli.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Tœnia solium.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Alcoholism.....	5	1	.....	.....	.....	.....	2	2	.....	.....
Rheumatic fever.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Rheumatism.....	3	1	.....	.....	1	.....	.....	1	.....	.....
New growth, nonmalignant.....	2	.....	.....	.....	.....	.....	2	.....	.....	.....
New growth, malignant .....	3	3	.....	.....	.....	.....	.....	.....	.....	.....
Sarcoma.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Epithelioma.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Carcinoma.....	8	1	.....	1	1	2	2	1	.....	.....
Diabetes mellitus.....	2	.....	.....	.....	.....	.....	.....	2	.....	.....
Diabetes insipidus.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Leucocythermia.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Debility.....	2	.....	.....	.....	1	1	.....	.....	.....	.....
Old age.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
<b>Local Diseases</b> .....										
DISEASES OF THE NERVOUS SYSTEM.....	29	15	.....	1	1	.....	5	7	.....	.....
Of the spinal cord and membranes, membranes—										
Inflammation of dura mater.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Of the spinal cord and membranes, cord—										
Inflammation, diffuse.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Degeneration of posterior columns .....	1	1	.....	.....	.....	.....	.....	1	.....	.....
Hemorrhage.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....
Of the brain and its membranes, brain—										
Hemorrhage.....	2	.....	.....	.....	.....	.....	2	.....	.....	.....
Bulbar paralysis.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Functional nervous disorders with other diseases of undetermined nature—										
Apoplexy.....	5	2	.....	.....	.....	.....	1	2	.....	.....
Paralysis.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....
Hemiplegia.....	5	4	.....	.....	.....	.....	.....	1	.....	.....
Mental diseases—										
Mania.....	2	.....	.....	.....	.....	.....	1	1	.....	.....
Melancholia.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Dementia.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....
General paralysis of the insane.....	4	2	.....	.....	.....	.....	.....	.....	.....	.....
Delusional insanity.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....
DISEASES OF THE EYE.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Lenticular cataract.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
DISEASES OF THE EAR.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Inflammation of all structures.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....



TABLE VIII.—TABULATED STATEMENT, BY DISTRICTS, OF CAUSES OF MORTALITY AMONG PATIENTS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1903—Continued.

Cause of death.	Districts.									
	Total.	Atlantic.	West Indies.	Gulf.	Ohio.	Mississippi.	Great Lakes.	Pacific.	Pacific islands.	Quarantine sta- tions.
DISEASES OF THE CIRCULATORY SYSTEM.....	58	27	.....	6	4	2	13	3	3	.....
Endocarditis.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....
Valvular disease—										
Aortic.....	13	6	.....	1	2	1	2	.....	1	.....
Mitral.....	23	9	.....	2	1	.....	6	3	2	.....
Aortic and mitral.....	8	4	.....	2	.....	.....	2	.....	.....	.....
Degeneration of heart, fatty.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Dilatation of heart.....	2	1	.....	1	.....	.....	.....	.....	.....	.....
Arteritis—										
Degeneration of arteries.....	2	1	.....	.....	.....	.....	1	.....	.....	.....
Arterio-capillary fibrosis.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Aneurysm of arteries.....	3	2	.....	.....	.....	.....	1	.....	.....	.....
Obstruction of arteries.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Embolism.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Reynaud's disease.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
DISEASES OF THE RESPIRATORY SYSTEM.....	63	21	.....	6	.....	9	19	7	.....	1
Bronchitis—										
Catarrhal, acute.....	3	2	.....	1	.....	.....	.....	.....	.....	.....
Catarrhal, chronic.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Spasmodic asthma.....	3	1	.....	.....	.....	.....	2	.....	.....	.....
Pneumonia.....	45	13	.....	3	.....	7	14	7	.....	1
Abscess of lung.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Chronic interstitial inflammation.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Phthisis—										
Acute.....	2	1	.....	1	.....	.....	.....	.....	.....	.....
Chronic.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Emphysema of lung.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Pleurisy: Acute.....	5	2	.....	.....	.....	.....	3	.....	.....	.....
DISEASES OF THE DIGESTIVE SYSTEM.....	40	14	.....	8	3	2	6	6	1	.....
Inflammation of tonsils, suppuration.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Salivation.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Stricture of œsophagus.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Inflammation of the stomach, catarrhal.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Hemorrhage of the stomach.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Dilatation of the stomach.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Stricture of pylorus.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Indigestion.....	2	.....	.....	.....	.....	.....	1	1	.....	.....
Inflammation of the intestines—										
Enteritis.....	6	2	.....	1	.....	.....	1	2	.....	.....
Typhlitis.....	4	2	.....	.....	.....	.....	1	1	.....	.....
Volvulus.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Fecal accumulation.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Hernia.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Obstruction of the intestines.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....
Diarrhea.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Inflammation of the liver—										
Acute.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Acute abscess.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Chronic.....	5	4	.....	1	.....	.....	.....	.....	.....	.....
Hyperemia of the liver.....	1	.....	.....	.....	.....	.....	.....	.....	1	.....
Atrophy of the liver.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Jaundice.....	2	.....	.....	1	1	.....	.....	.....	.....	.....
Inflammation of hepatic ducts and gall bladder.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Inflammation of the peritonæum.....	3	1	.....	2	.....	.....	.....	.....	.....	.....
Dropsy.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
DISEASES OF THE LYMPHATIC SYSTEM.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Abscess of spleen.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
DISEASES OF THE URINARY SYSTEM.....	36	20	.....	2	2	2	4	5	1	.....
Acute nephritis.....	4	2	.....	.....	.....	.....	.....	2	.....	.....
Bright's disease.....	13	8	.....	2	.....	1	2	.....	.....	.....
Chronic nephritis.....	13	4	.....	.....	2	1	2	3	1	.....
Granular kidney.....	3	3	.....	.....	.....	.....	.....	.....	.....	.....
Inflammation of bladder, chronic.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....
Calculus of bladder.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....



TABLE VIII.—TABULATED STATEMENT, BY DISTRICTS, OF CAUSES OF MORTALITY AMONG PATIENTS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1903—Continued.

Cause of death.	Total.	Districts.							
		Atlantic.	West Indies.	Gulf.	Ohio.	Mississippi.	Great Lakes.	Pacific.	Pacific islands, Quarantine stations.
DISEASES OF THE GENERATIVE SYSTEM.....	8	3	.....	1	.....	2	1	1	.....
Stricture of urethra, organic.....	4	1	.....	.....	.....	1	1	1	.....
Extravasation of urine.....	2	1	.....	1	.....	.....	.....	.....	.....
Inflammation of the prostate, acute.....	1	.....	.....	.....	.....	1	.....	.....	.....
Hypertrophy of the prostate.....	1	1	.....	.....	.....	.....	.....	.....	.....
DISEASES OF THE ORGANS OF LOCOMOTION.....	1	1	.....	.....	.....	.....	.....	.....	.....
Psoas, lumbar, and other abscesses.....	1	1	.....	.....	.....	.....	.....	.....	.....
DISEASES OF THE CONNECTIVE TISSUE.....	5	2	.....	1	1	1	.....	.....	.....
Inflammation.....	3	1	.....	.....	1	1	.....	.....	.....
Gangrene.....	1	1	.....	.....	.....	.....	.....	.....	.....
Oedema.....	1	.....	.....	1	.....	.....	.....	.....	.....
DISEASES OF THE SKIN.....	3	.....	.....	.....	.....	.....	3	.....	.....
Ulcer.....	3	.....	.....	.....	.....	.....	3	.....	.....
<b>Injuries.....</b>									
GENERAL INJURIES.....	9	2	.....	1	1	.....	4	1	.....
Effects of heat—									
Burns and scalds.....	4	1	.....	.....	1	.....	2	.....	.....
Sunstroke.....	1	.....	.....	1	.....	.....	.....	.....	.....
Multiple injury.....	4	1	.....	.....	.....	.....	2	1	.....
LOCAL INJURIES.....	26	6	.....	3	3	1	8	5	.....
Burns or scald of skin.....	1	1	.....	.....	.....	.....	.....	.....	.....
Wound of scalp.....	1	.....	.....	.....	.....	.....	.....	1	.....
Fracture of the vault of skull.....	4	.....	.....	1	.....	1	1	1	.....
Fracture of the base of skull.....	3	1	.....	.....	.....	.....	2	.....	.....
Concussion of brain.....	1	.....	.....	.....	1	.....	.....	.....	.....
Fracture of facial bones.....	1	.....	.....	.....	.....	.....	1	.....	.....
Gunshot wound.....	2	2	.....	.....	.....	.....	.....	.....	.....
Sprain of back.....	2	.....	.....	.....	1	.....	.....	1	.....
Wound of back.....	1	.....	.....	.....	.....	.....	.....	1	.....
Wound of parietes of abdomen.....	1	1	.....	.....	.....	.....	.....	.....	.....
Fracture or dislocation of pelvic bones.....	2	.....	.....	.....	.....	.....	2	.....	.....
Wound of joint, upper extremities.....	3	1	.....	1	.....	.....	1	.....	.....
Fracture of bones of forearm, ulna.....	1	.....	.....	1	.....	.....	.....	.....	.....
Fracture of femur.....	1	.....	.....	.....	1	.....	.....	.....	.....
Fracture of fibula.....	1	.....	.....	.....	.....	.....	.....	1	.....
Fracture of tibia and fibula.....	1	.....	.....	.....	.....	.....	1	.....	.....

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1903.

Operations.	No. of cases.	Remarks.
<b>Total number of operations.....</b>	<b>1,335</b>	
OPERATIONS ON TUMORS:		
Removal by excision.....	32	
For lipoma.....	6	
For fibroma.....	6	
For osteoma.....	2	
For neuroma.....	3	
For sarcoma.....	7	
For carcinoma.....	2	
For condyloma.....	1	
For epithelioma.....	3	
For oedema.....	2	
OPERATIONS ON CYSTS.....	27	
Removal by excision.....	16	
Sebaceous cyst.....	14	
Bursal cyst.....	1	
Dermoid cyst.....	1	



TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1903—Continued.

Operations.	No. of cases.	Remarks.
<b>OPERATIONS ON CYSTS—Continued.</b>		
Removal by free incision and drainage .....	11	
Sebacous cyst.....	6	
Bursal cyst.....	3	
Mucous cyst.....	1	
Dermoid cyst.....	1	
<b>EVACUATION OF ABSCESSSES:</b>		
By free incision and drainage .....	131	
Abscess of—		
Abdominal walls .....	3	
Alveolar process .....	3	
Antrum.....	2	
Arm .....	3	
Forearm .....	2	
Axilla.....	6	
Back.....	1	
Breast.....	2	
Face.....	1	
Foot.....	3	
Finger.....	4	
Hand.....	23	
Hip.....	1	
Ischio rectal fossa.....	15	
Knee.....	1	
Liver.....	2	
Leg.....	9	
Lower jaw.....	1	
Neck.....	11	
Perirenal.....	2	
Penis.....	1	
Perineum.....	4	
Rectum.....	12	
Scalp.....	1	
Scrotum.....	2	
Toe.....	1	
Thigh.....	6	
Tonsil.....	6	
Psoas muscle.....	3	
<b>CARBUNCLE.....</b>	<b>4</b>	
Neck.....	2	
Back.....	2	
<b>OPERATIONS FOR REMOVAL OF FOREIGN BODIES.....</b>		
From—		
Eye.....	2	
Arm.....	2	
Hand.....	4	
Abdominal parietes.....	1	
Scalp.....	1	
Spinal column.....	1	
Knee.....	1	
<b>OPERATIONS ON BLOOD VESSELS.....</b>		
	30	
Operations on arteries.....	5	
Ligation for hemorrhage.....	2	
For aneurism.....	3	1 aneurism thoracic aorta; died, shock, 8 hours.
Operations on veins.....	25	
Obliteration of varices, leg.....	25	18 ligation and excision; 7 ligation only.
<b>OPERATIONS ON NERVES.....</b>		
	4	
Excision of a portion of a nerve.....	2	1 muscular spiral; left supraorbital.
Stretching of a nerve.....	1	Sciatic.
Union of divided nerve.....	1	Ulna.
<b>OPERATIONS ON THE LYMPHATIC ORGANS.....</b>		
	254	
Incision and drainage of inflamed and suppurating glands .....	105	
Groin.....	91	
Neck.....	11	
Axilla.....	3	



TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1903—Continued.

Operations.	No. of cases.	Remarks.
<b>OPERATIONS ON THE LYMPHATIC ORGANS—Continued.</b>		
Removal of lymphatic glands.....	149	
Groin .....	141	
Neck .....	6	
Axilla.....	2	
<b>OPERATIONS ON THE SKIN AND SUBCUTANEOUS TISSUE..</b>		
For lupus of face.....	1	Curetted, unsuccessful.
For rodent ulcer.....	1	Excision.
For chronic ulcer of leg .....	22	16 Thiersch's method. 1 Reverdin's method. 5 curetted.
Wound of—		
Scalp.....	10	
Face .....	1	
Arm .....	2	
Hand .....	2	
Finger .....	1	
Chest.....	2	
Leg .....	1	
Scrotum .....	2	
Knee.....	1	
<b>OPERATIONS ON BONES .....</b>		
Excision of portion of bone .....	12	
Of tibia .....	3	For necrosis.
Of astragalus.....	1	Do.
Of ribs .....	4	Do.
Of metacarpal .....	2	Do.
Of metatarsal .....	1	Do.
Of vomer and turbinated bones .....	1	Do.
Removal of fragments of bones by curetting and scraping .....	21	
Of superior maxilla.....	1	Do.
Of inferior maxilla .....	2	Do.
Of femur.....	4	Do.
Of finger .....	3	Do.
Of sternum.....	3	Do.
Of tarsus .....	1	Do.
Of metacarpal bones.....	2	Do.
Of tibia .....	4	Do.
Of fibula .....	1	Do.
<b>Operations for ununited fractures .....</b>		
Of tibia .....	1	Wired, successful.
Of tibia and fibula .....	1	Do.
Of femur.....	8	Wired 5 unsuccessful. 3 successful.
Of humerus .....	1	Wired, successful.
Of inferior maxilla .....	3	Removal of loose fragments and scraping ends of bones—all successful.
<b>Operations on fractured bones for fracture of.....</b>		
Inferior maxilla .....	3	2 wired by teeth—1 splint only.
Clavicle.....	2	
Humerus .....	1	Reduced and splint applied.
Radius and ulna.....	3	Reduced; plaster-paris splint.
Ulna .....	1	Do.
Radius.....	1	Do.
Femur .....	5	Extension splint applied.
Tibia and fibula .....	8	Reduced; plaster of Paris splint.
Tibia .....	3	Do.
Fibula .....	4	Do.
Rib .....	5	Adhesive straps.
Ilium .....	1	
Finger .....	2	Splints applied.
<b>OPERATIONS ON JOINTS .....</b>		
Reduction of dislocation.....	18	
Shoulder.....	7	
Elbow.....	4	
Acromio clavicular .....	4	2 successful; 2 unsuccessful.
Hip .....	1	
Ankle.....	1	
Inferior maxilla .....	1	



TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1903—Continued.

Operations.	No. of cases.	Remarks.
OPERATIONS ON JOINTS—Continued.		
Excisions of joints .....	4	
Elbow .....	1	For tubercular disease.
Ankle .....	1	Do.
Knee .....	2	
Operations for ankylosis of joints .....	2	
Shoulder .....	1	
Finger .....	1	Brisement forcé.
Aspiration and injection .....	4	4 knee, tubercle.
Incision of joints .....	4	
Ankle .....	1	For abscess.
Knee .....	2	1 for hematoma; 1 for abscess.
Elbow .....	1	For tubercle.
OPERATIONS ON MUSCLES, TENDONS, AND FASCIA .....	3	
Tenotomy of tendo achilles .....	1	
Tenotomy hamstring .....	1	
Suture of tendon .....	1	Extensor index finger.
AMPUTATIONS .....	105	
For injury .....	97	
Of thigh .....	2	
Of leg .....	11	
At knee .....	1	
Of arm .....	2	
Of forearm .....	1	
Of finger .....	62	
Of toe .....	18	
For disease .....	8	
Of arm .....	1	
Of thigh .....	1	Gangrene of foot and leg.
Of leg .....	3	2 for gangrene of foot.
At knee .....	1	For tubercle of leg bones.
Of foot .....	1	Pirogoff for disease of bones of foot.
OPERATIONS ON THE SKULL .....	9	
Trephining .....	1	1 exploratory, successful.
Trephining and removal of portions of bone .....	7	1 Jacksonian epilepsy, successful; 2 depressed fracture of vault, successful; 2 necrosis, successful; 2 compound comminuted fracture of vault, died.
Opening of mastoid cells .....	1	
OPERATIONS ON THE SPINE AND SPINAL CORD .....	1	
Excision of neural arches .....	1	For relief of pressure and extraction of bullet.
OPERATIONS ON FACE, NASAL CAVITIES, AND MOUTH .....	4	
For deformity of nose from necrosis of nasal bones .....	2	1 plastic operation; 1 gutta-percha support under the skin, unsuccessful.
For deviation of nasal septum .....	1	Asch's operation.
Removal of tonsils .....	1	For hypertrophy.
OPERATIONS ON THE EYE AND ITS APPENDAGES .....	10	
Extraction of lens .....	4	4 for cataract.
Excision of eyeball .....	6	
OPERATIONS ON THE LARYNX, TRACHEA, AND THYROID BODY .....	1	
Tracheotomy .....	1	Successful.
OPERATIONS ON THE THORAX AND BREAST .....	14	
Paracentesis of the pleural cavity .....	5	
Thoracotomy .....	9	
(a) With excision of part of rib .....	2	
(b) Incision and drainage .....	7	



TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1903—Continued.

Operations.	No. of cases.	Remarks.
OPERATIONS ON THE ABDOMEN.....	161	
Paracentesis of the abdomen .....	1	Tubercular peritonitis.
Abdominal section .....	55	
Appendicitis.....	43	38 recovered; 5 died.
Peritonitis.....	1	Successful.
Exploration.....	3	All successful.
Gastro enterostomy.....	2	1 died; cancer.
Suture of intestines.....	3	1 successful; 2 died.
Excision of portion of intestines.....	1	Excision of 4 inches of ileum for multiple perforation; died.
Colotomy inguinal.....	1	Successful.
Cholecystotomy.....	1	
Operations for hernia.....	105	
For radical cure:		
(1) Oblique inguinal.....	86	{ 70 Bassini; 7 modified Bassini; 6 Halstead; 7 modified Halstead; 2 Kocher; all successful.
(2) Direct inguinal.....	6	
(3) Umbilical .....	2	
For strangulated hernia .....	11	Both successful.
Femoral .....	1	Successful.
Inguinal .....	10	All successful.
OPERATIONS ON THE RECTUM AND ANUS.....	78	
For fistula in ano .....	26	
For anal fissure .....	2	
For hemorrhoids.....	50	
By clamp and cautery.....	20	
By ligation and excision .....	15	
Whitehead's operation.....	2	
By ligature .....	10	
Dilatation of sphincter.....	3	
OPERATIONS ON THE BLADDER AND URETHRA.....	94	
Upon bladder.....	14	
Median perineal cystotomy.....	10	
Suprapubic cystotomy.....	4	
For stricture of urethra .....	80	
(1) By gradual dilatation.....	31	
(2) By forcible dilatation.....	6	
(3) By internal urethrotomy .....	30	
(4) By external urethrotomy.....	9	
(5) By perineal section .....	3	
For rupture of urethra—		
Urethrorrhaphy .....	1	
OPERATIONS ON THE KIDNEY .....	2	
Decapsulation (Edebohl's operation).....	2	1 successful; 1 unsuccessful.
OPERATIONS ON THE MALE GENERATIVE ORGANS.....	188	
For phimosis.....	136	125 circumcision; 11 dorsal incision.
For paraphimosis .....	5	5 circumcisions.
For varicocele .....	21	
For hydrocele .....	18	
(1) By tapping .....	2	
(2) By tapping and injection.....	4	
(3) By incision .....	7	
(4) Excision of parietal part of sac.....	5	
For castration .....	7	4 tubercle; 2 sarcoma; 1 carcinoma.
Prostatectomy .....	2	
OPERATIONS ON THE FEMALE GENERATIVE ORGANS ..	7	
Abdominal section—		
For removal of ovarian cyst .....	1	
For removal of ovaries .....	2	
For ventral fixation of the uterus .....	2	
Hystero-oophorectomy (vaginal).....	1	
Curettage for carcinoma uteri .....	1	



TABLE X.—RATIO OF DEATHS FROM SPECIFIC CAUSES.

Deaths from—	Per 100 from all causes.	Deaths from—	Per 100 from all causes.
General diseases .....	48.06	Diseases of the digestive system .....	7.39
Diseases of the nervous system .....	5.36	Diseases of the urinary system .....	6.65
Diseases of the circulatory system .....	10.72	Injuries .....	6.47
Diseases of the respiratory system .....	11.64	From all other causes .....	3.71

TABLE XI.—RATIO OF DEATHS IN EACH DISTRICT.

District.	Per 100 patients treated in hospital.	District.	Per 100 patients treated in hospital.
Atlantic.....	4.13	Pacific.....	4.90
Gulf.....	3.78	Quarantine.....	15.15
Ohio.....	2.86	West Indies.....	0
Mississippi.....	2.97	Pacific islands.....	8.57
Great Lakes.....	3.84		

TABLE XII.—COMPARATIVE EXHIBIT—MORTALITY PER 100 PATIENTS TREATED IN HOSPITAL, BY DISTRICTS, 1894-1903.

Districts.	General average.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Atlantic.....	3.44	3.51	3.73	3.46	3.17	3.32	3.36	3.42	3.23	3.10	4.13
The West Indies.....											
The Gulf.....	3.16	2.38	2.98	2.90	3.33	2.94	2.78	4.11	2.87	3.59	3.78
The Ohio.....	2.85	2.51	3.23	3.24	2.78	2.73	3.28	3.58	2.18	2.16	2.86
The Mississippi.....	3.12	3.99	2.53	3.20	2.92	3.18	3.13	3.46	3.46	2.38	2.97
The Great Lakes.....	2.73	2.61	2.54	2.26	2.86	2.34	3.26	2.42	2.91	2.34	3.84
The Pacific.....	4.17	3.76	4.38	4.70	4.40	3.43	4.87	3.78	3.62	3.93	4.90
The Pacific islands.....											8.57
The quarantine stations.....	6.37			4.76	4.94	2.68	1.15	12.90	6.38	6.06	12.12

TABLE XIII.—COMPARATIVE EXHIBIT—RATIO OF DEATHS FROM SPECIFIC CAUSES, 1894-1903.

Deaths from—	General average.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
General diseases.....		47.70	43.94	50.70	48.99	45.45	55.60	44.02	45.60	44.01	48.06
Diseases of the—											
Nervous system.....		5.58	4.81	4.65	5.56	6.56	3.02	3.62	8.78	7.29	5.36
Circulatory system.....		5.58	10.76	11.39	9.85	12.86	9.07	9.71	11.87	12.23	10.72
Respiratory system.....		16.51	16.24	12.23	10.35	11.29	9.30	15.12	13.53	13.54	11.64
Digestive system.....		8.48	10.53	6.51	9.09	7.35	7.67	9.70	6.65	7.55	7.39
Urinary system.....		5.35	6.17	3.49	7.07	5.25	8.37	9.03	5.70	4.94	6.65
Injuries.....		5.58	3.43	6.28	6.31	8.66	5.35	6.32	5.22	7.55	6.47
From all other causes.....		5.57	4.12	4.65	2.78	2.63	1.62	2.48	2.61	2.86	3.71



TABLE XIV.—COMPARATIVE EXHIBIT—AVERAGE DURATION OF TREATMENT IN HOSPITAL IN EACH DISTRICT, 1894-1903.

Districts.	General average.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Atlantic .....	29.66	26.73	31.32	32.52	28.93	30.74	32.00	27.88	28.82	29.35	28.36
The West Indies.....											20.47
The Gulf.....	23.07	22.13	22.46	22.24	22.41	21.35	21.41	23.15	22.78	25.65	27.14
The Ohio.....	22.76	22.80	25.18	25.43	22.20	23.83	23.02	21.98	20.88	20.81	21.53
The Mississippi.....	18.49	21.51	22.92	20.74	19.00	18.57	17.56	15.47	15.42	18.41	15.30
The Great Lakes.....	24.51	28.32	28.34	28.25	26.27	25.45	24.02	20.24	21.20	21.15	21.90
The Pacific.....	37.65	43.57	40.66	38.81	36.20	28.41	29.12	31.15	38.17	42.34	48.16
The Pacific islands.....											26.15
The quarantine stations.....	14.99	.....	19.97	10.00	11.69	9.00	10.43	13.72	21.21	18.48	20.42

TABLE XV.—NATIVITIES OF PATIENTS TREATED IN UNITED STATES MARINE HOSPITALS DURING THE FISCAL YEAR ENDED JUNE 30, 1903.

Countries.	Number.	Countries.	Number.
Total.....	13,567	Ireland.....	707
Africa.....	4	Italy.....	55
Arabia.....	3	Japan.....	16
Australia.....	34	Java.....	1
Austria.....	77	Malta.....	3
Azores.....	4	Mauritius.....	3
Bavaria.....	1	Mexico.....	13
Belgium.....	23	Netherlands.....	55
Canada.....	564	Norway.....	736
Cape Verde Islands.....	60	Portugal.....	42
China.....	7	Russia.....	100
Cuba.....	2	St. Helena.....	3
Denmark.....	150	Samoa.....	1
Egypt.....	1	Scotland.....	163
England.....	395	South America.....	49
Finland.....	165	Spain.....	125
France.....	83	Sweden.....	724
Germany.....	525	Switzerland.....	19
Greece.....	90	Transvaal.....	2
Honduras.....	1	Turkey.....	8
Iceland.....	1	United States of America.....	8,354
India.....	2	Wales.....	22
		West Indies.....	174



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