Annual report of the Supervising Surgeon General of the Marine Hospital Service of the United States : 1892


MARINE HOSPITAL SERVICE
1798 U S 1871

ANNUAL REPORT

OF THE

SUPERVISING SURGEON-GENERAL

OF THE

MARINE-HOSPITAL SERVICE OF THE UNITED STATES

FOR THE

FISCAL YEAR 1892.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1893.

TREASURY DEPARTMENT.
Document No. 1589.
Marine-Hospital Service.


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OPERATIONS

OF THE

UNITED STATES MARINE-HOSPITAL SERVICE.

1892.

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ERRATUM.

On page 33, fourth paragraph, "act of May 2" should read "act of May 4."

REPORT.

TREASURY DEPARTMENT,
OFFICE SUPERVISING SURGEON-GENERAL M. H. S.,
November 30, 1892.

SIR: I have the honor to make the following report of the Marine-Hospital Service of the United States for the fiscal year ended June 30, 1892, being the ninety-third year of the service and its nineteenth annual report.

In addition to the statistical portion of the report which terminates with the fiscal year, I have also to make mention of various operations of the service and matters relating thereto which have occurred up to the present date.

MEDICAL CORPS.

During the fiscal year 1892 two boards were convened for the examination of applicants for admission into the medical corps. The number of applications for permission to appear before said boards was fifty-seven. Twenty-seven presented themselves, of which number seven passed successful examinations.

APPOINTMENTS AND PROMOTIONS.

During the fiscal year two successful candidates were appointed to the grade of assistant surgeon, four assistant surgeons were promoted, after examination, to the grade of passed assistant surgeon, and one passed assistant surgeon appointed to fill a vacancy caused by death in the grade of surgeon.

CASUALTIES.

Death of Surgeon William H. Long.—It again becomes my sad duty to announce the death of one of the officers of the service, Surgeon William H. Long, which occurred at his post in Cincinnati on the 5th day of January, 1892. The following memorial has been prepared by one of his brother officers:

For several months prior to his decease Surgeon Long had been in poor health, which seemed to date from the death of his wife, which had occurred but a few months previous. The effect of this event upon Surgeon Long had been noted by his friends as contributing largely to the despondency under which he labored up to the time of his own death. The close companionship of many years which had been broken, his dependence upon his wife for counsel and assistance, resulted in his premature demise, as all his friends testify. From information furnished to me by Acting Assistant Surgeon William M. Griffiths, I have been enabled to record the following facts concerning his career:

He was the eldest of five children of Dr. Josiah Long, and was born October 5, 1842, in Mount Eden, Spencer County, Ky., where his father was a practitioner of medicine of considerable local reputation. The death of his father in September, 1852, imposed upon him the responsibilities of the support of the widowed mother and younger sisters and brothers, and at an early age he was obliged to work upon the farm to gain a livelihood; consequently his opportunities for obtaining an education were limited to an attendance at the village school during the winter months. Having decided to follow the practice of medicine, he utilized his evenings in reading medicine under the preceptorship of Dr. Coon, who had succeeded to his father's practice, and at the same time superintended the care of the farm and estate left by the latter. On the breaking out of the war of the rebellion he enlisted as a private in the Sixth Kentucky Infantry, U. S. Volunteers, December, 1861, and was under fire at Shiloh, Stone River, Chickamauga, Missionary Ridge, and the numerous conflicts in the Atlanta campaign. His familiarity with medicine gained him a detail as hospital steward after the battle of Missionary Ridge, a position which he occupied until his regiment was mustered out January 1, 1865. He had then seen over three years of military service, and after his discharge from the Army returned to his native State and resumed the study of medicine. He was graduated at the head of his class in the Kentucky School of Medicine in 1866, received an *ad eundem* degree at the University of Louisville in 1868, and was a member of the class of 1870 in the Bellevue Hospital Medical College of New York. After practicing his profession in Shelby County, Ky., until 1874, he came to Louisville. On December 11, 1873, he married Cassandra, daughter of Randolph Clark, esq., of Jefferson County, Ky., who died, as previously stated, in 1891, leaving two children, Cleo and William Hamilton Long.

His official connection with the service dates from his appointment as assistant surgeon, October 12, 1875, when he was detailed as junior officer of the U. S. Marine Hospital at Louisville, then under the charge of Surgeon Thomas J. Griffiths. On January 1, 1878, he was promoted to the grade of surgeon and assigned to the charge of the same hospital, succeeding Surgeon Griffiths, whose age and infirmities necessitated his retirement. He was ordered to Detroit in November, 1882, and while in charge of that hospital became one of the founders of the Michigan College of Medicine and Surgery, and held the chair of emeritus professor of military surgery. In October, 1888, after a short term of duty at Chicago, he was transferred to Cincinnati in charge of the service at that port, and, as had been his custom, he soon identified himself with the local medical school, filling the chair of general surgery and genito-urinary surgery in the Cincinnati Polyclinic. He was connected with that institution at the time of his death. In the art of surgery he became an accomplished exponent, and his operations for the radical cure of hernia, as may be read in the annual reports of this service, make a brilliant record.

Personally he was one of the most lovable of men, as guileless as a child and as gentle as a woman, and his decease is a distinct loss to the personnel of this service. He was buried at Cave Hill Cemetery, Louisville.

Among the other casualties, it is fitting here to mention the disability of an assistant surgeon who contracted tuberculosis undoubtedly in the performance of his hospital work, and whose temporary retirement under prolonged leave of absence in a suitable climate has been made necessary. The said assistant surgeon entered the service after a rigid physical examination, which proved him to be in perfect health. At the present writing, though improving, he is still unavailable for duty.

Another officer of the service, by reason of extreme devotion to his quarantine duties in the South, and by subsequent blood poisoning, in

consequence of a wound received during an operation, is in shattered health, and able to render partial service only.

Still another, Passed Assistant Surgeon S. C. Devan, in May last was stricken with pneumonia, and has subsequently developed tuberculosis, the latter disease hastened in its progress doubtless by the exposure and severe duty imposed upon him as officer in command of the Delaware Breakwater Quarantine, season just closed. At the present writing Dr. Devan is incapacitated and under treatment in hospital at Philadelphia.

All of these officers were, on entering the service and until a comparatively short time since, in the possession of good health.

The medical officers of the Marine-Hospital Service are engaged in functions of the highest importance to the welfare of the country, and frequently at posts of danger from which it is the instinct of human nature to flee in terror. They are stationed as a bulwark against the inroads of foreign epidemics and are exposed in a marked degree to contagion. At least two officers, if not a greater number, have contracted smallpox, of which no previous official mention has been made, and quite a number have contracted blood poisoning in their efforts to relieve their patients.

The death of Assistant Surgeon J. F. Groenevelt, in 1891, from yellow fever, while in the active performance of his duties at the Chandeleur Quarantine Station, in the Gulf of Mexico, is still fresh in the minds of his fellow officers.

In 1880 Assistant Surgeon W. C. W. Glazier died from yellow fever at Key West, Fla., while in the performance of his duties.

Dr. J. M. Greene, hospital steward, died of the same disease at his post of duty September 11, 1881, while serving under the service at Key West, Fla., and awaiting a medical appointment.

In 1878 Assistant Surgeon Roswell Waldo died of yellow fever at Cairo, Ill., during a yellow-fever epidemic, when all the local physicians had fled. After a long struggle his widow obtained a small clerkship under the Government. The following letter was received from his widow during the last quarantine season, when cholera was imminent and medical officers of this service were being detailed for duty at posts of danger:

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
Washington, D. C., August 31, 1892.

DEAR SIR: I want you to read and think of what I say.

Make some provision for the families of those of your officers who may fall in their service to their country in this her hour of trouble.

All army and naval officers leave their pensions to theirs, and they are the privileged employés under Government. If one of your officers fall his family may go to the poor-house if he has left no means, and very few have any to leave. They are, most of them, young men, just commencing life, with their young families to care for.

I know what I tell you. Dr. Waldo died of yellow fever, fighting like a hero, and didn't they allow the little life insurance he had taken out for us just before the fever came to be levied upon, and his family left perfectly destitute among strangers? When I applied to their members for aid in getting my office I was asked why didn't I go to the Marine-Hospital Service; that my claim was there.

Now, as steps are being taken for your brave officers to stand between the country and cholera, make some provisions to stand between gaunt poverty and their loved ones. Take care of the poor heart-broken wives and helpless little children.

Respectfully,

M. B. WALDO.

Dr. WYMAN,
Supervising Surgeon-General M. H. S.

The above mentioned facts demonstrate the liability to casualties in the Marine-Hospital Service. It would seem, therefore, to be but just if some provision could be made for the families of officers of this service who die at their post of duty.

While, strictly speaking, the service is a civil service, its discipline and requirements are in many respects military in character, and the regulation requiring officers to be willing to serve in any climate or in any part of the United States, and be subject to frequent change of station, prevents the accumulation of pecuniary resources other than are provided by their salaries; and although Congress may decline to add to the pension list of the Government, nevertheless it is believed that upon a fair representation of the matter some such provision might be made as has already been made for the benefit of the officers and men of the Life-Saving Service.

Section 8, Supplement to the Revised Statutes, 1874–1891 (p. 341), provides that, in the event of the death at his post of a member of the Life-Saving Service his family shall receive, an amount equal to a full salary for two years. There appears to me to be no reason why a similar provision should not be made for the families of the officers of the Marine-Hospital Service.

ORGANIZATION OF BUREAU.

The following report of the Bureau executive describes the present organization of the Bureau, though with the additional force, which it is hoped will be granted by Congress, two new assignments of clerks will be made:

JUNE 30, 1892.

SIR: I have the honor to make the following report as to the organization of the Bureau, giving the various duties of the officers and clerks engaged:

The officers are, the Supervising Surgeon-General, two surgeons, and two passed assistant surgeons, each detailed from the service for duty in the Bureau in the following divisions:

(1) The quarantine and public health division, in charge of a surgeon, now Surgeon H. W. Austin, with Miss M. A. Black, first-class clerk, who prepares the weekly Abstract of Sanitary Reports for publication, examines estimates, and writes letters authorizing advertisement for proposals for supplies to quarantine stations, writes letters authorizing contracts for same, and, when the contracts are received, examines them for approval. She also audits all quarantine bills except regular subsistence bills.

The bacteriological laboratory comes under this division, and is in charge of Passed Assistant Surgeon J. J. Kinyoun, occupying the entire fourth floor of the building. Dr. Kinyoun is also assistant to Surgeon Austin in preparing specifications for the preparation of disinfecting and fumigating apparatus, construction of hospitals, and other sanitary appliances for use at the different hospitals and quarantine stations.

(2) The purveying division, under a surgeon, now Surgeon F. W. Mead, with the following clerks: Mr. W. P. Worcester and Mr. G. A. Gustin, third-class clerks; Mrs. F. F. Meany, copyist; also Mr. H. Gahn, hospital steward and chemist.

Mr. Worcester examines and checks for payment all bills for supplies issued by the Bureau, and all bills, including those for subsistence, for articles purchased at stations, with the exception of miscellaneous quarantine bills, and does all the correspondence relative thereto.

He examines and compares the subsistence reports for each month with those of the previous month and with bills for the corresponding month; prepares all requisitions for supplies issued by the Bureau, and all proposals for supplies furnished at the stations, for approval; and writes letters authorizing purchases at all the stations except quarantine stations.

He makes duplicate invoices of all supplies issued, and enters them in a book called "Medical Supplies Issued." All bills for supplies purchased at the stations are recorded in the "Port Bill Book" under the port to which they belong.

Estimates and proposals for subsistence supplies, including quarantine subsistence, with the annual contracts based thereon, are received and prepared for approval at this desk; also letters relative to rent of offices, telephone service, fuel, lights, and water, laundry service, and miscellaneous bills.

"Supplies Purchased for Issue" is a book containing a record of all supplies received for issue, with name of parties from whom received, date of receipt, and of issue.

"Record of Requisitions and Invoices" is a book in which approved requisitions are entered for issue; also the invoice giving articles, date of shipment, and date of officers' receipt.

In the book "Miscellaneous Expense Accounts" are entered all bills which do not appear in the property return, such as bills for office rent, laundry service, etc.

Mr. Gustin writes the letters of the purveying division upon general subjects, prepares letters authorizing advertisements, makes requisitions for stationery and general supplies for the Bureau, and keeps record of the same; prepares and sends out the semiannual schedules and proposals for supplies, and records the same when received; orders all supplies for the service from these schedules, takes the place of the stenographer to the Surgeon-General during his absence, and prepares the Weekly Abstract at such times as Miss Black is absent or otherwise employed; also prepares semiannual property returns of the Bureau to the Department, and keeps typewriting machines in order.

Mrs. Meany sends the medical journals received from the publishers to the various stations of the service, examines property returns, comparing them with those of the preceding year, also with the port books (one for the Marine-Hospital Service proper, the other for quarantine service), which contain copies of bills of articles purchased at all stations, and with the book "Medical Supplies Issued," which contains a copy of the invoices of all supplies issued from the Bureau, and compares the inventory and inspection return of unserviceable property with property returns and letters authorizing the dropping of articles, in order to see that the items correspond and that the orders have been carried out.

Mrs. Meany also writes letters concerning lost and worn-out articles, and occasionally makes translations from foreign languages.

Mr. Gahn prepares the original schedule of supplies to the Bureau, receives and examines them, and keeps a record of bills for the same, manufactures pharmaceutical preparations, fills requisitions, attending to the packing and shipping, makes out packing lists and original invoices, and keeps a "Packing and Shipping Record," a "Record of Supplies Issued," and a "Laboratory Journal."

(3) The general service and relief division, under a passed assistant surgeon detailed as Bureau executive, now Passed Assistant Surgeon George T. Vaughan, with the following clerks and copyists: Mr. John Maclean, fourth-class clerk; Mr. John C. Rowland, Mr.

John Moon, and Mr W. S. Parks, third-class clerks; Mrs. Emma H. Griffin, first-class clerk; Miss A. J. Sorrels, Miss A. L. Mallory, Miss E. R. Jones, Miss D. E. Quin, Miss S. R. Beatty, and Mrs. E. V. D. Miller, copyists; the last-named serving under detail from another Bureau.

Mr. Maclean, with the assistance of Miss Quin, does the principal work comprised in the relief section. Mr. Maclean makes examination of daily reports, relief certificates, permits, and applications for extension of permits, keeps a record of relief furnished (a summary of the foregoing in book form); examines all relief bills (except bills for care of foreign seamen), bills for transportation and burial of seamen, contracts for care of seamen, tabulation of all medical officers' reports, and prepares all letters authorizing relief or transportation.

Miss Quin makes a permanent record (a large book) of the age, nativity, dates of admission to, and discharge from hospital, and diseases for which treated, of all seamen furnished relief in the U. S. Marine Hospitals; also examines and compares all monthly medical and surgical reports received, and prepares the statistical work of the annual report, including seventeen tables, showing number of cases of disease treated, causes of mortality, surgical operations performed, etc.

Mr. Rowland is stenographer for the Surgeon-General; attends to entering and mailing of all official letters received, written, sent, etc.; indexes the press-copy book, and makes requisitions for printing and binding of medical journals, etc.

Mr. Moon is the bookkeeper of the Bureau.

The following books are kept by him:

(1) A "blotter," containing a record of all bills paid by Mr. Bartlett on account of the Marine-Hospital Service.

(2) A "Marine-Hospital Journal," which contains a record of the bills from the duplicates, with the dates of payment, number, and page in blotter, where found. After payment the duplicates are filed.

There is also in the "Journal" a record of bills paid for treatment of foreign seamen; of supplies furnished by the Marine-Hospital Service to other services, as to the quarantine stations, the Immigration Service, and the Revenue-Marine Service; unclaimed money of deceased seamen; sale of condemned property; accounts with the First Auditor, as for stationery, bills not receipted, bills furnished by the Marine-Hospital Service to other services, and on account of land-grant railroads.

(3) "Record of Expenditures Authorized from the Annual Appropriations." This includes only the quarantine appropriation.

(4) "Record of Bills for Quarantine Service." This is a record of the bills on account of quarantine expenditures which are recorded before payment, and when paid the date is given in the quarantine journal.

(5) "Journal of Quarantine and Epidemic Funds," gives the expenditures collectively and in detail from these funds.

(6) "Record of Appropriation for Individual Quarantine Stations." This appropriation is for the establishment and equipment of the separate stations, and not for their maintenance, which is provided by the general quarantine fund.

(7) "Record of Requisitions made on the Secretary of the Treasury." These are in favor of the disbursing clerk and agents, for all the different appropriations.

(8) "Record of the Tonnage Tax," in which the monthly receipts collected from the tonnage tax are kept.

(9) The "Ledger," which contains all the preceding, in a compact form, showing the condition of the appropriations and of the accounts of all disbursing officers and agents.

Mr. Moon also keeps a list of all persons to whom the Weekly Abstract of Sanitary Reports is sent.

Mr. Parks examines traveling-expense accounts, pay rolls and commutation bills, bills for personal services; prepares all letters relative to appointments, change of

station, change of employés, leaves of absence, and those transmitting checks; and makes out the time reports and lists of changes, and mails all checks sent from this office.

All bills paid by this office pass through his hands, receiving his "check" before being approved by the Surgeon-General.

The following books are kept by Mr. Parks:

(1) "Record of Officers." This book shows the date of appointment, oath of office, assignment to duty, change of station, promotion, and resignation (when it occurs) of every officer in the service, commissioned and noncommissioned, including acting assistant surgeons and hospital stewards.

(2) "Record of Employés of the Service." This book gives names, dates of appointment and resignation or dismissal, and salaries of all hospital attendants except quarantine employés.

(3) "Record of Quarantine Employés." Same as the preceding as to employés at quarantine stations.

(4) "Record of Dates of Payment of Salaries." This record shows the date of payment of salaries of all officers, including hospital stewards.

(5) "Record of Applicants for Appointment in the Service as Assistant Surgeon." This gives the names, addresses, dates, and results of examination of all applicants.

Mr. Parks also prepares the office pay roll, which is made out four times a month.

Mrs. Griffin is in charge of the files of the office, and when papers are sent to her she assorts and classifies them, filing those relating to the service, according to port and date, in alphabetical order; letters, bills, requisitions, proposals, contracts, reports, etc., each in separate files cases.

Letters received from places which are not ports, or from persons not connected with the service, if the subject be important, are filed according to subject, as World's Fair, rag importation, etc. When the current files boxes are filled the papers are carefully rearranged, jacketed and labeled, and placed in permanent files.

Miscellaneous bills and pay rolls are kept according to port, together in one case, arranged by number, in the order in which they have been paid, except quarantine bills, which are arranged first according to appropriation from which they have been paid, and then by number, as before stated, and filed in a separate case.

Proposals for subsistence supplies and reports of same are filed according to port, alphabetically arranged, in separate sections, in one case.

Requisitions for medical supplies and miscellaneous special requisitions from stations, with proposals to furnish same, are kept in one case in same order

Personal reports of medical officers, when on special duty or on leave, acknowledging receipt of orders, or upon subjects not relating to the port, are filed by name, alphabetically, in one case. A section of this case is also used for letters upon like subjects from hospital stewards.

Applications for appointment into the commissioned corps, Marine-Hospital Service, are filed in a section of this same case, as also are applications for appointment as hospital steward, all arranged by initial letter of name of applicant.

Examination papers of candidates for admission to the service, and those of medical officers for promotion, now more than fill one large case; and in the second case, taken for this purpose, a section is used for examination papers of hospital stewards; all are neatly jacketed and labeled with full name of person examined and date of examination. Reports of boards of examiners, properly labeled, are also filed in this case.

One case is used for circulars, which are filed by date and number.

Consular weekly and monthly sanitary reports, together with weekly abstracts of bills of health from foreign countries are rapidly filling a large case of 240 files boxes. These are filed, by countries, in alphabetical order. The domestic sanitary reports are filed, by States and cities, in one section of a similar case.

All the above-mentioned papers are in the files room proper, on second floor, together with three large cases of permanent letter files and one large case containing all the permanent record books belonging to the office.

On the third floor, in the hall, is a large case containing foreign medical journals and miscellaneous pamphlets published in foreign countries.

Also a case containing reports of boards of health and miscellaneous pamphlets on medical and sanitary subjects. A third case in this hall contains cloth-bound books, principally annual reports of the heads of the different branches of the Government. And still another small case contains the office reserve file of bound annual reports, and other Marine-Hospital Service publications.

In a small room or closet leading from this hall, is kept the file of the Congressional Record, and upon the top shelves in said closet are packed a large number of superfluous copies of the unbound Weekly Abstract of Sanitary Reports.

In another small room, leading from the east room, third floor, are kept all Marine-Hospital Service publications intended for distribution, namely: Annual Reports of the Service for the different years; bound copies of the Weekly Abstract; Revised Regulations U. S. Marine-Hospital Service; Uniform Regulations; Hand Book of Ship's Medicine Chest; and Dr. Sternberg's Report on Yellow Fever.

On the fourth floor, in the hall, in a small case, are filed invoices of property and of medical supplies; and in a section of this case are contracts for subsistence supplies. In another case on the fourth-floor hall are inventory and inspection returns of unserviceable property, and in a separate section of same case are proposals for medical and other supplies. Upon shelving in the hall are filed property returns, error sheets, receipts for checks, relief certificates and permits, medical and surgical reports, daily reports, transcript of record of medical inspection of seamen, traveling-expense accounts, and other miscellaneous papers of which the quantities are small.

In the observatory are stored about 400 boxes of old files sent to this office in 1884 from the Treasury Department, consisting principally of relief files prior to 1870.

In a case in the Bureau Executive's room are filed in alphabetical order, according to title, all medical journals for the current year received by this Bureau. Mrs. Griffin also examines telegraph and cable bills, attends to the distribution of the annual report, copies of the regulations, circulars, and other publications, and makes up the monthly report of punctuality and attendance of the clerks in the Bureau.

Miss Sorrells is the principal typewriter for the Bureau.

Miss Mallory keeps the records of letters and reports received.

This book contains the number, date when received, place from which received, date of letter or report, subject, inclosures (if any), and remarks, giving the final action in the case, of all mail received at the Bureau. Miss Mallory also engrosses and indexes Department letters.

Miss Jones makes the translations for the Bureau from foreign publications, including German, French, Spanish, and Italian. She also engrosses letters from the Department, does miscellaneous copying, and attends to scrap books.

Miss Beatty makes a permanent record of all letters from the press-copy book. She also addresses circulars and other publications sent from the Bureau, and does miscellaneous copying.

Mrs. Miller keeps one book in which is kept a record in brief of all letters sent out from the Bureau. She also assists in the typewriting, and is stenographer for Surgeon Austin.

Very respectfully,

GEORGE T. VAUGHAN,
Passed Assistant Surgeon, M. H. S.

To the SUPERVISING SURGEON-GENERAL M. H. S.

MARINE HOSPITALS AND RELIEF FURNISHED.

During the year ended June 30, 1892, the total number of patients treated in the service was 53,610, of which number 16,022 were treated in hospital, the remainder being office or dispensary patients.

The following is a statement by stations of the condition of the eighteen Marine Hospitals:

MARINE HOSPITALS.

The following is a statement of the repairs and alterations made during the past fiscal year, and those still needed at the several hospitals:

Hospital in Baltimore, Md. (erected 1887).—Surgeon W. H. H. Hutton reports the following repairs made at this hospital:

Renewing decayed woodwork of verandas, steps, and fences; refitting doors and sashes, and the pointing of chimneys and brick supports to the wards. The exterior of the surgeon's quarters, the three wards and approaches, piazzas, bridges, and the barn have been thoroughly repainted, as well as the exterior woodwork of the executive building, employés' building, and boiler houses. The total cost of the above work was $2,002.52. Much of the work of renovation and repair has been done by the hospital employés.

The estimated cost of repairs now necessary is about $1,600. Specifications covering this work have been prepared in accordance with instructions from the Supervising Architect, dated July 27, 1892, and are now on file in that office awaiting consideration and action.

Hospital at Boston, Mass. (erected 1860).—Surgeon H. W. Sawtelle makes the following statement of repairs and alterations:

The tin roofs and outside iron and wood work have been repainted; slight repairs have been made to the slate roof; a new sink has been put in the hospital dining room; and the earthen slop hopper on the third floor replaced by one of iron. A partition has been built across the first-floor hall to afford an additional room for the quarters of the passed assistant surgeon. New floors have been laid in the dining room, Hamilton and Purviance wards, the hospital kitchen, and the hall on the fourth floor. Two windows which were used in common for the hospital and quarters have been replaced by two half windows, thus providing an independent window for each side of hall. New fences have been built around the hospital reservation. New radiators have been authorized for the assistant surgeon's quarters and for the Wild ward on the third floor, which have heretofore been heated by indirect radiation. Necessary repairs to furnaces have been made; corragated rubber matting has been purchased for the hall floors in place of the old cocoa matting.

Painting of several wards, repairs to the flagging on piazzas, repainting lavatories and screens for quarters, minor repairs to plumbing and steam apparatus, and whitewashing, were done by the hospital attendants. The old laundry plant at this hospital is almost entirely unserviceable, and a new one is urgently needed. A new stable is needed; plans for this and a new necropsy house have been prepared by the Supervising Architect. Specifications will be forwarded to the Department at an early date for repairs to plumbing in lavatory on the fourth floor, including two new urinals, washbowls, and water-closet. It is proposed to replace the old hot and cold water pipes with brass pipes, and to provide proper ventilation of the main soil pipe of the hospital, by carrying it from the fourth floor to the roof, and by extending the 3-inch soil pipe which receives the waste from the urinals, bathtubs, and washbowls in the lavatories on the first, second, and third floors, and which terminates on the third floor, to the fourth, and ventilating the same by connecting it to the main soil pipe on the fourth floor.

A hand-power invalid elevator is much needed; a suitable one would cost about $600.

New flooring is required in several wards and halls on the second and third floors. The first-hall floor should be replaced by encaustic tiling or oak. Only ordinary repairs will be required to the heating apparatus. A strip of land 43 feet wide on Broad-

way, extending to the hospital, belonging to the naval hospital, has been transferred to the Treasury Department for the purpose of constructing a roadway directly from Broadway to the hospital. Plans, specifications, and an estimate for the cost of constructing this improved roadway have been forwarded to the Department.

Hospital at Cairo, Ill. (erected 1885).—Passed Assistant Surgeon R. M. Woodward reports the following repairs:

A ward chimney rebuilt, a new flagstaff, a new cesspool back of deadhouse, two new water-closets in surgeon's quarters, steps between main corridor and wards, ice chest provided with drain pipe and sewer connections, hot and cold water pipes in carriage and deadhouse, new sinks in wards, and bathroom in executive building, deadhouse, and operating room.

The stable has been reshingled and painted, the area walls around kitchen and laundry buildings have been painted, and new stone sills and window frames put in.

The exterior of executive building, kitchen, and laundry have been painted, thirteen new marble slabs put on steam radiators, two hot-water boilers placed in rooms adjoining wards, and the sides of boiler casing in executive building reinforced. Crushed limestone has been used to repair the roadways. Many of the minor repairs were made by the attendants.

For the ensuing fiscal year the following will be needed:

General painting of the exterior of the hospital buildings, reshingling roofs of corridors, repairs to floors, steps, and railings, new water-closets in executive, kitchen, and laundry buildings, hot-water boiler in kitchen, repairing walls of heating boiler, and a steel ceiling in boiler room. The total cost of these repairs has been estimated at about $3,500.

Hospital at Chicago, Ill. (erected 1873).—Surgeon John B. Hamilton reports the following repairs and improvements made during the past fiscal year:

The filling and grading of the grounds east of the building have been completed. A certain portion of the reservation, about half an acre, east of the engine house was inclosed with a high board fence, for the purpose of a horse paddock. The grounds have been laid with water pipe, and on the east portion of the reservation a 5-inch pipe has been laid to the lake from the engine house, so that in case of fire the hospital is independent of the fire department of the city. This pipe also supplies the water for the east half of the grounds. Two old buildings south of the engine house have been repaired and placed in better condition. One of the buildings, 17 by 12 feet in size, has been lathed, plastered, and furnished for an isolation ward. The other, 14 by 14 feet, has had a cemented floor, and has been fitted up as a disinfection house. A jacketed steam boiler, fitted for either moist or dry heat has been placed in it at a cost of $455.

Among minor alterations during the year may be mentioned the fitting of a small room in the basement as an analysis room. In this room all the microscopic examinations and urine analyses are made. Tests of milk and drinking water are made here from time to time. The basement windows and doors have been fitted with wire screens. The electric bells have been repaired. The smoking room attached to the second story and in the south wing was damaged by fire, and has been repaired. About three-fourths of the wall space of the hospital has been repainted. The basement and ventilation corridors have been kalsomined.

What is needed here is the completion of the painting at the earliest date practicable, a suitable cottage for the commanding officer, a new surgical operating room, a chapel, shrubbery and landscape gardening on the grounds, and a brick wall on the north and south sides of the reservation, and a new roof on the fuel house.

Hospital at Cincinnati (erected 1884).—Surgeon H. R. Carter makes the following report concerning this hospital:

The brick floors of six rooms and halls of the basement were taken up and relaid in cement, and repairs made to the retaining wall, the flagging around the buildings, and to some steam pipes, at total cost of $1,335. The interior of the surgeon's cottage has been repainted.

There is needed for the current fiscal year—repaving the sidewalk on Third street (a notice from the city authorities requesting this has been forwarded to the Department), and painting the main and office buildings, as well as the wards and adjoining halls. New floors are needed in some basement rooms of the main buildings and in the east wards. The estimated total cost of these repairs is about $3,000. Better quarters are recommended for the attendants, but how this can be effected is not seen at this time.

Hospital at Detroit, Mich. (erected 1857).—Surgeon G. W. Stoner reports new floors in the hospital pantry and kitchen; painting of veranda floors, and repairs of a minor character to the building. Slight repairs have been made to the plumbing and heating apparatus. A new stone driveway at the hospital entrance has been made. It is not thought advisable to recommend any extensive repairs or alterations until such time as an appropriation is made by Congress for an additional building, in which case alterations can be made that will greatly increase the facilities of administration. An electric plant for lighting the hospital with incandescent lights is recommended. It is estimated that by utilizing the exhaust steam from the heating boiler the necessary engine, dynamo, and lights may cost not in excess of $800.

The ordinary minor repairs necessary during the ensuing fiscal year are small.

Hospital at Evansville, Ind. (erected 1891; opened for reception of patients January 25, 1892).—Passed Assistant Surgeon P. M. Carrington reports the following repairs:

A new range has been placed in the hospital kitchen; a Bowden filter with a capacity of 7,000 gallons per diem has been placed in the tank house; the down spouts from all the gutters have been connected with the main sewer; a plank walk has been constructed from the main gateway to Franklin street; wire window screens have been fitted to all the windows in surgeon's quarters, executive, and kitchen buildings; a system of electric bells has been put in; and the hospital dining room has been subdivided so as to make two convenient storerooms.

A roadway 150 feet long and 14 feet wide has been made from the hospital gateway to the extension of Illinois avenue; about 500 cubic yards of refuse material was used, and the labor performed by the hospital attendants.

The estimate for additions and repairs forwarded to the Supervising Architect on the 17th of August, 1892, was as follows: Retaining wall on the north side of reservation, $13,000; painting buildings, $4,200; electric-light plant, $3,000; repairs to plumbing, roadways, and walks, and construction of coal bins, $3,300.

Hospital at Louisville (erected 1852).—Surgeon C. S. D. Fessenden reports repairs to gates, pavement, porch, plastering, arches, plumbing work, and galvanized-iron conductors; plumbing has also been done in the eight closets on the third floor at a total cost of $3,962.48.

The tin roof, brickwork, and outside woodwork should be painted; the five old water-closets on the second floor should be removed and replaced by new and improved closets; a new garden fence is necessary, as well as repairs to the stable; the total cost of which is estimated at $1,025.

Hospital at Key West (erected 1845).—Surgeon R. D. Murray submits the following report:

No repairs at public cost have been made during the present fiscal year.

Repairs deemed urgent and absolutely necessary include the following, viz:

(1) Entire new tin roof, including all new sheathing, with entire new guttering and water pipes. The roof leaks in many places—in too many to be made water-tight by coats of paint. As the central portion of the structure has sunk so as to make a slight depression in center of roof ridge, it will be necessary to arrange pipes to fall from center of present overflow of water from gutters. The new roof, although needed now, should be put on in January or February, months that are freest from rains. From May to November rains are so frequent as to make such work difficult and risky to the building and contents.

(2) Repair of stucco of outside walls, repainting of walls, blinds, and shutters; minor repairs to shutters and frames are also needed.

(3) Replastering of portions of ceilings where plastering has fallen off, and freshening of all inside plaster with some material better than whitewash. "Plastico" is recommended for this purpose.

(4) Repainting of all hall floors and inside woodwork.

(5) Recoating the area, storeroom, dining room, and kitchen floors with good cement. The bricks have become much worn, and the sinking of the center building has cracked many. The cement should be laid so as to give the storm water a direction outside instead of towards the center structure. The cementing should include the walk to the front gate and repair of the southwest cistern.

(6) Minor repairs are necessary to steps, pumps, and locks.

Advisable repairs and alterations:

(1) Repairs of laundry outhouse, detaching it from main building, and putting on an upper story, giving much-needed quarters for the laundress.

(2) Placing four permanent ventilating hoods in roof, to give better circulation of air in building.

(3) Removal of flagstaff from roof, where it does harm by shaking the roof, and placing a new staff in front yard.

(4) An iron fence, placed on a brick pediment around the reservation, in place of the present half-rotten paling fence, and a concrete sidewalk on Emma street, in front of grounds.

Items for future consideration:

(1) A building for the use of surgeon, permitting the steward to live in close proximity to his duties.

(2) Introduction of electric lights.

(3) The use of gas for cooking is recommended, ordinary fuel being very scarce and expensive.

Hospital at Memphis, Tenn. (erected 1886).—Passed Assistant Surgeon L. L. Williams makes the following report of repairs made at this hospital and grounds during the past fiscal year:

The work of repairing embankments, drains, driveway, and cement floors in executive and kitchen buildings and surgeon's quarters, and the repairs to plumbing re-

ported as in progress at the close of the fiscal year ending June 30, 1891, have been completed. A new hot-water boiler has been obtained for the west ward, and three 12-inch Emerson ventilators placed in the ridge of each ward. A 6-inch ventilator has been placed in water-closet of surgeon's quarters.

All breaks and cracks in the plastering of the several buildings have been thoroughly repaired, all defective newels and railings of verandas replaced, defective boards in floors of wards, verandas, and basement of surgeon's quarters taken up and replaced, and the flooring of covered passageways to the hospital buildings entirely removed. The roofs of executive and kitchen buildings, wards, and surgeon's quarters have been repaired, all tin roofs receiving two coats of paint.

The wooden fencing on the west and south sides of reservation has been thoroughly repaired.

Minor repairs have been made from time to time to heating apparatus, laundry engine and boiler, plumbing, and glazing. A large portion of the reservation has been leveled, and a lawn planted. This work has been done by the hospital attendants. Minor repairs to the north embankment of the reservation have been authorized for the current year. Similar repairs to the south bank will be required, owing to recent damage. The exterior of the hospital should be painted. No other repairs of consequence will be necessary during the present year.

Hospital at Mobile, Ala. (erected 1843).—Surgeon John Vansant reports that only repairs of a minor character have been made at this hospital during the past year. These have been generally to the plumbing apparatus in different parts of the building and grounds:

During the current year certain parts of woodwork, such as the window blinds, sashes and frames, and the floors of some of the porticoes will require repainting; parts of the floors in the basement will need renewing. The woodhouse and other outbuildings will need slight repairs. A water pipe should be laid from the stable yard to the middle of the garden, and hose provided for supplying water during the dry season.

There is need of some simple laundry apparatus. The total cost of these improvements and repairs will probably not exceed $1,200.

Hospital at New Orleans, La. (erected 1885).—Surgeon James M. Gassaway reports the following repairs and alterations made during the past fiscal year:

The middle ward, provided by appropriation, begun January, 1892, was completed in the following June, increasing the capacity of the station 50 per cent. The batture on the river front of the reservation has been cleared of its obstructions and the squatters thereon ejected. An electric-light plant of 200 sixteen-candle-power lights has been installed, with complete outfit. The fire apparatus has been reinforced with two new reels, 400 feet of flax hose, with nozzles and reducers, and 24 fire buckets. The water supply, which is pumped from the Mississippi River, has been improved by taking up, repairing, and replacing of the river end of the inlet pipe; a new No. 7 Blake power pump substituted for the old and inefficient one; the main boiler repaired, and a water heater and injector supplied, and new valves and new 6-inch flues for the two wards, together with Russia-iron single-piece funnels for four heating stoves in the wards. The unusual severity of the winter burst a number of water pipes, which were repaired. Oyster-shell roads, with proper bridges and culverts, have been made, giving access to all parts of the reservation. A water heater has been placed in the laundry, and new cones and gates placed in the filtering apparatus.

Minor repairs have been made to galleries, porches, and walks, and all the buildings, with one or two exceptions, painted or whitewashed inside and out. This work has been done by the attendants, with occasional authorized extra help.

Extensive repairs were made, by contract, upon the executive building. The shingle roof was replaced by one of slate, in which were placed two iron ventilators; roofs and gutters of wards and kitchen repaired; water tables placed over sixty-five windows; woodwork of stable and mortuary repaired, and fallen plaster renewed; two new cisterns, with substantial brick foundations, constructed.

The following repairs and improvements are reported necessary:

A new laundry building, with modern steam appliances, to replace the antiquated methods still in vogue at this station. This building should also contain storerooms and quarters for the attendants. Estimated cost, $5,000. The water mains laid in this reservation are not large enough for the daily use, and their capacity is still more reduced by rust. Water will not flow in the second stories of any of the buildings if a ground hydrant is running. All the buildings on this reservation are of wood, except the hospital kitchen, and in case of fire, with the present facilities, would be rapidly destroyed. Additional cisterns, with water piping of sufficient size, should be laid. Estimated cost, $8,000.

A new main boiler should replace the one now in use, which is patched and unsafe. The hot-water supply pipes for the dining room and wards, which have been led underground, unprotected, from the hospital kitchen, should be led from the boilers at end of each ward, suspended and properly felted. Bids for this work were obtained in January under instructions from the Department, but were not forwarded on account of the building operations occupying all available space.

The decayed cistern at the assistant surgeon's quarters should be removed and a large one of proper capacity supplied. The stable and carriage house should be raised some 4 feet to preserve it from decay; the old stalls and feed box replaced by comfortable box stalls; earthen floors and proper drains made; the carriage house, which is small and inconvenient, should be extended and provision made for harness and feed closets, both of which are now exposed to saturation from urine and manure exhalation. A new cesspool to relieve the present one should be placed alongside of it; its capacity should be at least 10,000 gallons.

The engine-house roof should be replaced with an iron one extending over the side of the house to form a coal shed. The floor of the engine and boiler room should be replaced.

A doorway should be made on the east front of the passed assistant surgeon's quarters, the only entrance being on the west side.

The surgeon's quarters should have the rear building raised to a level with the front (which is two-story) and a staircase added, and the second-story gallery contemplated by the original plan completed.

The passed assistant surgeon's quarters should be raised about 8 feet; owing to the long and narrow plan of this house, the heat of the kitchen is almost unbearable in the rear of the house; the gallery around the second floor, also contemplated in the original plan, completed. Such a place would greatly add to the health and comfort of officers and their families.

Hospital at Portland, Me. (erected 1859).—Passed Assistant Surgeon C. E. Banks reports the repairs made during the passed year of comparatively slight importance. Rubber treads have been fitted to all iron staircases; linoleum has been laid in corridors of hospital wing; and paint, lumber, and hardware have been purchased for minor repairs, which have been made by attendants. The total cost has been $284.48.

The following repairs are necessary:

New hard-wood floors should be laid in the two wards on the third floor; the windows throughout the hospital need general repair, including readjustment of the cas-

ings and renewal of some of the sills. The front entrance doors and three outside doors of west wing need replacing. The horse stalls in the stable are too short, and should be remodeled into box stalls. Slight repairs are needed to the plastering in the hospital. The estimated cost of these repairs is about $700.

A new laundry with power apparatus should be provided; washing, wringing, and ironing now being done by hand. The lawns, grounds, and approaches should be resodded, laid out, and repaired. No systematic attention has been given to the grounds in the past.

Hospital at Port Townsend, Wash. (established 1883).—Passed Assistant Surgeon G. M. Magruder reports that only repairs of a minor character, such as were needed on windows, gates, and walks, have been made during the past fiscal year.

He makes the following statement as to the needs of the station for the current year:

The hospital building is in a very deplorable condition, and can not be well repaired. It is a roughly built, weather-boarded structure, ceiled on the inside with unplaned and unjointed boards, whose gaping cracks offer a safe retreat to insect life of all kinds; and in cold and windy weather admit drafts of air to such an extent as to make the wards almost untenable. The floors are badly warped and cracked, and one end of the building has settled to such an extent, from rotting of the underpinning, that its uneven condition is plainly noticeable.

The wards are too small to meet the requirements of the constantly increasing service, and overcrowding has been necessary on several occasions during the past few months. The condition of the outbuildings in which are located kitchen, dining room, storeroom, and unserviceable property room, is in keeping with the hospital proper, and needs no special description.

The surgeon's cottage is in a very decayed and dilapidated condition, and not having been painted for five years, the old paint is worn off and faded. The roof leaks badly, and in places will need partial replacing by a new one. The floors in several of the rooms are badly rotted, and should be relaid. The fence around the grounds, and partition fence between the surgeon's cottage and hospital buildings, are rotten and ready to fall.

The estimated cost of necessary repairs to cottage, including roof, floors, and painting, and repair of fences and walks is $500.

In view of the facts set forth, I would urge that a hospital, on the pavilion plan, capable of accommodating sixty patients, with dining room, kitchen, storeroom, etc., be placed on what is known as block No. 102, and that a new surgeon's cottage be constructed on fractional block No. 91.

Hospital at San Francisco, Cal. (erected 1875).—Surgeon Preston H. Bailhache reports the following repairs and additions:

Repairs have been made to the pump house, the southern boundary fence, the gas machine, gas engine and pump, the kitchen range, the hay scales, and the pipes and connections to water tanks. The removal of hay scales and stable from the site of the new ward, the repair of roads and walks, and many repairs of minor character, were chiefly done by attendants, including painting, varnishing, etc.

A new ward building has been constructed, new gas machine, pump and gas engine purchased, also trees and shrubs planted, and the grounds beautified.

The hospital buildings and officers' quarters need repairs outside and inside. The ward accommodation is inadequate for the needs of the station, notwithstanding the

addition of a new ward; quarters for officers, stewards, and attendants are also inadequate; in fact there never have been any quarters erected or designed for attendants, who are domiciled in different wardrooms and odd places.

The old iron pipes leading from the main water tank are badly rusted and cause frequent leaks; they should be replaced by those of galvanized iron.

Hospital at Wilmington, N. C. (erected 1859).—Assistant Surgeon A. W. Condict reports repairs only of a minor character as having been made at this hospital during the past fiscal year:

New window blinds have been placed upon the building and awnings supplied for officers' quarters; the barn and fence have been painted; a new flagstaff has been placed upon the lawn and that on the cupola removed; slight repairs have been made to the waste pipes; and the Ducket portable hospital has been taken down and stored. It is recommended that the present system of disposal of hospital sewerage be changed; connection with the city sewers can be had by laying drains for a distance of about 200 yards. The water tank at the top of the building has become so weakened by oxidation as to be unsafe; it should be replaced by one larger. The present means of supplying hot water is inadequate to meet the demands of the laundry and general hospital needs. The range in officers' kitchen is burnt out and should be replaced by a new one; bathtubs through the building should be renewed, as they are in an unsanitary condition. With the exceptions noted the hospital and grounds are in excellent condition.

Hospital at Vineyard Haven, Mass. (established 1880).—Assistant Surgeon E. R. Houghton reports that in view of contemplated additions and improvements, only absolutely necessary repairs have been made at this hospital. An appropriation is now available to enlarge and improve the building at this station. Plans and specifications are now being made by the Supervising Architect, and probably the work will soon be under course of construction. The proposed plan is to move the present buildings further back on the reservation, and to utilize them with the design of erecting an executive building, two wards, laundry, kitchen, and dining room. The buildings will be of frame, and the wards built on the pavilion style.

Hospital at St. Louis, Mo. (erected 1885).—Passed Assistant Surgeon C. T. Peckham reports that the following repairs have been made at this hospital:

The interior of the wards was repaired and painted, and alterations of old hospital were made; steam heating apparatus was placed in the old hospital building on the first and second stories.

A new sewer is now being constructed. During the next fiscal year, besides the ordinary repairs incident to the wear of different parts of the building, repairs to the barn will be needed.

The wards need painting externally.

Referring to the above detailed statement of the Marine Hospitals, I would urge, as a matter of the most pressing necessity, the construction of a new hospital at Port Townsend, Wash., the condition of the old hospital and the grounds being such that it is discreditable to the National Government. An estimate of $30,000 for a new hospital has been included in the Book of Estimates of Appropriations for the coming fiscal year.

CONTRACTS FOR THE CARE OF SEAMEN.

The following contracts have been made for the fiscal year ending June 30, 1893:

[Circular.]

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., June 21, 1892.

The following contracts for the care of seamen entitled to relief from this service for the fiscal year ending June 30, 1893, are published for the information of accounting officers of the Treasury Department, disbursing agents, medical officers of the Marine-Hospital Service, acting assistant surgeons, and customs officers. This circular is to be regarded as official notification of the acceptance of the proposals made by the parties designated, and must be cited, giving its number and date, on all bills for the treatment and maintenance of seamen, and for the burial of deceased patients, as the authority for any expenditure incurred under its provisions. Charges will be allowed only for actual time in hospital. The right is reserved by the Secretary of the Treasury to terminate any contract whenever the interests of the service require it. All relief must be furnished in accordance with the Revised Regulations approved 1889, and subsequent circulars; and, in consequence of the largely increased expenditures for relief, and of the diminished sources of income for the Marine-Hospital Service, it has become necessary to give notice that, as provided in paragraph 177 of the Regulations, no allowance can be made for expenditures incurred at any other station than those named in this circular.

The term "contagious diseases" wherever occurring in this circular, except as to specific contracts made otherwise, includes only those diseases which, under usual municipal regulations, are required to be treated in a pesthouse, namely, cholera, yellow fever, plague, or smallpox, and in some municipalities measles.

WALTER WYMAN,
Supervising Surgeon-General U. S. Marine-Hospital Service.

Approved:
CHARLES FOSTER,
Secretary of the Treasury.

Albany, N. Y.—The medical attendance to be furnished by an acting assistant surgeon; the Albany Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day.

Alexandria, Va.—The medical attendance to be furnished by an acting assistant surgeon; the Alexandria Infirmary to furnish quarters, subsistence, nursing, and medicines, at 90 cents per day.

Ashland, Wis.—St. Joseph's Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1 per day.

Ashtabula, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. Henry Whelpley to furnish quarters, subsistence, and nursing, at $1 per day; contagious diseases, $1.50 per day; John Ducro & Sons to provide for the burial of deceased patients, at $14 each. Patients requiring long-continued hospital treatment will be furnished transportation to Cleveland, Ohio.

Astoria, Oregon.—St. Mary's Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1 per day; F. W. Kuykendall to provide for the burial of deceased patients, at $15 each.

Baltimore, Md.—Hospital patients to be cared for in the U. S. Marine Hospital; George Rinehart to provide for the burial of deceased patients, at $17 each.

Bangor, Me.—The medical attendance to be furnished by an acting assistant surgeon; Thomas E. Murray to furnish quarters, subsistence, and nursing, at $1 per day; Abel Hunt to provide for the burial of deceased patients, at $10 each.

Bath, Me.—The medical attendance to be furnished by an acting assistant surgeon; William J. Howard to furnish quarters, subsistence, and nursing, at $1 per day; John M. Clark to provide for the burial of deceased patients, at $14 each. Patients requiring long-continued hospital treatment will be furnished transportation to the U. S. Marine Hospital at Portland, Me.

Belfast, Me.—The medical attendance to be furnished by an acting assistant surgeon; Almerin Dickey to furnish quarters, subsistence, and nursing, at $1.25 per day.

Bismarck, N. Dak.—The medical attendance to be furnished by an acting assistant surgeon; Lamborn Hospital to furnish quarters, subsistence, nursing, and medicines, at 90 cents per day.

Boston, Mass.—Hospital patients to be cared for in the U. S. Marine Hospital at Chelsea, Mass.; burial of deceased patients at the hospital cemetery; burial of foreign patients, at $10 each.

Bridgeport, Conn.—Bridgeport Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1 per day.

Brownsville, Tex.—The medical attendance to be furnished by an acting assistant surgeon.

Brunswick, Ga.—The medical attendance to be furnished by an acting assistant surgeon; Johanna Foley to furnish quarters, subsistence, and nursing, at 90 cents per day; contagious diseases, at $1.75 cents per day; Charles G. Moore to provide for the burial of deceased patients, at $15 each.

Buffalo, N. Y.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; the Buffalo Hospital (Sisters of Charity) to furnish quarters, subsistence, nursing, and medicines, at 80 cents per day; contagious diseases, at $2 per day; and to provide for the burial of deceased patients, at $10 each.

Burlington, Iowa.—The St. Francis Hospital to furnish quarters, subsistence, medical attendance, nursing, and medicines, at 90 cents per day; J. Prugh & Sons to provide for the burial of deceased patients, at $15 each.

Burlington, Vt.—The "Mary Fletcher Hospital" to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1 per day.

Cairo, Ill.—Hospital patients to be cared for in the U. S. Marine Hospital; William E. Feith to provide for the burial of deceased patients, at $10 each. Allowance will be made, when necessary, for ambulance transportation, at rates not to exceed $1.50 for day service, and $2 for night service.

Charleston, S. C.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; out-patients to be treated at the dispensary (Atlantic Wharf); St. Francis Xavier's Infirmary to furnish quarters, subsistence, nursing, and medicines, at 90 cents per day; contagious diseases, $2 per day; and to provide for the burial of deceased patients, at $10 each. Seamen requiring long-continued hospital treatment will be furnished transportation to the U. S. Marine Hospital at Wilmington, N. C.

Chattanooga, Tenn.—The medical attendance to be furnished by an acting assistant surgeon; William Shelton, chairman County Hospital, to furnish quarters, subsistence, nursing, and medicines, at 65 cents per day.

Chicago, Ill.—Hospital patients to be cared for in the U. S. Marine Hospital; Theodore Speaber to provide for the burial of deceased patients, at $19 each.

Cincinnati, Ohio.—Hospital patients to be cared for in the U. S. Marine Hospital; dispensary at the hospital, southeast corner Third and Kilgour streets; John B. Habig to provide for the burial of deceased white patients, at $16 each; colored patients, at $17.50 each.

Cleveland, Ohio.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; the "Cleveland City Hospital Association" to furnish quar-

ters, subsistence, nursing, and medicines, in the U. S. Marine Hospital, under lease of September 21, 1875, at 64 cents per day. The hospital to be kept in repair by the association; Flynn, Abel & Froelk to provide for the burial of deceased patients, at $7.95 each.

Corpus Christi, Tex.—The medical attendance to be furnished by an acting assistant surgeon; James E. Ellis to furnish quarters, subsistence, and nursing, at $1.25 per day.

Darien, Ga.—The medical attendance to be furnished by an acting assistant surgeon; patients requiring hospital treatment will be furnished transportation to Brunswick, Ga.

Detroit, Mich.—Hospital patients to be cared for in the U. S. Marine Hospital; out-patients to be treated at the dispensary, No. 90 Griswold street; F. G. Marshall to provide for the burial of deceased patients, at $9 each.

Dubuque, Iowa.—The medical attendance to be furnished by an acting assistant surgeon; St. Joseph's Mercy Hospital to furnish ambulance service, quarters, subsistence, nursing, and medicines, at $1 per day.

Duluth, Minn.—The medical attendance to be furnished by an acting assistant surgeon; St. Luke's Hospital to furnish quarters, subsistence, nursing, and medicines, at 90 cents per day; John W. Stewart to provide for the burial of deceased patients, at $15 each.

Edenton, N. C.—R. Dillard, M. D., to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $2 per day. Patients requiring long-continued hospital treatment will be furnished transportation to the U. S. Marine Hospital at Wilmington, N. C. For out-patients $1 will be allowed for each medical examination, and 25 cents additional for each time medicine is furnished.

Elizabeth City, N. C.—The medical attendance to be furnished by an acting assistant surgeon.

Ellsworth, Me.—The medical attendance to be furnished by an acting assistant surgeon. Hospital care and treatment will be furnished only to patients who are unable to bear transportation to the U. S. Marine Hospital at Portland, Me.

Erie, Pa.—The medical attendance to be furnished by an acting assistant surgeon; Hamot Hospital Association to furnish quarters, subsistence, and nursing, at 71 cents per day. Patients requiring long-continued hospital treatment will be furnished transportation to the U. S. Marine Hospital at Detroit, Mich.

Escanaba, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Delta County Hospital to furnish quarters, subsistence, and nursing, at $1 per day.

Eureka, Cal.—The medical attendance to be furnished by an acting assistant surgeon; Elizabeth Gill to furnish quarters, subsistence, nursing, and medicines, at $1 per day; contagious diseases, at $3 per day.

Evansville, Ind.—Hospital patients to be cared for in the U. S. Marine Hospital; A. Johann & Sons to provide for the burial of deceased patients, other than cases of yellow fever, cholera, or smallpox, at $20 each.

Fernandina, Fla.—The medical attendance to be furnished by an acting assistant surgeon; John H. Mills to furnish quarters, subsistence, and nursing, at $1 per day; contagious diseases, at $2 per day; and to provide for the burial of deceased patients, at $15 each.

Fredericksburg, Va.—The medical attendance to be furnished by an acting assistant surgeon; Amelia Parrott to furnish quarters, subsistence, nursing, and medicines, at $1 per day; George Nosset to provide for the burial of deceased patients, at $12.50 each.

Gallipolis, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. Ida E. Brown to furnish quarters, subsistence, and nursing, at 75 cents per day; Edward Skees to provide for the burial of decesed patients, at $13 each.

Galveston, Tex.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; St. Mary's Infirmary to furnish ambulance service, quarters, subsistence, nursing, and medicines, at $1 per day; contagious diseases, at $2 per day;

and to provide for the burial of deceased patients, at $7 each. Patients requiring long-continued hospital treatment will be furnished transportation to the U. S Marine Hospital at New Orleans, at the discretion of the medical officer.

Georgetown, D. C.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; out-patients to be treated at the dispensary, No. 3 B street SE., Washington; Providence Hospital, Washington, to furnish quarters, subsistence, nursing, and medicines, at 75 cents per day.

Georgetown, S. C.—The medical attendance to be furnished by an acting assistant surgeon; M. S. Mustard and Susan Dennison to furnish quarters, subsistence, and nursing, at $1 per day; Joseph J. Dunmore to provide for the burial of deceased patients, at $18 each.

Gloucester, Mass.—The medical attendance to be furnished by an acting assistant surgeon. Patients requiring hospital care and treatment to be furnished transportation to the U. S. Marine Hospital at Chelsea, Mass.

The Government Hospital for the Insane, District of Columbia.—Under act of Congress, March 3, 1875, to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $4.50 per week, for each insane patient admitted upon the order of the Secretary of the Treasury.

Grand Haven, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Nancy Palmer to furnish quarters, subsistence, and nursing, at $1 per day.

Green Bay, Wis.—The medical attendance to be furnished by an acting assistant surgeon; St. Vincent Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day; contagious diseases, at $3 per day; Lefebore & Schumacher to provide for the burial of deceased patients, at $16 each.

Hartford, Conn.—The Hartford Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1 per day; G. W. Woolley & Son to provide for the burial of deceased patients, at $13 each.

Jacksonville, Fla.—The medical attendance to be furnished by an acting assistant surgeon; Phillis Lamar to furnish quarters, subsistence, and nursing, at 80 cents per day; and to provide for the burial of deceased patients, at $9 each.

Keokuk, Iowa.—Mercy Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at 50 cents per day.

Key West, Fla.—Hospital patients to be cared for in the U. S. Marine Hospital; F. E. Bolio & Co. to provide for the burial of deceased patients, at $10.25 each.

La Crosse, Wis.—The medical attendance to be furnished by an acting assistant surgeon; St. Francis Hospital, M. Ludovica, superior, to furnish quarters, subsistence, nursing, and medicines, at $1 per day; contagious diseases, at $2 per day; F. Tillman & Co. to provide for the burial of deceased patients, at $22 each.

Lewes, Del.—The medical attendance to be furnished by an acting assistant surgeon; Levin D. Lynch to furnish quarters, subsistence, nursing, and medicines, at 85 cents per day.

Little Rock, Ark.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. M. Turkis to furnish quarters, subsistence, and nursing, at 75 cents per day; Cook & Jones to provide for the burial of deceased patients, at $8.75 each; Sayle & Ashby to furnish medicines, at 25 cents for each prescription.

Louisville, Ky.—Hospital patients to be cared for in the U. S. Marine Hospital; out-patients to be treated at the dispensary, 915 Jefferson street; Wyatt & Cralle to provide for the burial of deceased patients, at $17 each.

Ludington, Mich.—The medical attendance to be furnished by an acting assistant surgeon: Hanibal D. Linsley to furnish quarters, subsistence, and nursing, at $1 per day.

Machias, Me.—The medical attendance to be furnished by an acting assistant surgeon; Abiel E. Preble to furnish quarters, subsistence, and nursing, at 86 cents per day; Pierce & Hanscom to provide for the burial of deceased patients, at $15 each.

Manistee, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Mercy Hospital to furnish quarters, subsistence, nursing, and medicines, at 90 cents per day.

Marquette, Mich.—The medical attendance to be furnished by an acting assistant surgeon; St. Mary's Hospital to furnish quarters, subsistence, and nursing, at $1 per day, and to provide for burial of deceased patients, at $15 each.

Marshfield, Oregon.—The medical attendance to be furnished by an acting assistant surgeon; John Snyder to furnish quarters, subsistence, nursing, and medicines, at $1.20 per day.

Memphis, Tenn.—Hospital patients to be cared for in the U. S. Marine Hospital; John Walsh to provide for the burial of deceased patients, at $9 each.

Michigan City, Ind.—The medical attendance to be furnished by an acting assistant surgeon; seamen requiring hospital treatment must make application at the U. S. Marine Hospital at Chicago, Ill.

Milwaukee, Wis.—The medical attendance to be furnished by an acting assistant surgeon; out-patients to be treated at No. 159 Wisconsin street; St. Mary's Hospital to furnish quarters, subsistence, nursing, and medicines, at 80 cents per day; George L. Thomas to provide for the burial of deceased patients, at $16 each. Chronic hospital patients to be furnished transportation to the U. S. Marine Hospital at Chicago, Ill.

Mobile, Ala.—Hospital patients to be cared for in the U. S. Marine Hospital; McCay & Roche to provide for the burial of deceased patients, at $12.50 each.

Nashville, Tenn.—The medical attendance to be furnished by an acting assistant surgeon; Nashville City Hospital to furnish quarters, subsistence, nursing, and medicines, at 90 cents per day.

New Bedford, Mass.—The medical attendance to be furnished by an acting assistant surgeon. Patients requiring hospital care and treatment, if able to bear transportation, will be sent to the U. S. Marine Hospital at Vineyard Haven.

Newbern, N. C.—The medical attendance to be furnished by an acting assistant surgeon. Patients requiring long-continued hospital treatment will be furnished transportation to the U. S. Marine Hospital at Wilmington, N. C. For other hospital patients, the Sisters of Mercy to furnish quarters, subsistence, and nursing, at 90 cents per day; William F. James to provide for the burial of deceased patients, at $12.50 each.

New Haven, Conn.—The medical attendance to be furnished by an acting assistant surgeon; the New Haven General Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day; contagious diseases, at $3 per day; and to provide for the burial of deceased patients, at $15 each.

New London, Conn.—The medical attendance to be furnished by an acting assistant surgeon. Quarters, subsistence, and nursing to be furnished at a rate not exceeding 75 cents per day.

New Orleans, La.—Hospital patients to be cared for in the U. S. Marine Hospital; Schopp & Son to provide for the burial of deceased patients, at $10 each.

Newport, Ark.—The medical attendance to be furnished by an acting assistant surgeon; Puss Watkins to furnish quarters, subsistence, and nursing, at $1 per day.

Newport, R. I.—The medical attendance to be furnished by an acting assistant surgeon; the Newport Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day; Michael Cottrell to provide for the burial of deceased patients, at $11.50 each. Patients requiring long-continued hospital treatment will be furnished transportation to the Marine Hospital, Stapleton, Staten Island, N. Y.

New York, N. Y.—Hospital patients to be cared for in the Marine Hospital, Stapleton, Staten Island, N. Y.; out-patients to be treated at the dispensary, near the "New Barge Office, Battery;" G. F. Schaefer, of Staten Island, to provide for the burial of deceased patients, at $8 each.

Norfolk, Va.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; Sister Isadore Kenney to furnish quarters, subsistence, nursing,

ambulance service, and medicines, at 80 cents per day; J. E. Edwards to provide for the burial of deceased patients, at $10 each.

Ogdensburg, N. Y.—The medical attendance to be furnished by an acting assistant surgeon; the City Hospital to furnish quarters, subsistence, medicines, and nursing, at $1.25 per day; and to provide for the burial of deceased patients, at $15 each.

Oswego, N. Y.—The medical attendance to be furnished by an acting assistant surgeon; the Oswego Hospital to furnish quarters, subsistence, nursing, and medicines, at $1.25 per day.

Pensacola, Fla.—The medical attendance to be furnished by an acting assistant surgeon; R. W. Hargis to furnish quarters, subsistence, nursing, and medicines, at $1 per day; and S. B. Hutchinson & Co. to provide for the burial of deceased patients, at $15 each. Patients requiring long-continued hospital treatment will be furnished transportation to the U. S. Marine Hospital at Mobile, Ala.

Philadelphia, Pa.—The medical attendance to be furnished by a medical officer of the Marine Hospital Service; the Medico-Chirurgical Hospital to furnish ambulance service, quarters, subsistence, nursing, medicines, and one interne, at 95 cents per day.

Pittsburg, Pa.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; out-patients to be treated at No. 96 Wood street; the Mercy Hospital to furnish quarters, subsistence, nursing, medicines, and a resident physician, at 94 cents per day; J. J. Giltinan to provide for the burial of deceased patients, at $13 each. Care and treatment of contagious cases to be furnished by the Pittsburg Board of Health, at $2 per day.

Port Huron, Mich.—The medical attendance to be furnished by an acting assistant surgeon; "Hospital and Home" to furnish quarters, subsistence, nursing, and medicines, at $1 per day. Patients requiring long-continued hospital treatment will be furnished transportation to the U. S. Marine Hospital at Detroit; George Thompson to provide for the burial of deceased patients, at $8 each.

Portland, Me.—Hospital patients to be cared for in the U. S. Marine Hospital; Ilsley Bros. to provide for the burial of deceased patients, at $6.50 each.

Portland, Oregon.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; out-patients to be treated at the dispensary, Room 21, "Union Block," corner of First and Stark streets; St. Vincent's Hospital to furnish quarters, subsistence, nursing, and medicines, at 58 cents per day; contagious diseases, at $1 per day; F. S. Dunning to provide for the burial of deceased patients, at $10 each

Portsmouth, N. H.—The medical attendance to be furnished by an acting assistant surgeon; Cottage Hospital to furnish quarters, subsistence, and nursing, at $1 per day; contagious diseases, at $3 per day.

Port Townsend, Wash.—Hospital patients to be cared for in the U. S. Marine Hospital; Alfred G. Swendsen to provide for the burial of deceased patients, at $10 each.

Providence, R. I.—The Rhode Island Hospital to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1 per day, and to provide for the burial of deceased patients, at $12 each. Patients requiring long-continued hospital treatment will be furnished transportation to the U. S. Marine Hospital at Chelsea (port of Boston).

Richmond, Va.—The medical attendance to be furnished by an acting assistant surgeon; out-patients to be treated at the Marine-Hospital office, custom-house building; "Retreat for the Sick" Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day.

Rockland, Me.—The medical attendance to be furnished by an acting assistant surgeon; John S. Ranlett to furnish quarters, subsistence, and nursing, at $1 per day; contagious diseases, at $2 per day; N. A. & S. H. Burpee to provide for the burial of deceased patients, at $14 each. Patients requiring long-continued hospital treatment to be furnished transportation to the U. S. Marine Hospital at Portland, Me.

Rome, Ga.—The medical attendance to be furnished by an acting assistant surgeon; the Martha Battey Hospital to furnish quarters, subsistence, and nursing, at $1 per day

Saginaw, Mich.—The medical attendance to be furnished by an acting assistant surgeon; the Good Samaritan Hospital to furnish quarters, subsistence, nursing, and medicines, at 72 cents per day. Patients requiring long-continued hospital treatment to be furnished transportation to the U. S. Marine Hospital at Detroit, Mich.

St. Louis, Mo.—Hospital patients to be cared for in the U. S. Marine Hospital; John Hahn to provide for the burial of deceased patients, at $12 each.

St. Paul, Minn.—The medical attendance to be furnished by an acting assistant surgeon; St. Joseph's Hospital to furnish quarters, subsistence, nursing, and medicine, at $1 per day; contagious diseases, at $2 per day; and to provide for the burial of deceased patients, at $15 each.

San Diego, Cal.—Dr. W. A. Winder to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1.25 per day; contagious diseases, at $3 per day; and to provide for the burial of deceased patients, at $12 each.

Sandusky, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; the Good Samaritan Hospital to furnish quarters, subsistence, and nursing, at $1 per day.

San Francisco, Cal.—Hospital patients to be cared for in the U. S. Marine Hospital; out-patients to be treated at the Marine-Hospital office, rooms 1–3, Appraiser's building; burial of deceased patients at the hospital cemetery; burial of foreign seamen, at $10 each.

Sault St. Marie, Mich.—The medical attendance to be furnished by an acting assistant surgeon; Mrs. Annie McNeeley to furnish quarters, subsistence, and nursing, at $1 per day; J. Vanderhook to provide for the burial of deceased persons, at $8 each.

Savannah, Ga.—The medical attendance to be furnished by a medical officer of the Marine-Hospital Service; St. Joseph's Infirmary to furnish quarters, subsistence, nursing, and medicines, at $1 per day; Joseph Goette to provide for the burial of deceased patients, at $8 each. Patients requiring long-continued hospital treatment will be furnished transportation to the U. S. Marine Hospital at Wilmington, N. C.

Seattle, Wash.—The medical attendance to be furnished by an acting assistant surgeon; Providence Hospital to furnish quarters, subsistence, nursing, and medicines, at 65 cents per day; The Seattle Undertaking Company to provide for the burial of deceased patients, at $13 each.

Shreveport, La.—The medical attendance to be furnished by an acting assistant surgeon; out-patients to be treated at the Marine-Hospital office. Shreveport Charity Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day; W. W. Warring to provide for the burial of deceased patients, at $13 each.

Sitka, Alaska.—The medical attendance to be furnished by an acting assistant surgeon.

Solomons, Md.—The medical attendance to be furnished by an acting assistant surgeon; F. P. Harten to furnish subsistence, nursing, fuel, and lights, at $1 per day; T. M. White to provide for the burial of deceased patients, at $7.50 each. Patients requiring long-continued hospital treatment to be furnished transportation to the U. S. Marine Hospital at Baltimore, Md.

Superior, Wis.—The medical attendance to be furnished by an acting assistant surgeon.

Tacoma, Wash.—The medical attendance to be furnished by an acting assistant surgeon; St. Joseph's Hospital to furnish quarters, subsistence, nursing, and medicines, at 83 cents per day.

Tappahannock, Va.—Drs. Jeffries and Robinson to furnish quarters, subsistence, nursing, medical attendance, and medicines, at Tappahannock; Dr. W. J. Newbill at Carter's Creek; and Dr. W. S. Christian at Urbana, each at $1.50 per day.

Toledo, Ohio.—The medical attendance to be furnished by an acting assistant surgeon; St. Vincent's Hospital to furnish quarters, subsistence, nursing, and medicines, at 80 cents per day; contagious diseases, $2 per day; and to provide for the burial of deceased patients, at $15 each.

Tuckerton, N. J.—The medical attendance to be furnished by an acting assistant surgeon.

Vicksburg, Miss.—The medical attendance to be furnished by an acting assistant surgeon; the Vicksburg City Hospital to furnish quarters, subsistence, nursing, and medicines, at $1 per day; contagious diseases at $3 per day.

Vineyard Haven, Mass.—Hospital patients to be cared for in the U. S. Marine Hospital; M. C. Vincent to provide for the burial of deceased patients, at $17 each.

Wheeling, W. Va.—The medical attendance to be furnished by an acting assistant surgeon; the Wheeling Hospital to furnish quarters, subsistence, nursing, and medicines, at 60 cents per day.

Wilmington, Cal.—Randolph W. Hill, M. D., to furnish quarters, subsistence, nursing, medical attendance, and medicines, at $1.10 per day; and to provide for the burial of deceased patients, at $15 each.

Wilmington, N. C.—Hospital patients to be cared for in the U. S. Marine Hospital; Edward Green to provide for the burial of deceased patients, at $12.50 each.

At the following-named ports, hospital or other relief will be furnished only under the provisions of the Regulations for the Marine-Hospital Service as to *third-class* stations: Apalachicola, Fla.; Barnstable, Mass.; Beaufort, N. C.; Beaufort, S. C.; Castine, Me.; Cedar Keys, Fla.; Chatham, Mass.; Crisfield, Md.; Dennis, Mass.; Eastport, Me.; Edgartown, Mass.; Hyannis, Mass.; Newport News, Va.; Provincetown, Mass.; Sag Harbor, N. Y.; Salem, Mass.; Somers Point, N. J.; Tampa, Fla.; Waldoboro, Me.; Wilmington, Del.; Wiscasset, Me.

The rate at ports not specifically provided for by this circular will, in each special case, be fixed by the Department, upon the recommendation of the proper officer, in accordance with the Regulations approved 1889.

The rate of charge for seamen from vessels of the Navy and Coast Survey, admitted to hospital under the provisions of the Regulations, and for foreign seamen admitted under the act of March 3, 1875, is hereby fixed at the uniform rate of $1 per diem at the ports where there are Marine Hospitals, and at contract rates at other ports.

At all ports not otherwise specified, the dispensary is located at the custom-house or Marine Hospital.

PURVEYING DIVISION.

In the purveying division 403 requisitions for medical and other supplies have been filled to meet the wants of nineteen U. S. Marine Hospitals and thirty-eight other relief stations of the service.

Eight national quarantine stations, one United States revenue cutter, the Emergency Hospital at the barge office, and the Insane Hospital at Ellis Island, New York Harbor, under the control of the Immigration Service, have received their medical supplies through this division.

The following is a summary of the cost of the various supplies purchased for issue during the year:

Medical supplies	$10,835.94
Hospital stores	5,772.66
Hospital sundries	6,943.91
Surgical instruments and appliances	2,949.65
Bedding and clothing	5,648.33
Medical books and journals	662.70

DONATIONS.

I have to acknowledge herewith the donation from the Woman's National Relief Association (Blue Anchor Society), through Mrs. Amelia C. Waite, of clothing sent for the benefit of the destitute seamen taken into the Marine Hospitals from the oyster-dredging boats on the Chesapeake Bay.

AID TO OTHER BRANCHES OF THE GOVERNMENT SERVICE.

Aid has been given to other branches of the Government service as follows:

(1) *Aid to the Life-Saving Service.*—During the year ended June 30, 1892, there were 906 surfmen and keepers examined, of which number 64 were rejected for physical causes. All claims for pensions made by keepers and crews of the Life-Saving Service under the act of May 2, 1882, have been passed upon in the office of the Surgeon-General.

(2) *Aid to the Inspection Service of Steamboats.*—During the year 1,344 pilots were examined with regard to their sight, more particularly as to their ability to distinguish colors, and sixty were rejected on account of color-blindness.

The following correspondence referring to a second examination for color-blindness of pilots, and examination for defects other than color-blindness, is hereby submitted, and is self-explanatory:

SEPTEMBER 10, 1892.

DEAR SIR: Referring to your communication of the 25th ultimo, concerning color-blindness, I have to say that in response to inquiry among the officers of this service, of fourteen replies received to date, all except one state that no cases of color-blindness have occurred within their knowledge from illness, disease, or use of drugs; in short, that all cases were congenital. The exception was in a case pronounced color-blind at the first examination, but a year later was discovered to possess normal color sense.

It is well known that the drug santonin may produce a temporary derangement of the color sense, objects appearing yellow.

One difficulty in detecting cases of acquired color-blindness is due to the law, as mentioned in your editorial, requiring only one examination of applicants, provided they pass successfully, not deeming it necessary to examine them again from time to time, so that any acquired defect might be detected.

Respectfully, yours,

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

The EDITOR OF SEABOARD, *New York, N. Y.*

NEW YORK, N. Y., *September 13, 1892.*

DEAR SIR: My absence from the city for a week has prevented an acknowledgment of your esteemed letter of the 10th instant concerning color-blindness. The National Board of Steam Navigation, an organization of considerable strength and influence, is now in session, and will reconvene again to-morrow at 10 o'clock a. m. At that time, or as soon as possible after, I want to bring up the subject of color-blindness, and beg of you to kindly telegraph me whether or not you favor a second examination of pilots and others for the purpose of ascertaining whether they are still free from the defect called color-blindness? I should say that such an examination would be invaluable,

both from a practical and scientific point of view, as a settler of the agitation in favor of regular and frequent examinations. Your opinion, of course, would have the greatest weight with this association in recommending to Congress the adoption of the law necessary to secure such an examination; and so, if you will telegraph me as early as possible in the forenoon an answer to my query, at address, believe I shall be under lasting obligations, as would the Board, and maritime interests in general.

ALEX. R. SMITH,
Care National Board Steam Navigation,
Fifth Avenue Hotel, New York City.

To the SUPERVISING SURGEON-GENERAL M. H. S.

The request is entirely personal on my part, but the Board is going to consider the question of color-blindness.

[Telegram.]

SEPTEMBER 14, 1893.

Believe it advisable to reëxamine for color-blindness every three years, and I have long thought a general visual test and test for sense of hearing should be made at the same time as color test.

WYMAN,
Surgeon-General.

To ALEX. R. SMITH,
Care National Board Steam Navigation,
Fifth Avenue Hotel, New York City.

(3) *Aid to the Revenue-Marine Service.*—There were 231 seamen of the Revenue-Marine Service examined physically as a prerequisite to their enlistment, of which number eleven were rejected. By request a detail of a medical officer of the Marine-Hospital Service was made April 18, 1892, for duty on the revenue cutter *Rush* during her annual cruise to the Arctic.

(4) *Aid given to the Immigration Service.*—Medical officers of the Marine-Hospital Service are specially detailed at the following ports for the medical inspection of immigrants, namely: Boston, New York, Philadelphia, and Baltimore. At all other ports the regular officer on duty at the station is available for this service as occasion requires.

The following reports have been received from the medical officers stationed at the ports mentioned, showing the number of immigrants examined and rejected:

Portland, Me.—During the fiscal year ended June 30, 1892, 1,460 examined; 6 rejected for physical causes.

Boston, Mass.—Same period, 57,659 examined; 448 detained for further examination; 36 rejected for physical causes.

New York.—Immigrants inspected during the fiscal year ended June 30, 1892, 445,987. Total number detained and physically examined, 6,677; 2,279 of these were sent to the hospital; returned on account of idiocy, 4; on account of insanity, 13; on account of loathsome or dangerous contagious diseases, 72; returned as likely to become charges, 780. A majority of these latter were suffering also from physical disability.

Philadelphia, Pa.—Thirty-one thousand six hundred and nineteen examined; detained for further examination, 221; rejected, 16.

Baltimore, Md.—Fifty-five thousand eight hundred and seventy immigrants were inspected during the fiscal year 1892; 3 were debarred on account of physical causes. The physical examination of immigrants was not made by a medical officer of the Marine-Hospital Service until about the 15th of April, 1892.

New Orleans, La.—Examined, 3,082; detained, 2; rejected, none.

San Francisco, Cal.—Total number examined, 3,645; detained, 85; rejected for physical causes, 5.

Acknowledgment is here due to the Revenue-Marine Service and to the Coast Survey for important aid rendered during the past year.

PUBLIC-HEALTH SERVICE.

The most important subject which has engaged the attention of the Bureau during the past year is the epidemic of cholera in Asia and Europe and its approach to the shores of the United States, causing great anxiety to all sanitary authorities and others, and calling for unusal activity on the part of the Marine-Hospital Service. It will be of interest to give a brief summary of the history of cholera for the previous three years and a history of the last epidemic:

THE CHOLERA EPIDEMIC OF 1892.

The cholera epidemic of 1892 presents some marked differences as to origin, progress and area of prevalence from the epidemics of the past ten years. It appears to have followed the course of the great epidemic of 1830 and to have entered Europe mainly by the overland route. The history of cholera in the East for the past decade shows the disease to have originated in India and to have been communicated by way of the sea from Bombay to Egypt and Arabia. From 1881 to 1891 five epidemics of cholera have prevailed in the Hedjaz. In 1881 the disease was imported from Bombay to Aden, in Arabia, by the English pilgrim vessel *Columbian;* in 1882, from Bombay to the island of Cameran, by the *Hesperian*; in 1890, from Bombay to Cameran, in the English vessel *Dekkam*; in 1891, from Bombay to Cameran, in the English vessel *Sculptor*. In each case the outbreak occurred at the time of the annual pilgrimage to Mecca. In 1883 cholera was imported into the Hedjaz direct from Egypt, where the disease then prevailed in a violent form.

The epidemic of 1892 appears to have reverted to the route taken by epidemics before the opening of the Suez Canal, and to have been imported into Russia from Persia by way of the Caspian Sea and the Caucasus. Its starting point was Herat, in Afghanistan, but it is still undetermined whether the local epidemic of cholera which broke out in Afghanistan in April, and from which the general epidemic of 1892 is believed to have been derived, was imported from India or Arabia. Advices were received from Simla in June of this year that a virulent cholera epidemic had broken out in India early in the spring, and that the disease was being disseminated by the pilgrimage to the Ganges and by the assemblage at the annual fair held at Hurdwar, in India. In April the epidemic was reported present in Afghanistan, with a mortality of 5,575 at Cabul and 2,000 at Herat, but an earlier outbreak of cholera had been noted at Herat February 28, 1892, and a connection shown between the appearance of the disease and the return of pilgrims from Arabia. On January 5, 1892, Hodeida, a seaport in Arabia, was infected by the arrival of a transport ship from Syria, where cholera was officially reported to be prevailing, and the dispersion of the troops carried the disease into the interior of the country. It seems probable that returning pilgrims imported cholera into Herat, from which place it was carried into Persia by means of land traffic. In May a severe epidemic was fully declared in Persia. It was imported from the great trading towns of Asterabad and Rescht into the Russian ports of the Caspian Sea. The total number of choleraic deaths reported in Persia since the outbreak of the epidemic is 80,000. The total number reported for the epidemics of 1890 and 1891 was 15,000.

On June 28 cholera appeared in Baku, in southern Russia. It caused a general flight of the inhabitants and a consequent spread of the epidemic along the line of the Cau-

casian Railway; across the Black Sea to Tiflis, Batoum, Asov, Rostow, and Odessa, and across the Caspian Sea to Petrowsk and Astrakhan. It spread through the great towns on the Volga, and by the 1st of July was reported present at Astrakhan, Saratow, Samara, Kasan, in the Don provinces, and along the line of the Rostow-Woronesch-Koslow Railway, and by the end of July at Ekatermislow and in the provinces on the Dnieper. In the latter part of July the first cholera cases occurred at Nishni-Novgorod, Moscow, and St. Petersburg, and the epidemic was still pushing steadily westward. The total number of deaths from cholera in Russia during the prevalence of the present epidemic is estimated at 300,000.

Simultaneously with the approach of cholera from the East a focus of the disease formed in France. Early in the spring an outbreak of cholera, the origin of which is still unexplained, occurred at Nanterre, a town in the vicinity of Paris. By the end of July the disease had reached Paris, where, by the end of August, it became epidemic. On July 5 cholera was imported from Courbevoie, a northwestern suburb of Paris, to Havre, where, owing to the negligence of the sanitary authorities, it became epidemic, numbering, by the latter part of August, about 20 cases daily. At Dunkirk, Calais, Etoples, and other localities on the northern seaboard, and at Marseilles, cholera cases occurred.

The total number of choleraic deaths reported from France is 3,184; of these, 1,694 occurred in Paris.

The outbreak of the disease in Germany occurred suddenly with two suspicious cases in Hamburg and Altona. On August 19 a Swedish sailor and a pauper cigar-maker died in hospital at Altona with suspicious symptoms, and bacteriological investigation in both cases verified the presence of Asiatic cholera. By August 24 the epidemic was declared, the number of cases and deaths increasing until August 30, when the maximum intensity was reached with 1,081 cases and a mortality of 484. During September the epidemic declined steadily, with a slight acceleration on September 9, 10, and 16. After October 2 the daily average of cases did not exceed 20. Since October 24 only isolated cases have occurred. The population of Hamburg is estimated at 600,000. The total number of cholera cases reported is 17,972; deaths, 7,610. The rapidity with which the disease became epidemic throughout the city is attributed to the water supply, which is derived from the Elbe, and is distributed in insufficient quantity for the needs of the population.

From Hamburg the epidemic spread along the course of the Lower Elbe to Wilhelmsberg, Neuenfeld, Harburg, Lanenburg, Boisenburg, Berlin, and Stettin. The provinces on the Weser remained immune, except for a few isolated cases brought by refugees from Hamburg and a slight local epidemic at Achim. The total number of cases reported throughout Germany is 19,647; deaths, 8,575.

Sanitary measures.—The measures adopted by the Imperial German Government to prevent the importation of the disease from abroad consisted in medical inspection of incoming vessels at the seaports, prohibition of entry of certain articles of commercial exchange, detention and inspection of merchandise and travelers on the frontier, inspection of trains and disinfection of goods, clothing, etc., sanitary police control of river traffic, and the observation of all persons arriving from Russia. Measures enacted for the suppression of the epidemic, wherever declared, were as follows: Report by telegraph to the central health office of the outbreak of the disease, isolation of infected persons and disinfection, and the publication by a specially appointed cholera commission of regulations for train and depot inspection, for practical hygienic precautions as to food, mode of living, etc., and special instructions to sailors on sea and river vessels. These circulars were required to be publicly read. Commercial exchange and travel were restricted only under extraordinary circumstances. Inspection stations were established on the Rhine, Oder, Elbe, Vistula, Niemen, and Danube. These were provided with a medical staff, hospitals, and hospital attendants; also with the means for making bacteriological investigation.

Cholera appeared in the seaport towns of Holland early in September, and, as appears, by direct importation from Hamburg. Its dissemination was along the line of canal traffic. The principal focus of the disease in the Netherlands was Utrecht. About 132 deaths in all have been reported. The epidemic may be considered as nearly extinct. The disease was imported into Belgium from Havre, and appeared at Antwerp about the middle of August. Up to November 15, 798 cases and 400 deaths had been reported in the city and province of Antwerp. The epidemic was reported present in thirty other localities, with 540 cases and 302 deaths. The maximum intensity was reached September 26, with 32 cases in twenty-four hours; maximum mortality, 13.

A formidable focus of the epidemic formed early in October in Austria-Hungary. The first case of cholera at Buda-Pesth was declared October 5. Up to October 31, 874 cases and 375 deaths were reported. During the month of November cases and deaths occurred, but not in considerable numbers. About 142 cases were observed in various localities in Hungary and Galicia. The progress of the epidemic was mainly along the course of the Danube and Theiss and along the Russian frontier. Two cases were reported from Vienna. When not directly imported, the disease was generally found to be due to the use of contaminated drinking water.

In Turkey in Asia cholera was declared epidemic in the vilayets of Erzroom, Trebizond, and Van. The total number of choleraic deaths officially reported by the Ottoman authorities is 3,000. It is believed that the disease was imported into Mesopotamia from Persia with bodies brought to the sacred places, Kerbela and Nedjif, for burial.

No general epidemic of cholera is reported from India. The disease is present in Calcutta. From the Hissar district 3,500 choleraic deaths are reported; from Lahore, 2,000.

Cholera on vessels.—The United States consul at Edinburgh reported, under date of August 25, the occurrence of a fatal case of cholera at Grangemouth, a seaport 30 miles west of Leith, Scotland. The case occurred on the *Helene Sanber*, a vessel from Hamburg. It was followed by a second case in September. On August 31 two cases were reported from Glasgow among Russian immigrants to America. Both recovered, and there was no spread of the disease. At Newcastle-upon-Tyne, England, 3 cases of cholera occurred during the first week in September in the persons of seamen on the *Gerona*, from Hamburg. In all the cases named the spread of the disease was prevented.

Cholera in the United States—New York City.—During the month of September 10 cases and 8 deaths occurred in the city of New York. In New York Bay 1 death occurred in August and 43 deaths in September. Cholera cases, 72 in number, and 56 cases suspected of being cholera, were transferred to Swinburne Island from vessels in the harbor, namely, *Moravia*, *Normannia*, *Rugia*, *Wyoming*, *Scandia*, *Heligoland*, and *Bohemia*. These vessels had all cleared from Hamburg except the Wyoming, from Liverpool. Seventy-six deaths from cholera occurred at sea on the above-named vessels.

New Brunswick, N. J.—One death from cholera occurred in September. The disease was supposed to have been contracted in New York Harbor.

Grahwick, N. Y. (a suburb of North Tonawanda).—Five suspected cases and 2 deaths occurred during October.

Cholera statistics—Epidemic 1892.

Countries.	Totals.		Countries.	Totals.	
	Cases.	Deaths.		Cases.	Deaths.
Russia	.....	300,000	Persia	.....	80,000
Germany	19,647	8,575	Caucasus	.....	80,000
Austria-Hungary	874	375	India	.....	5,500
Galicia	142	.....	Afghanistan	.....	7,575
Netherlands	132	.....	Turkey in Asia	.....	3,000
Belgium	1,338	940	United States	87	54
France	.....	3,184			

These statistics are only approximately accurate, full reports of the epidemic not having yet been received. The most recent information shows the disease to exist in an epidemic form in many localities of the East, and that in some European seaports and in Russian Poland cases still occur.

In connection with the consideration of the origin and progress of the epidemic of 1892, it should be observed that the conditions for the generation and propagation of cholera are always present in the East; that for some years past cholera has been domiciled in Persia, where, on the approach of the summer season, it assumes the character of an epidemic; that the modern system of travel and traffic by railway and steam vessels makes it possible for an epidemic to be carried within a few days from Asia into the heart of Europe; and that the United States stands in commercial relations with those ports of the Black and Caspian seas, which were the most formidable foci of the epidemic of 1892. It has been repeatedly shown that cholera is conveyed not only by infected persons, but by clothing and goods. In view of these facts, it becomes of the first importance to consider the most effective means of protection against the importation of the disease into this country and of checking it in its initial stage where it may find entry.

THE WORK OF THE MARINE-HOSPITAL SERVICE DURING THE RECENT THREATENED INVASION OF CHOLERA.

Long before the press gave evidence of alarm over the cholera situation, it was evident to thoughtful sanitarians that the fearful outbreak in Persia and eastern Russia must soon imperil the United States. I may say that, as far back as October, 1891, the cholera then prevailing in various provinces of Asiatic Turkey, first special precautionary steps were taken through a circular addressed to collectors and other officers of the customs, dated October 9, 1891, requiring a disinfection at the port of Marseilles of all rags imported to the United States from that port, it having been shown by the report of the able consul, Mr. Charles B. Trail, that rags collected in the infected districts were shipped to Marseilles for rebaling and reshipment to the United States. The following is the circular:

[Circular.]

IMPORTATION OF OLD RAGS FROM MARSEILLES.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., October 9, 1891.

To Collectors and other Officers of the Customs:

The act approved April 29, 1878, entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," provides that "no vessel coming from any foreign port or country where any contagious or infectious disease exists, nor any vessel conveying infected merchandise, shall enter any port of the United States or pass the boundary line between the United States and any foreign country except in such manner as may be prescribed under said act."

It having been shown that an epidemic of cholera prevails in various provinces of Asiatic Turkey; that old rags are collected in these provinces and shipped to Marseilles, France, there to be rebaled and reshipped to the United States; that, therefore, rags from Marseilles, unless disinfected, are liable to import contagious disease into the United States, and that, while the laws of the several States forbid the admission of infected merchandise, a want of conformity of the several State and municipal regula-

tions may cause a laxity in the enforcement of restrictive measures: Therefore, it is ordered that no rags imported from Marseilles shall be admitted to entry, unless accompanied by a certificate from the United States consul at Marseilles that they have been disinfected in accordance with the regulations of this Department, or by a certificate to the like effect from a medical officer of the Marine-Hospital Service or State or local quarantine officer.

This circular will take immediate effect, but will not apply to rags afloat on or before the date of its issue.

For disinfection one of the following methods will be used:

First. Boiling in water not less than one hour, all rags to be unbaled for this purpose.

Second. Exposure to steam not less than one hour, the steam to be of a temperature not less than 100° C. (212° F.), nor greater than 115° C. (239° F.).

Third. Exposure not less than six hours to sulphurous-acid gas, made by burning not less than 3 pounds of roll sulphur to each 1,000 cubic feet of space.

Fourth. Exposure not less than six hours to an atmosphere containing 3 per cent of sulphurous-acid gas liberated from its liquid state (liquid sulphur dioxide).

In methods No. 2, No. 3, and No. 4 the rags must be well scattered upon racks, or so arranged that they can from time to time be turned in such a manner that all shall be exposed to the steam or gas.

CHARLES FOSTER,
Secretary.

I will say that the object of this circular was twofold:

(1) As a preventive measure against the introduction of cholera; and

(2) As a preliminary step in the establishment of permanent regulations requiring all rags shipped from any foreign port to the United States to be disinfected abroad. The rag question has always been one of the most difficult sanitary problems for practical solution. I had been informed by the consul at Marseilles that ample provision had been made by the shippers for disinfection of rags, but that while the health officer at New York was willing to enforce a foreign disinfection, the local health officers of the neighboring ports in New Jersey would not enforce it. The shippers themselves were entirely willing to comply with this sanitary demand, and at Marseilles had erected large disinfecting rooms for the purpose; but learning that it was not an absolute requirement, they had abandoned the practice, and all rags were being admitted without disinfection. The first circular referred only to the port of Marseilles, and fortunately raised no opposition; and I believe that its provisions have been faithfully met.

Some six months subsequently smallpox became prevalent in Ghent, Belgium. On the report of the consul at that port showing the danger from rags, another circular was issued May 12, 1892, requiring disinfection at Ghent of all rags shipped from that port. Some effort was made to break down this circular after the subsidence of the smallpox, but the protestants were informed that its provisions were intended to be permanent, and their acquiescence followed. Thus from at least two ports in Europe the requirement of consular certificates of disinfection became permanent. Later, when the danger of the introduction of cholera became more imminent, a circular was issued (August 19, 1892) requiring that rags from any foreign port after Septem-

ber 20, 1892, would not be admitted into the United States without a consular certificate of disinfection after the methods prescribed in the circular. The date, September 20, 1892, was fixed in order to give shippers an opportunity to provide the necessary plant for disinfection, and this same circular (August 19) provided further that rags gathered in or shipped from any port where cholera was known to prevail in epidemic form should be denied entry to the United States absolutely on and after the date of its issue, except such as were then afloat, which, however, were required to be disinfected on arrival.

The circular of August 19 is as follows:

[Circular.]

CONSULAR CERTIFICATES OF DISINFECTION REQUIRED WITH ALL IMPORTATIONS OF RAGS FROM FOREIGN PORTS—ABSOLUTE PROHIBITION OF RAGS FROM DISTRICTS KNOWN TO BE INFECTED WITH CHOLERA.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., August 19, 1892.

The act approved April 29, 1878, entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," provides that "no vessel coming from any foreign port or country where any contagious or infectious disease exists, nor any vessel conveying infected merchandise, shall enter any port of the United States or pass the boundary line between the United States and any foreign country except in such manner as may be prescribed under said act."

It having been shown that an epidemic of cholera prevails in Persia, India, and Russia, and that it has also reached Germany, Austria, and France, and in view of the danger which arises through the importation of rags from cholera-infected districts, and of the difficulty, through their reshipment at various ports, of accurately determining the localities in which rags are actually gathered:

Furthermore, because of the prevalence from time to time in various foreign countries of smallpox, scarlet fever, diphtheria, and other contagious diseases liable to be conveyed by rags, therefore it is hereby ordered that on and after September 20, 1892, rags from any foreign port will be refused entry into the United States unless said rags are accompanied by a certificate from the consular officer at the port of shipment to the effect that they have been disinfected in accordance with the methods herein described.

It is also ordered that rags gathered in or shipped from any port or place where cholera is known to prevail in epidemic form be denied entry to the United States *absolutely* on and after the date of this circular, except such as were then afloat, which must be disinfected on arrival. All previous Department circulars relative to the importation and disinfection of rags conflicting with the provisions of this circular are hereby amended to conform therewith.

For disinfection one of the following methods will be used:

First. Boiling in water not less than one hour, all rags to be unbaled for this purpose.

Second. Exposure to steam not less than one hour, the steam to be of a temperature not less than 100° C. (212° F.), nor greater than 115° C. 239° F.).

Third. Exposure not less than six hours to sulphurous-acid gas, made by burning not less than 3 pounds of roll sulphur to each 1,000 cubic feet of space.

Fourth. Exposure not less than six hours to an atmosphere containing 3 per cent of sulphurous-acid gas liberated from its liquid state (liquid sulphur dioxide).

In methods No. 2, No. 3, and No. 4 the rags must be well scattered upon racks, or so arranged that they can from time to time be turned in such a manner that all shall be exposed to the steam or gas.

O. L. SPAULDING,
Acting Secretary.

The enforcement of these provisions has not been without difficulty. For a time the determination concerning cargoes of rags arriving as to whether they were afloat at the date of the circular was a matter of some nicety and occasional dispute, the most notable case being a cargo of rags from Germany held at the United States quarantine station at the Delaware Breakwater. The vessel carrying these bales of rags, with other cargo, was detained a period of about two weeks, and finally, in justice to the owners of the vessel, the rags were allowed to be transferred to two large barges, and still held in quarantine, the vessel being fumigated and allowed to proceed to her port. The rags in the mean time, by reason of advance in prices, became quite valuable, but, despite the repeated efforts of the agents, they were held several weeks, until under the claim that they were afloat before the date of the circular, and after arrangement had been made by the owners with the Philadelphia board of health, and an assurance had been received by myself from Dr. E. O. Shakespeare, the port physician, that their disinfection would be thoroughly effected at the lazaretto at Philadelphia under his strict supervision, and without danger to the public health, they were finally passed to the lazaretto, and are now undergoing said disinfection, the lazaretto being near the point of their ultimate destination. The importers of paper stock, including rags, members of the paper-trade association, and other dealers have held meetings and appointed committees for the purpose of securing a modification of these regulations, their published proceedings reiterating the claims that rags are entirely free from all danger of carrying infection. During the coming month, by a special request, I am to have a conference with these several bodies, but I see no reason why the sanitary safeguard thus established should be broken down.

Owing to the large amount of newspaper and other paper manufactured in the United States, it is claimed that the home production of rags is insufficient to meet the demands of the trade. On the other hand, I have been assured that, should foreign rags be absolutely prohibited, it would result in the development of a manufacture of a substitute for paper stock in this country which would soon be sufficient for all purposes.

Early in the summer the following circular was issued:

[Circular.]

VESSELS FROM CHOLERA-INFECTED DISTRICTS TO BE FORBIDDEN ENTRY UNLESS PROVIDED WITH CERTIFICATES OF DISINFECTION.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., July 8, 1892.

To Collectors of Customs, Medical Officers of the Marine-Hospital Service, and others whom it may concern:

The act approved April 29, 1878, entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," provides that no vessel coming

from any foreign port or country where any contagious or infectious disease exists, nor any vessel conveying infected merchandise, shall enter any port of the United States, or pass the boundary line between the United States and any foreign country, except in such manner as may be prescribed under said act.

Information has been received that cholera prevails in the Caucasus, in eastern European Russia, in Persia, in Calcutta, and on the western littoral of the Red Sea; and in view of the threatened further spread of the disease, and because of the danger which attaches to rags, furs, wool, hides, etc., which may have been gathered in the infected districts, and to articles of personal wear therefrom, it is hereby ordered that no vessel having rags, furs, skins, hair, feathers, boxed or baled clothing or bedding, or any similar article liable to convey infection, hailing from any port in the districts aforesaid, and no vessel from any port carrying the above-mentioned merchandise or immigrants from the present infected districts, or from districts that shall hereafter be officially declared infected, will be allowed entry to any port in the United States unless provided with either a consular certificate or a certificate from a medical officer of the Marine-Hospital Service, or State or local quarantine officer of the United States, to the effect that the vessel, cargo, personal effects, etc., have been disinfected in accordance with the methods herewith prescribed.

A.—Disinfection of Vessels.

The disinfection of the vessel must be in accordance with the most efficient quarantine practice, and will be by one or more of the following methods:

a. Bichloride of mercury.
b. Sulphurous oxide.
c. Steam heat.

In addition to the above, thorough cleansing, flushing with sea water, etc.

B.—Disinfection of Articles of Merchandise, Personal Effects, etc.

For the disinfection of the articles of merchandise, personal effects, etc., mentioned in the circular one or more of the following methods will be used, all articles to be unbaled:

1. Boiling in water not less than one hour.

2. Exposure to steam not less than one hour, the steam to be of a temperature not greater than 115° C. (239° F.), and unmixed with air.

All bedding and clothing must be subjected to methods No. 1 or No. 2.

3. Exposure not less than six hours to sulphurous-acid gas, made by burning not less than 3 pounds of roll sulphur to each 1,000 cubic feet of space.

4. Exposure not less than six hours to an atmosphere containing 3 per cent of sulphurous-acid gas liberated from its liquid state (liquid sulphur dioxide).

5. Solution of carbolic acid of a 2 per cent strength.

This method (No. 5) may be applied *only* to leather goods, such as trunks, satchels, boots, shoes; to rubber goods, etc., the articles to be saturated with the solution.

Walter Wyman,
Supervising Surgeon-General U. S. M. H. S.

Approved by direction of the President:
A. B. Nettleton,
Acting Secretary.

The provisions of this circular were exacting, and purposely so, with the intent of discouraging as much as possible shipments of articles liable to be infected from the badly infected districts, the disease not having at that period reached Germany or France. By request, the State Department cabled to all its consuls abroad the terms of the cir-

cular, and from consular reports it has been learned that the circular had the desired effect. Later, however, the cholera having appeared in various parts of Germany, Austria, and France, the prohibition caused by this circular appeared more exacting than could be reasonably enforced. The requirements of disinfection were now applied to a class of merchandise which was not contemplated at the time of its issue. I refer to boxed articles of manufacture, from which the danger was small, to the baggage and personal wear of first-class cabin passengers, which might be ruined by the process of disinfection required; large shipments of silks and other new goods, for damage to which the Government was threatened with prosecution. Moreover, the General Government having control of but few of the quarantine plants on the North Atlantic coast, was not prepared to itself undertake the practical work of disinfection, which necessarily had to be left to the local quarantine authorities, the only alternative on the part of the Government being absolute prohibition, which was impracticable. Therefore another circular was issued September 7, modifying the circular of July 8, as follows:

[Circular.]

AMENDING DEPARTMENT CIRCULAR NO. 112, JULY 8, 1892, RELATIVE TO DISINFECTION.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., September 7, 1892.

To Collectors of Customs, Medical Officers of the Marine-Hospital Service, and others whom it may concern:

Department Circular No. 112, July 8, 1892, entitled "Vessels from cholera-infected districts to be forbidden entry unless provided with certificates of disinfection," issued when the cholera prevailed only in Russia and the far East, is now hereby amended, and it is ordered that collectors of customs shall hereafter accept such other disinfection as may be required by the nature of special articles of merchandise and wear, provided a certificate is furnished by the quarantine officer at the port of arrival that said articles can not be disinfected without injury after the methods described in the circular, and that they are not liable to convey infection, or have been disinfected and freed from all danger in a manner satisfactory to himself.

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

Approved:
O. L. SPAULDING,
Acting Secretary.

The danger accompanying immigration, on account of the cholera abroad, was so imminent as to excite in the minds of all thoughtful sanitarians the gravest fears. The appearance of cholera cases on board of a ship at an efficient quarantine station does not warrant a tithe of the alarm which should be felt over the hidden germ of the disease in the closely rolled packages of clothing of immigrants coming from infected districts and carrying their personal baggage far into the interior. The disinfection, therefore, of all baggage of immigrants was of the ut-

most importance. A compulsory disinfection upon this side of the ocean was immediately impracticable, and the following circular was therefore issued:

[Circular.]

PERSONAL EFFECTS AND BAGGAGE OF IMMIGRANTS AND OTHERS FROM DISTRICTS INFECTED WITH CHOLERA TO BE DISINFECTED AT PORTS OF DEPARTURE.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., August 17, 1892.

To Collectors of Customs, Medical Officers of the U. S. Marine-Hospital Service, Agents of Foreign Steamship Lines, Local Quarantine Officers, and others whom it may concern:

The act approved April 27, 1878, entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," provides that no vessel coming from any foreign port or country where any contagious or infectious disease exists, or any vessel or vehicle conveying persons, merchandise, or animals affected with any contagious disease, shall enter any port of the United States, or pass the boundary line between the United States and any foreign country, except in such manner as may be prescribed under said act.

Furthermore, section 4792 of the Revised Statutes of the United States provides as follows:

"The quarantine and other restraints established by the health laws of any State, respecting any vessels arriving in, or bound to, any port or district thereof, shall be duly observed by the officers of the customs revenue of the United States, by masters and crews of the several revenue cutters, * * * and all such officers of the United States shall faithfully aid in the execution of such quarantine and health laws, * * * and as they shall be directed from time to time by the Secretary of the Treasury."

Official information having been received of an epidemic of cholera in Russia, and in view of the large immigration into the United States from said country, and of the danger that exists of the introduction of cholera into the United States through the medium of personal effects and baggage of said immigrants, it is hereby ordered that on and after September 18, 1892, no vessel having on board personal baggage, bedding, clothing, etc., belonging to immigrants from Russia, or belonging to immigrants from any cholera-infected district, shall be admitted entry into the United States unless accompanied by a certificate from the consular officer at the port of embarkation to the effect that said personal effects, baggage, etc., have been disinfected in accordance with the methods hereinafter described.

For the disinfection of said articles one or more of the following methods will be used, all articles to be unpacked and freely exposed for disinfection:

1. Boiling in water not less than one hour.

2. Exposure to steam not less than one hour, the steam to be of a temperature not less than 100° C. (212° F.), nor greater than 115° C. (239° F.), and unmixed with air.

3. Solution of carbolic acid of a 2 per cent strength.

This method (No. 3) may be applied *only* to leather goods, such as trunks, satchels boots, shoes; to rubber goods, etc., the articles to be saturated with the solution.

WALTER WYMAN,
Supervising Surgeon-General U. S. M. H. S.

Approved:
O. L. SPAULDING,
Acting Secretary.

At the date this circular was prepared cholera prevailed only in Russia, and the steamship companies were given until September 18 to prepare the necessary steam-disinfecting chambers which would have to be constructed to carry out its provisions. In the light of what has since been achieved, it now seems an easy matter to make this requirement of steamship companies, but at that time it was an innovation which there was reason to believe might be resisted. The fixing of the date, September 18, and the application of the requirement to immigrants from infected districts only, appeared to embrace all that was immediately necessary, or that might be successfully accomplished.

August 24, however, cholera having with a tremendous stride appeared in Hamburg, a supplemental circular was issued requiring disinfection abroad of baggage and personal effects of immigrants from *all European and Asiatic ports*, whether infected or not, and declaring that the provisions of the circular should become operative immediately:

[Circular.]

PERSONAL EFFECTS AND BAGGAGE OF IMMIGRANTS FROM ALL EUROPEAN AND ASIATIC PORTS TO BE DISINFECTED AT PORTS OF DEPARTURE.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., August 24, 1892.

To Collectors of Customs, Medical Officers of the U. S. Marine-Hospital Service, Agents of Foreign Steamship Lines, Local Quarantine Officers, and others whom it may concern:

Department Circular No. 141, dated August 17, 1892, relative to the disinfection of the personal effects and baggage of immigrants prior to embarkation, is hereby extended to include the baggage and personal effects of immigrants from all European and Asiatic ports; and it is further ordered that the provisions of the circular thus amended shall become operative on and after this date, except for articles of baggage, etc., afloat prior to the promulgation of this order, which must be disinfected on arrival.

H. W. AUSTIN,
Surgeon, M. H. S., for the Supervising Surgeon-General.

Approved:
CHARLES FOSTER, *Secretary.*

Baggage of immigrants that was afloat before the issue of the above circular was required to be disinfected at the port of arrival; and not only at that time, but since, as a supplemental measure, disinfection of large quantities of baggage has been successfully performed in the vessel's hold where, in a suitable compartment through which steam pipes were conducted, holes being bored in the latter, the personal clothing was properly distributed and steam thrown in abundance from the vessel's boiler.

But despite this precaution it was felt that danger from immigration was still great. The loopholes through which cholera might yet enter, in the company of immigrants, were numerous enough to cause great alarm, and the thought was discouraging that, should cholera once break out in the United States, while efforts were being made to stamp it out,

fresh importations were liable to come with every large shipload of immigrants. The total prohibition of immigration, therefore, seemed to be a crying demand from a sanitary standpoint. In the mean time a popular demand arose that the President of the United States should, by proclamation, suspend immigration, but there was no law of Congress authorizing specifically such a proclamation. How, then, to stop this immigration without such proclamation?

In reading over the quarantine laws of the States, which have been collated and published by the State Department, I found that every seaboard State had the right, under its laws, to enforce a quarantine detention of at least twenty days—some States more—but there was no State which could not enforce twenty days. Under the national quarantine act of April 29, 1878, the General Government is authorized to aid State and local boards, and the principle has been announced by the highest legal authority that while, under existing laws, the National Government might not break down the quarantine barriers of a State, its power is unquestionable to add to those barriers when it becomes necessary. In other words, as tersely expressed by another, the State has the right to erect a 10-foot fence, but there is no law to forbid the United States from adding 5 feet to it.

Now, on account of the large expense entailed daily upon a huge ocean steamer, it was obvious that a quarantine detention of twenty days would be so costly that the steamship companies would be unwilling to be subject thereto. Therefore, for the purpose of temporarily suspending immigration, and not with any idea of returning to the old Venetian quarantine, the following circular was issued:

[Circular.]

QUARANTINE RESTRICTIONS UPON IMMIGRATION TO AID IN THE PREVENTION OF THE INTRODUCTION OF CHOLERA INTO THE UNITED STATES.

TREASURY DEPARTMENT.
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., September 1, 1892.

To Collectors of Customs, Medical Officers of the Marine-Hospital Service, Foreign Steamship Companies, State and Local Boards of Health:

It having been officially declared that cholera is prevailing in various portions of Russia, Germany, and France, and at certain ports in Great Britain, as well as in Asia, and it having been made to appear that immigrants in large numbers are coming into the United States from the infected districts aforesaid, and that they and their personal effects are liable to introduce cholera into the United States, and that vessels conveying them are thereby a direct menace to the public health, and it having been further shown that under the laws of the several States quarantine detentions may be imposed upon these vessels a sufficient length of time to insure against the introduction of contagious diseases, it is hereby ordered that no vessel from any foreign port carrying immigrants shall be admitted to enter at any port of the United States until said vessel shall have undergone a quarantine detention of twenty days (unless such detention is forbidden by the laws of the State or the regulations made thereunder) and of such greater number of days as may be fixed in each special case by the State authorities.

This circular to take immediate effect except in cases of vessels afloat at this date, which will be made the subject of special consideration upon due application to the Department.

WALTER WYMAN,
Supervising Surgeon-General U. S. Marine-Hospital Service.

CHARLES FOSTER,
Secretary of the Treasury.

Approved September 1, 1892.
BENJAMIN HARRISON.

The effect of this circular (to the present date, November 30) has been practically to suspend immigration. Under various claims for modification in the enforcement of its provisions, and to avoid extreme harshness, from time to time small numbers of immigrants have been admitted by the Treasury Department, but only after thorough disinfection of the baggage of these limited numbers. The first willful attempt to override the circular has been made by the steamer *Weimar*, which arrived at the United States quarantine station at Cape Charles, November 10, with 1900-odd immigrants on board. At the present writing this vessel has already been detained thirteen days in quarantine at large expense to the steamship company, and it is expected that she will be detained the full twenty days. It is proposed to maintain this temporary suspension of immigration until Congress shall have had an opportunity to express its will in the matter.

The interpretation of the term "immigrants" has been the subject of discussion, and the following circular was issued by the Department November 16:

[Circular.]

ENTRY OF VESSELS CARRYING IMMIGRANTS.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., November 16, 1892.

To Collectors and other Officers of the Customs:

The Department has received authentic assurance that the danger of cholera infection still exists, and that the measures of precaution which have been heretofore observed can not be materially relaxed without imperiling the public safety. In order that the provisions of its circular, No. 150, of September 1, 1892, shall be uniformly applied, officers having supervision over the arrival of vessels are instructed as follows:

1. The Department adheres to its construction of the term "immigrants" as used in Circular No. 150, and holds that any person who arrives from his home in a foreign country with the intention of making a permanent settlement here is an immigrant within the terms of said circular.

2. Experience has demonstrated that the principal danger of infection through immigration arises from passengers brought over in the steerage. The crowding of immigrants to the extreme limits of the steerage accommodations of many of the ships, the considerable quantity and the character of their baggage and personal effects, and the consequent difficulty of maintaining those conditions of cleanliness and ventilation which are demanded by sanitary laws, are among the causes which create special danger of infection from the class of immigrants referred to. These perils do not arise from the transportation of passengers in the cabin, and the Department finds no occasion to interfere with the landing of the latter after they have passed the inspection of local health authorities.

3. The objections to the unrestricted admission of steerage immigrants do not apply to vessels in which the steerage is occupied by the limited number of citizens and residents of the United States and their families who are likely to avail themselves of the cheaper fares afforded by steerage tickets in returning to this country.

4. No vessel bringing foreign immigrants in the steerage will be relieved from the restrictions contained in Circular No. 150. Vessels bringing no such steerage passengers, but having immigrants on board as cabin passengers, will not be refused entry after having passed the local quarantine, but will be subject to the regulations contained in the following instructions addressed to the Commissioner of Immigration on September 24 last:

"It is represented that you have informed steamship companies that you will require personal examination of all cabin passengers by a surgeon, boarding officer, and registry clerks. This is not deemed necessary, and it is probable that you are misunderstood. A cursory examination of the cabin passengers, as they pass experienced officers on leaving the ship, will be sufficient. You will only detain for examination such foreigners as you have reason to believe, from such examination or from the passenger list, are removing to this country for a permanent residence. A record examination of all cabin passengers is not contemplated by any instructions of the Department."

The inspection thus provided for is enforced because the Department has information which shows that persons of the prohibited classes, notably contract laborers, have been found to arrive in the cabin in attempted evasion of the law. All immigrants coming as cabin passengers will be compelled to undergo the required examination, which is also desirable in order to insure the collection of the head tax on passengers not citizens of the United States.

This examination does not necessarily entail any detention of the vessel, as it will be made during the landing of the passengers, but all immigrants will be subjected to such further restraint and disinfection as the Commissioner of Immigration may consider requisite, and any baggage which shall appear to have been insufficiently disinfected shall, before delivery, be disinfected at the expense of the consignees of the vessel.

This circular, so far as it modifies any instructions previously issued, will be applied to all vessels sailing from foreign ports after this date.

O. L. SPAULDING,
Acting Secretary.

Regarding the effect of the circular of September 1, it is pertinent here to quote the following from the New York Sun of November, 1892:

The stoppage of immigration for a period of more than ten weeks, under order of the President, is an incident without precedent in our history. It took place at a time when the volume of immigration was extraordinarily large. The number of immigrants who arrived at our port during the eight months of this year ending with August last was 12,000 greater than the number who arrived during the whole of last year, or 442,619 against 430,884. It is very certain that, but for the restrictions imposed by the President's order, fully 700,000 foreigners would have been added to our population within the current year. When the bars were put up the steerages of the whole fleet of immigrant-carrying ships were crowded to their utmost; and we had abundant evidence from Europe that this state of things would continue for an indefinite period of time.

CANADIAN BORDER INSPECTION SERVICE.

As a result of this embargo upon immigration at the maritime ports of the United States, it was feared that there would be a deviation of the European traffic to the ports of Canada, whence immigrants might reach the United States through the Canadian frontier. It therefore became

necessary to establish a line of inspection along the whole of the Canadian frontier from Maine to Dakota at all points of railroad crossing from Canada into the United States. Forty medical inspectors have been employed by the Marine-Hospital Service for this purpose, having the aid, by direction of the Secretary of the Treasury, of the collectors of customs and the customs and regular immigrant inspectors on the border. The first circular to this end was issued August 30, as follows:

[Circular.]

VIGILANCE AGAINST CHOLERA.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., August 30, 1892.

To Collectors of Customs and others:

Collectors of customs on the Canadian and Mexican frontiers are instructed to exercise special vigilance in the examination of immigrants and their effects, and to coöperate with the officers of the Marine-Hospital Service and local health officers in such action as they may deem advisable to prevent the introduction of cholera into the United States.

O. L. SPAULDING,
Acting Secretary.

The following instructions were issued September 3:

[Circular.]

INSTRUCTIONS TO CUSTOMS AND MEDICAL OFFICERS ACTING UNDER PROVISIONS OF DEPARTMENT CIRCULAR NO. 148.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., September 3, 1892.

You are hereby directed to inspect all immigrants coming to the United States, and all other persons coming from any districts where cholera is prevailing, and enforce the provisions of Department circulars of July 8 (No. 112), August 17 (No. 141), and August 24 (No. 147), which are hereby made applicable to all vehicles crossing the frontier:

1. All incoming trains or boats to be boarded at some point without the United States, or at the border, or before entering a port, if practicable.

2. Immigrants from the cholera-infected districts of Europe, Asia, or elsewhere to be separated from the ordinary passengers and held for inspection.

3. Baggage and effects of said immigrants to be separated and held at some point to be selected until the inspector is satisfied that they have been subjected to the disinfection required by said circulars.

In addition to the above, you will render assistance to State and local authorities in the enforcement of their health regulations.

WALTER WYMAN,
Supervising Surgeon-General U. S. M. H. S.

Approved:
CHARLES FOSTER, *Secretary.*

As a result of this measure, large numbers of immigrants without a certificate of disinfection of baggage have been returned to various points in Canada, or have been detained at the frontier until their baggage has been disinfected in a proper manner, under the supervision of a Marine-Hospital inspector. The disinfecting apparatus required has

been demanded of either the Canadian authorities or of the railroad authorities seeking to transfer their immigrants into the United States. In some instances box cars have been fitted up at the frontier as steam-disinfecting chambers, the steam being supplied from the locomotive.

Additional quarantine measures taken by this Bureau may be stated briefly:

(1) To prevent entrance of infected vessels at smaller ports of the United States where quarantine restraints are insufficient, the following circular was issued:

[Circular.]

TO PREVENT THE ENTRANCE OF INFECTED VESSELS OR VESSELS FROM INFECTED PORTS ENTERING SMALLER PORTS OF THE UNITED STATES WHERE QUARANTINE RESTRAINTS ARE INSUFFICIENT.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., September 19, 1892.

To Collectors of Customs, Medical Officers of the Marine-Hospital Service, and State and Local Health Officers, and others whom it may concern:

It having been shown that, by reason of stringent quarantine restraints at the larger ports upon the seaboard, infected vessels, or vessels from infected ports, either belonging to regular lines or known as "tramps," may seek entry at smaller ports where quarantine restraints are insufficient, it is hereby ordered that collectors of customs at smaller ports on the seaboard and at ports where local law or financial provision is insufficient, shall maintain unusual watchfulness with regard to said vessels, and impose the necessary quarantine restraints upon the same, reporting in each instance to the Marine-Hospital Bureau.

Collectors at the above-mentioned ports, after consultation with the local health authorities, will report to the Supervising Surgeon-General of the Marine-Hospital Service regarding such assistance as may be required to insure thorough inspection and disinfection of said vessels prior to entry, with recommendation of appointment, if need be, of a properly qualified medical inspector.

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

Approved:
CHARLES FOSTER, *Secretary.*

The above provision was made particularly with reference to "tramp" steamers and others seeking to avoid greater restrictions at larger ports.

(2) It was learned that immigrants' baggage was shipped into the United States as cargo to prevent the necessity of previous disinfection. The danger from this source was obvious, and immediately upon my representation the following circular was issued:

[Circular.]

DISINFECTION OF IMMIGRANTS' BAGGAGE AND EFFECTS.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., November 18, 1892.

To Collectors and other Officers of the Customs:

The Department has been advised by the Supervising Surgeon-General of the Marine-Hospital Service that cholera infection is liable to be communicated by personal and household effects which do not arrive with the owners but are consigned to them from abroad. These effects are sometimes intended for transportation to interior ports and

for examination thereat. The following instructions will be observed by all customs officers having supervision of such importations.

Whenever personal baggage or household effects which do not accompany the owner arrive at any customs port from a country in which cholera has existed at any time during the present calendar year, such baggage and effects shall, before delivery for transportation or otherwise, be subjected to a process of disinfection according to one of the following methods as prescribed in Synopsis 12754:

1. Exposure for not less than one hour to steam of a temperature of not less than 212° and not more than 239° F.

2. Exposure for not less than six hours to sulphurous-acid gas, made by burning not less than 3 pounds of roll sulphur to each 1,000 cubic feet of space.

3. Exposure for not less than six hours to an atmosphere containing 3 per cent of sulphurous-acid gas liberated from its liquid state (liquid sulphur dioxide).

The disinfection must be accomplished in an isolated place or compartment, and the articles must be so arranged upon racks or hooks as to be fully exposed to the action of the disinfectants. To avoid the delay incident to the erection of steam apparatus, it is expected that what is known as the sulphur process, either No. 2 or No. 3, will be utilized.

The expense of this disinfection must be borne by the owner or consignee of the effects.

Collectors and custodians will assign or secure proper accommodations for the purposes above described as promptly as possible.

O. L. SPAULDING,
Acting Secretary.

To insure the proper carrying out of the provisions of certain of the circulars above referred to in foreign countries, and for the purpose of gaining reliable information which will be of service to the Bureau, and to all State and local health authorities, concerning the recent epidemic of cholera abroad and the dangers to which this country may be subjected in the coming spring and summer, two medical officers have been detailed to make a thorough inspection of the chief ports of departure of immigrants, their instructions including an inspection of the methods of disinfecting baggage and merchandise and the transmission of all pertinent information relating to cholera and protective measures necessary to be taken abroad by this Government.

The above is a statement of the general measures taken by the Bureau, to which should be added, also, the regular weekly issue of the bulletin of sanitary information.

The more special efforts were in the matter of quarantine, viz: The establishment of Camp Low for the relief of the overburdened New York quarantine; the enlargement of the quarantine functions at the Breakwater Quarantine at the mouth of the Delaware Bay, and the erection there of permanent barracks for the accommodation of nearly 1,000 immigrants; the establishment of a complete marine quarantine, consisting of five vessels, at the mouth of the Chesapeake Bay (Cape Charles Quarantine); and the establishment of a quarantine camp at Fort Pulaski, at the mouth of the Savannah River, for the protection of the city of Savannah and the surrounding territory. The details of the special quarantine service thus rendered will be found in the succeeding pages.

A sanitary expert, by request of the health officer of the port of New York, was detailed for duty at New York for the supervision of the scientific disinfection of the infected vessels in the harbor. Some items of valuable information acquired in the process of this work, showing how cholera may be spread upon infected vessels, will be found in the special report of Passed Assistant Surgeon J. J. Kinyoun.

SMALLPOX.

During the fiscal year ended June 30, 1892, two epidemics of smallpox have occurred in which the Bureau has been called upon to render aid. First, may be mentioned the one at Harris Neck, Georgia, with regard to which the following correspondence is explanatory:

SMALLPOX EPIDEMIC, HARRIS NECK, GEORGIA.

STATE OF GEORGIA, EXECUTIVE MANSION,
Atlanta, Ga., November 10, 1891.

SIR: I hand you herewith a letter from the Hon. George J. Mills, mayor *pro tempore* of Savannah, Ga., and chairman of the board of sanitary commissioners of the same city.

You will observe that he states there is an epidemic of smallpox on Harris Neck, Liberty County, this State, and that your Department, if appealed to, would take charge of the infected district, and care for the afflicted at the marine quarantine station on Blackbeard Island.

I shall state, in this connection, that the authority of the governor of this State is limited in such matters to the furnishing of vaccine points to the people of the infected section.

I ask, therefore, in view of the situation, that, if it is consistent with your duty and with the custom of the Department of the General Government which you represent, you will render such aid in the matter, both by taking charge of the epidemic and by caring for the afflicted negroes at your quarantine station, as lies within your power and authority. I have no doubt but that the local authorities will render you all the assistance they are able to do.

With highest respect, I am, very truly, etc.,

W. J. NORTHEN,
Governor of Georgia.

To the SUPERVISING SURGEON-GENERAL M. H. S.

The following reply was made:

WASHINGTON, D. C., *November 17, 1891.*

SIR: I have the honor to acknowledge the receipt of your letter of the 10th instant (containing a letter addressed to yourself from the mayor of Savannah), calling attention to an epidemic of smallpox on Harris Neck, Liberty County, Ga., and requesting the General Government, through this service, to take charge of the epidemic and care for the afflicted.

In compliance with your request, I would respectfully inform you that an officer of this service, Passed Assistant Surgeon J. H. White, has been detailed for this duty and has started for the infected settlement.

Respectfully, yours,

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

To His Excellency W. J. NORTHEN,
Governor of Georgia, Atlanta, Ga.

TELEGRAPHIC REPORT FROM PASSED ASSISTANT SURGEON J. H. WHITE.

SAVANNAH, GA., *November 18, 1891.*

Total cases, 85; deaths, 13; convalescent, 30; 42 active; probably more yet to be found. Fifteen houses known to be infected so far; 19 cases in one two-roomed house. There is awful overcrowding and destitution. Saw 3 families, 10 persons each, almost starving. Population of infected district, between 600 and 900; 300 have been vaccinated recently. Have employed six men temporarily as watchmen and to feed the destitute; one of these, a local magistrate of influence with the negroes, is in charge till I return. Employed one female nurse and bought two days' rations. Houses old, rotten with the accumulated filth of years, and beyond disinfection. Absolutely no steamboat or railroad communication; impossible to charter boat here, and one must be had. Fuller particulars by mail.

WHITE.

To the SURGEON-GENERAL M. H. S., *Washington, D. C.*

Full instructions were wired to Passed Assistant Surgeon White, and detail made of an additional medical officer (Passed Assistant Surgeon P. M. Carrington) and acting hospital steward (Dr. Disney) for duty at Harris Neck.

Following is the final report of Passed Assistant Surgeon J. H. White:

SAVANNAH GA., *July 1, 1892.*

SIR: I have the honor to submit my final report upon the epidemic of smallpox at Harris Neck, Georgia, with a statement of the character of the field of operations, the number of cases, the measures adopted for stamping out the disease, and the probable origin of the same.

Harris Neck is a peninsular about 8 miles long by 3 broad, but only very sparsely populated, save at the northern end of it, where there is congregated, upon from 3 to 4 square miles, the great bulk of the whole population, consisting of from four to five hundred people, nearly all negroes.

Upon my arrival there, on November 17, in obedience to Department orders, I found the disease had been existent since August 15, when the first case developed in the person of Ida Curry. It had extended slowly until about the 1st of October, when it began to assume alarming proportions, and on my arrival I found 73 cases and a record of 12 deaths.

I made provision for feeding several families whom I found in a destitute and well-nigh starving condition, and returned to Savannah for further orders and supplies on November 17.

Obtaining a launch, provisions, and medicines, left Savannah again on November 23, leaving instructions for Passed Assistant Surgeon Carrington and Acting Assistant Surgeon Disney to follow with the remainder of supplies and building materials as soon as possible. This they did; and on November 29 all was landed at Harris Neck, and the work of constructing a camp was begun, ground having been cleared by me.

On December 8 the buildings were completed, and thenceforward to December 14 patients and suspects were moved in as rapidly as circumstances would permit.

House-to-house inspections discovered 8 hitherto unobserved cases of varioloid and 5 new cases of smallpox, bringing the total up to 98 cases, new and old. All parties were vaccinated, and on December 15, all cases being concentrated within the camp, the quarantine imposed by the county authorities was removed.

Between November 29 and December 15 all the infected houses, nineteen in number, were either burned or disinfected.

The total nnmber of persons who were under surveillance, including suspects, were 140.

On January 8, all but one case having recovered, that one was removed to the South Atlantic Quarantine, the buildings and property destroyed or disinfected, as the case demanded, and all further restrictions upon anyone removed.

As to the arrangements of the camp, I would state that it is 4 acres of ground in a forest clearing, upon which were placed six buildings and six tents, viz: A hospital building, 20 by 120 feet, containing two large wards and two nurse rooms. A detention building for suspects, 15 by 100 feet, containing six rooms. Executive building, 20 by 50 feet, containing a storeroom, office, and quarters for officers. Two kitchens, 15 by 15 feet, one each for officers, employés, and suspects, and for hospital. A stable or shed, 14 by 50 feet, for all horses and wagons.

The six tents furnished quarters to the guards and attendants, except nurses.

Water was supplied from a well, dug in the vicinity of officers' quarters, and conveyed through pipes to each and every building.

Food was carried by hospital cook to a designated point, where it was taken by the nurses, and supplied to patients.

No one save the physicians and nurses was allowed within 30 paces of the hospital building.

All suspects, placed in the building for their use, were disinfected prior to their entry, and I may say here that no cases developed among them.

Finally, as to cause of epidemic, it was found that on August 1 one Curry, a cousin of Isaiah Curry, came to Harris Neck and spent the night, occupying the bed of Isaiah's daughter, Ida Curry. This party had a noticeable eruption on his face and hands.

On August 15 or 16 Ida Curry, who afterwards reoccupied the bed, was attacked with the disease.

Mary Curry, grandmother to Ida Curry, nursed her, and received the disease from her, conveying it in turn to all the occupants of Mary Curry's house and to that of her kinsman Simon Baker.

Sandy Grant, jr. (beau of Ida Curry), contracted the disease from Ida, conveying it to the family of his father, Sandy Grant, sr., and to that of his uncle, Hamilton Grant.

Simon Baker's family infected that of his daughter, Rebecca Thorpe.

Mary Curry dying of the disease, there occurred what is common with the negroes, a great gathering "to sit up with the dead," and after this all further tracing is lost.

This is sufficient, however, to prove beyond peradventure that the "Curry" negro brought the disease.

He came from Bryan County, as I am told, where there existed some four or five cases, springing from that of one refugee from the Savannah epidemic, which epidemic sprang, as has already been stated, from the Spanish steamship *Miguel Pinelos* (in all probability).

I would call attention to accurate chart of Harris Neck (infected portion) submitted to your office with my letter of January 18, 1892, and to detail of cases in my letter of November 18, 1892.

Very respectfully, your obedient servant,

J. H. WHITE,
Passed Assistant Surgeon.

To the SUPERVISING SURGEON-GENERAL M. H. S.

SMALLPOX IN CANADA.

In November the following letter was received from the governor of Michigan, calling attention to the prevalence of smallpox in the province of Quebec, and requesting Government aid:

EXECUTIVE OFFICE, STATE OF MICHIGAN,
Lansing, Mich., November 19, 1891.

SIR: Official reports show that smallpox is present in five counties of the province of Quebec. The season now approaches when there is especial danger of smallpox spread-

ing, and when many come into Michigan from Canada to work in lumbering camps, and the tide of immigration is from and through Canada to the States of the Northwest. I am informed that there is an act authorizing the President to use money in aid of local boards of health and otherwise in preventing and suppressing epidemic diseases, the expenditure of which fund, I understand, is through the Marine-Hospital Service in your Department. Accordingly I have the honor to request that you cause to be established at Port Huron and at Detroit an inspection of immigrants and travelers from, or who have come through, the infected counties of the province of Quebec, and who propose to enter the United States at those places, and that such inspection service be maintained at least until the unusual danger from the spreading of smallpox is over.

This proposed inspection may well tend not only to exclude smallpox, but also to ascertain, as I understand is now being done at New York, to what extent other dangerous diseases are being brought into this country through those places of entry of immigrants, and excluding not only smallpox, but other dangerous diseases.

Respectfully, yours,

EDWIN B. WINANS,
Governor of Michigan.

Hon. SECRETARY OF THE TREASURY.

Similar requests were received from the secretaries of the State boards of health of Michigan and Minnesota and from the commissioner of health of the city of Chicago.

REPLY TO THE GOVERNOR OF MICHIGAN.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., November 24, 1891.

SIR: I have the honor to acknowledge the receipt of your letter of the 19th instant, addressed to the Secretary of the Treasury and transmitted to this Bureau, requesting an inspection of all immigrants coming into the State of Michigan at Detroit and Port Huron who have passed through the infected counties of the province of Quebec, and have to inform you that medical inspection of immigrants will be established at once at those places.

Respectfully, yours,

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

To His Excellency EDWIN B. WINANS,
Governor of Michigan, Lansing, Mich.

Inspectors were accordingly stationed at the points named, and Special Inspector Passed Assistant Surgeon Spencer C. Devan was directed, under date of November 30, to proceed to the infected counties of Canada in order to furnish reports concerning the prevalence of the disease and the measures taken for its restriction. A full report of this inspection will be found in the Abstract of Sanitary Reports, December 25, 1891.

The disease was not transmitted into the United States.

SMALLPOX ON THE OHIO RIVER.

In June, 1892, smallpox became prevalent in various places upon the Ohio River and Great Lakes, and the following circular was issued:

[Circular.]

VACCINATION OF CREWS OF VESSELS ON THE GREAT LAKES AND OHIO AND MISSISSIPPI RIVERS.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., June 28, 1892.

To Medical Officers and Acting Assistant Surgeons of the Marine-Hospital Service, serving in the districts of the Great Lakes and Ohio and Mississippi Rivers:

In view of the prevalence of smallpox in various places upon the Ohio River and Great Lakes, and the increase in the number of cases in various sections of the country, the Bureau is called upon to render aid in preventing the further spread of the disease by vaccinating and revaccinating the beneficiaries of this service, who, by reason of their migratory calling, may not come within the jurisdiction or may escape the surveillance of State and local health authorities.

You are directed to transmit a copy of this circular to each of the principal steamboat companies within your district, and to such other authorities as it may seem to you proper, to the end that they may assist, by granting all possible facilities, in the prosecution of the work herein mentioned. You are further directed, until you shall be formally notified to cease operations, to personally, or through the detail of an assistant, visit the vessels as they arrive in port, if need be, and vaccinate the crews on board. You will notify the masters of vessels that vaccine points of reliable character are constantly on hand in the office of the Marine-Hospital Service, where any seaman will be vaccinated on application. You will make requisition from time to time upon the Bureau for the number of vaccine points required, and render a report at the close of each month of the names of vessels whose crews have been vaccinated, and the number of vaccinations on each vessel, using for this purpose blank form No. 1920. It is believed that by the hearty coöperation of this service along the whole line of the Ohio and Mississippi rivers and upon the Great Lakes a very efficient check may be placed upon the spread of the disease.

WALTER WYMAN,
Supervising Surgeon-General U. S. M. H. S.

Approved:
CHARLES FOSTER, *Secretary.*

This circular remained in force until September 5, 1892, when it was suspended by official orders of that date. About 2,000 seamen were vaccinated.

In July, 1892, smallpox was reported at Victoria, British Columbia, in epidemic form, and this Bureau was called upon to aid in the prevention of its introduction into the United States by enforcement of national quarantine at Port Townsend, and by the appointment of sanitary inspectors at Blaine and Sumas, in the State of Washington. The efforts to prevent the introduction of the disease were successful.

NATIONAL QUARANTINE SERVICE.

DETAILED REPORT OF THE NATIONAL QUARANTINE STATIONS.

The following is a statement in detail of the operations of the national quarantine stations, giving their present status, and exhibiting pertinent facts regarding each station.

DELAWARE BREAKWATER—EXECUTIVE BUILDING AND SURGEON'S QUARTERS.

Delaware Breakwater Quarantine (post-office address, Lewes, Del.).—Between October 3, 1891, and November 30, 1892, there were thirty-seven vessels disinfected, and twelve vessels detained for observation. Two vessels were detained for discharge of ballast and disinfection. Two hundred were inspected and passed. Two hundred and twenty-eight were inspected and passed to the Philadelphia lazaretto. Eighteen were compelled to have water ballast pumped out and replaced by clean sea water. Four were spoken and passed.

On the above infected vessels there had been one case of yellow fever and one death from same at Havana, and three cases of cholera and one death therefrom at Hamburg.

When the cholera appeared in Hamburg the following request was made by the board of health of Philadelphia:

OFFICE OF THE BOARD OF HEALTH,
Philadelphia, August 24, 1892.

SIR: I am directed by the board of health to transmit to you the following copy of resolution passed this date.

Yours, respectfully,

JOHN J. MCCAY,
Acting Chief Clerk.

To the SUPERVISING SURGEON-GENERAL M. H. S.

[Inclosure.]

Resolved, That the Marine-Hospital Service Department be requested to notify the American consular service at all foreign ports to direct all vessel owners and captains of vessels departing for the port of Philadelphia to stop and report at the Delaware Breakwater to the officer of the U. S. Marine-Hospital Department.

REPLY.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., August 29, 1892.

SIR: I have the honor to acknowledge the receipt of the copy of a resolution passed August 24 by the Philadelphia board of health, and requesting that a notification be sent to the American consular service at all foreign ports to direct all vessel owners and captains of vessels departing for the port of Philadelphia to stop and report at the Delaware Breakwater to the officer of the Marine-Hospital Service.

In reply, I beg leave to state that a request to this effect has been made by the Secretary of the Treasury to the Secretary of State, and that the said notification be by cable.

Respectfully, yours,

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

To JOHN J. MCCAY,
Acting Chief Clerk, Board of Health,
City Hall, Philadelphia, Pa.

In previous years vessels bound for Philadelphia, and with no sickness on board, were allowed to proceed without inspection at the Breakwater. But in accordance with the above request a compulsory inspection

of all vessels was enforced, and the force and equipment of this station were both increased as follows: Passed Assistant Surgeon S. C. Devan was detailed to take charge of station, assisted by Assistant Surgeon Stimpson, Acting Assistant Surgeon William P. Orr, Dr. A. B. McDowell, and Hospital Steward R. B. Mitchell. The revenue cutter *Winona*, by request, was detailed to assist in the boarding of vessels at the station. The fumigating steamer *Pasteur*, proving to be unavailable for service at all times for boarding purposes, the powerful new quarantine steamer *Charles Foster* was transferred from the Cape Charles Station, her place being supplied at Cape Charles by the steamer *Dagmar*, transferred from the Dry Tortugas Quarantine. The steam disinfecting barge *Zamora*, with modern steam chamber, having been completed in Philadelphia, was towed to the station. During the latter part of August a camp for the detention of immigrants was established, tents having been purchased from the Quartermaster's Department, U. S. Army.

The camp was equipped to accommodate 200 or more immigrants, and was declared ready for occupancy September 4, 1892.

Later, permanent barracks were erected, capable of accommodating 800 immigrants, thus adding materially to the effectiveness of the station.

The following rules for the general government of the camp alluded to were formulated at this office and transmitted to the medical officer in command for his guidance:

GENERAL INSTRUCTIONS FOR THE GOVERNMENT OF THE CHOLERA CAMP AT DELAWARE BREAKWATER.

TREASURY DEPARTMENT,
OFFICE OF THE SUPERVISING SURGEON-GENERAL M. H. S.,
Washington, D. C., September 7, 1892.

SIR: It having become necessary for you to establish a cholera camp at the Delaware Breakwater Quarantine Station, you will be governed by the following suggestions as to its inauguration and rules for its government:

You will cause to be erected latrine boxes of sufficient size and number to receive the discharges of cholera patients.

These boxes should be rendered water-tight by means of asphalt, pitch, or a lining of sheet lead.

A sluice box should be made in the ends of the boxes, in order to discharge their contents after disinfection. You will cause a pit or pits of sufficient size to be dug, to be filled with unslacked lime, for the reception of the contents of the latrines.

You will make special requisition for such quantities of carbolic acid and mercuric bichloride and unslacked lime as you judge the circumstances will require. You will prepare flooring for tents and so arrange the plan of their distribution that four wall tents shall constitute a division, and thus segregate the camp into divisions of that size.

Requisition for beds and bedding, tables, chairs, cooking and dining utensils in sufficient quantity for the number of tents, should be made on special requisition blanks.

One of the officers under your command should have direct charge of this camp, and the other to continue the work of boarding vessels.

To the hospital steward should be delegated all matters relating to the subsistence department, over all of which you are to exercise a general supervision.

DELAWARE BREAKWATER QUARANTINE—ONE OF THE HOSPITALS.

The rules, which are herewith inclosed, will guide you in the detail of caring for suspects and hospital cases.

Very respectfully,

WALTER WYMAN,
Supervising Surgeon-General M. H. S.

To Passed Assistant Surgeon S. C. DEVAN,
U. S. Marine-Hospital Service, Delaware Breakwater, Delaware.

REGULATIONS FOR CHOLERA CAMP.

The surgeon in command of the quarantine camp to have absolute authority over the police and sanitary regulations of the camp, and to see that they are obeyed.

Camp to be divided into two divisions—detention and hospital. Former for housing of suspected cases and well persons from infected localities and the latter for treatment of sick.

DETENTION CAMP.

(1) Persons destined for this camp to be assigned to specific quarters in tents. First to be subjected to disinfecting bath, and clothed afterwards with fresh vestments. Not to leave this camp except by permission or order of surgeon in command.

(2) Persons in detention camp to be inspected twice daily or oftener by medical officer or assistant, while standing, to ascertain any new cases which may develop.

(3) New cases of cholera in detention camp to be immediately transferred to hospital camp for treatment, and all their effects disinfected, as well as the tent in which they may occur.

(4) Guards to patrol detention camp night and day, to prevent intercourse between the two divisions of the camp.

(5) Water supply for entire camp to be boiled for drinking. To be dealt out to each person in cups or glasses for potable purposes. May be acidulated with diluted hydrochloric acid under supervision of a medical officer.

(6) If there be room, the detention camp to be segregated into divisions of not more than twenty persons. No intercommunication should be permitted between the groups.

(7) All clothing removed from persons entering detention camp to be subjected to steam heat (unmixed with air), not less than 100° C., for half hour, or boiling for one hour. Leather and rubber goods to be immersed in 3 per cent carbolic solution until thoroughly saturated.

(8) The washing of clothing not to be permitted by the detained persons under any pretext. After above disinfection, all laundry work to be then done by the force of employés. The clothing of detained suspects should be kept in separate building after disinfection and reissued as required for change.

(9) Cleanliness and disinfection of quarters and person to be enjoined and enforced daily. Disinfectants to be used where there is any possibility of infection.

(10) At the expiration of five days, if no case of cholera or choleraic diarrhea has developed in a given group segregated as above, those composing the group may be discharged after a final disinfection of person and clothing.

(11) All water-closets, urinals, privies, or troughs should be provided with latrines, similar to those of the cholera camp, and means should be provided for their thorough disinfection before their contents are discharged into pits of unslacked lime.

(12) Food issued shall be simple, thoroughly cooked, and served at stated hours. No fruit permitted.

HOSPITAL CAMP.

(1) Day sick calls at 8 a. m. and 4 p. m.; oftener if necessary. Night call, 12 p. m. by night physician, or oftener if circumstances require.

(2) There shall be one nurse for every hospital tent, who shall be on duty in six-hour watches. Night nurses according to circumstances. (Female nurses for cases occurring in that sex.) Nurses should be instructed in the necessity of personal hygiene and the sources of infection.

(3) Vomited matter and stools to be received into earthen vessels, and at once disinfected with 3 per cent solution of carbolic acid, or 1-500 $HgCl_2$, combined with two parts of HCl to each part of $HgCl_2$; then thrown into a pit of unslacked lime or discharged into the sea.

(4) All soiled linen or clothing that can not be disinfected to be immediately destroyed by burning.

(5) When death occurs, body to be immediately buried, swathed in sheets saturated with $HgCl_2$, 1-500. Place of interment to be selected to avoid contamination of water supply.

(6) No persons having personal contact with the sick or dead shall leave the hospital camp without practicing disinfection as specified above.

Cape Charles Quarantine (*post-office address, Fort Monroe, Va.*).—Between October 17, 1891, and November 30, 1892, there were 428 vessels inspected and passed; 277 vessels hailed and passed; 19 vessels detained in quarantine and disinfected, and 3 vessels detained in quarantine for observation. Upon one of the vessels there were 73 cases of measles and 6 deaths.

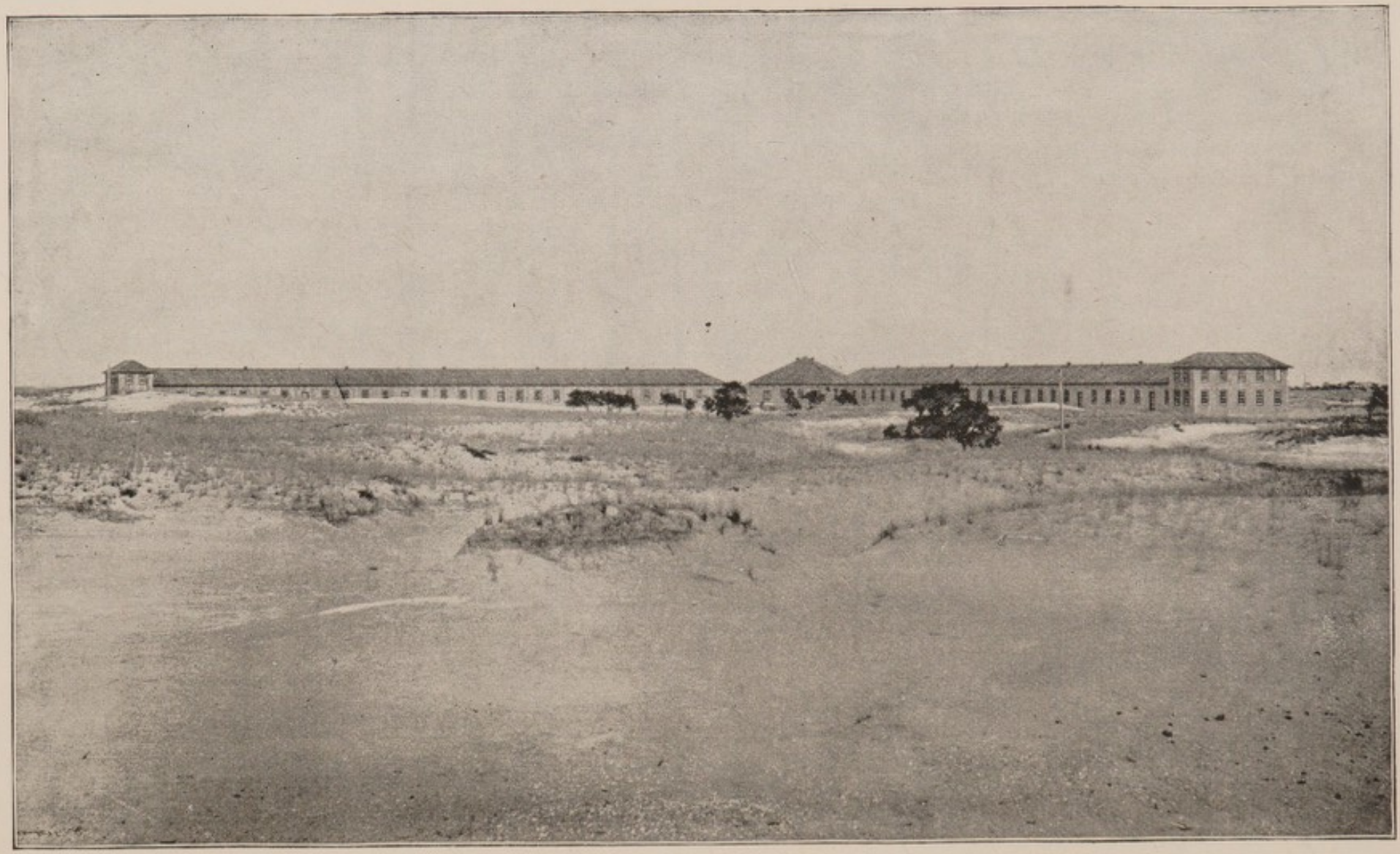
The ordinary inspection of vessels bound for Richmond, Norfolk, Newport News, and Baltimore was conducted at this station until the latter part of August, when, on account of the outbreak of cholera in Hamburg and other European ports, orders were issued directing that all vessels entering the Chesapeake between Cape Charles and Cape Henry should be inspected. This order was made efficient by a letter from the Secretary to the collector of customs forbidding entry without the certificate of inspection by the national quarantine officer.

Fisherman Island, which had been contracted for as a quarantine station two or three years previously, had but within a few months come into the possession of the Government, the delay being due to difficulty in obtaining title. From the report of the medical officer in command of the station, it was learned that to construct a suitable wharf would cost far more than the appropriation available for such purpose, and that there was not sufficient depth of water for a safe and convenient anchorage near the island.

The report of Surgeon W. H. H. Hutton, relative to the availability of Fisherman Island for immediate quarantine purposes, was as follows:

CAPE CHARLES QUARANTINE, *August 30, 1892.*

SIR: Referring to Department letter (H. W. A.) of the 27th instant, directing me to proceed to this station, visit Fisherman Island, make an inspection thereof with special reference to its use in case of the arrival of a number of patients with cholera, or for the detention of a large number of persons as suspects, etc., I have to report that Fisherman Island is quite a large one, probably one-half mile wide and 2 or 3 miles long, and lies west and north of the entrance to Chesapeake Bay. It is partly of rough sand dunes and partly salt marsh or swamp. It can not be approached by vessels except by



DELAWARE BREAKWATER QUARANTINE—DETENTION BARRACKS. CAPACITY 1,000.

the so-called north channel. This channel will carry, in its shoalest parts, from 18 to 20 feet of water.

* * * * * * *

There is no wharf or means of getting on shore, except wading through the surf. There is no potable water on the island. Therefore, until this island is thoroughly equipped with wharves, buildings, hospitals, barracks, and a complete disinfecting plant, it will be, in my opinion, impracticable to attempt, in the present condition of the island and facilities, to put a large number of persons as suspects thereon. It being impossible, in the present emergency, to prepare the station for the reception of a large number of persons, it is possible to make temporary arrangements for the reception and treatment of a small number of sick on the island; and the well would be vastly better off if held on board the vessel in quarantine until time and disinfection shall have freed them from infection. * * *

It was necessary, therefore, to immediately make some provision to meet a threatened emergency, namely, the arrival of a cholera-infected vessel. From the Navy Department the large United States training ship *Jamestown*, which had recently gone out of commission, was secured, and immediately fitted up as a detention vessel capable of holding 400 or 500 passengers. The old revenue cutter *Ewing* was secured from the Revenue-Marine Service and fitted up completely as a hospital ship, capable of accommodating 30 patients, with full corps of officers, nurses, etc.

A complete marine quarantine was thus established, consisting of: (1) The quarantine steamer *Charles Foster* (and afterwards the *Dagmar*), as a boarding steamer. (2) The revenue cutter *Crawford*, carrying a Marine-Hospital officer, as an additional boarding vessel for outside patrol. These two steamers made their headquarters at Old Point. (3) The *Jamestown*. (4) The *Ewing*. These last two vessels were anchored midway between Old Point Comfort and Newport News. (5) The fumigating steamer *Robert Koch*, for use in the disinfection of vessels and as a means of communication between the other vessels and the shore.

The officers detailed were Surgeon W. H. H. Hutton, in command of station, and afterwards Surgeon H. R. Carter; Passed Assistant Surgeon T. B. Perry, in command of the *Foster;* Assistant Surgeon M. J. Rosenau, in command of the *Ewing;* Dr. A. B. McDowell, on board the *Jamestown* (after transfer from the Breakwater Station); Dr. R. C. Irving, on board the revenue cutter *Crawford;* Hospital Steward C. H. Woods.

The boarding steamer *Foster* was temporarily commissioned as a revenue cutter by flying the revenue flag and carrying a revenue-marine officer. This provision gave her the right to stop and examine all vessels without question. The preparations made were amply justified by the alarming situation on the other side of the Atlantic. As soon as possible the extra force was withdrawn.

South Atlantic Quarantine (post-office address, via Doboy, Ga.).—Between October 10, 1891, and November 30, 1892, there were 35 vessels detained in quarantine and disinfected. On these infected vessels there were 10 cases of yellow fever and 1 death at Havana just prior to departure;

33 cases of yellow fever and 18 deaths at Santos on vessels just prior to departure; 4 cases and 1 death at Rio de Janeiro on vessels just prior to departure; 4 cases and 4 deaths at Barbadoes on vessels just prior to departure, and 1 death at Pará just prior to departure, and 1 case of yellow fever upon one vessel upon her arrival at this station. Three vessels were inspected at the station and passed, not requiring disinfection.

Surgeon H. W. Austin was directed to inspect this station March, 1892, and the following is his report:

SOUTH ATLANTIC QUARANTINE STATION,
Blackbeard Island, Georgia, March 16, 1892.

SIR: In accordance with your orders dated March 3, 1892, I have the honor to report that I arrived at Blackbeard Island on the evening of the 14th instant, after a day's voyage on the Savannah quarantine steamer, which, through the courtesy of the health officer of Savannah, Dr. W. F. Brunner, was placed at my service for this purpose, himself and Passed Assistant Surgeon J. H. White accompanying me. I commenced an inspection of the wharf and disinfection plant on the same evening.

There were two yellow-fever infected barks in quarantine awaiting disinfection, one, the Italian bark *Giovani*, from Havana, and ordered to this station by the Brunswick health authorities (one death from yellow fever after leaving Havana), the other, the Norwegian bark *Orneo*, from Santos, sent to this station from Tybee. The mate of the latter vessel died of yellow fever at Santos.

Blackbeard Island, from its remoteness from the mainland and the course of vessels passing this coast, as well as on account of its fairly safe anchorage and ease of access, appears to be well adapted for a quarantine station, and the local health authorities of all the coast cities between Wilmington, N. C., and Jacksonville, Fla., avail themselves of its privileges, sending here all infected vessels entering those ports having cases of yellow fever aboard. The wharf at the anchorage is now a firm structure, having been filled to the water line with rock and cement, and a vessel drawing 15 feet of water can lay alongside while discharging ballast or undergoing disinfection. There has been built upon the wharf during the past winter a house 15 by 40 for the detention of the crew and attendants while working at the wharf. The two bichloride tanks are in good condition, but one should be taken down and placed upon the new wharf when it is completed.

The donkey engine is in good condition, except for a few minor repairs which must be made, and it can be used to furnish steam to the new steam chamber now under contract. The wharf room at this station is inadequate, and even when the new wharf is finished it is believed that another of the same dimensions will be required to accommodate all vessels sent to this station and to prevent the delay in unballasting which now occurs whenever two or more vessels are at the station at the same time. It is believed that the new wharf can be erected and ready for the steam chambers by May 1. It should be placed 100 feet east of the present wharf, and that will afford ample water for the largest vessel. Mooring piles should be driven along both sides of the wharf and a strong derrick for use in unballasting, and a scaffold about 25 feet high built upon it to hold the bichloride of mercury tanks.

A building will also be necessary upon the wharf to protect the steam chambers and boilers, and they should be changed to the new wharf when it is completed, and placed upon the west end. The holding ground in the anchorage is good. The anchorage should be buoyed off to mark its boundary, which would prevent vessels from anchoring at a distance from the station, necessitating expense and labor in boarding them and to prevent other vessels lying in too close to the station.

DELAWARE BREAKWATER QUARANTINE—IRON PIER. BOARDING STEAMER "CHARLES FOSTER," DISINFECTING STEAMER "LOUIS PASTEUR."

The steam launch purchased for this station during the winter is an important addition to its equipment, and will facilitate the passage of officers and attendants and the transportation of supplies between the anchorage and the quarters, a distance of about 8 miles. It can also be used to tow an ambulance boat from the wharf to the lazaretto. To protect the launch from teredo, it should be copper-bottomed, and I would recommend that this work be authorized. The executive buildings, lazaretto, and officers' and attendants' quarters are in good repair. The grounds about the officers' quarters and executive buildings have been graded and partly covered with soil from the marsh and grass seed sown. There is no diminution in the pressure of water from the great artesian well upon the grounds. It is believed to be sufficient to propel a suitable dynamo to furnish electric lights for the entire station. Water should be conveyed in pipes from this well to the lazaretto.

An examination of the records and files, and an inspection of all the buildings and property belonging to the station was made, and I found them in proper condition. The usefulness of the station increases with the years from its establishment, and its importance to the South Atlantic States, and even to the entire country, can not be overestimated. It should be the best-equipped station upon the Atlantic coast, as it is believed that there are more infected vessels sent to this station by the local health authorities, that really menace the health of the people in this country and are treated at this station than at any other on this coast. The requirements of the station not already provided for or in process of construction are, an additional wharf, a gangway connecting the present wharf with the shore, a water main from the artesian well to the lazaretto, and a small hospital for noncontagious diseases. I will not attempt a general description of the station, as it was so completely done by yourself in a letter which was published in your last annual report.

The alterations and repairs made at the station during the fiscal year ended June 30, 1892, together with those recommended, are summarized in the following letter from Passed Assistant Surgeon A. H. Glennan, medical officer in command of the station:

SOUTH ATLANTIC QUARANTINE, *August 29, 1892.*

SIR: In obedience to circular letter of instructions (H. W. A.) dated August 19, 1892, I have the honor to forward the following report of alterations and repairs made at this station during the past fiscal year, together with the necessities of the service for the current year. Iron pipe connections with stopcocks have been attached to bichloride tanks to facilitate the sprinkling and disinfection of vessels; cement work in ballast wharf has been continued by the attendants, the structure now rising above the level of mean water mark. Rear end of the wharf has been braced and spiked to prevent further outward spring from the weight of stone pressure against the piling. The steam hoister already provided has been set up in position, smokestack, steam and water connections supplied, also safety plate and spark arrester to protect wharf structure from fire, and roof of wharf buildings coated with fireproof paint for the same reason. The loose planks on gangway from the boathouse to shore line are now laid and spiked for a proper footway.

A closed rough wood stable was erected by the attendants to house the horses while at this end of the island. The large lighter was recovered (driven ashore in a December gale), and reanchored for a supply-steamer landing, old bottom overhauled, bottom coated with copper paint, etc.

SOUTH END.

Flagstaff being in danger of carrying away, was braced and painted; scow leaked; copper bottom cleaned and painted inside. A new roadway 20 feet in width was cut and graded in a straight line to the beach, vastly improving the appearance and ease of

communication to this end of the station. A cabin is built upon large sailboat, painted, and converted into an ambulance boat, ready for launch to tow patients to the lazaretto; all the small boats have been overhauled and bottoms coated with copper point; cart and wagons repaired, and all ironwork painted, to prevent rapid destruction by salt air and water. Considerable grading has been done, the surface rolled, and sown in Bermuda grass seed, to hold down the shifting sand. Decayed wood in railing about office building is replaced and painted.

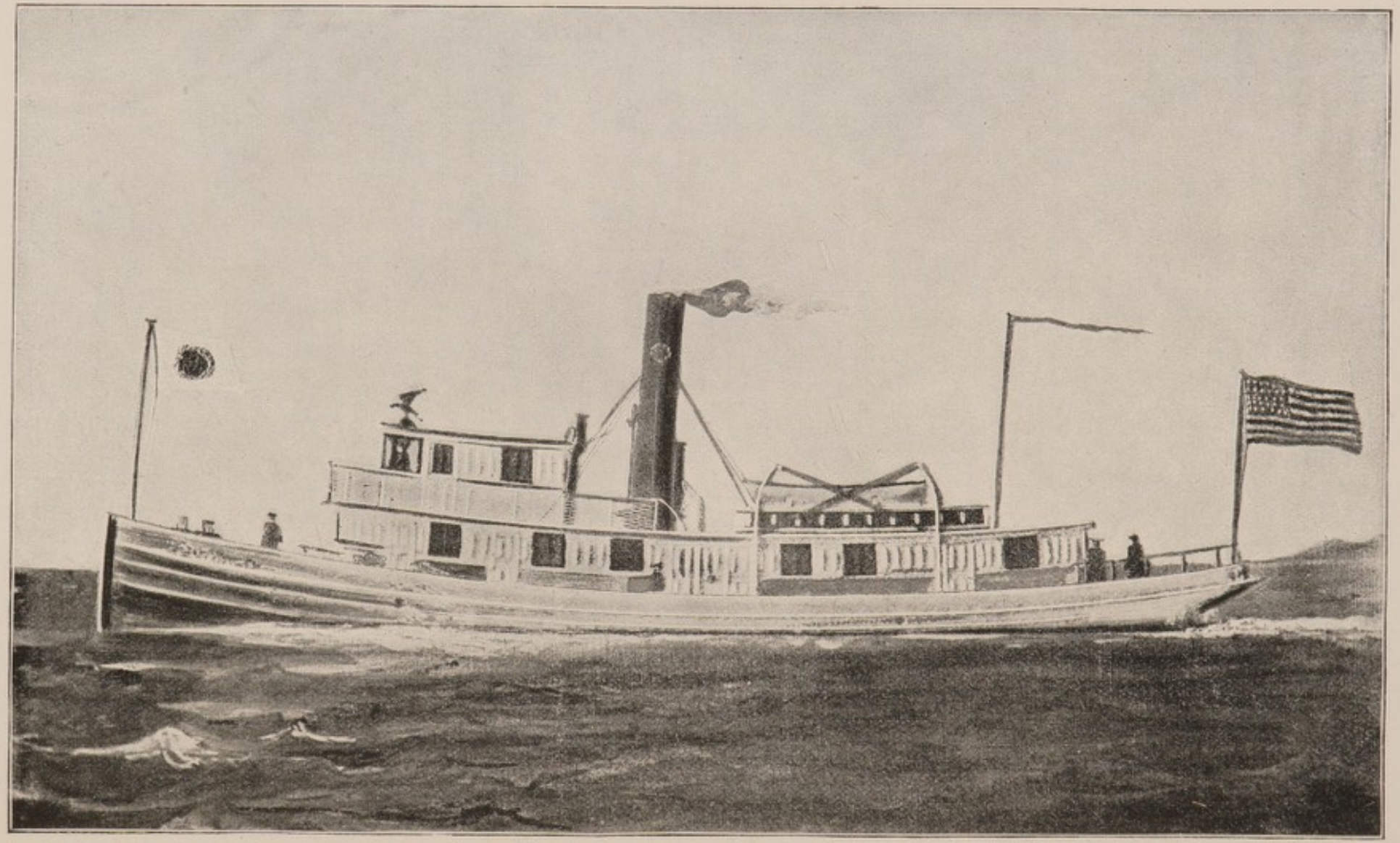
NEEDS OF THE STATION.

The cement work in ballast wharf should be continued, and an additional quantity of Portland cement supplied. Blocks, fall, and tackle, with two ballast tubs, are needed in connection with the steam hoister for unballasting vessels; also a truck and light flat iron track for dumping ballast in proper places. This can be obtained at reasonable expense, and the box with hinged bottom made by the attendants, to expedite unloading. A very important matter for the near future is the disposal of stone ballast, as the wharf will soon be filled up. I strongly recommend that a few palmetto piles (cheap and not creosoted) be driven from the ballast wharf a little distance towards the shore, so that the ballast may be dumped here in proper line by the track car before mentioned, thus accomplishing two objects and making the beginning of a connecting gangway to the beach. These piles can be inexpensively driven while the contractor is at work upon the new wharf. A signal line to connect one end of the island with the other end, erected by the attendants, would cost about $250 for wire, insulators, keyboards, etc., and without running expense if the latter were used. Possibly short metal poles (160 for the 8 miles), such as are used in field telegraphy, might be in disuse, and obtained from that department of the Army. A good supply of lumber, hardware, paint, lime, etc, is constantly needed for repairing and painting the buildings, bichloride tank, boats, and all exposed ironwork, which are rapidly destroyed from the effects of the salt atmosphere. The small steam launch which rendered good service in the epidemic of smallpox at Harris Neck last winter has just been placed in good condition for service in salt water, having been copper-bottomed, a towing post placed in the stern, enlarged fresh-water capacity added, etc., which has converted her from a fresh-water harbor launch into a good working boat at a very reasonable total cost to the service, and the running expense is comparatively small. The appropriation for water main, sewer, closets, painting, and coal house, being now available, plans and estimates will be forwarded as soon as possible, in accordance with your instructions of recent date.

An additional wharf, 25 by 100 feet, is now in course of construction, and will be completed and ready for the reception of the steam-disinfecting plant by the 1st of January, 1893. Specifications and drawings have been made for this steam chamber; boiler, sulphur furnace, and a complete disinfecting plant will be completed and set up on the wharf before the 1st of April, 1893. The cut showing the buildings, wharves, etc., of this station is shown in this report.

Key West Quarantine (post-office address, Dry Tortugas, via Key West, Fla.).—Between October 3, 1891, and November 30, 1892, 3 vessels were disinfected at this station and 2 vessels inspected and passed. Upon one of these vessels 3 cases of yellow fever appeared shortly after arrival, 1 case proving fatal. There also occurred among the employés of the station 5 cases of yellow fever, all of which recovered, the disease being contracted from the sailors taken from the brig *Caspian*.

This station has been kept open throughout the year, and will soon be equipped with an iron steam-disinfecting chamber, which is now ready



DELAWARE BREAKWATER QUARANTINE—BOARDING STEAMER "CHARLES FOSTER."

for shipment. Any vessel of a draft of less than 26 feet can lie in safe anchorage at the dock just constructed. The fort (Fort Jefferson) which covers the key on which the station is located furnishes room for the accommodation of a large number of detained passengers.

The following report is from Passed Assistant Surgeon H. D. Geddings, in command:

KEY WEST QUARANTINE STATION, *September 12, 1892.*

SIR: Referring to your circular of August 19, 1892 (H. W. A.), directing report of alterations and repairs which have been made during the past year, and recommendations for the ensuing one, I have the honor to report that so much of the buildings at this station as are occupied for quarters and administrative purposes have been kept in repair as far as possible, and the roof painted and kept tight. Owing to the size of the buildings and their condition when first occupied, it is, however, a question of a few years before the ravages of time and the elements will render them uninhabitable. A bridge has been built across the moat connecting the wharf and sally port. The cost was that of material only, the labor being performed by the employés. A wharf of 120 feet head in 19 feet of water has been completed by contract, and a shed covering the entire length for the protection of fumigating machinery is under contract and will be commenced in a short time. A site for a coal bin of 250 tons capacity has been graded and prepared. Contracts have been let for a coal car and rail, which will convey coal from this bin to steamer with a minimum of labor.

The steamer *Dagmar* has been kept in repair, her machinery kept up, and is in good order, with the exception of a very foul bottom and some repairs to stern bearing, and these will be remedied at an early date, authority to that end having been granted by the Bureau. The work would have been completed two months ago, but Key West has quarantined against this station owing to the presence of a number of cases of yellow fever here. The fumigating machinery was placed on the scow temporarily pending the construction of the wharf. At the completion of the wharf it was removed, and is now in permanent position.

A wooden steam chamber has been constructed by the employés of the station, provided with means for the application of dry and moist heat by steam. It has given fair satisfaction in practice, but it is hoped that the steel chamber contracted for by Messrs. Valk & Murdock, of Charleston, S. C., will soon be put in position. An abundant supply of fresh water from the cisterns in the interior of the fort has been conveyed by means of piping to the wharf, and furnishes all water needed for steamer, disinfecting apparatus, etc., and could supply any vessels needing fresh water in emergency. So far as the fumigation and disinfection of vessels is concerned, the equipment of the station is fairly satisfactory.

I would respectfully recommend the following for the ensuing year: The building of a hospital establishment or the providing of the Station with at least two Ducker portable barracks for the isolation and care of infectious and contagious diseases. As the regulations of the Florida State board of health require the removal of all ballast from infected ports and its replacement with new ballast, we urgently need at this point a ballast lighter of 10 to 15 tons capacity and a steam-hoisting engine. To be serviceable for any length of time, the lighter must be metaled above the water line; any other would be useless after six months. Any stone ballast obtained from vessels could be put to good use in filling around wharf, and would repay in time the cost of handling. The steam chamber contracted for is urgently needed, and it is hoped that the contractors will be required to put it in soon. An additional mooring buoy and an anchor of about 3,000 pounds weight and about 20 fathoms of heavy chain are needed to enable large vessels to haul away from the wharf and get themselves in proper position for entering in and going out of the narrow channel which leads into this har-

bor. The cost would be about $200, and it is a positive necessity, and should be provided at an early date. A bath tub is needed in the quarters, also some laundry machinery for use on the station. The two items, I should think, could be covered for a total cost of $600 to $700. The steamer *Dagmar* needs new awnings, for which only material would be required. The cost would not exceed $50. The *Dagmar* will also need within the next six months very extensive repairs to circulating and air pumps, which would amount to almost replacing them. I would therefore recommend the purchase of a Worthington combined circulating and air pump at a cost of $315, which could be put in position and connected up here. It would take the place of the present circulating pump and do away with the present air pump, which is connected with low-pressure engine. The result would be increased speed by higher speed of engine and saving of coal by higher vacuum, and the cost would be almost saved in one year.

Gulf Quarantine Station, Chandeleur Island (post-office address, via Biloxi, Miss.).—Between October 8, 1891, and November 30, 1892, there were 33 vessels disinfected and 8 vessels inspected and passed. There were 6 cases of yellow fever taken from the British steamship *May* at this station, 2 cases proving fatal. On the other infected vessels treated there had been 8 cases of yellow fever and 4 deaths while at Santos; 26 cases, 9 deaths, at Rio; 5 cases, 1 death, at Havana; and 12 cases and 4 deaths at sea.

The following reports are from the medical officer in command:

UNITED STATES GULF QUARANTINE,
Chandeleur Island, Louisiana, July 1, 1892.

SIR: I have the honor to submit the following report of the more important transactions at this station during the fiscal year ending June 30, 1892, and to invite your attention to several recommendations which I take the liberty of presenting for your consideration.

The first part of the period covered by this report having been already alluded to in the last annual report, it will be unnecessary to enter into any details with regard to it.

The station was in command of Passed Assistant Surgeon (now Surgeon) H. R. Carter until July 6, 1892, when he was relieved by Surgeon R. D Murray; an assistant, Dr. Charles Pelaez, being employed about the same time, whose services were discontinued after November 1.

On the 27th of October, in compliance with official orders dated October 24, I reported in person to Surgeon R. D. Murray, and on November 3 I relieved Surgeon Murray and assumed command of the station, as directed by Department letter, S. G. O., dated October 31, 1891.

During the fiscal year just ended 53 vessels were boarded and inspected at this station. Of this number 43 were held for fumigation and disinfection, and given free pratique after the necessary detention; the remaining 10 were simply inspected and passed. The crews of all the above vessels were examined for leprosy, and given a favorable certificate, no case of that disease having been found.

There were 9 cases of yellow fever, but no deaths. All these cases occurred last summer. Thus far there have been none this season.

The fumigating steamer *Wm. H. Welch* went out of commission on the 26th of November at Moss Point, Miss., after having towed the three barges belonging to the station to the same place, where they remained for the winter in charge of Pilot William H. Swasey.

Contracts for repairs, etc., to the steamer *Welch* and barges were forwarded by the Department to De Angelo and Tony Gatti, of Moss Point, on March 23, and work was commenced on the 26th. The repairs and alterations to the steamer were quite extensive, including a new propeller 12 inches greater in diameter than the old one and the

DELAWARE BREAKWATER QUARANTINE—STEAM DISINFECTING BARGE "ZAMORA."

addition of an iron skag to the keel, increasing her draft by 9 inches. After considerable delay the steamer arrived at the station on June 1, but having found that the patch put in her boiler to stop a leak was not sufficient to attain that object, it became necessary to remand her to Moss Point to remedy this difficulty. Since her return to the station, June 28, she has behaved satisfactorily. Her speed and power are both increased, and she seems to be steadier in a sea. The repairs to the flats have put them in serviceable condition.

The buildings urgently required painting, not only to give them a presentable appearance, but also for the preservation of the wood. This work was carried on during the winter with the small force available, slowly and at odd times, whenever it was possible to spare the men from ordinary routine duty. The painting, unfortunately, has not been completed. The lazaretto and boathouse still remain unfinished. Work on the latter was commenced a few days ago.

The naphtha launch was put in thorough repair last November, and has been of great service during the winter and spring. She is an absolute necessity to the station, making it practicable to transact business promptly, methodically, and with diminished risk to the health of those engaged in it.

Great difficulty has been experienced in keeping and properly arranging unserviceable property on account of insufficient space, in consequence of which many articles have been lost. To obviate this a room has been constructed to the rear of the medical officers' quarters, fitted up with shelves, and is now in use as a "condemned-property room."

A floating platform has been made and placed in front of the hospital ward, connected with the veranda by a broad gangway, which greatly facilitates the landing of boats at any stage of the tide.

The work on the pierheads and buildings, which has been performed under contract by Mr. Stephen S. Leonard, was begun on May 15, 1892, and practically completed on the 28th of June. The painting on the railings and trimmings is not satisfactory, and will have to be done over again. This will occasion some slight delay. The wharf is a decided improvement to the station. It will serve as a coal depot for the steamer *Welch*, and when a disinfecting plant is supplied it will greatly facilitate the operation of cleansing a vessel. There is one objection to the wharf, and that is its exposed condition, which will render it impossible for a vessel to lie to it during rough weather if the wind should be blowing from the south, southwest, or west. To meet the difficulty one or two mooring buoys should be placed about 100 fathoms from the wharf, so that when necessary a vessel could make fast to the buoy and swing clear of the wharf.

The sloop *Annie*, as in years past, has made the transfer of mail and supplies during the winter from the station to Biloxi, and occasionally from the station to Ship Island during the quarantine season, in the absence of the steamer *Welch*. The *Annie* I consider inadequate to the purpose for which she is used. The boat was originally a pleasure yacht, and as such she is equal to any of her class (except for her age, which is 17 years), but as a transfer, supposed to make regular trips without reference to weather, wind, or tide, and frequently heavily loaded, she is entirely unfitted. She is too small, too light, and never intended to sail in the open sea, and it is a matter of surprise that she has performed this duty so long without meeting with some serious mishap, accompanied with loss of life.

In this connection, I would respectfully recommend that the sloop *Annie* be disposed of and a new boat supplied better adapted for the work. I would respectfully suggest that an "auxiliary naphtha launch," schooner-rigged, as made by the Gas Engine and Power Company of New York, would be admirably fitted for this purpose.

The necessity for a laundry is very great. At present the laundress has to do her work in a corner of the boathouse, where there are no conveniences whatever. The result is very unsatisfactory. I beg to submit a rough plan of a laundry, containing also quarters for female attendants, an important desideratum. Also a system of gang-

ways or bridges connecting the laundry with the boathouse and medical officers' quarters, thus putting all the buildings at the station, with the exception of the lazaretto, in direct communication with each other.

The gangways and bridges now in use are becoming unsafe for want of repair. This was to have been attended to last winter, but the small number of attendants at the station made it impossible to undertake it. A system of electric bells between the medical officers' quarters, office, and boathouse would be of great advantage in facilitating the business of the station.

A small sink is required for the hospital kitchen for washing dishes, etc. At present this service must be performed in a dish pan, which is objectionable on account of the dirt it makes on the floors and walls. A pipe could be laid from the cistern, situated at the west corner of the veranda, and carried beneath the flooring, to connect with a faucet over the sink. At present the water must be carried by hand. The same arrangement would be advisable (though not so necessary) at the lazaretto and steward's quarters. There are at present no bathing facilities whatever for the officers, employés, or patients at this station. Bath rooms are required in each building, pipe connections being made with the cisterns, and a bath house should be erected to permit of outdoor bathing during the summer, thus saving the cistern water during the hot season. At present outdoor bathing is impossible on account of the danger from sharks, sting rays, and other dangerous fish that are natural to these waters.

Awnings along the galleries most exposed to the sun would add very much to the comfort and health of everyone on duty at this station. At certain hours of the day the heat from the direct rays of the sun and the reflection from the water is almost unbearable. The necessity for a proper flagstaff is obvious for the following reasons: The pole at present in use is a short, thin stick placed over the roof of the boatmen's quarters. On several occasions it has become necessary to communicate by means of international signal code with vessels in the offing or lying at the quarantine anchorage, but it has been impossible to do so satisfactorily or at all, from the fact that the present pole can carry but two flags, and most of the signals require three and four. Moreover, during the quarantine season the quarantine flag must be displayed, and no way then remains for setting the national ensign. I would recommend that a flagstaff be erected 100 feet long, to be used for the ensign and for signal purposes, the present pole remaining in use for the quarantine flag.

In conclusion, I beg to invite your attention to Surg. H. R. Carter's letter of June 10, 1889, with reference to dredging a channel across the bar in front of the station. The necessity for that channel still exists, and, if possible, the plan as laid out by Surg. Carter should be carried out.

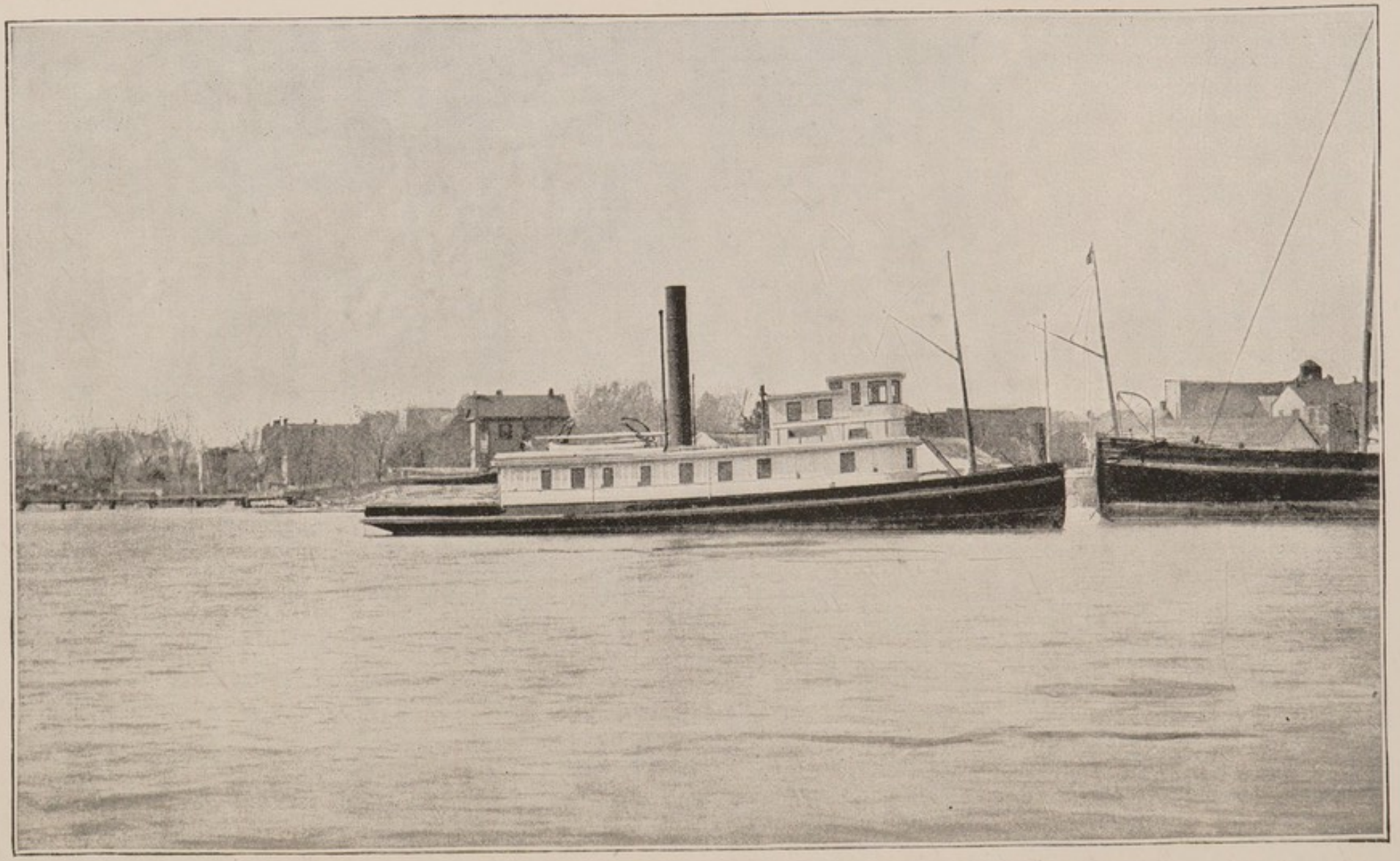
Very respectfully submitted,

G. M. GUITÉRAS,
Assistant Surgeon, M. H. S., in command.

UNITED STATES GULF QUARANTINE STATION,
November 1, 1892.

SIR: I have the honor to submit the following report of the operations of the service at this station from the 30th of June, 1892, to November 1, 1892, the date of closing the active quarantine season, and have also thought it not amiss to make some observations on the relations existing between this national quarantine station and the local health authorities with whom it is brought in contact.

During the above-mentioned period eighteen vessels coming from infected and suspected ports were treated at this station and released in free pratique after undergoing the necessary disinfection, etc. Of this number, the following may be considered as having been infected: British bark *Thomas Perry*, from Rio de Janeiro; American bark



CAPE CHARLES QUARANTINE—FUMIGATING STEAMER "ROBERT KOCH."

Mary G. Reed, from Havana; British brig *Rosella Smith*, from Havana; British steamship *May*, from Vera Cruz; British brig *Estella*, from Havana; and British bark *Edmonton*, from Santos.

Following is an extract from the register of patients treated at this station from June 30, 1892, to November 1, 1892:

No. of permit.	Name of seaman.	Age in years.	Nativity.	Name of vessel.
1	William Leibman	35	Poland	British brig Rosella Smith.
2	Gustave E. Neilson	26	Sweden	American schooner Anna M. Stammer.
3	Andrew Larub	21	Denmark	British steamship May.
4	Samuel Lampson	28	England	Do.
5	Robert Crowley	30	....do	Do.
6	Robert Humble	29	....do	Do.
7	Joseph Watson	47	....do	Do.
8	Samuel Lampson	28	....do	Do.
9	Robert Crowley	30	....do	Do.
10	Edgar Sykes	17	....do	Do.

No. of permit.	Name of seaman.	Date of admission.	Disease or injury.	Date of discharge or death.	Result.	Days in hospital.
		1892.		1892.		
1	William Liebman	Sept. 3	Debility	Sept. 8	Recovery	6
2	Gustave E. Neilson	Sept. 10	Insolation	Sept. 15	....do	6
3	Andrew Larub	Sept. 10	Yellow fever	Sept. 15	....do	6
4	Samuel Lampson	Sept. 10	....do	Sept. 19	....do	10
5	Robert Crowley	Sept. 10	....do	Sept. 19	....do	10
6	Robert Humble	Sept. 10	....do	Sept. 19	....do	10
7	Joseph Watson	Sept. 14	Simple continued fever	Sept. 19	....do	6
8	Samuel Lampson	Sept. 23	Yellow fever (relapse)	Oct. 4	....do	12
9	Robert Crowley	Oct. 1	Malarial fever (intermit.)	Oct. 3	....do	3
10	Edgar Sykes	Oct. 3	Simple continued fever	Oct. 6	....do	4

The British steamship *May*, from Vera Cruz, was the only vessel arriving here with contagious disease (yellow fever) on board. Six cases developed at the port of departure, two of which died in transit. The others, with the exception of the second mate, Samuel Lampson, were almost convalescent on the vessels arrived here.

None of the vessels treated developed any contagious disease after being released from this station. The average time of detention for each vessel was nine and four-tenths days. The steamship *May* was in quarantine twenty-six days, undergoing extraordinary disinfection and close observation; yet the detention would not have been so great had not one or two suspicious cases occurred on board, which eventually turned out not to be yellow fever.

The pratique of this station was accepted by the following ports, to wit: Ship Island and adjacent harbors, Pascagoula, Apalachicola, and the Rigolets entrance to New Orleans for noninfected vessels. Mobile accepted it for noninfected vessels, and Pensacola, I believe, ignored it entirely. It may be observed that the ports refusing our pratique are those having complete quarantine plants, and the conclusion is obvious that this refusal is due either to an unreasonable fear or that these quarantine establishments have some other mission to perform besides that of protecting the public health. The consequence of this is, that in presumably protecting the people from the incursion of contagious maladies they act as a direct obstacle to commerce without any corresponding advantage to health. The injustice to commerce is further increased by the fact that harbor pilots are practically made the judges as to whether a vessel is to be considered infected or not. They certainly can not be expected to determine the character of any disease which has occurred on board, and, in fact, as far as I know, they never attempt it, thus showing their good sense in not presuming to investigate a subject about which they know nothing. But it is sufficient for the master of the vessel to state

that he comes from an infected or suspected port, and has had or has sickness on board, to be summarily refused entrance into the harbor by the pilot who speaks him (the pilot acting in accordance with the regulations of the local health boards), and informed that he must proceed to the Gulf Quarantine Station (or other national refuge station), without any very positive determination being made as to whether the disease happens to be yellow fever, sunstroke, or a broken leg. It would seem to be but the merest justice that if a vessel is to be refused harbor (a very serious matter for many reasons), the question of her being infected, upon which the refusal rests, should be decided by a more competent sanitary authority than a pilot.

But the most remarkable fact connected with this matter is that when a vessel has been sent to this station by some such method as detailed above, and has been thoroughly treated here with sulphur dioxide, live steam heat, and bichloride of mercury, and all precautions taken which advanced sanitary science suggests, so that the vessel would be considered clean by most authorities on the subject, you are confronted with the fact that your efforts have been fruitless; your fumigation, disinfection, and detention for observation are all a myth; the vessel is still infected, or at least so considered by the health authorities of several Gulf ports; for our clean vessel, with a certificate of free pratique, is subjected to a repetition of the process of disinfection, accompanied by a further detention for observation, and, lastly, the payment of a considerable fee.

From whatever point of view these facts are examined, they reflect no credit upon the local health authorities to which they apply. Their well-appointed and expensive quarantine plants are only for the disinfection of clean vessels and other purposes, perhaps, not directly pertaining to the preservation of the public health.

It is to be deplored that the commerce of the United States should be at the mercy of such State health authorities, or, as happens in some cases, of county and city authorities acting almost independently of the State.

Neither does it appear just, on the other hand, that the barriers for the protection of the whole country against the introduction of pestilence from abroad should be intrusted to local health boards evincing so little power to protect themselves, narrow and provincial in their modes of action, while arrogating to themselves an importance which they do not possess, and which belies itself when they seek the aid of the National Government, and then ignore the assistance given.

If the quarantine service of the country were systematized under one authority under the control of the Government, with ample discretionary power given to act for the best interest of the public health and of commerce, according to the circumstances of each case presenting itself for consideration, the absurdity of disinfecting a clean vessel, "dipping" her ballast, etc., as a safeguard against yellow fever, after the occurrence of a hard frost on the Gulf coast, would be done away with. In the case which I have in mind this, to my mind, unnecessary disinfection was performed to comply with the requirements of the health authorities of Escambia County, Fla.; but even this was not enough, for on the vessel's arrival at Pensacola it was deemed necessary to repeat the process of disinfection.

To argue that the violence done to commerce in this instance was warranted, on the plea of protecting the public health, is *reductio ad absurdum*.

Very respectfully, your obedient servant,

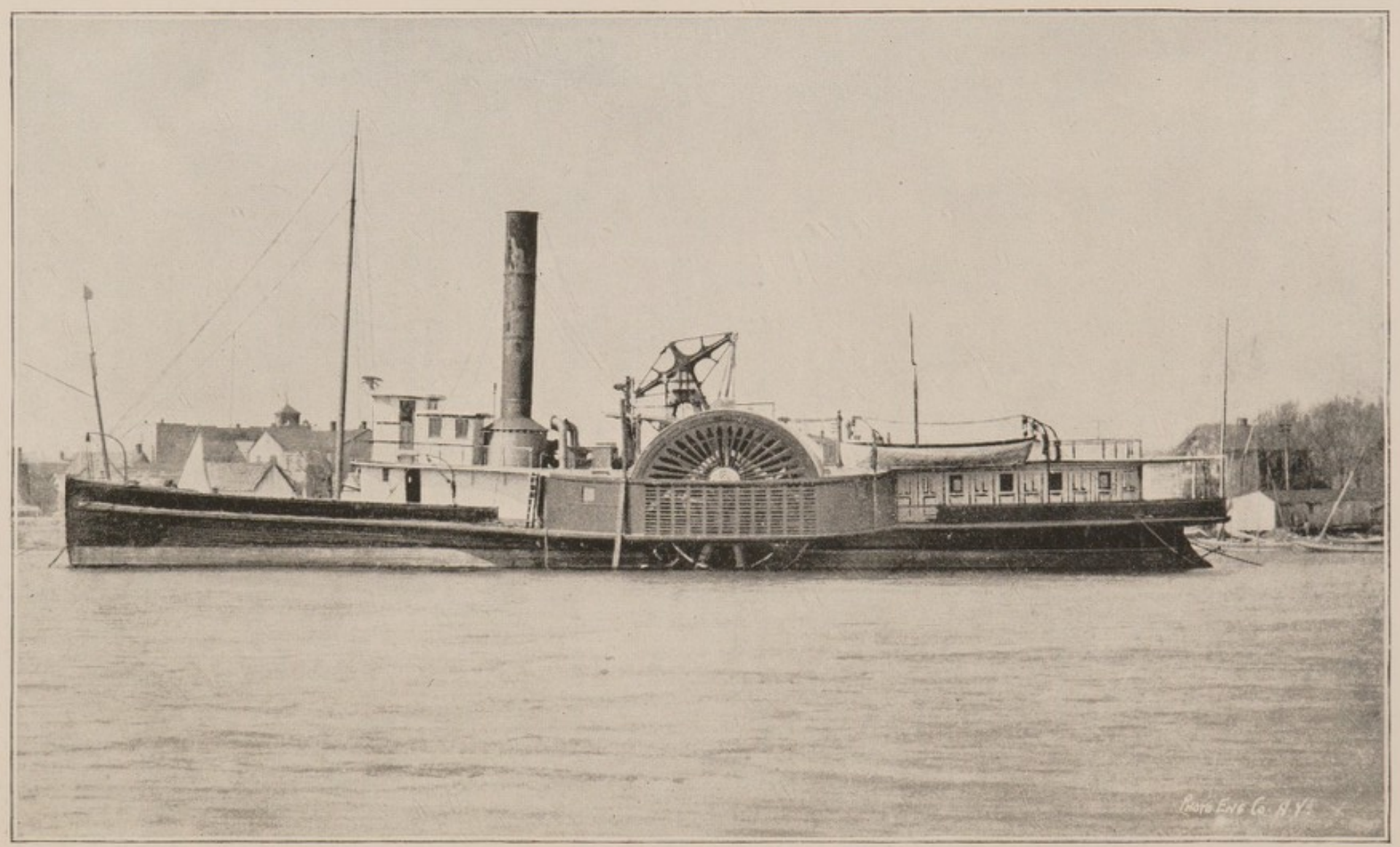
G. M. GUITÉRAS,
Passed Assistant Surgeon, M. H. S., in command.

To the SUPERVISING SURGEON-GENERAL M. H. S.

REPORT OF INSPECTION OF GULF QUARANTINE STATION.

GULF QUARANTINE STATION,
Chandeleur Island, March 9, 1892.

SIR: I have the honor to report that, in accordance with your order dated March 3, 1892, I arrived at Biloxi on the evening of March 7. On the morning of the 8th I de-



CAPE CHARLES QUARANTINE—HOSPITAL SHIP "EWING."

parted for Chandeleur Island accompanied by Assistant Surgeon G. M. Guitéras, aboard the quarantine sloop *Annie*. We arrived at the station in the afternoon. I called a muster of the attendants, and commenced an inspection of the hospital buildings on the same evening. The following day, March 9, I completed an inspection of the buildings, including the lazaretto, and condemned a large quantity of unserviceable property. The hospital buildings, quarters, boathouse, storerooms, etc., are in good repair, and clean, and appear to be well adapted to the requirements of the service. A storeroom for property held for condemnation is a very necessary requirement, and should be constructed. Property worn out and held for inspection is at present thrown into boxes and placed upon the ground back of the surgeon's cottage, and at every high water the articles are likely to be washed away.

All buildings should be repainted on the outside. No other repairs to the buildings are necessary at this time. There are two whaleboats at this station that have been used in carrying the supplies to vessels at the anchorage; one of these boats is about worn out and is leaking badly, requiring extensive repairs that are not thought to be warranted on account of her condition. In case one boat should be disabled, the lack of another seaworthy boat would embarrass the station for a time. The small yawls are hardly safe to go out to the anchorage, and the steam launch can not at all times land at the hospital for sulphur and other supplies. I have therefore to recommend that another whaleboat, similar to the one now on hand at the station, be purchased. A flat, to be used for storing coal for the steamer, will have to be purchased or chartered for the season, provided the new wharf is not ready by the 1st of May. I would recommend that Dr. Guitéras be authorized to obtain bids for a flat or a schooner for this purpose and to submit them with his recommendation.

The ballast flat should be reserved for the unloading of ballast, and not used for storing coal for the steamer. The steamer *Welch* and all the barges are at Moss Point, and I will inspect them on my return. When the new wharf and steam-disinfecting chambers now under contract are finished, and the necessary repairs made to the quarantine steamer *Welch*, the station will be equipped to treat any or all infected vessels likely to be sent here in as perfect and effective a manner as can be at any quarantine station on the coast.

Additional gangways connecting the various buildings are required, and an additional wharf is also necessary to facilitate the work of unballasting vessels and to prevent unnecessary delay. A derrick for unloading ballast should be erected upon this wharf, and also a house for sheltering the crew, the engine, and boiler.

I have to recommend that two medical officers should be placed on duty at this station during the entire quarantine season, as the duties of the station are arduous, the responsibilities exceedingly weighty, and the complete isolation from the rest of the world, coupled with a forced residence in a house built upon piles upon a barren sand bar, makes the life of an officer there one of hardship and privation as well as of hazard. This is the outer fortification upon the Gulf coast which receives the most violent attack in the battle against the introduction of yellow fever into the United States, and the additional equipment that has been recommended in this report, or that may hereafter be found essential to perfect this station, should be provided.

H. W. AUSTIN,
Surgeon, Marine-Hospital Service.

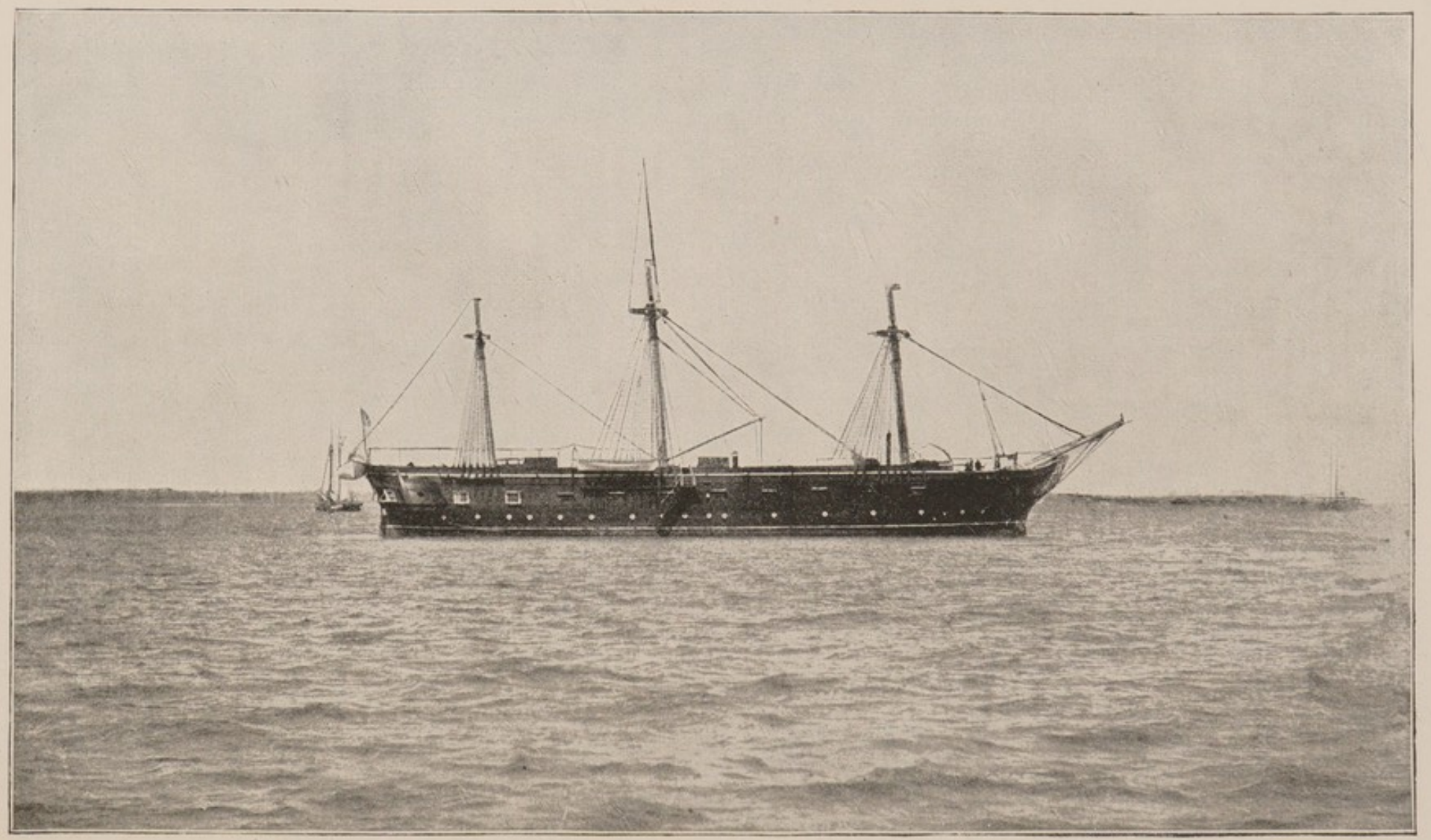
San Diego Quarantine, San Diego, Cal.—Between September 16, 1891, and November 30, 1892, there were 292 vessels inspected at this station.

A new wharf, a warehouse built upon the same, and gangway connecting the wharf with the shore have been constructed during the year, and contract has been let for the erection of hospital buildings, medical officers' quarters, boathouse, etc., to be completed about the 1st of March, 1893.

The following letter from Acting Assistant Surgeon W. W. McKay details the history, the condition, and facilities of the station:

SAN DIEGO, CAL., *October 11, 1892.*

SIR: * * * The United States quarantine act of August, 1888, established a national quarantine station at San Diego Harbor, to be under the supervision of the United States Marine-Hospital Service. There was appropriated for the purchase of site, construction of wharf, warehouse, disinfecting machinery, small boats, hospital buildings, officers' quarters, etc., the sum of $55,500. Early in the fall of 1888 a board appointed to select a site completed their duties, selecting a location on a portion of the Government reservation at a point called "La Playa," on Point Loma, within about 100 yards of where the present site now is. The War Department was requested to make a formal transfer of the property, but declined to do so. In April, 1889, an acting assistant surgeon was assigned to duty as quarantine officer, and instructed to maintain active quarantine inspection of all foreign vessels entering the harbor, which service has been continuously maintained the whole year through. Since that date, in June, 1889, the quarantine officer was requested to report on a site, and directed to choose some other point of the Government reservation than that selected by the previous board (the reservation being a large one, containing about 1,100 acres). A spot 1½ miles farther down the bay, and near the entrance, was chosen. The War Department was requested to make a transfer of this site, but again refused, on the ground that the spot selected was needed for military purposes. Finally, after several ineffectual attempts and serious delay, purchase was made of two blocks of ground at La Playa, a point putting out slightly into the bay, and about 1,600 feet inside the Government reservation line. In March, 1891, a survey of the two blocks purchased was made. It demonstrated that the property line extended to a depth of but 15 feet of water at mean low tide. Permission was then obtained from the State board of harbor commissioners for the Bay of San Diego to extend a gangway and wharf out to 25 feet of water at mean low tide. Accordingly, in August, 1891, a survey and hydrographic plat of the quarantine front was completed under the direction of Lieut. Col. W. H. H. Benyaurd, Corps of Engineers, U. S. Army. The site has a water frontage of about 300 feet, and while the organization of the station is not yet completed, a wharf and gangway on iron-cased piles, together with a warehouse for the fumigating and disinfecting machinery, have just been finished; also two large mooring anchors and buoys, capable of holding the largest steamers, have just been placed at each end of the wharf. A telephone line is being constructed, so as to furnish quick communication with the city. Water under pressure from the San Diego Water Company's mains is also being piped to the station. A contract has been let and work is now progressing on the shore buildings, which will consist of a men's barracks building, a cottage hospital building, boathouse and boatman's quarters, surgeon's quarters, etc. Work will be pushed on these buildings as rapidly as possible, and it is the intention of the Department to equip the station with modern sanitary appliances and disinfecting and fumigating machinery similar to the United States quarantine station at Angel Island, San Francisco Harbor, but on a scale commensurate with the appropriation and the commerce and immigration to the port of San Diego. Everything is being done by the Department as rapidly as possible with the limited appropriations at hand to completely equip and organize the station. It takes time to build quarantines and properly equip them, and some of the manifold difficulties and delays to be encountered will be noted herein pending the completion of the station. However, should a cholera-infected vessel reach this port, a cholera camp would have to be established, and, on inquiry, I have been informed that any number of tents would be supplied on requisition to the National Guard of the State of California should an emergency arise requiring them. In this way ample accommodations could be provided without serious delay. In the event of cholera appearing aboard of one of the



CAPE CHARLES QUARANTINE—DETENTION SHIP "JAMESTOWN."

Panama steamers, which only touch here to discharge mail and passengers, and whose destination or home port is San Francisco, they would not be allowed to enter, but would be sent on to their home port to be quarantined at the United States quarantine, Angel Island, one of the best equipped stations in the United States.

The station is about 6 miles in a straight line by water from the city, and vessels are inspected 6 miles out from the landing.

* * * * * * *

The number of coasting vessels arriving at this station for nine months ending September 30, 1892, was 225. Ports of departure were San Francisco, Puget Sound, New York, Baltimore, Panama, Coronel, South America; Point Arenas, Central America; Mazatlan, Acapulco, Ensenada, Nanaimo, and Vancouver.

National Quarantine, Angel Island, San Francisco, Cal.—Between October 10, 1891, and November 30, 1892, there were 53 vessels detained in quarantine and disinfected; 15 vessels were inspected and passed. The Pacific Mail steamship *City of Peking* arrived at this station on the 20th of December, 1891, with 67 passengers aboard, including 2 cases of confluent smallpox. The 2 cases of smallpox were placed in the lazaretto and the passengers in the barracks, and detained for a period of observation and their effects disinfected.

The steamship *Rio de Janeiro* arrived January 20, 1892, with 527 passengers on board, including 2 cases of smallpox. The passengers were taken to the detention barracks, and the smallpox cases sent to the lazaretto. Eleven other cases of smallpox occurred among those detained at the barracks, and were immediately transferred to the lazaretto. All cases recovered.

The steamer *Gaelic* arrived from Chinese ports and Yokohama in April with 300 passengers on board, among whom were 4 cases of smallpox, which were sent to the lazaretto, and the passengers were detained at the barracks for observation.

The Pacific Mail steamship *China* arrived at the quarantine April 13 with 412 passengers aboard, with 1 case of smallpox, which was sent to the lazaretto. The barracks at the station being crowded with passengers detained from the *Gaelic*, there was not room to take off the passengers from the steamer *China*, and therefore they were detained aboard the vessel.

The steamship *City of Peking* arrived in May with 800 passengers aboard, including 1 case of smallpox. The patient was removed to the lazaretto, and 633 of the Chinese passengers were taken off on covered barges and 280 removed to the barracks for observation.

All of the above named vessels were disinfected and passengers vaccinated before being released. There were 25 cases of smallpox treated at this station, and 2 deaths resulting therefrom.

The barracks are inadequate to meet the requirements. During this year the Pacific Mail Steamship Company erected at their own expense on the quarantine grounds two temporary barracks buildings capable of accommodating about 500 passengers.

The station has been open throughout the year. A new fumigating steamer, the *George M. Sternberg*, has been built and accepted by the Government.

The following reports, made by Passed Assistant Surgeon D. A. Carmichael, in command, give a concise history of the station, a detail of the present equipment, the work performed during the year, and the improvements required:

NATIONAL QUARANTINE STATION,
Angel Island, San Francisco, Cal., October 11, 1892.

SIR: In accordance with the instructions of circular letter of August 19, 1892 (G. T. V.), I have the honor to report that the following repairs and alterations have been made at this station during the past year:

A new door has been built and placed in position in the south end of the disinfecting house, to replace one wrecked during a storm last winter, and the end of the house strengthened by heavy braces.

The under surface of the room in the boathouse, used as attendants' quarters, has been ceiled by matched lumber. The hoops on the fresh-water tanks have been tightened, the seams calked, and the outside given two coats of paint. An overflow pipe has been placed in the salt-water tanks.

Two water-closets have been built over tide water for the use of those not suffering from contagious disease.

Bins and shelving have been constructed for the kitchen storeroom and suitable bins built for the storage of coal and vegetables adjacent to the kitchen.

Fire-hose reels have been placed on the different buildings, a flagstaff placed on the lazaretto, and a new flagstaff for the station erected.

A small stable has been built in the rear of the warehouse.

In May permission was given to the Occidental and Oriental Steamship Company to erect two temporary barracks for the accommodation of the passengers of one of their steamships expected to arrive from China with smallpox on board, the station having in quarantine at the time 914 passengers from the Pacific Mail Steamship Company's steamer *City of Peking*.

These buildings are located to the east of the roadway against the hillside and about midway between the disinfecting house and the barrack building. They are built of plain material, are 85 by 20 feet, with 10-foot walls, and open to the roof. Bunks are arranged in sections along the sides, with central and cross passageways, and each building is furnished with a number of side and end windows and doors at each end. The two buildings will accommodate 576 people.

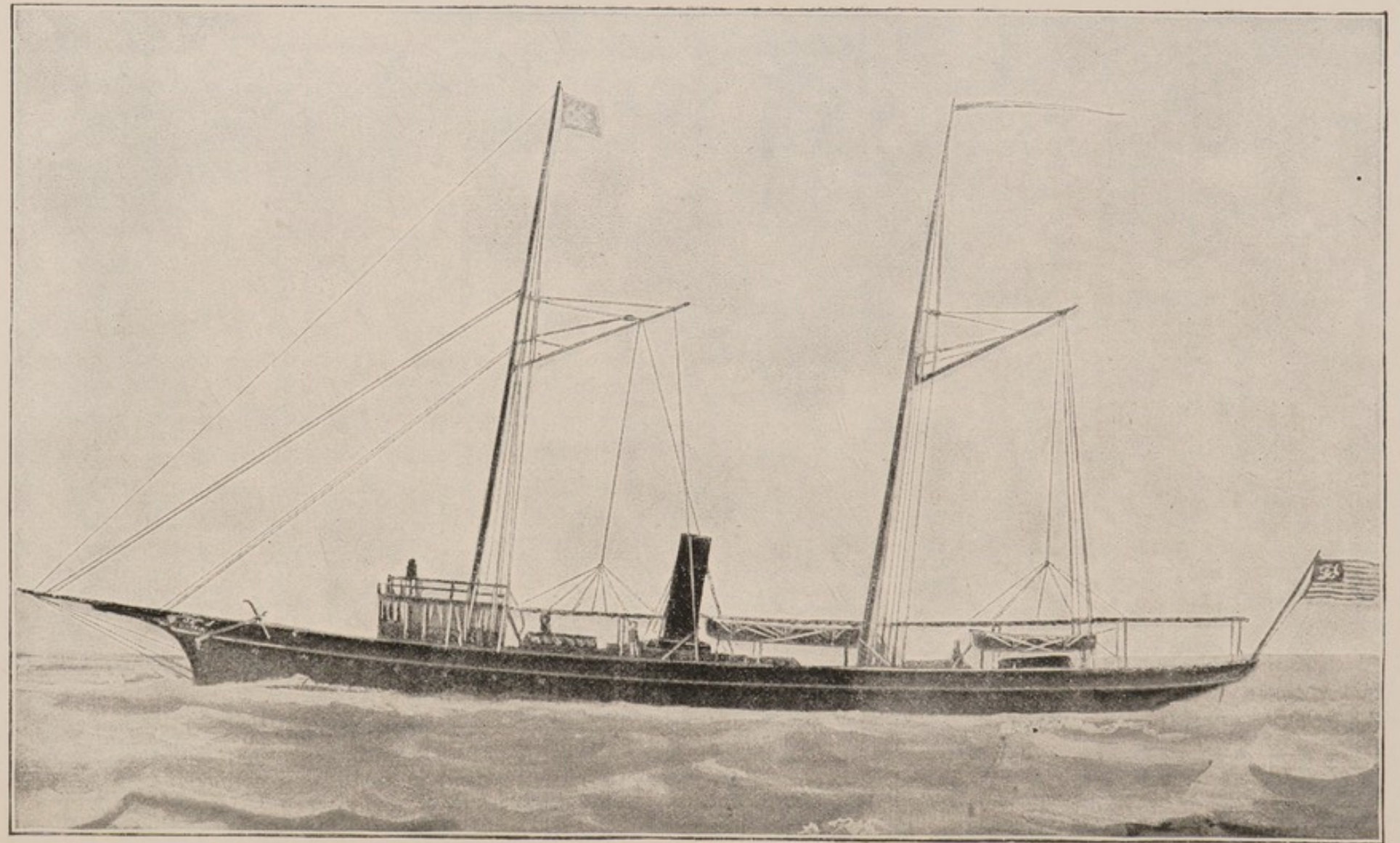
The grass and weeds were cut and removed from the reservation in May in order to diminish the danger from fire.

A new sea wall has been built in front of and extending north of the barracks to replace the riprap washed away during a storm.

The foundation of the lazaretto has been strengthened by tamping and filling with broken stone about the piers, and the bank sloping to the water protected with riprap.

Several places about the wharf that were damaged by storm have been repaired, and a new road of pounded shell, taken from an adjacent mound, has been made to the officers' quarters on the hill. The following alterations and repairs will be required to place the station in good order in addition to the recommendations made in the letter from this office of August 25, 1893, relative to the expenditure of the appropriation made for the completion of the station by the first session of the Fifty-second Congress.

Coal shed.—A coal shed is required for the storage of coal and wood and a suitable building with hatches in the roof or roof in hinged sections about 50 by 18 feet, with 12-



CAPE CHARLES QUARANTINE—U. S. QUARANTINE STEAMER "DAGMAR."

foot walls, can be built on a position of the wharf to the west of the warehouse for the sum of $500.

Painting.—The inside walls of the barracks have been so defaced by those held under observation in quarantine that they will need painting. The kitchen, dining room, and storeroom of this building should also be painted and the outside walls and roofs of the boathouse, warehouse, and disinfecting house require it also. This would necessitate an expenditure of $500.

Latrines.—The closets in use in the lazaretto and barracks should be replaced by Mott's latrines on account of the facility they offer for the disinfection of excreta, and this would cost about $150.

Drain.—The manhole leading to the drain at the east side of the lazaretto adjunct is tilted and the brickwork broken by the settling of the fill about the building. To repair this an expenditure of $30 will be required.

House for fresh-water tanks.—The fresh-water tanks should be covered by a suitable house or shed in order to protect them from the action of the sun and their contents from impurities carried by the winds. The cost would be $150.

House for fresh-water spring.—A small structure should be built over the spring in order to protect it from dust and other impurities, as at present it is only partly protected by a cement dome with a large open grating in one side. The spring is situated immediately in the rear of the pump house, and as during quarantines the greater part of the cooking is done by steam from this house, there is danger of the water in the spring receiving impurities. A small structure that would furnish sufficient protection could be built for the sum of $20.

Cremation furnace.—A small cremation furnace should be built adjacent to the lazaretto for the destruction of material used therein and the cremation of the bodies of those dead from contagious disease. It is estimated that a furnace suitable for the above purposes, and similar in design to those used for heating boiler plates, can be built for the sum of $800.

Grading of reservation.—The grounds from the limit of the reservation at the southern end to high-water mark should be graded, terraced, and planted with shrubbery and flowers. This would add much to the appearance of the station and would diminish the heavy grades now existing between the different buildings. This would necessitate an expenditure of between $4,000 and $5,000, and would, I presume, be the subject of a special appropriation.

Communication between buildings.—On account of the heavy grades, some means of communication between the different buildings, the wharf, and the office in the officers' quarters should be provided, and this could be accomplished by a system of electric bells or speaking tubes, and $250 would in all probability be sufficient for this purpose.

Furniture.—Additional furniture is needed, as the steward's and officers' quarters have never been completely furnished. Five hundred dollars would be required for this purpose.

Safe.—A small safe is badly needed, as at present there is no secure place in which to keep records and valuables, and a suitable one could be furnished for a sum not exceeding $100.

Launch.—A new launch should be provided for the use of the station, as at present the one formerly in use is worn out and a launch has to be rented in order to communicate with the mainland at Tiburon. A new launch would cost $2,050.

Whitehall boat.—A Whitehall boat should also be supplied, as in case of accident to the launch we are left without means of obtaining supplies. A suitable boat completely equipped with centerboard and sail can be purchased for $200.

Water supply.—At present, when the quarantines are few and a small number of persons are at the station, the water supply obtained from a spring in the rear of the station is abundant, but when the station is crowded it is always a source of anxiety, and the

strictest economy has to be practiced in its use. An artesian well would furnish an abundant supply, and would probably not exceed in cost $3,000.

Should you desire a more extended report of the station, I will furnish it at any time you may direct.

Respectfully, yours,

D. A. CARMICHAEL,
Passed Assistant Surgeon, M. H. S.

REPORT ON NATIONAL QUARANTINE STATION, SAN FRANCISCO, CAL.

(By Passed Assistant Surgeon D. A. CARMICHAEL, in command.)

NOVEMBER 18, 1892.

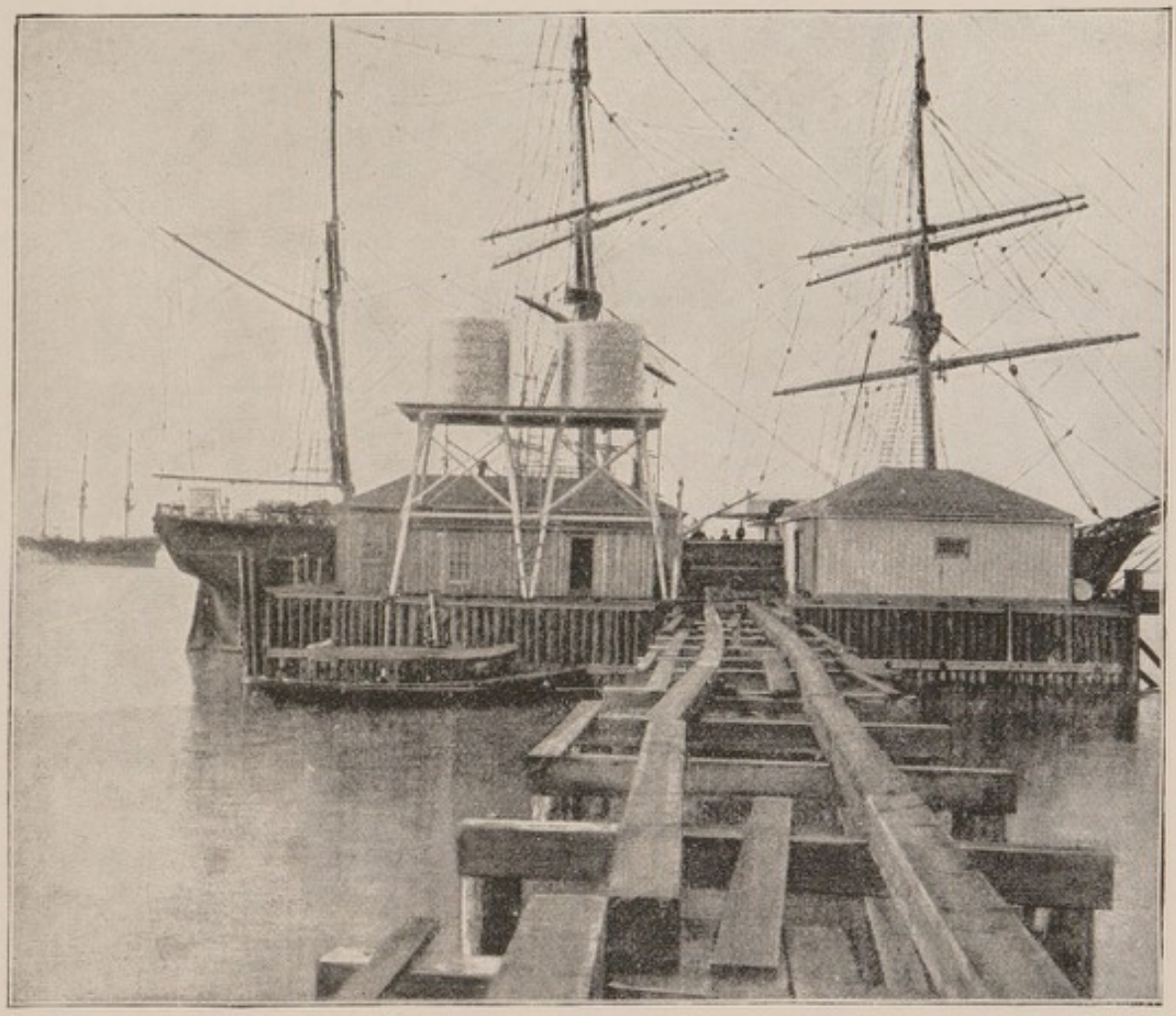
The establishment of the national quarantine station in San Francisco Harbor was authorized by the quarantine act approved August 1, 1888.

It is situated on Angel Island, distant 6 miles from San Francisco and 1 mile from Tiburon, the bay landing of the San Francisco and North Pacific Railroad. To the north are San Quentin and San Pablo bays and to the eastward Berkley and Oakland. To the south and westward is Goat Island, Alcatraz, San Francisco, the Golden Gate, Sausalito, Belvidere, and Tiburon. The island has a superficial area of about 800 acres, and is strongly marked by a spur or ridge of hills which trend south, southwest, west, and northwest. On the southern and western sides, where the hills are exposed to the southwest winds and fogs, the vegetation is scanty and limited to sage brush and grass. On the eastern and northern sides there is a dense growth of chaparral, composed chiefly of live oak, madrona, wild convolvulus, a few specimens of the bay tree, and everywhere on the island grows the poison oak. The soil is a mixture of rock and clay and is a very soluble earth when mixed with water. It is fertile, and under the influence of natural rain or irrigation will make large returns in the way of vegetation. The water supply is good, and after mature reflection it is difficult to believe that it is dependent on the local rains. There seems to be a large water-bearing stratum which crops out from the hillsides at various depths, and although there is usually no rain here from May to October, the supply does not apparently diminish a great deal. This has led to the belief that the water-bearing strata or reservoirs are dependent for their supply on the mountain rains, and that there is a communicative stratum which passes from the mainland under the bay to the island. It has been observed that a heavy rainfall in the mountains has been followed by an increased flow in the springs on the island, while local rains have not been productive of like results. The water is soft, pure, and wholesome, and if the surmise as to its source is correct, it should be excellent in quality after passing through such a grand filter as nature has provided.

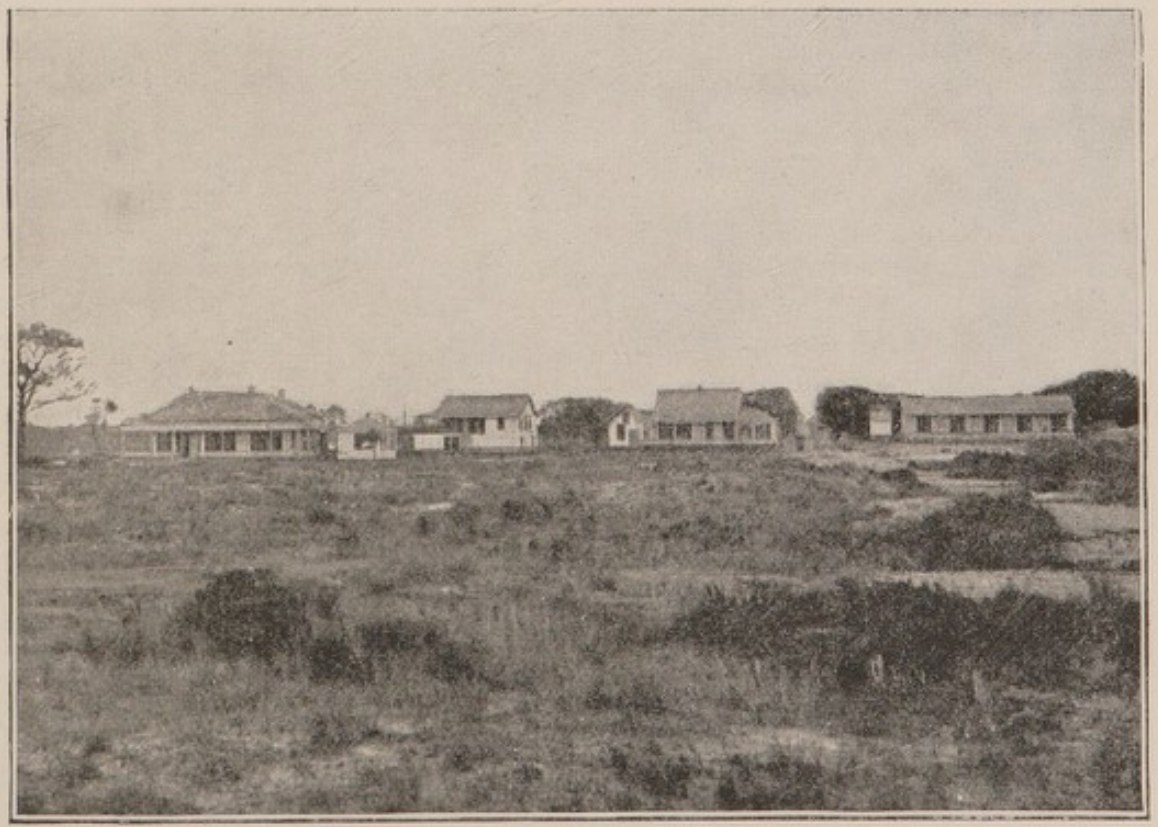
There is a good depth of water all around the island, and vessels of large size can pass within a short distance of the shore on every side.

A military road cut in the face of the hills runs completely around the island, a distance of about 5 miles. Three companies of the First Regiment of Infantry, U. S. Army, with their officers, are stationed at Angel Island post, on the western side of the island, directly opposite Sausalita on the mainland, and distant from the quarantine station about three-quarters of a mile. There is a milk ranch a short distance south of the army post and a few men, who work at a stone quarry, on the eastern side of the island. The rest of the island, with the exception of the quarantine station, is uninhabited.

The station is located in what has been called Hospital Cove, a quiet little valley on the northern end of the island, surrounded by precipitous hills, and a place of great natural beauty. It is well sheltered from the southwest winds and fogs which prevail during the summer months, and is an admirable site for a quarantine station. Directly opposite, between it and the mainland, is Raccoon Straits. Farther to the northward can be seen San Quentin and San Pablo bays, and in the distance the Coast Range of Mountains.



BALLAST WHARF WITH VESSEL—SOUTH ATLANTIC QUARANTINE—NORTH END.



GROUP OF BUILDINGS AT SOUTH END—SOUTH ATLANTIC QUARANTINE.

The reservation, ceded by the War Department, is some 10 acres in extent, and the grounds slope gradually from the limit at the southern end to the water's edge, the descent being more abrupt on the eastern and western sides of the cove. In the rear of the station to the southeast is Mount Ida, 820 feet in height, and the highest point on the island. The hills on the south, west, and east sides of the cove are well wooded, and when watered by the winter rains are made beautiful by the profusion of wild flowers produced thereon. The proposal of the San Francisco Bridge Company to erect the wharf and buildings necessary for the station was accepted by the Department, and a contract entered into for the completion of the work.

Work began on April 15, 1890, and the wharf and buildings were finished on December 30, 1890, and the disinfecting machinery about January 15, 1891.

The original amount of the contract was $111,578, and a deduction was made from this of $14,090 for buildings and work omitted, leaving the sum of $97,488. A further deduction of $5,045 was made for the change in location of the wharf, leaving $92,443. To this should be added $5,390 for extra work, making a total cost of $97,841.

In the original plan of the station the wharf was located near the center of the cove and connected by a gangway to the shore at about the middle of the reservation. To the west of the wharf was the warehouse, and near the shore end of the gangway the boathouse. It was found impracticable to construct the wharf, warehouse, and boathouse on the original plan, and it was so modified that those structures were placed at nearly the northeastern end of the cove, an extensive fill having been made from the adjoining hillside to provide a proper foundation. On this was placed the wharf, warehouse, disinfecting house, and boathouse, and a connecting road built to the original grounds of the cove. It is said this change of plan effected a saving of $5,045, and I think it has given better results, as the wharf, warehouse, disinfecting plant, and boathouse are placed at some distance from the other buildings, a greater depth of water is secured at the wharf, and there is greater security from northerly storms.

Wharf.—The wharf is built in the form of an ⊓, well supported upon driven and protected piles. It has nine large mooring piles, and is anchored by a — running diagonally from the junction of the arms of the ⊓ to the fill of earth and rock between the warehouse and disinfecting house, and has a firm and substantial flooring. The long arm of the ⊓, which faces the west, is 204 feet long, and the short arm, 104 feet, faces the north. Each section of the wharf is 35 feet wide. At the southern end of the wharf is the foundation of driven piles for the boathouse, 67 feet long and 41 feet wide. On this is placed the boathouse, a building 50 by 23 feet, provided with platforms outside and inside, hoisting apparatus for raising and lowering small boats, landing stairs, and a room for boatmen's quarters. In the boathouse is moored the launch used to communicate with the mainland at Tiburon.

It may be necessary to extend the wharf, and the extension could be made to the northward towards the point at the entrance to the cove on the eastern side. This would give more space for the accommodation of vessels, and would secure a greater depth of water. A shoal is forming near the center of the entrance to the cove, but well within it, and may in time require dredging.

Buildings.—All of the buildings are constructed of wood with the exceptions noted in each description. There are ten new buildings and one old cottage, located as follows: The warehouse and disinfecting house, at the northeastern end of the cove on the fill adjoining the wharf; the boathouse, at the end of the wharf; two detention barracks (erected by the Occidental and Oriental Steamship Company), on the eastern side of the roadway between the disinfecting house and the barrack and kitchen building; the barrack and kitchen building, at the eastern side of the original grounds of the cove. Directly south of the latter building is the pump house, and further to the south and western side of the reservation is the surgeon's house and officers' quarters, placed on an elevation at some distance above the other buildings. In front of the officers' quarters and at a much lower point is an old one-story cottage.

At the northwest end of the original grounds of the cove, and well away from the other buildings, is the lazaretto and its adjunct building.

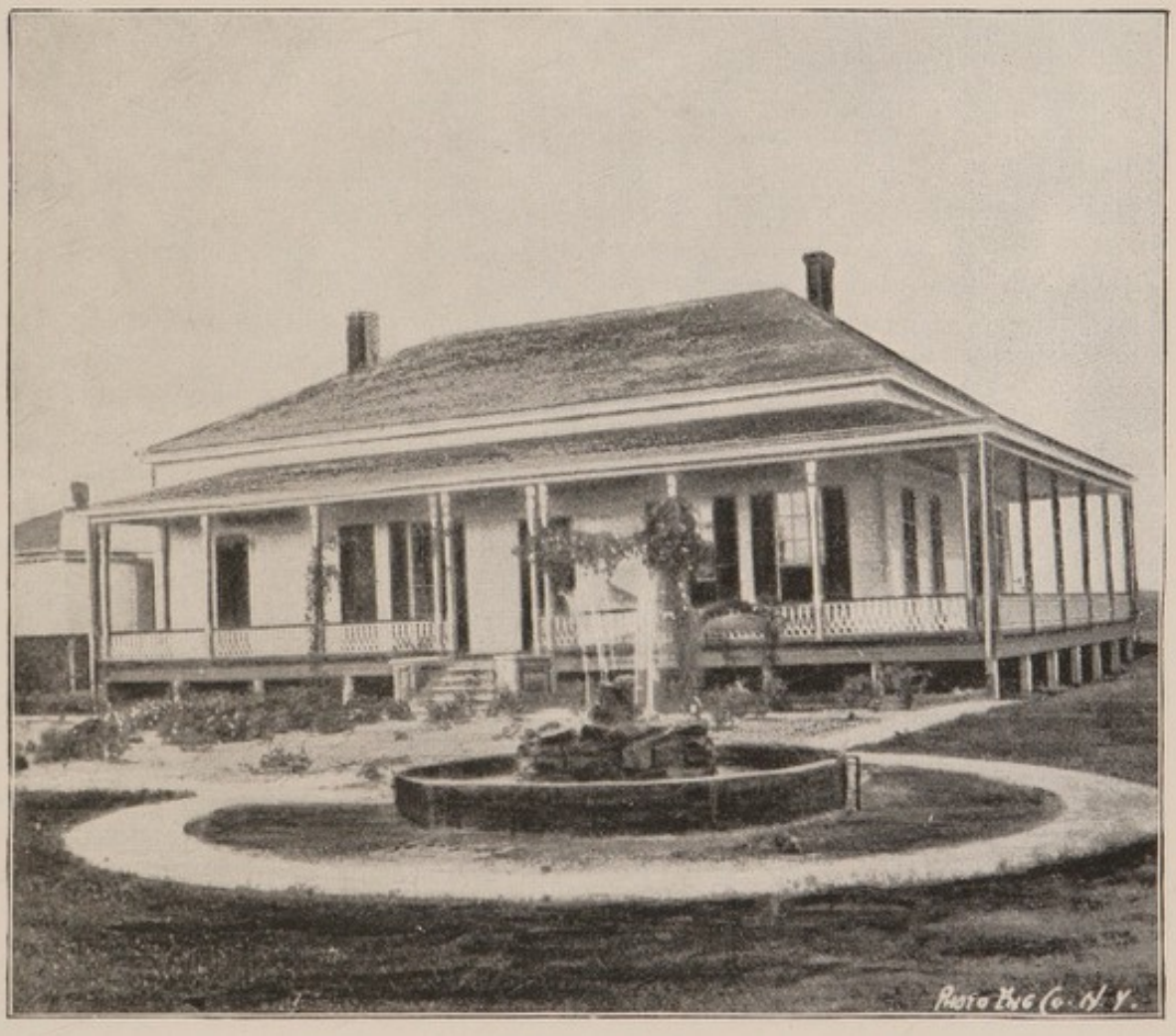
Washhouse.—The washhouse is 58 by 16 feet, with 17-foot walls open to the roof; has no interior finish, and is lighted by side windows. It has sliding doors on the side facing the wharf, and a door at each end. It is used for storage of baggage and miscellaneous articles, and during the overcrowded condition of the station in some of the quarantines has been used as a detention barracks.

Disinfecting house and plant.—The disinfecting house is a large building, 70 feet 6 inches by 36 feet 6 inches, with 20-foot walls and open to the roof. At the northern end, and communicating with it, is the boiler house, 15 by 13, with 15-foot walls. The disinfecting house has a cement floor, large sliding doors in each end, side windows, large ventilator in the roof, and is strongly built. In it are placed three large cylindrical jacketed chambers for the disinfection of baggage, clothing, etc. Each chamber is 40 feet long, 7 feet interior diameter, rests on six cast-iron saddles, is lined with hexagonal spruce frames, and is furnished with a high-grade thermometer arranged in a nickel-plated brass open casing graded to 500° F., and so fitted that the temperature of the interior of the chamber and jacket can be recorded. The inside and outside shell of the jacket is made of three-eighths-inch C. H. No. 1 boiler iron of standard tensile strength. The seams of the plates composing the cylinders are riveted with five-eighths-inch diameter rivets spaced 1¾ inches from centers, and all horizontal seams are double-riveted. The doors are made of the same thickness of metal as the shells of the chambers and riveted to solid turned and faced wrought-iron rings. Each door is braced by radial and circular braces of 2½ by half inch iron, has heavy cast-iron hinges, and is opened and closed by the aid of rollers moving on a quadrant iron track fixed firmly to the floor opposite each end of the cylinders. Each door is furnished with twelve 1-inch diameter screws secured in sleeve nuts with proper fork plates, by which the doors can be securely closed, and the joints are made steam tight by Jenkins Bros.' patent packing secured to the face of the grooved wrought-iron rings of each chamber. Each chamber has steam supply and return pipes, steam gauges, valves, safety valves, and pressure regulators. The condensation from the steam jackets of the chambers is returned to the boiler by a Knowles automatic feed pump and receiver, and the condensation from the chambers is wasted through a No. 4 Jones automatic steam trap.

The steam required for the disinfecting chambers is furnished by a vertical tubular boiler (placed in the boiler house adjoining the disinfecting house), 3 feet 8 inches in diameter, 9 feet 6 inches high, and contains ninety-four 2-inch diameter tubes 6 feet 9 inches long. The shell is five-sixteenths of an inch thick and the heads seven-sixteenths, and is constructed of the best homogeneous steel of standard tensile strength. The boiler is set on a cast-iron base 18 inches high and is provided with rocking grate, safety valve, water and steam gauges, gauge cocks, feed valve, check valve, and blow-off cock. The disinfecting chambers, boiler, and connecting pipes are covered with salamander felt.

Detention barracks.—Permission was given to the Occidental and Oriental Steamship Company last May to erect two temporary barracks for the accommodation of immigrants expected on their steamship *Oceanic*, the Chinese and Japanese passengers of the Pacific Mail steamship *City of Peking* being then in quarantine on account of smallpox, and numbering 914 persons. These buildings are constructed of rough redwood lumber, with battened sides and roofs, are 80 by 20 feet each, with 10-foot walls, and open to the roof, and are provided with stationary bunks arranged in sections, with central and cross passageways between. There are six windows on each side and a large transom and double door at each end. Each building can accommodate 288 persons, and both together 576. They are now somewhat out of repair, requiring shingle roofs and rustic boarding on the sides and ends, in order to make them weatherproof.

The Department has now under consideration a report relative to the purchase of these buildings for the station, and if the purchase is decided upon when repaired in the manner indicated, and painted, they will be well suited for the detention of Chinese and Japanese immigrants.



RESIDENCE—SOUTH ATLANTIC QUARANTINE—SOUTH END.

Barrack and kitchen building.—This is the largest building at the station, and is arranged in the form of an ⌐; the short arm, 68 by 28 feet, faces towards the north, and contains the kitchen, kitchen storeroom, and dining room. The long arm, 109 by 28 feet, faces the west, and contains the large rooms designed as detention barracks. The building is one story in height, placed on stone piers, has smooth-finished walls and ceilings, and an 8-foot veranda, which runs completely around it. The kitchen is 28 by 27 and 14 by 27, is provided with a large range, hot-water boiler, sink, etc. The storeroom, 13 by 14, is in the northeast corner of the kitchen, and has lately been fitted with shelving and bins for the storage of provisions. The dining room is large, 40 by 27 feet, has the same finish as the rest of the building, and has a ventilator leading to a louvre in the roof. There are two rooms used as detention barracks, separated by a hallway; one is 54 by 27 feet and the other 40 by 27. Each room has ventilators in the ceiling, supporting columns for the ceiling, bath room and water-closet adjoining, side windows and doors leading to the kitchen, rear veranda, and hallway. In the largest rooms are twelve upright frames of wood strongly bolted together in pairs, with a narrow passageway around each section. The frames are arranged in three tiers, and are fitted with slots for the reception of canvas cots slung on poles, which fit into the slots. Each tier will receive four canvas cots, or twelve in each frame. The smaller room is arranged in a similar way, and has eight of the frames described. Two hundred and forty persons can be accommodated in the barracks. The water-closets in the building have been found insufficient during quarantines, and it was necessary to erect temporary closets placed over tide water for the accommodation of those held under observation. A sufficient number of latrines with proper facilities for the disinfection of excreta should be placed in these barracks. A large boiler for heating water for the baths is placed in the basement under the hallway.

Pump house.—The pump house is a small frame building with stone foundation walls, 28 feet 8 inches by 16 feet 10 inches and 11-foot walls. It is similar in design to the other buildings, and is provided with a vertical tubular boiler 30 inches in diameter and 7 feet 6 inches high, and two pumps, one of which is used to pump salt water and the other fresh water. The floor of this building is of brick, and it has settled in places and will require repairs.

Surgeon's house and officers' quarters.—These buildings have stone basement walls, heavy stone piers for verandas, attics with dormer windows, and 8-foot verandas around each building. The surgeon's house is 45 by 41 feet, and has four rooms and a kitchen, pantry, bath room, and water-closet. There is a fireplace with ornamental mantel in each room, and in the basement there is another water-closet.

In the officers' quarters (50 by 44 feet) there are two sets of three rooms each, divided by a central hallway. There is a kitchen, and in the basement a bath room and water-closet for each set of quarters. There are grates in each room and a hot-air furnace in the basement. There is no furnace in the basement of the surgeon's house.

White house.—This is an old house formerly used as an isolation hospital for the army post on the western side of the island. It is a one-story cottage, contains two rooms, a small hallway, and a small room at the rear. It is used at present for attendants' quarters, is badly suited for such a purpose, is in bad repair, and should be removed from its present position in front of the officers' quarters.

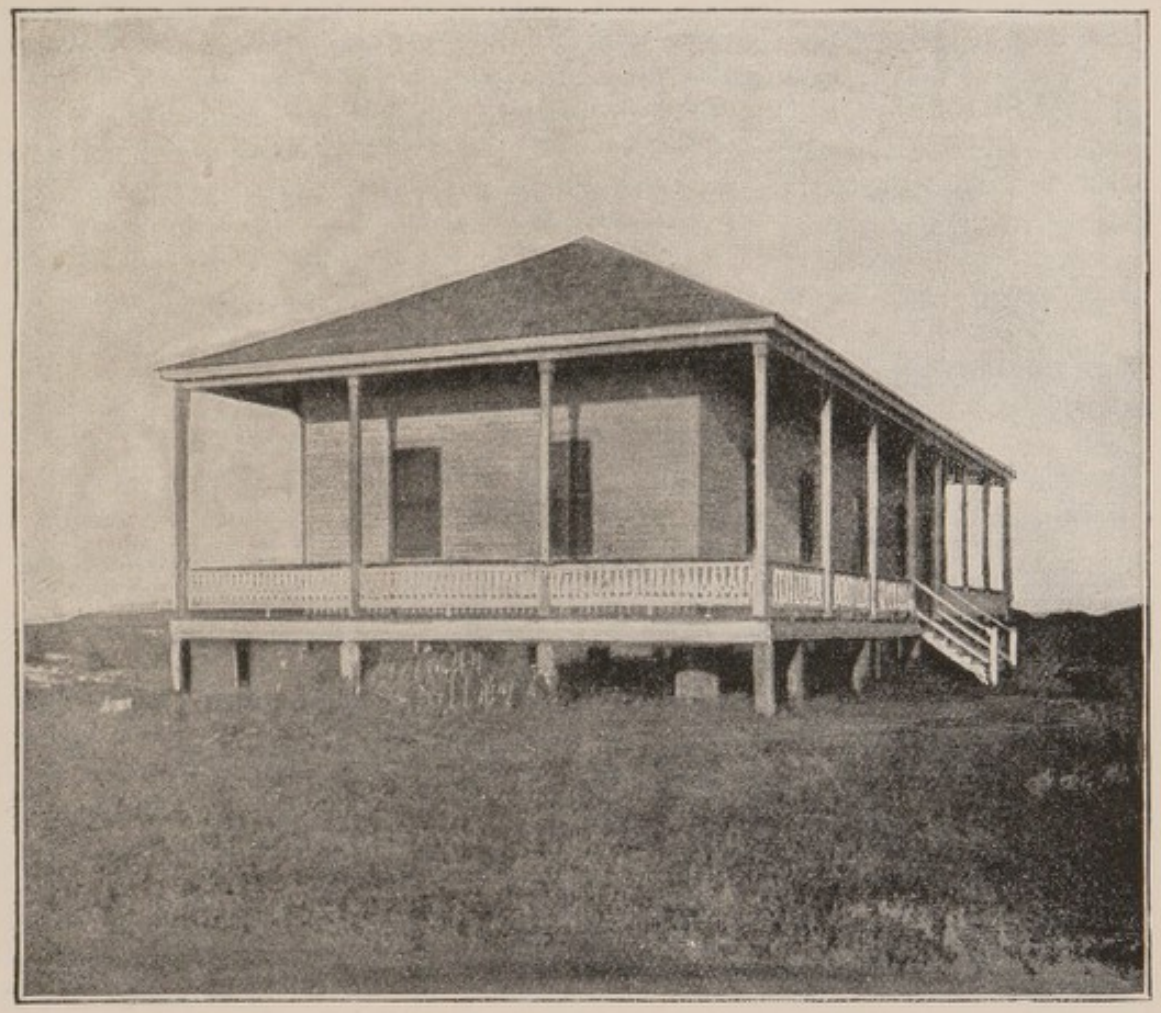
Lazaretto and adjunct building.—These two buildings are placed at the northwestern end of the cove, well away from the other houses, and are elevated on stone piers, so that there is a free circulation of air underneath them. The lazaretto is a one-story building, 76 by 26 feet, has a wide veranda completely around it, and the interior is divided into two wards, 31 by 25 feet each, with water-closet and bath room for each ward and a connecting hallway on each side. Each ward will accommodate ten persons, and has side and end windows and ventilators through the ceiling and roof. There is a boiler in a small basement under the hallway for heating water for the baths, but

no provision has been made for heating the wards except by means of stoves. The adjunct building is 42 by 30 feet, has an observation ward, kitchen, nurse's room, dispensary, and a small attic with dormer windows. A water-closet is also placed in this building, and sinks in the kitchen and dispensary. It is connected to the lazaretto by a covered passageway 15 feet long and 10 feet wide, and is surrounded by an 8-foot veranda. The closets in both of these buildings should be replaced by latrines for reasons already given.

Water supply.—Fresh water is obtained from a spring in the rear of the pump house, the water-bearing strata before referred to cropping out at this point. From the spring there is a steady flow to a cement-lined cistern placed in the ground at a lower level, and from this cistern it is pumped by the fresh-water pump in the pump house to three large, wooden storage tanks of 17,000 gallons capacity each, located on the hillside above the station and east of the disinfecting plant. These tanks have cut-off valves, so that one or more can be used at a time. They have for a foundation a stone wall with crossbeams, to support the planking on which the tanks rest. This foundation is too slight for the weight to be supported when all of the tanks are filled with water, and it has been necessary to support the crossbeams by short upright beams placed underneath. From the tanks the water is conveyed by a system of pipes to the different buildings, and the pressure is sufficient to throw water on the roofs of the surgeon's house and officers' quarters, the highest buildings at the station. There has always been a fear that the fresh-water supply would prove insufficient, but from the same strata from which our spring is evidently supplied is drawn the water supply for the use of the army post and a large number of cattle which are kept on the island. An artesian well would, I think, furnish an abundant supply of good water, and would put beyond all doubt the permanency of supply. Salt water is used for flushing to limited extent, and storage tanks to hold it, of 14,000 gallons capacity, have been built directly above the pump house on the hillside. The supply pipe leads from the cove to one of the pumps in the pump house, and is pumped to the tanks referred to. At present it is only supplied to the barrack and kitchen building from this source. If the system of pipes leading from the salt-water tanks was extended to the other buildings, it would save the fresh water, but it is ill suited for cleaning purposes, as it soon defaces painted surfaces and is ruinous to water-closet fixtures unless they are made especially for its use.

Sewerage and drainage.—Iron sewers which empty into the waters of the cove are connected with the closet in the warehouse, barrack and kitchen building, pump house, surgeon's and officers' quarters, and adjunct of the lazaretto. From the lazaretto proper a long line of sewer pipe runs from that building to the extreme northwest point of the cove, where it empties its contents into the rushing tide of Raccoon Straits and is carried directly to the ocean. It is the intention to extend this sewer to the new hospital for noncontagious diseases soon to be erected. Surface drains for storm water are placed at different points in the grounds, and all lead directly into the waters of the cove. The original plan of the station did not contemplate the use of sewers connected with the water-closets and emptying into the waters of the cove, but a system of outbuildings provided with suitable boxes for the reception of excreta, subsequent disinfection, and destruction. The plan was modified, however, with the understanding that thorough disinfection would be practiced before the fæcal matter passed from the closets to the sewers. It is doubtful if any advantage was gained by the change of plan, and I think the original proposition was the safer.

Grounds.—The reservation has no inclosure, and a suitable fence should be built around it in order to secure the isolation requisite for a station of this kind. The grade between some of the buildings is heavy, and a proper system of grading, retaining walls, and terracing would lessen this, and the cultivation of flowers and shrubbery would make the quarantine cove one of the prettiest spots in San Francisco Bay.



HOSPITAL.—SOUTH ATLANTIC QUARANTINE—SOUTH END.

BOAT-HOUSE, WITH BALLAST WHARF IN DISTANCE—SOUTH ATLANTIC QUARANTINE—NORTH END.

In locating the barrack and kitchen building, officers' quarters, and lazaretto, excavations were made in the adjacent hillsides, and the removal of the protecting turf has made these embankments, wetted by the heavy winter rains, subject to landslides. To prevent danger and loss from this source, stone or cement retaining walls should be built in the rear of the structures named. The grounds of the cove are too limited in extent for the number of buildings already erected thereon and those whose construction is now under consideration. It is proposed to build at an early date a hospital for noncontagious diseases and adjunct building, the same in design as the lazaretto and its adjunct, a laundry, and quarters for attendants. By extending the fill, on which the warehouse and disinfecting plant now stand, from the southeast corner of the boathouse to the northwest corner of the barrack and kitchen building, and securing it by a firm sea wall, considerable space would be gained and there would be room for additional buildings. This space is shoal water, is not used for any purpose, and varies from 6 to 8 feet in depth.

There is a small cove to the westward of the station, distant about 500 or 600 yards, and separated from it by a range of hills; and it has occurred to me, in thinking of the possibilities of the station, that if this was obtained from the War Department, the lazaretto and adjunct placed therein, and communication established with the present station by means of a road cut in the face of the cliff, or the communication could be made by water, more perfect isolation would be secured, contagious disease would be entirely removed from the cove now occupied, less restraint would be placed on the working staff during quarantines, and, to a great extent, the popular fear of this station would be allayed. The adoption of this plan would also remove the lazaretto still farther from the vicinity of the army post and the military road around the island. It is unlikely that the War Department will ever need the cove I mention for any purpose whatever. If such a plan was adopted, it would be necessary, as I have already mentioned, to build a road from the present station, construct a small wharf or landing, and a certain amount of excavation, with retaining walls, would be requisite for the foundation of the building.

Communication with the mainland.—When there is no contagious disease at the station communication is held with the mainland by way of Tiburon, and thence by ferry to San Francisco, a launch being used to run between the station and Tiburon. The steam launch formerly in use is broken down and worthless, and a naphtha launch is now rented to perform the service until money can be appropriated for the construction of a new launch. A Whitehall boat should be purchased for the station for use in case of accident to the launch. During quarantines arrangements should be made that the fumigating steamer shall dock in the city and visit the station each day to bring mail and supplies, or a tug should be hired in the city to perform this service, as the city authorities and people of San Francisco and Tiburon object to a vessel docking at the quarantine station and visiting the mainland while there is contagious disease at the quarantine.

Telephone.—There is no communication between the mainland and the station by telegraph or telephone. There is a long-distance telephone wire between Tiburon and San Francisco, and if a line was extended from this to the station the convenience in obtaining supplies would indeed be great. Some such means of communication should be provided, as in case of interruption to the means of transportation and during quarantines the position is at times a most embarrassing one. To lay a cable of one conductor (three strands), armored with twelve No. 9 galvanized wires from Tiburon to the quarantine station would cost, it is estimated, about $1,800, and steps should be taken to secure an appropriation for that purpose at an early date.

Fumigating steamer.—A contract was made with the Fulton Iron Works on July 9, 1891, to build for the use of this station a composite fumigating steamer for the sum of $26,500. The vessel was completed early in the present year, but was not taken to the station until September 24, 1892. The steamer had lain at Little Main street dock in San Francisco for some months, and was in need of a thorough cleaning, calking, and painting.

Additional fittings were also required, but it is now in good order and ready for service when it is decided to place it in commission. Surgeon-General Wyman has named the steamer the *George M. Sternberg*, in honor of the distinguished bacteriologist and sanitarian of that name.

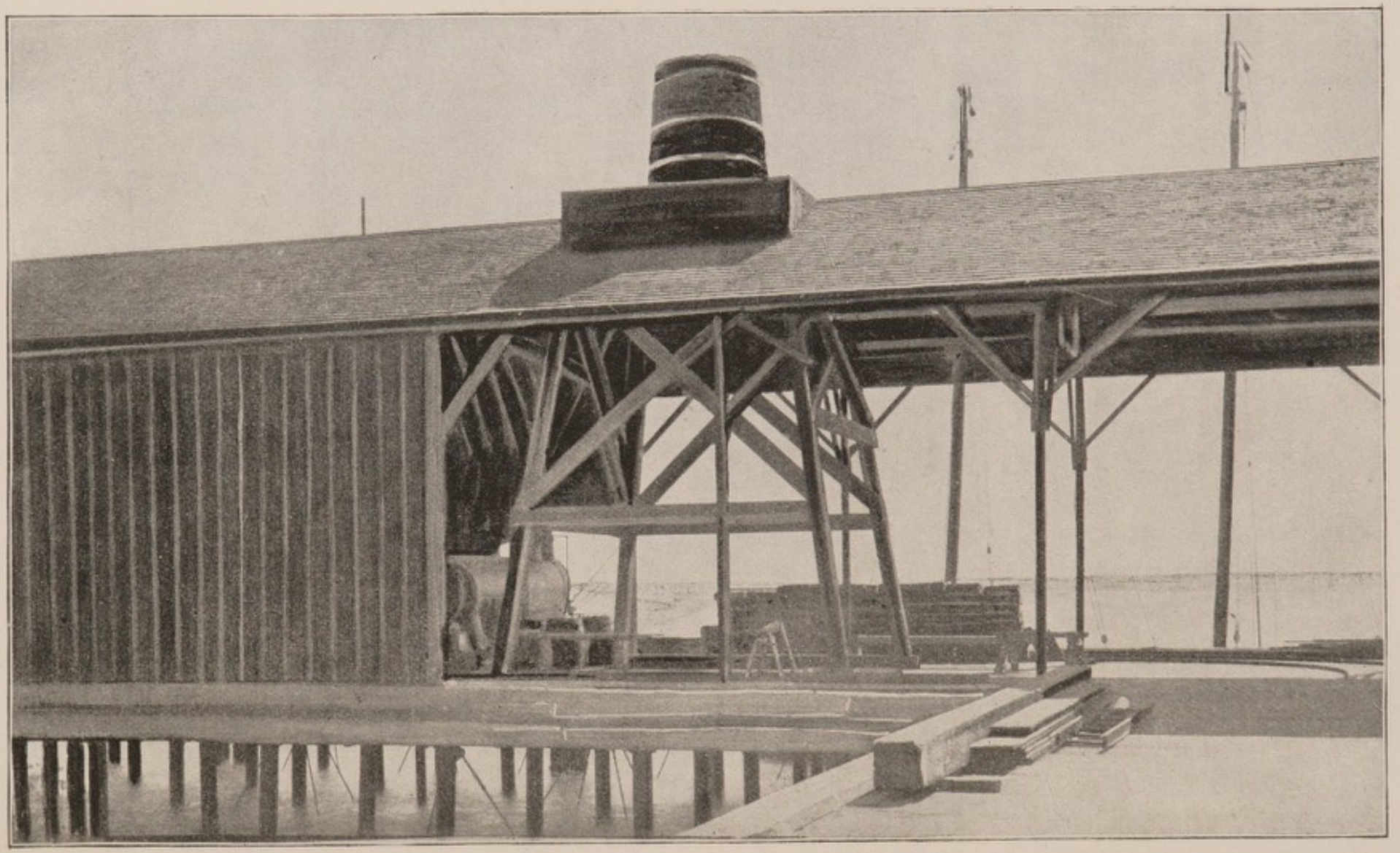
Description.—The steamer is 80 feet long, 16 feet 9 inches beam, draft 5 feet 9 inches, has a steel frame, iron bulkheads, and is strongly built. The bottom is covered on the inside with Portland cement up to the floor ends, and the hull is sheathed with 22 and 24 ounce sheathing metal up to 6 inches above the water line. It is provided with a cylindrical return tubular boiler of the Scotch type, 8 feet 2 inches in diameter and 9 feet 3 inches long, compound surface condensing engines, with high and low pressure cylinders, with a stroke of 12 inches, two pumps for bilge and fire purposes and for pumping sublimate solution, and one hand bilge pump. In the forward part of the hull is a chain locker; then aft is the berth deck, with four berths and lockers for the accommodation of the crew; two iron tanks, capacity 525 gallons each, one on each side; engine room, fire room, coal bunkers, iron box for interception of particles of burning sulphur, and rope and pipe locker, with hatch on main deck.

There are five bulkheads in the hull and the deckhouse has three. The vessel has been furnished with a four-bladed Zeise propeller 4 feet 6 inches in diameter. The outside planking of the hull is of fine-grained Puget Sound pine and the deck is constructed of the same material. On the main deck forward is an anchor windlass, aft of this the hatch leading to the berth deck, and aft of this the main deck house. In the port side of the deck house forward is a small waiting room, and on the starboard side the pilot's room, furnished with berth, curtains, lockers, and washstand. Further aft are lockers for lamps and boat furniture, a water-closet on each side, entrances to fire and engine rooms, and in the after part of the deck house is placed the fumigating furnace for the generation of sulphur dioxide, the exhaust fan, and engine for driving it. Beneath the furnace under the main deck and aft of the engine room is an iron reservoir 3 by 4 feet, with cement-lined bottom for the interception of any burning particles of sulphur which may pass from the furnace. The pipe from the furnace reaches nearly to the bottom of the reservoir and the pipe to the ship's hold or outlet from near the top. The engine used to drive the exhaust fan is supplied with steam from the main boiler, and can make 250 revolutions a minute. The exhaust fan can make 3,000 revolutions a minute, with a capacity of about 1,600 cubic feet of gas per minute. The sulphur furnace is circular in form, 36 inches in diameter, about 9 feet long, and projects partly into the upper part of the engine room forward. There are two large trays for the reception of sulphur, and they have a capacity for 400 pounds of lump or roll sulphur. The door of the furnace is secured by clamps, and underneath the furnace is a fire box lined with fire brick, with door and grate and independent smokepipe leading through the roof of the deck house to the outer air. The floor of the furnace room is, like the rest of the deck, of wood, and should be protected by iron plates or cement covering. Aft of the deck house is a large metal towing post, and still further aft part of the steering gear.

There are three scuppers on each side of the main deck, 2 by 4 inches in diameter, and three storm freeing ports, 8 by 24 inches, fitted with hinges, clamps, and ringbolts. Flagstaffs are placed at the bow and stern.

On the forward part of the deck house is placed the pilot house. It is large, somewhat lofty, and is reached from the main deck by an ash ladder furnished with brass hand rails. It has doors at each side, windows in front and sides, and contains a steering wheel of mahogany with hickory spokes, compass, bell and steam-whistle pulls, speaking tube to engine room, lockers for signal flags, and two windows at the rear.

Aft of the pilot house is the doctor's room, fitted with berth, lockers, curtains, washstand, and writing desk. In the rear of this house are the smokestacks, steam-whistle ventilators to fire hold, outlet from sulphur furnace, and smokestack of the same. Secured to the top of the deck house and around the pilot house and doctor's room is a hard-wood hand rail capped with a teak rail.



DISINFECTION BUILDING—KEY WEST QUARANTINE.

The steamer will have a speed of 8 or 10 knots an hour. It has not yet been used for any purpose except to make a trial trip of four consecutive hours. If it was placed in commission it could be used for communication with the city, thereby saving the large freight bills incident to the peculiar position of the station, and it would then be ready for service when vessels arrive at this port with contagious disease on board.

Present relation to State and city authorities.—No sanitary inspection or disinfection of vessels arriving at San Francisco Harbor is made by the Marine-Hospital Service. All inspections and disinfection of vessels are made by the city quarantine officer, who is appointed by the governor of the State of California for a term of four years, and who also acts as United States quarantine officer under the provisions of section 5 of the national quarantine act approved April 29, 1878.

Neither the State of California nor the city of San Francisco have any quarantine buildings or modern appliances for the treatment of contagious disease brought by vessels entering San Francisco Harbor, and since the establishment of this station it has been used as an aid to the State and city in the treatment of contagion.

Quarantine methods.—When a vessel arrives at the entrance to the harbor it is boarded and inspected by the State quarantine officer, and if found to have contagious disease on board the yellow flag is hoisted, all communication with the vessel is prohibited, and it is removed to the quarantine anchorage. The cases of contagious disease, with their clothing and effects, and those who have been in attendance upon them, are then taken to the national quarantine station, the sick placed in the lazaretto, and those in attendance, but who have not developed disease, in the adjunct building adjoining it. Care is exercised in the removal from the vessel to the station that there shall be as complete an isolation of the sick as the circumstances will permit. The steerage passengers with their effects are then transferred to the station and placed in the detention barracks, where they are held under observation for a period recognized as the full time of incubation of the disease, dating always from the development of the last case. If the contagion is smallpox, all are vaccinated. When those sick with contagious disease are taken to the lazaretto the yellow flag is hoisted on that building and on the dock, and no one is allowed to leave the station until the quarantine is raised.

The practice at this port with reference to the cabin passengers, crew, and vessel, and which is under control of the State authorities, has been as follows:

Effects and clothing are fumigated with chlorine gas or sulphur dioxide. In case of smallpox all are vaccinated. The cabin passengers, who, it is claimed, have not been actually exposed to the disease, are then allowed to proceed to their destination.

The effects of the crew are then disinfected, and, in case of smallpox, the crew is vaccinated. The vessel is then fumigated with chlorine gas by the pot method, a mixture of binoxide of manganese, chloride of sodium, and sulphuric or hydrochloric acid being used for that purpose. The vessel is then cleaned and allowed to go to her dock in the city. The crew, I am told, are not allowed liberty on shore until the period of incubation of the disease brought by the vessel has passed.

After the removal of the steerage passengers to the station, rigid inspections are made once, twice, or oftener in the day, those under observation passing slowly in line before the officer in charge of the station, while one assistant counts and another keeps tally of the number. All doubtful cases are made to stand apart from the others, and are reserved for closer examination at the close of the general inspection. The number of persons taken to the detention barracks from the vessel is carefully recorded, and if any are missing at inspection the rest are held in line until a careful search is made in the barracks and elsewhere for those not present. As cases of disease are developed, they and their effects are removed to the lazaretto.

The detention barracks are emptied each morning, fumigated with sulphur dioxide by the pot method, flushed with salt water and thoroughly washed, and the water-closets and baths disinfected and the sewers flushed.

Those held under observation are encouraged to remain in the open air as much during the day as possible, and the wide verandas about the barracks assist in attaining this object. No one is allowed to leave the reservation, and great assistance has been given to those in charge of the station by the commanding officer of Angel Island post, who, during quarantine, has always posted sentinels on the military road at each end and above the cove.

When the period of incubation of the disease for which the quarantine is enforced has passed and no more cases have developed, the quarantine is then raised for those under observation, and after a thorough cleaning and disinfection of their baggage and clothing in the steam-disinfecting chambers, they are allowed to depart from the quarantine station. No one enters the lazaretto but the officer who has charge of the sick, and the precaution is taken by him to change his clothing in the adjunct building before entering the lazaretto and on leaving the adjunct.

All food and supplies for the sick are placed on a table some distance from the adjunct building and are taken from it by the attendants in that building.

Those confined in the lazaretto are kept there until recovery or death. When there are no more cases the convalescents are thoroughly bathed with warm carbolized water, their clothing, previously boiled and fumigated, given to them, and they are placed in the adjunct building for a few days and then transferred to the barracks, and from this point they leave the station, after their baggage has, in addition to the fumigation, passed through the steam-disinfecting chambers. The lazaretto and adjunct are then thoroughly fumigated with sulphur dioxide, washed with solution of mercuric chloride, and windows and doors left open for free ventilation. Bedding, clothing, etc., used in the lazaretto is burned and disinfection made as complete as possible.

A small cremation furnace for destroying articles used in the lazaretto and disposing of the bodies of those who have died from contagious disease would be a valuable addition to this station.

Subsistence, nursing, and everything that is required for the sick is furnished by the service, and those held under observation are subsisted by the owners of the vessel by which they arrived.

The greater number of those held in quarantine at this station have been Chinese and Japanese immigrants, and the accommodations have largely been made for the use of this class. Good buildings with fine finish are not needed by these people, as they soon deface and disfigure them. Cheap structures of plain material are better suited for their use. There are no suitable accommodations at this station for cabin passengers.

The steam-disinfecting apparatus has performed very satisfactory work at this station, and so far as is known no case of disease has developed from any baggage or clothing that has been treated therein. The method of using it has been as follows: Within the chambers are placed the articles to be disinfected, boxes are opened, and articles of clothing and bedding suspended from hooks inserted in the hexagonal frame lining of the chambers. The doors are then tightly closed, and steam is turned into the jackets until a dry heat is obtained of at least 100° C. (212° F.). This is maintained for at least an hour; live steam is then turned into the chambers for twenty-five or thirty minutes, this being followed by a rise of 15° or 20° in temperature. The steam is then turned off, and the chambers left as they are for an hour, then the waste from the chambers through the steam trap is opened, the fastening of the doors gradually loosened, and when the chambers have cooled sufficiently the disinfected articles are removed.

After the raising of quarantine the station is given a thorough cleaning and everything put in readiness for the next arrival.

Work of the station.—It was opened temporarily by Surgeon P. H. Bailhache, M. H. S., then in command, on April 29, 1891, for the accommodation of the steerage passengers of the Pacific Mail steamship *China*, which arrived at San Francisco with smallpox on board, and the Occidental and Oriental Company's steamship *Oceanic*, which arrived May 30, 1891. The quarantine for the steamship *China* was raised on May 13, 1891, and for

PIER AND DISINFECTION BUILDING—KEY WEST QUARANTINE, DRY TORTUGAS, FLORIDA.

the steamship *Oceanic* on June 12, 1891. On June 13, 1891, Passed Assistant Surgeon W. P. McIntosh was placed in command, relieving Surgeon Bailhache, and on May 2, 1892, he was relieved by the writer. On December 20, 1891, the Pacific Mail steamship *City of Peking* arrivedwith smallpox on board, and from that date until May 27, 1892, and including the quarantines of the *China* and *Oceanic* in May and June 1891, twenty-five cases of smallpox have been treated in the lazaretto, with two deaths, and 2,451 persons have been held under observation, and at the close of the different quarantines their baggage and effects disinfected. During that time no case of contagious disease has reached San Francisco by sea. No contagious disease but smallpox has been taken to the station for treatment, and there has been no contagious disease of any kind here since the 27th of last May.

There are nine attendants and a hospital steward and one medical officer on duty at this station.

During quarantines an additional officer is needed, in order that the care of the sick may be under the direction of one while the other attends to the executive work of the station and the inspection of those held under observation.

Photographs of the different buildings, the fumigating steamer, and a bird's-eye view of the station, all of which were taken by Hospital Steward F. R. Haurath, now on duty at this station, have been forwarded with this report.

National Quarantine Station, Port Townsend, Wash.—Between October 10, 1891, and November 30, 1892, there were 7 vessels detained in quarantine and disinfected; 282 vessels were inspected and passed; 1 vessel detained for observation. During the year a board was appointed for the selection of a site for a quarantine station, composed of Surgeon P. H. Bailhache, chairman; Andrew Wasson, collector of customs; and Capt. D. F. Tozier, U. S. Revenue-Marine Service.

The site selected was Diamond Point, located about six miles from Port Townsend. One hundred and fifty-three acres of land was purchased by the Government at a total cost of $3,500. The site is well located, having a deep-water anchorage and good harbor. Plans for the erection of quarantine buildings, a wharf, and disinfecting machinery are in course of preparation, and it is thought that the station can be equipped during the spring of 1893. A boarding steamer is necessary for this station, and an estimate for the same has been presented to Congress.

Appended is the financial statement, special reports, and statistical tables.

Before closing this report it is but due to the officers of the service, and particularly to those engaged in the quarantine work, to express my appreciation of their efficient service, rendered at a time when a great calamity threatened, and at posts of great responsibility and danger.

Acknowledgment is also due to the clerks of the Bureau for their faithful and zealous aid.

I have the honor to remain, very respectfully, yours,

WALTER WYMAN,
Supervising Surgeon-General.

HON. CHARLES FOSTER,
Secretary of the Treasury.

SPECIAL REPORTS AND CORRESPONDENCE.

(FINANCIAL, SANITARY, AND MISCELLANEOUS.)

FINANCIAL STATEMENT.

RECEIPTS AND EXPENDITURES, U. S. MARINE-HOSPITAL SERVICE, FOR THE FISCAL YEAR ENDED JUNE 30, 1892.

The balance available at the commencement of the fiscal year was $75,528.01, and the receipts from all sources were $650,510.39.

The expenditures were $586,839.06, leaving on hand at the close of the fiscal year a balance of $139,199.34, a net increase of $63,671.33.

SUMMARY.

Balance July 1, 1891	$75,528.01
Receipts, tonnage tax collected	636,012.44
Repayments for care and treatment of foreign seamen, etc	14,497.95
Total available during fiscal year	726,038.40
Expenditures	586,839.06
Balance June 30, 1892	139,199.34

Summary of expenditures on account of the quarantine service, fiscal year ended June 30, 1892.

Stations.	Payments from the appropriation, "quarantine service, 1892."	Payments from the appropriation, "preventing the spread of epidemic diseases."	Total.
Cape Charles	$8,178.86	$2,625.89	$10,804.75
Delaware Breakwater	5,261.43	2,818.44	8,079.87
Gulf	9,036.90	8,582.96	17,619.86
Key West	10,445.87	4,812.55	15,258.42
Port Townsend	1,591.70	1,101.80	2,693.50
San Diego	1,122.56	830.62	1,953.18
San Francisco	8,464.89	7,257.26	15,722.15
South Atlantic	6,528.01	3,290.04	9,818.05
Miscellaneous	289.44	.....	289.44
Total	50,919.66	31,319.56	82,239.22

STATEMENT BY APPROPRIATIONS.

Quarantine service, 1893.

Amount appropriated, act March 3, 1891	$50,000.00
Repayments for care of foreign seamen, etc	946.29
Total available during fiscal year	50,946.29
Expenditures	50,919.66
Unexpended balance	26.63

Preventing spread of epidemic diseases.

Balance July 1, 1891		$157,174.32
Amount transferred from appropriation, "in aid of yellow-fever sufferers"		8,731.97
Repayments for care of foreign seamen at quarantine stations, etc		1,622.58
Total available during fiscal year		167,528.87
Expenditures at—		
Havana, Cuba	5,186.00	
El Paso, Tex	1,450.00	
Way Cross, Ga	520.70	
Harris Neck, Georgia	9,096.19	
Quarantine stations, 1891	8,534.29	
Quarantine stations, 1892	31,319.56	
Miscellaneous	1,160.93	
		57,267.67
Balance June 30, 1892		110,261.20

Appropriations for quarantine stations, act August 1, 1888.

Stations.	Balance July 1, 1891.	Expenditures during fiscal year.	Balance June 30, 1892.
Cape Charles	$72,152.75	$5,318.35	$66,834.40
Delaware Breakwater	29,763.04	5,110.88	24,652.16
Key West	81,455.50	35,594.06	45,861.44
Port Townsend	55,430.44	12.75	55,417.69
San Diego	49,530.03	23,440.05	26,089.98
South Atlantic	209.27	209.27	

San Francisco Quarantine fumigating steamer.

Appropriation, act approved August 30, 1890	$30,000.00
Expenditures to June 30, 1892	24,003.25
Balance June 30, 1892	5,996.75

Key West Quarantine disinfecting machinery.

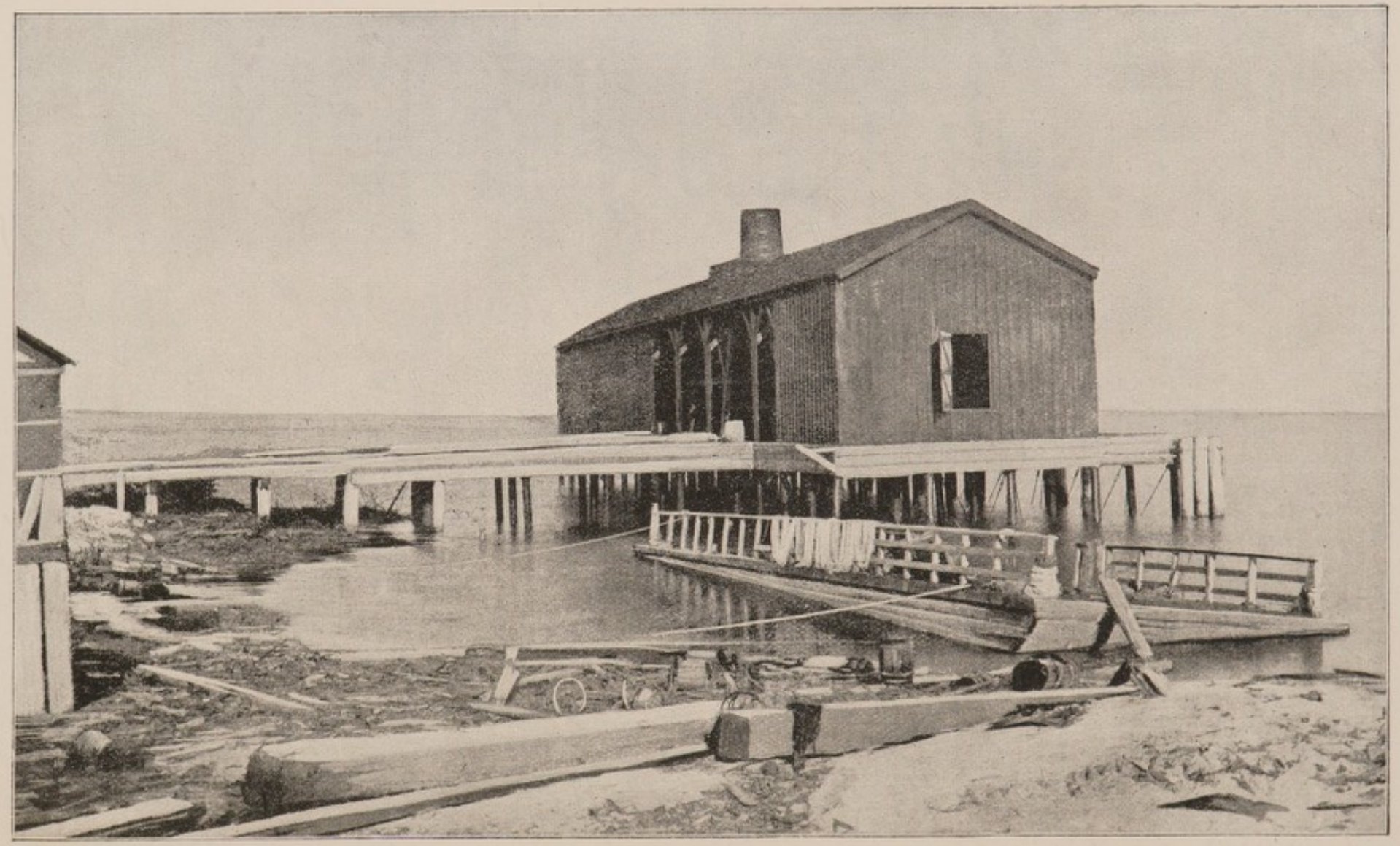
Appropriation, act approved August 30, 1890	$10,000.00
Expenditures to June 30, 1892	2,839.26
Balance June 30, 1892	7,160.74

South Atlantic Quarantine Station, buildings, etc.

Appropriation, act approved March 3, 1891	$20,000.00
Expenditures to June 30, 1892	1,008.67
Balance June 30, 1892	18,991.33

Gulf Quarantine Station, buildings, etc.

Appropriation, act approved March 3, 1891	$13,000.00
Expenditures to June 30, 1892	387.99
Balance June 30, 1892	12,612.01



KEY WEST QUARANTINE, DRY TORTUGAS—DISINFECTING HOUSE.

REPORT ON THE ORGANIZATION OF CAMP LOW, SANDY HOOK, N. J.

By Surgeon John B. Hamilton.

REVENUE-MARINE STEAMER U. S. GRANT,
Off Camp Low, New Jersey, September 20, 1892.

SIR: I have the honor to report the establishment of the national quarantine station "Camp Low," on the Government reservation at Sandy Hook.

RAISON D'ÊTRE.

The reason for the existence of this establishment was the presence in New York Harbor of a large number of vessels infected with Asiatic cholera, having on board a very large number of passengers exposed to the danger of infection and for whom the provisions made by the health authorities of the State of New York was entirely inadequate.

In particular, the passengers from the steamer *Normannia* of the Hamburg-American Line were in quarantine for several days, and each day members of the crew were taken sick with the cholera. These passengers, being detained on board, were constantly subjected, on the one hand, to the terrors of Asiatic cholera, and the hardships of rigorous confinement on the other. Although detained in quarantine, these passengers, most of them American citizens, managed to communicate their unfortunate condition to the public; and American sympathy, always responsive to human suffering, was quick to heed. The Government undertook to supply the deficiencies of the local quarantine at New York, and by direction I examined the New York quarantine stations at Hoffman and Swinburne Islands, and found that Hoffman Island, the only station to which persons from infected vessels could be removed, was crowded with detained immigrants, that no more could be accommodated, and that no provisions whatever had been made for cabin passengers. More than 10,000 steerage passengers from European ports infected with Asiatic cholera were either on their way or were booked for passage, and ships recently arrived had lost many on the voyage. Under the stress of this menace the Government had no alternative, and by your further direction I next inquired what measures of precaution could be undertaken by the Government to aid the State of New York in what threatened to become one of the most calamitous years of the Republic, in averting the prospective invasion.

The United States revenue steamer *Grant*, Capt. Thos. S. Smyth, was placed at my disposal, and her officers rendered most valuable coöperation. In examining New York Bay and vicinage in company with Medical Director Gihon, U. S. Navy, and Health Officer Dr. Rauch, it was seen that Horseshoe Cove, off Sandy Hook, afforded a perfect anchorage for vessels and the land opposite being a Government reservation, and no important village or settlement near, afforded an eligible site on which to establish a quarantine camp at once easy of access and easy to guard. Fortunately the old wharf of the New Jersey Central Railroad, on which was built a warehouse, was in an excellent state of preservation, and in such condition that it could be easily made the initial point for the new buildings. I subjoin a map of Sandy Hook with the point located, on which the location of the proposed camp can be seen.

THE CONSTRUCTION OF THE CAMP.

On Friday, September 9, 1892, the steamer *Grant* anchored in Horseshoe Cove, and with Lieut. Levis and the ship's carpenter, U. S. Revenue Marine, measurements of the wharf and buildings were taken. That evening the proposal of Mr. Austin Corbin was accepted to build the necessary buildings according to my suggestions, and the next morning a force of 150 carpenters, under the direction of Mr. C. M. Jacobs, C. E., and Mr. Cummings, were on the ground, and the buildings were erected with surprising rapidity. These comprised a large dining hall with a capacity of seating 500 persons; a storeroom for the commissariat; a kitchen; three pavilions; a telegraph office; a baggage room; a hospital; a laundry; a building for the dynamos; surgeon-commandant's office, and quarters for the correspondents. The railway tracks between the pavilions were of great use not only in the construction of the camp but afterwards in its administrative functions. Over 400,000 feet of lumber were used in the construction of the buildings, and they were completed on Saturday morning, September 17.

The dimensions of the buildings were as follows:

Pavilion A.—Apartments: 18 by 343 feet; south, 47 feet; north, 47 feet; total, 94 rooms.

Pavilion B.—Apartments: 13 by 313 feet; 48 single.

Pavilion C.—Apartments: 16 by 330 feet; south, 44 feet; north, 23 feet; total, 63 rooms.

Making a total of 209 staterooms.

Telegraph office.—13 by 25 feet.

Press office—10 by 40 feet, and kitchen 10 by 13 feet.

Laundry building.—13 by 64 feet.

Dining hall.—36 by 96 feet.

Electric-light building.—12 by 28 feet.

Baggage room.—36 by 60 feet.

Commissary building.—18 by 36 feet.

Pantry and kitchen.—27 by 35 feet; extra kitchen, 12 by 23 feet.

Surgeon-commandant's room.—13 by 30 feet.

In addition to the foregoing there were 3,006 feet of sidewalk laid, 4 water-closets made, 58 latrines built, 100 tent floors, 12 by 14, and 200 tent floors, 10 by 12 feet, were made ready to be placed in position.

On Sunday, September 11, 400 wall tents, previously shipped by the War Department, were set up by the United States Artillery from Fort Hamilton by order of Maj. Gen. O. O. Howard, and speedy provision was made for the early occupancy of the camp.

WATER SUPPLY.

Abundance of fresh water is obtained on the Hook by driven well, and the old railway tank was utilized as a source of pressure, and water was piped to the various buildings.

MACHINERY.

Mr. Corbin caused the electric-light plant formerly used at Rockaway Beach to be removed and put in position; and after the third night the work of construction was carried on at night by its aid. This has since been used for lighting the camp. A steam pump was placed at the old tank house to keep up the supply of water in the tank, and another pump was placed near the dynamo on the wharf and supplied with 500 feet of hose, with sea-water connection, to be used in case of fire. I made a contract with the Troy Laundry Machinery Company of New York to furnish and place in position ready for running a laundry plant capable of washing for 500 persons a day. This machinery comprised stationary tubs, an engine, two washing machines, a centrifugal wringer, a mangle, and drying racks. This was completed according to contract within forty-eight hours by the men working night and day.

GULF QUARANTINE STATION, CHANDELEUR ISLAND.

LATRINES.

In a camp intended to contain suspects from ships infected with Asiatic cholera, the construction of the latrines and their subsequent management are points of the first importance, for, as is well known, the surveillance of persons suspected of cholera must include a watch of the frequency of their bowel movements. In the plan which was finally adopted, I availed myself of the advice of my friends, Lieut. Col. George M. Sternberg, surgeon U. S. Army, and a committee of the New York Academy of Medicine, consisting of Drs. A. L. Loomis, Stephen Smith, Jacobi, Janeway, and Allen McLane Hamilton. It was urged by Dr. Jacobi that the use of earth closets or chambers in the staterooms would make it impossible to ascertain quickly what person in the camp was suffering from diarrhea, a point which only needed to be stated to be self-evident; therefore latrines were constructed in such a way that the dejecta were received into a pail, and the little houses themselves placed between the rows of corridors and tents in such position that the patrolman could easily keep them under observation.

Galvanized-iron pails of a capacity of 2 gallons were provided to receive the dejecta, and milk of lime was ladled into these pails by the patrolmen, who were instructed to systematically inspect them while on their beat. At the same time they were instructed to report to the office any person making the second trip to the latrine from his stateroom or tent. Other attendants were directed to mop the seats with bichloride of mercury solution.

HOSPITAL.

The hospital was constructed in more careful finish than the barracks, and was intended for persons falling sick or being injured while in camp. Cholera patients when found are removed to and kept in tents near the hospital and isolated from the remainder of the camp.

PATROL.

To prevent straying of detained persons, the Secretary of the Navy directed the detail of 211 marines, under the command of Maj. Huntington, who drew a complete *cordon sanitaire* at a safe distance from the camp, and maintained a regular patrol. This arduous duty, necessary for this temporary camp, which involved considerable hardship upon the officers and men of Maj. Huntington's command, could readily be obviated if the Government shall finally conclude to establish a permanent station, by the erection of a brick wall and the dredging of an inner moat. The sea patrol was a matter of much less difficulty, and for the first days was performed by the steamer *Grant*, Capt. Thomas S. Smyth, which officer also detailed Chief Engineer F. H. Pulsifer to aid in making his first purchases, and in various other ways aided in the construction of the camp.

SEA PATROL.

The Hon. B. F. Tracy, Secretary of the Navy, detailed the naval monitor *Nantucket*, Capt. Book, with two steam launches, to continue the sea patrol and relieve the *Grant*.

THE EXECUTIVE FORCE.

At first I was the only officer, but when the camp commenced to receive refugees turned over by the health officer of New York the force consisted of myself as surgeon-commandant of the camp, Surgeon W. H. H. Hutton, M. H. S., Passed Assistant Surgeons Wasdin and Stoner, and Hospital Stewards Roehrig and Stearns. At my earnest solicitation the veteran sanitarian, John H. Rauch, M. D., consented to remain as sanitary adviser and cholera expert. The remainder of the force consisted of cooks, carpenter, one plumber, and about forty-five laborers. These were employed in continuing the barrack extension and policing the camp. At first we were shorthanded, and attempted the employment of refugees, but it was found that they could neither be kept at work nor could they be made efficient. Ten sailors, uniformed, were therefore engaged as an

additional force and were employed exclusively in sanitary work. My experience has shown that sailors are better disciplined and can be kept on such duty much better than the ordinary laborers. Mr. Minmo, an interpreter and medical student, was made the foreman of the disinfecting corps. It was from the first deemed necessary to have female attendants to look after the welfare of the female refugees and perform such other duties as might be required of them, and Mrs. Dunkinson, of Geneva, N. Y., was given supervision of their duties. Surgeon Henry W. Sawtelle relieved Surgeon Hutton, and I turned over the command of the camp to him September 22, 1892.

AËRATION.

It is well known that aëration is one of the most effective means of disinfection, and for that purpose 2,000 feet of clothesline was placed in position to enable refugees to aërate their baggage.

SUPPLIES.

The first supplies for the camp were received by the New Jersey Central Railroad, but the local health authorities of New Jersey threw such obstacles in the way of trains as to make it impossible to obtain supplies with regularity or certainty. The steam tug *Talisman*, Capt. C. H Winette, was chartered to be entirely at the service of the commanding officer of the camp, and make such trips to New York City as should be deemed desirable. Lieut. William J. Herring, U. S. Revenue Marine, of the steamer *Chandler*, whose headquarters were near the barge office, kindly consented to purchase miscellaneous supplies, and this officer is entitled to the highest commendation for the faithfulness with which he performed this extra duty.

GENERAL.

Should the Government at any time take this for a permanent station, a wall directly across the Hook to the Atlantic, marking the east and the west boundaries of the quarantine, would not only obviate the necessity of a military guard, but would allow persons detained to go through the cedar grove back of the camp, and thus add materially to their facilities for recreation while undergoing detention.

The barracks could be weatherboarded and plastered and heated by steam when necessary. A crematory should be built in the vicinity of the hospital. No isolation ward is necessary, as tents properly floored and heated by stoves are better managed than isolation wards, which, with every precaution, are likely to themselves become centers of infection.

It is obvious that the establishment of this camp met a necessity arising from the great number of immigrants from infected ports massed in the harbor of New York; without it great hardship and greater loss of life must inevitably have resulted, not only among the unfortunate immigrants, but in cities and towns near by as well as those remote from New York. The officers engaged in the work have entered upon it with great public spirit, fully imbued with the intention, at whatever risk to themselves, to spare no effort in protecting the country against a great calamity; and I am safe in predicting that the final report of the surgeon-commandant will show the great superiority of national methods, in which the whole country have an interested voice, over those which formerly obtained.

There is no question of the power of Congress to legislate in the matter of national quarantines, and it is no argument against the exercise of that power to show that heretofore Congress has only undertaken to supply the deficiencies of State quarantines. Congress has not formally relinquished its power, nor could it do so; it has only failed to use it. When a fringe of States along the Atlantic seaboard comprised almost the whole of the United States, the necessities were different from the present conditions, when the center of population has been removed to the Mississippi Valley. It is in-

GULF QUARANTINE, CHANDELEUR ISLAND—SURGEON'S QUARTERS.

conceivable that one State alone should continue to conduct protective measures according to its own methods, without regard to the wishes of other States, when all have common interests and are mutually interdependent.

But even more than economical considerations or convenient administration is the great relief to these poor suffering people huddled together on a ship lying at anchor. They have nothing to fear more deadly than the fatal "crowd poison." Close quarters at sea may be made endurable by the forced ventilation, but lying at anchor the steerage air soon becomes stagnant and poisonous.

I am, sir, very respectfully, your obedient servant,

JOHN B. HAMILTON,
Surgeon, U. S. M. H. S.

REPORT OF INSPECTION AND DISINFECTION OF VESSELS IN NEW YORK HARBOR.

By Passed Assistant Surgeon J. J. Kinyoun.

SIR: I have the honor to submit the following as a report of my tour of duty at the quarantine station of the port of New York during the prevalence of cholera in September and October, 1892.

In compliance with your order of the 21st of September, I immediately proceeded to the quarantine station on Staten Island, and reported to the health officer for such duty as he might see fit to assign to me.

Two days were consumed in visiting the several vessels in quarantine, Hoffman and Swinburne Islands, and during this time matters were practically at a standstill.

On the morning of the third day, at the suggestion of certain parties, I was appointed as one of the deputies of Health Officer Jenkins, and was assigned to superintend the disinfection of ships in the lower bay.

The *Scandia* and *Bohemia* were the only vessels that were considered infected; the *Rugia*, *Moravia*, and *Normannia* had been brought up to the quarantine station, and were discharging their cargoes in quarantine.

Only one of the vessels had passengers aboard—the *Bohemia*. The *Scandia's* passengers had been removed to Hoffman Island several days before and had almost completed their period of detention.

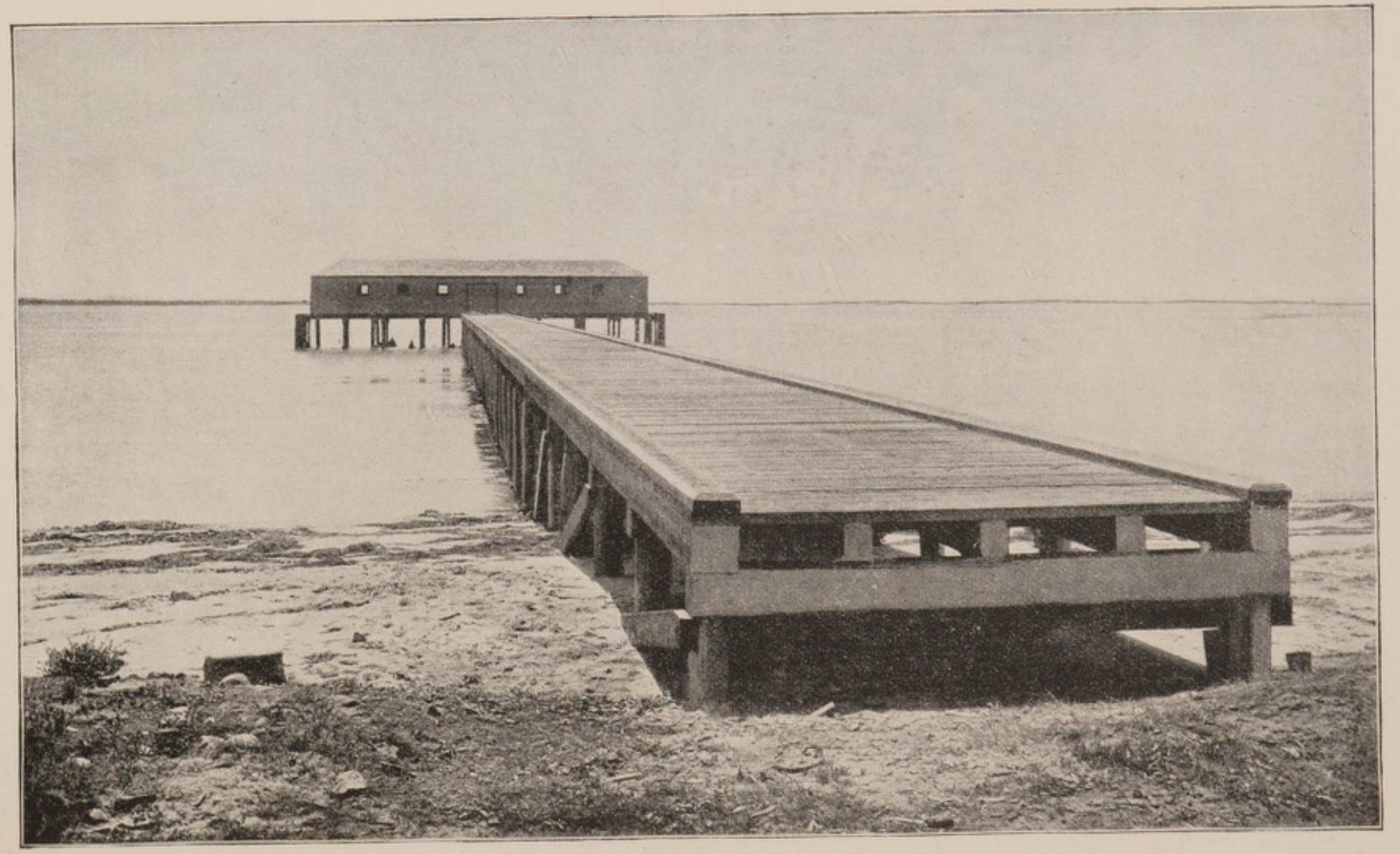
After many vexatious delays I was given one man designated to me as a "fumigator," who was to carry out my instructions relative to the manner of disinfection and to render assistance in any way possible.

One of the steam tugs had been hastily converted into a disinfecting vessel by utilizing the forward fresh-water tank for the bichloride of mercury solution, and connecting with this a duplex steam pump for distributing it. On trial it was found to meet the required want and acted admirably.

An inspection was made of the *Scandia*, which embraced all portions of the vessel except the cargo space. Several of the steerage compartments had been given a mechanical cleansing. The hospitals wherein the cases of cholera had occurred had been disinfected with sublimate. The inspection revealed that in many places which were claimed by the ship's officers to have been disinfected it was not thorough, and it was demonstrated to both the deputy health officer and the captain that there was a necessity for further disinfection of the compartments in question.

One of the compartments had been mechanically cleansed and subsequently steamed. As the time of steaming was short and the temperature had not reached the requisite degree (100° C.), a further treatment was decided upon.

The crew, except a few, had been taken off by the Hamburg American Company's order, and had been either assigned to other vessels of their line to fill the complement of their crews or were being utilized at the quarantine stations in caring for the detained passengers, so that the process of the disinfection of this vessel (*Scandia*) was extremely slow, it for the most part devolving upon myself and the "fumigator."



SAN DIEGO QUARANTINE WHARF AND WAREHOUSE.

I reported the condition of affairs to the health officer, and told him that with the small force at the command of the captain the vessel could not be made ready in a short time, and urged him to give me a sufficient force to treat the vessel properly, for if additional force be given me it could be made ready to be used as an adjunct to other vessels for the care and treatment of the *Bohemia's* passengers.

The Hamburg company was telephoned to send additional men immediately, but nothing came of it save that they could not furnish any more men.

The discharge of cargo appeared to be of more consequence than the care of the passengers; so matters stood; and it was evident that they would have to be permitted to take their course and we would have to accommodate ourselves to the condition of affairs.

DISINFECTION OF THE SCANDIA.

The bedding and mattresses had been removed from the several compartments, and nothing remained except the iron bunks and wooden partitions. The life-preservers were in most part removed to the poop deck and made ready for disinfection. A mechanical cleansing was given the compartment, all surfaces being first cleansed with brushes and a solution of caustic soda, termed by the sailors as "sharp water," after which they were further cleansed by washing the surfaces with sea water applied by means of a hose. As soon as one of the compartments was cleansed in the foregoing manner the port holes on either side were partially opened, the hatches were battened down, the ventilators were stopped by pillows, and steam turned in for a sufficient time to elevate the temperature to 100° C. Usually two hours was found sufficient. Not more than two compartments could be subjected to the steaming process at once.

After the compartment was completed it was kept closed until after the process of disinfection had been finished throughout.

The hospitals were so situated that they could not be disinfected by steam, and these were again disinfected with an acid solution of bichloride of mercury, applied to all surfaces by a hose at 25 pounds pressure.

After disinfecting about 500 of the life-preservers, the majority of which were in an extremely filthy condition, principally soiled with the dejecta of the passengers, I placed a few in one of the compartments about ready for steaming and made the experiment of disinfecting them by steam. I was met with serious objection by the ship's officers, but the trial was so successful that all others were placed below in the different compartments and disinfected by steam.

The saloon and other parts of the cabin were given a mechanical cleansing, followed by the bichloride douche, save portions which would be ruined by the process and which had not been liable to infection of cholera, which were given a disinfection by a 6 per cent volume of sulphur dioxide from six to twelve hours' exposure.

The bedding, clothing, and personal effects of the officers which had been exposed in any way to infection were disinfected by steam or by bichloride of mercury. Some few articles were subjected to sulphur dioxide, 6 per cent volume strength, for twelve to eighteen hours, the cubical contents of the room wherein the exposure was made being at least eight times larger than the articles undergoing treatment.

The decks, walls, and ceilings of gangways and other portions of the ship, including the water-closets, bath rooms, wash rooms, and the like, were cleansed and thoroughly disinfected with bichloride of mercury solution (1 to 500).

After all other portions of the vessel had been thus treated, the apartments occupied by the crew were taken in hand. These were thoroughly cleansed and disinfected with bichloride of mercury. After six hours the surfaces were rinsed with water and wiped dry. This was done on account of a possible danger of poisoning from the mercury. The dunnage and personal effects of the crew, save the mattresses, which are burned, were disinfected by steam or with bichloride of mercury.

The eating utensils, dishes and the like which were used by the crew were immersed in boiling water. The soiled ship's linen was boiled for twenty minutes. Dur-

ing the process of disinfection, before any member of the crew was allowed to take his meals, he was compelled to disinfect his hands and face with sublimate.

When the process of disinfection of the apartments of the crew was finished, the crew were made to bathe, and then were furnished with fresh clothing which had been previously sterilized. The clothing taken off was also sterilized.

The water casks of the lifeboats were disinfected by steam, then refilled with croton water.

New mattresses were furnished the crew.

An inspection was made of the several compartments of the hold. From the nature of the cargo it was thought not to be of a nature liable to convey the infection of cholera.

As the vessel was destined to go to Baltimore to discharge her cargo, and would be compelled to pass the national quarantine station at the Capes, I suggested the propriety of discharging the vessel from the New York quarantine by granting her a limited pratique, so that the disinfection of the hold could be done thoroughly and expeditiously at the latter place, for no appliances were on hand to generate sulphur dioxide in sufficient strength to disinfect either the hold or the cargo, provided it was infected. As this plan was not concurred in, a preliminary fumigation was given the hold, by burning about 30 pounds of sulphur in each of the compartments.

To further the efficacy of this (provided it was of account), the captain was directed to keep the hatches closed until after he had reached the Capes; this would give at least forty-eight hours' exposure to the sulphur dioxide. The captain, I subsequently learned, carried out the directions.

On the 28th of September the vessel was reported to the health officer as finished, and permission was given her captain to leave quarantine. Five full days were consumed in the process of disinfection, when, if a sufficient force had been given me, two days would have been sufficient for the vessel's cleansing.

The steamship *Bohemia* had been lying in the lower bay for several days; the history of her voyage is too well known to be repeated here.

On September 21, in company with the deputy health officer, Dr. Walsen, I assisted in making an inspection of the vessel and her passengers. At the time of the inspection measles had broken out among the children, and had assumed the form of an epidemic; five new cases had developed during the preceding twenty-four hours.

While the passengers were mustered on deck a cursory examination of the steerage apartments was made in company with Dr. Walsen and the ship's surgeon, and this was about the condition of the steerage: The compartments forward of the engine room were in as filthy a condition as could be. The old vessel, its faulty construction, the length of time occupied by a class of people who had no knowledge of the first principles of what constituted cleanliness, made every condition favorable for the development of any infectious disease.

The compartments aft the engines were in a far better condition. They were occupied principally by Germans—a few compared in number to those forward. There was more light, better ventilation, and far more space allotted to each occupant.

Cholera had occurred only in those compartments which were occupied by the Russian Jews. In the inspection which followed, it was demonstrated beyond a doubt that the manner of the spread of cholera among these people was due to infected food. Every bunk, box, and nearly every bundle of personal effects had different articles of food or dishes secreted in them. The character of the food was varied, some evidently furnished by the ship and some evidently coming aboard with the persons. The term "swill" would be more appropriate than food, for a greater portion was found in the various stages of decomposition. This condition was found in every one of the forward compartments.

Further, to give a better insight into the actual condition of the vessel, I will note that among those who occupied the forward compartments were over 100 children under

SAN FRANCISCO QUARANTINE, ANGEL ISLAND, SAN FRANCISCO BAY—GENERAL VIEW.

2 years old, whose mothers did not know the intention or use of a diaper. Fecal contamination was the rule. It seemed not even articles of food were spared. In the compartments where cholera occurred I was told that little or no disinfection had been practiced. I saw the life-preservers remaining in the bunks which had been made vacant. The mattress, etc., usually accompanied the case to the hospitals.

At the time of our visit the Russian Jews were celebrating their most solemn fast. The captain of the vessel informed me that it had been under way for two or three days, and that none of those forward would eat any of the ship's provisions, but that they were fasting, eating little or nothing save cut loaf sugar, tea, and "Kosher" meat (sausage), and bread, the last-mentioned articles having been sent down from New York. I was informed that the fast would still continue for two or three days.

On our return to the station the facts were reported to the health officer, and it was suggested to him that on the expiration of the fast, when those people returned to this vile food, an epidemic of cholera would be the result.

On the following day another inspection was made and an attempt was made to remove and destroy the food that was stored about the bunks and among their bundles of clothing. About 10 bushels of food and filth were removed. The task was not an easy one on account of the lack of discipline and the perfect indifference of the officers to the passengers. It seemed to them it mattered nothing now that they had arrived with their cargo of human freight.

While the inspection was in progress a young man was taken suddenly ill with vomiting, followed by collapse. He was immediately isolated, and two days thereafter he had about recovered. It was claimed this was not a case of cholera, but simply a case of dietary indiscretion. No bacteriological examination was made.

After this had been accomplished, orders were given to feed all persons on deck and to allow no one to take any food below. Prior to giving the people their supper, I caused all the receptacles for food to be immersed in boiling water, and left orders that the same should be carried out preceding each meal.

On the next morning the muster and inspection showed more measles cases and that the orders issued to the captain had not been carried out, for considerable quantities of food of the same character as before described were found secreted in the bunks and baggage. It was evident that this food was secreted by the persons in some manner and afterwards carried to the compartments.

I immediately reported the facts to the health officer and urged immediate removal of the *Bohemia's* passengers to some place, and suggested to him that if there was a sufficient force given me the *Scandia* could be used for a portion; the *New Hampshire*, which had about forty cabin passengers on board undergoing detention, could be transferred to Fire Island. The *Stonington*, which had about fifty cases of measles, could be also utilized if the measles cases were disposed of by taking them to Swinburne Island. Thus the passengers of the *Bohemia* could be cared for and the condition of affairs relieved. This suggestion was met with the statement that it was not considered feasible.

Two days after the end of the fast, five new cases occurred, and not until two and a half days thereafter were the passengers removed to Hoffman Island.

DISINFECTION OF THE BOHEMIA.

The mattresses of the steerage were burned; the personal effects of the passengers accompanied them to Hoffman Island, where they were disinfected.

The steerage of this vessel differed somewhat in its construction from that of other vessels, in the fact that it consisted of one large compartment, which was cut up into rooms by wooden partitions. Before mechanical cleansing was undertaken I had the hatches battened down and steam turned into the steerage for ten hours, at the expiration of which time it was found not to be sufficient to elevate the temperature to the required degree. Four hours more were given, when it was found to be complete.

The dunnage and personal effects of the crew were disinfected with steam or a solution of bichloride of mercury, the various details of the disinfection not differing from those practiced on the *Scandia*.

The vessel was completed in far less time on account of having more men at my disposal. But as there was no such necessity for great haste as there was in the case of the *Scandia*, the work proceeded leisurely.

Nothing was done in regard to the cargo, which consisted of sugar, as it had been previously determined to discharge it in quarantine, further than to give it a preliminary fumigation of sulphur dioxide by burning sulphur in each compartment of the hold.

This completed the cholera-infected vessels. I have gone into details more than at first would appear to be necessary because the character of the ship's inhabitants and the condition of the vessels differed in many respects from the usual class of vessels coming into ports other than Boston, New York, Philadelphia, and Baltimore.

It is further intended to show that, in order to expedite the treatment of infected vessels in general, these stations should be equipped with the most approved appliances of the latest type, and, above all, be manned with a full complement of quarantine employés. . To depend upon the crew of the vessel to do the work at a quarantine station can only be successful in part.

I have urged upon the health officer the importance of equipping his station with everything which would add expedition and thoroughness in the disinfection of vessels, and for this purpose a sulphur furnace should be placed on a tug. Also disinfecting apparatus should be provided for the treatment of infected clothing, etc., of cabin passengers.

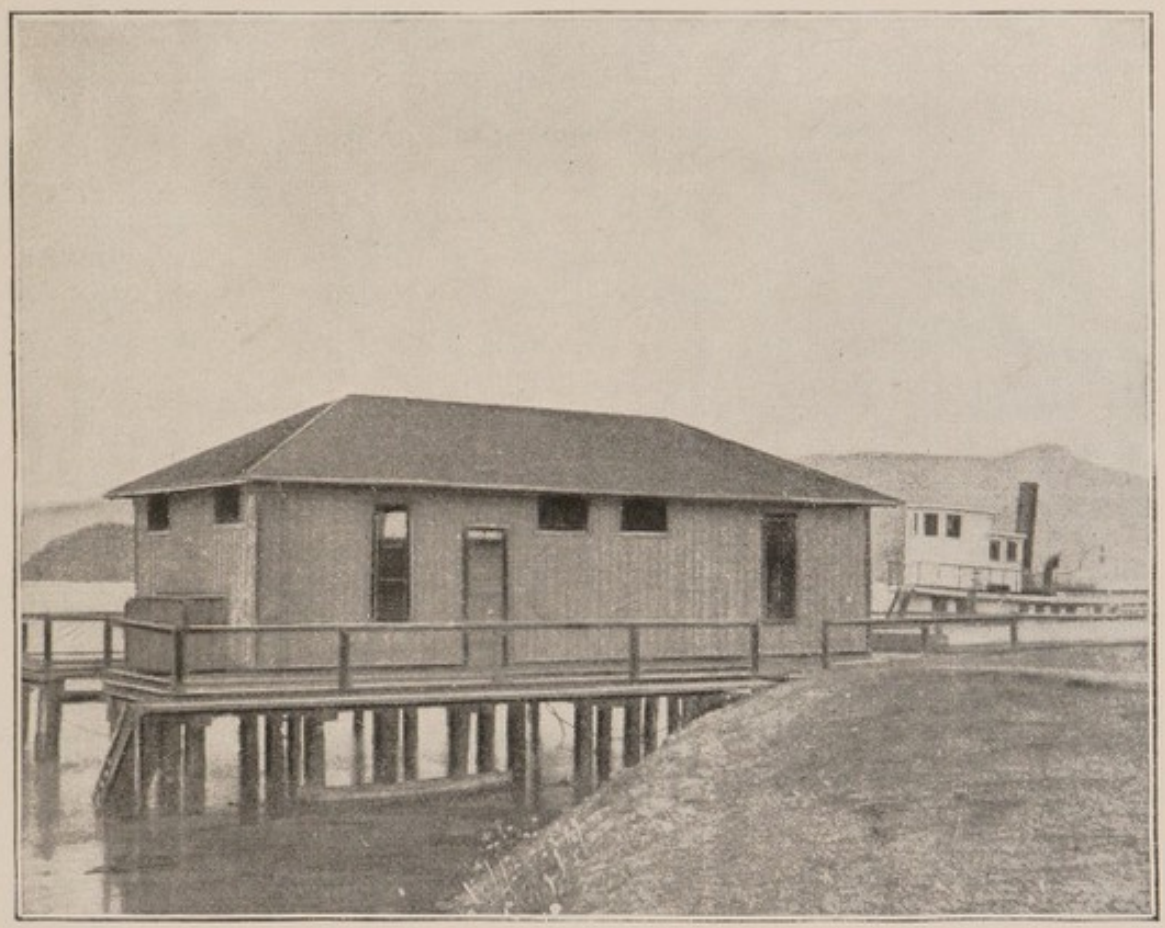
After completion of these vessels I was engaged in assisting in the inspection work of a number of the large passenger vessels which carried none but first and second cabin passengers.

I was further engaged in making the final inspection of those vessels arriving after the promulgation of the President's order of September 1. The vessels coming under this, which I inspected by your order, were the *Herman*, *State of Indiana*, *Nevada*, *The Polaria*, and *Massillia*. A report on these has been forwarded.

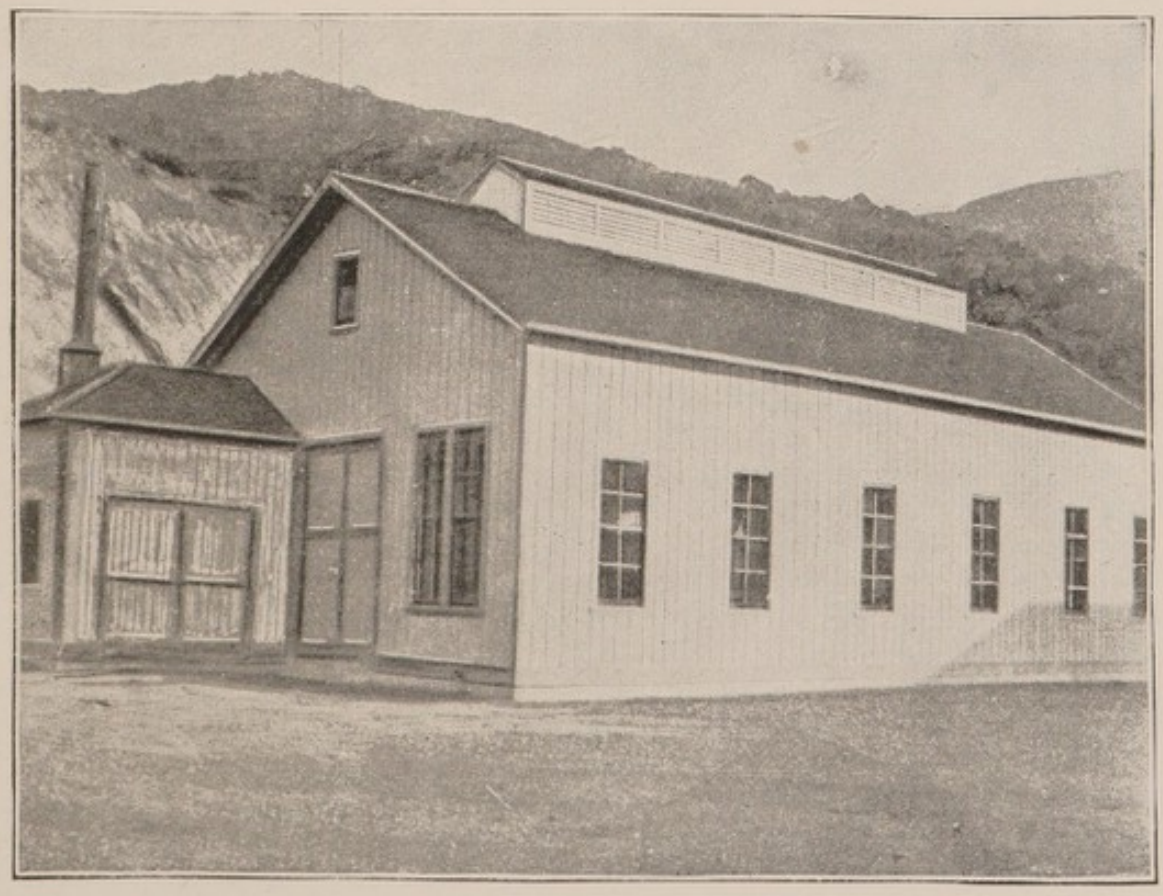
My tour of duty having been completed, I returned to Washington.

Very respectfully,

J. J. KINYOUN,
Passed Assistant Surgeon, M. H. S.



SAN FRANCISCO QUARANTINE—BOAT HOUSE.



SAN FRANCISCO QUARANTINE—DISINFECTION HOUSE.

REPORT OF MEDICAL ADVISORY COMMITTEE OF CHAMBER OF COMMERCE OF NEW YORK ON CERTAIN POINTS RELATING TO QUARANTINE DETENTION OF PASSENGERS AND DISINFECTION OF PASSENGERS' BAGGAGE, MERCHANDISE, AND INFECTED SHIPS.

[Received at the Marine-Hospital Bureau September 23, 1892.]

The medical advisory committee of the Chamber of Commerce has the honor to submit the following statements of opinion regarding the *quarantine detention* of passengers and the *disinfection* of passengers' baggage, merchandise, and infected ships:

Your committee has called in council in its deliberation on these matters Walter Wyman, M. D., Supervising Surgeon-General of the U. S. Marine-Hospital Service, who was, however, unable to be present, but was officially represented in our conference by Passed Assistant Surgeon J. J. Kinyoun, Marine-Hospital Service. Dr. Kinyoun's presence had been independently solicited by your committee on account of his scientific attainments, his experience in sanitary affairs, and his special knowledge of modern maritime quarantine management and the modern methods of disinfection of ships and their cargoes.

We have further summoned to our conference Dr. E. O. Shakespeare, health officer of the port of Philadelphia, whose large personal knowledge of the problems before us, many of which were touched upon in his recent report as special commissioner of the United States on the cholera in Europe and India, rendering his counsel most desirable.

We have further profited in our conference by the opinion of Dr. George M. Sternberg, lieutenant-colonel and deputy surgeon-general, U. S. Army.

At our informal consultation with the gentlemen just mentioned on Friday, September 16, Dr. W. T. Jenkins, health officer of the port of New York, was present, and shared in the discussion.

We were unfortunately unable to avail ourselves of the counsel of Prof. Wm. H. Welch, of the Johns Hopkins University, whose presence was solicited, but who was unable to join us.

While we have thus availed ourselves of the invaluable counsel of the gentlemen who met with us on Friday, and while we believe that our conclusions are in accord with their views, so far as we have been able to obtain them, we wish to state explicitly that for the opinions and conclusions embodied in this report your committee, and not these gentlemen, are responsible.

It should be distinctly understood that, in formulating the opinions contained in this report, we have limited the scope of our consultation entirely to Asiatic cholera and to the circumstances of the present epidemic.

We report here only the conditions under which the germs of this disease are liable to enter our country in transatlantic ships and certain of the measures which seem to us necessary to prevent their access. The control of other infectious diseases offers distinct problems in each case.

The opinions which we have formed rest primarily upon this consideration: That under ordinary conditions there is little liability to the introduction of the germs of Asiatic cholera either through the mails or through ships' cargoes. It is, on the other hand, through the ships' inhabitants and their personal effects that the contagium of this disease is most liable to enter.

MERCHANDISE AND MAILS.

In view of the fact just stated, we concur in the general conclusion adopted by the technical commission of the International Sanitary Conference at Rome in 1885, namely, that disinfection of merchandise and of the mails is unnecessary.

This general statement, however, must, we believe, be qualified when the merchandise is known to have been prepared for shipment in infected places, has been shipped from infected ports, or has been brought on ships in which cholera has occurred during the voyage. Under either of these conditions it is our opinion that measures of disinfection should be practiced. The nature of these measures will depend upon the nature of the cargo, its form of packing, and the circumstances under which it has been placed before or during the voyage. We do not think that general merchandise prepared and packed in uninfected places, in boxes or barrels or closed packages, and which has been shipped at infected ports or brought on infected ships, would need other than such an exterior disinfection as could be practiced on the ship or during the unloading without injury to the goods.

We believe that the necessity for such exterior disinfection of boxes, barrels, and closed packages arises mainly under conditions like those in Hamburg, where the epidemic was severe in the dock regions and the possibility of exterior soiling with infectious material evident. These considerations apply equally to mail sacks.

We believe that merchandise in bales presents greater possibility of contamination from its handling by infected dock hands, stevedores, or ships' crews at infected ports or on infected vessels than when packed in boxes, and should therefore be subjected to more rigorous inspection and disinfection process than if it were closely inclosed.

We are assured by our advisers that hides can be disinfected without injury.

A thorough, prolonged, intelligent exposure of rags to live steam or prolonged boiling are the only methods known to us by which they may be rendered absolutely safe.

We furthermore are of the opinion that at present edibles which have either been prepared or packed in infected places should be refused entry altogether. It is also our opinion that in general edibles which have been shipped from infected ports or transported on infected vessels should be refused entry unless they have been packed in close cases or packages in such form as to preclude the possibility of exterior contamination.

We are, however, not prepared to say that means can not be devised by which certain edible merchandise—sugar, for example—which may possibly have been exposed to contamination, may not be rendered safe by specially planned methods of disinfection.

THE INHABITANTS OF INFECTED SHIPS AND THEIR EFFECTS.

We have in this report limited the term "infected ship" to such ships as may have had a case or cases of Asiatic cholera on board during the voyage. In view of the fact above stated, that the greatest danger of the introduction of the germ of Asiatic cholera by sea lies in the ship's inhabitants (passengers and crew) and their effects, we believe that on arrival in port of an infected ship its passengers should be at once removed to a safe and comfortable place of detention, where they should be isolated in groups as small as practicable and held under observation.

We believe that under ordinary conditions the period of quarantine detention of healthy persons when removed, as they should be, at once, on their arrival in port from all known or possible sources of infection, and properly placed, should be five days in case no cholera occurs among them.

We believe that the baggage of cabin passengers arriving on infected ships should be the subject of most careful investigation as to its point of shipment, its degree of protection from the possibility of contamination while on board, and as to its condition on arrival, and that such manner of disinfection should be practiced as may seem necessary

to the health officer in view of the facts in each particular case, special attention being paid to the baggage of those who may have taken ship at infected ports or who have been recently staying in infected towns.

We believe that the personal clothing and baggage of the steerage passengers among whom cholera has occurred during the voyage should be subjected during their detention to reliable processes of disinfection; and, furthermore, that the persons of such steerage passengers should be freed as fully as may be from all possibly infected clothing and effects before they are taken from the infected ships to the place of detention.

We hold the opinion that the detention of passengers of any class on infected ships for a moment longer than is absolutely necessary is unjustifiable.

We believe that the detention of passengers and the conditions of detention should be planned and maintained in accordance with modern views of quarantine, which not only look to, but usually render possible, the speedy release, if not of all the detained persons, at least of those isolated groups in which during detention no outbreak of cholera has occurred.

It is the opinion of your committee that it is the duty of quarantine health officers to fix upon some definite principle upon which the detention of passengers from an infected ship shall be based, and that the passengers should be immediately informed, with such detail as their degree of intelligence may justify, exactly what the purpose of detention is, and when, under favorable conditions, it may reasonably be expected to come to an end. We urge the importance of this matter not only on humanitarian but on obvious scientific grounds.

This committee is convinced from the personal observation of some of its members and from the history of the older quarantine methods that it is possible under favorable conditions, by the employment of vigorous means of local disinfection on the ships, combined with the immediate removal to a separate place of the dead and fresh victims of the cholera and of those immediately associated with them, largely to control, and even ultimately to stamp out, the disease without the removal of passengers from an infected ship.

But we believe, and wish to lay special stress upon this point, that the pursuit of this method usually if not invariably involves the sacrifice of human life, extreme and prolonged mental and physical suffering on the part of the passengers, and such an unnecessary detention of the infected ship as is seriously detrimental to the pecuniary interests of her owners.

Your committee recognizes the necessity of the temporary employment of this severe and costly method of quarantine when the provision of facilities for meeting in any adequate measure an emergency like the present one in New York has been wholly neglected. But when it is possible by the judicious and intelligent use of the facilities at the command of the health officer, or the facilities which in a great emergency may be furnished by an appeal to the resources and humanity of the authorities and the people, to immediately remove all passengers from an infected ship and detain them in isolated groups for observation, any other course than this is, in the opinion of your committee, wholly unjustifiable.

We wish to remind your committee, and to suggest to those who are disposed to indulge in indiscriminate criticism of the management of the quarantine affairs at the port of New York during the past few days, that the emergency has been one of almost unparalleled magnitude and the complication of circumstances of a most perplexing character.

THE INFECTED SHIPS.

We believe that the disinfection of a ship in which during the voyage a case of Asiatic cholera has occurred can not be with certainty accomplished while its passengers are on board.

We hold the opinion that the attempt to disinfect a ship on which a case of Asiatic cholera has occurred, without the use of modern methods and modern appliances for this purpose, and under the direction of persons acquainted with their use, is not only liable to lead to uncertain results, but to such prolonged detention of the ship as is unjust to others.

We have in this report not attempted to lay down rules which will govern all cases, nor have we felt called upon to specify particular modes of disinfection. We have simply endeavored to answer in as brief a form as possible certain specific questions which have been put to us by the committee of the Chamber of Commerce or by others in view of our temporary relationship to that body as an advisory medical council.

STEPHEN SMITH, M. D., *Chairman.*
A. JACOBI, M. D.
E. G. JANEWAY, M. D.
T. MITCHELL PRUDDEN, M. D.
R. H. DERBY, M. D.
HERMAN BIGGS, M. D.
ALLEN MCLANE HAMILTON, M. D.
Secretary.

REPORT ON DETENTION CAMP AT FORT PULASKI, GA.

By Passed Assistant Surgeon J. H. White.

MARINE-HOSPITAL SERVICE, SOUTHERN ATLANTIC DISTRICT,
Surgeon's Office, Port of Savannah, Ga., November 1, 1892.

SIR: In accordance with tenor of Department letter of October 25 (G. T. V.), I have the honor to submit herein below my report upon action taken by me in the establishment of a camp at Fort Pulaski.

It should first be stated that the city of Savannah, having, through Capt. O. M. Carter, of the Engineer Corps, U. S. Army, secured the privilege of using Fort Pulaski as a camp of detention, they placed a force of laborers, under the direction of Capt. Carter, to clear away weeds and rubbish from the interior and whitewash and paint the casements. Before the completion of this work it was discontinued by the city and left for the employés of this service to finish.

In so much as I deemed necessary, it was completed by the employés, under the direction of Hospital Steward L. A. Duckert, M. H. S., and the casemates in part made ready for occupancy.

Basing my estimates upon the known average of crew and passenger list of the steamships arriving here, I concluded that at least 200 people should be provided for comfortably, and accordingly, after going to Waycross and securing and shipping to Savannah all available supplies there, I purchased in Savannah a sufficiency of household and kitchen and laundry furniture to, with the bedding sent from the Department, amply supply the essential needs of such a camp of 200 souls.

As a matter of course no luxuries were contemplated, but all necessities were, I believe, provided.

These supplies were then placed upon lighters and taken to the fort, which is situated upon Cockspur Island, some 12 miles below the city, and near the mouth of Savannah River.

A force of laborers, employed and placed under orders of Steward Duckert, as before stated, completed the necessary work of cleaning the interior of the fort, mowing weeds, etc., and storing supplies in proper manner.

The idea which presented itself most forcibly to me in this establishment being the necessity for primarily disinfecting all persons and personal effects before their entry into the camp, I made the following provisions to that end:

(1) A steam chamber, built of wood after the manner of that constructed by Surgeon Henry R. Carter at Chandeleur, viz: An outside and inside casing of wood with a metal casing (tin) between, braced outside to stand as much as 10 pounds pressure from within, and provided with sliding racks for clothing, bedding, etc. The dimensions of this steam chamber are 8 by 8 by 16 feet inside.

The city of Savannah will lend a small steam engine, with boiler capacity sufficient for supplying steam, whenever the need arises.

(2) Materials for construction of racks in an empty casemate, to be used for fumigation by SO_2 of anything needing such treatment.

(3) Ordinary wooden tubs for use with solution of $HgCl_2$.

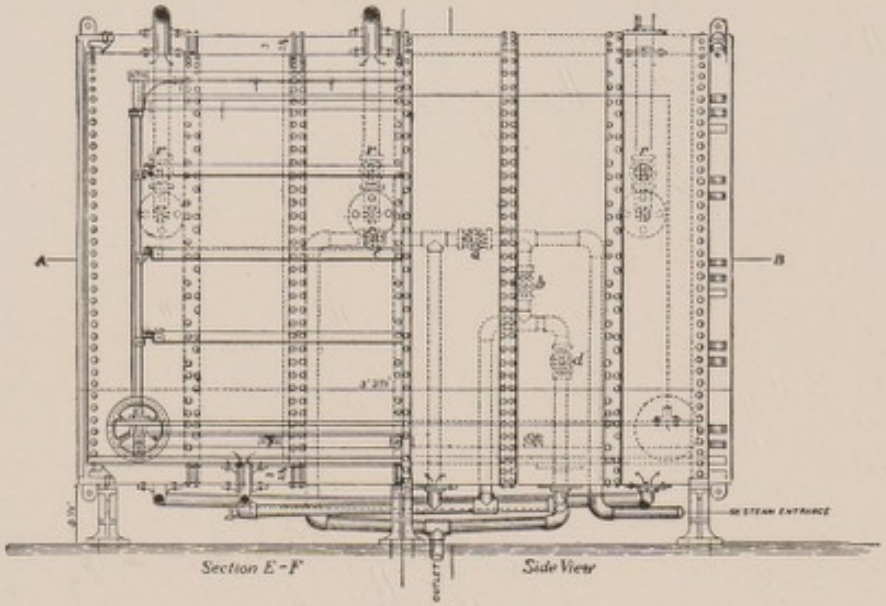
Had it fallen to my lot to command at this camp, I had intended that this apparatus should be so used that neither person nor baggage should enter the camp except after thorough disinfection, and with this end in view the steam chamber was erected at the wharf.

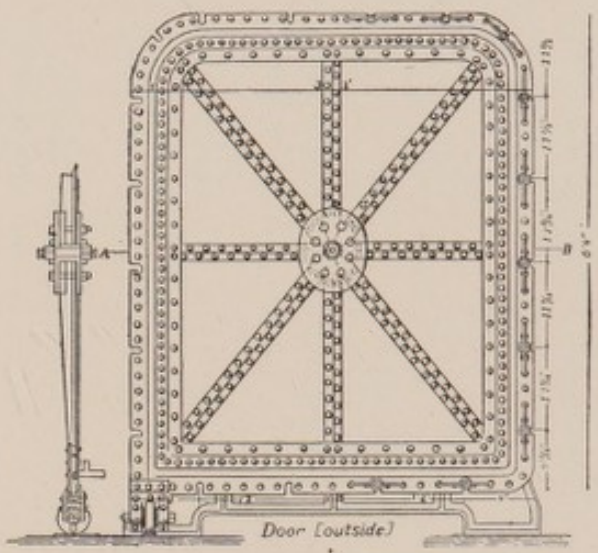
In closing this camp to await further developments, I beg to say that I have stored all supplies in such shape that the camp may be reopened in the shortest possible time.

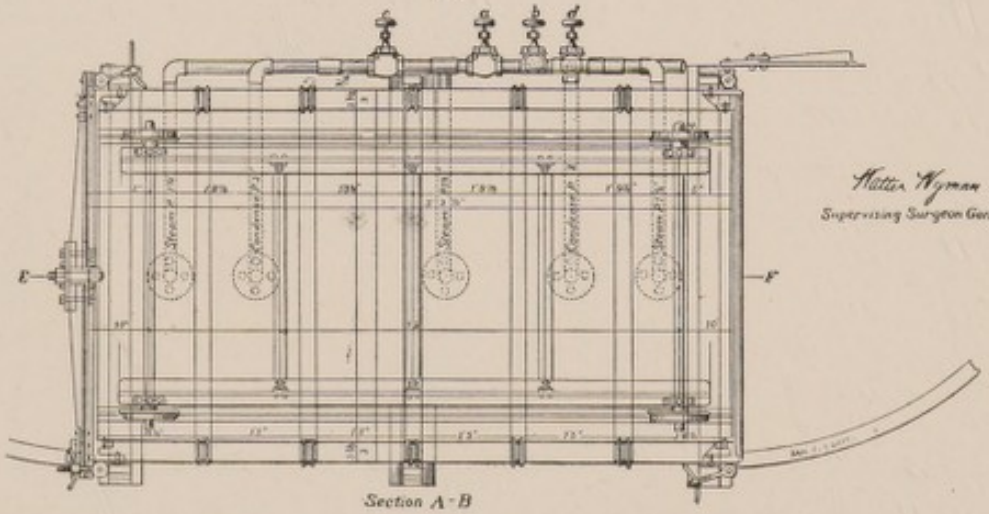
Very respectfully, yours,

J. H. WHITE,
Passed Assistant Surgeon, M. H. S.

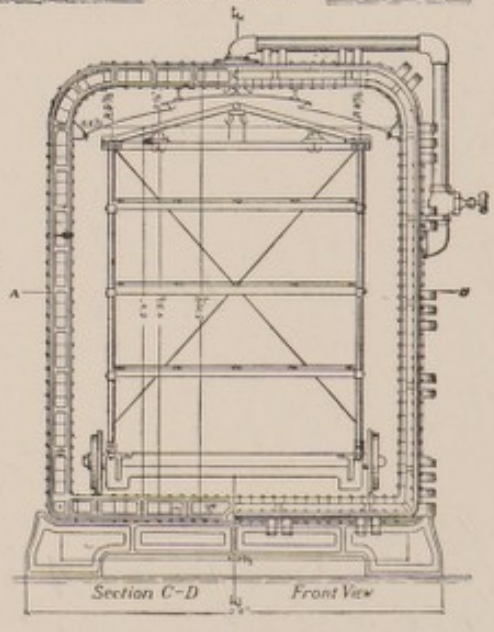
To the SUPERVISING SURGEON-GENERAL M. H. S.







Walter Wyman
Supervising Surgeon General



STEAM DISINFECTING CHAMBER.

SOME POINTS IN THE DISINFECTION OF WOODEN VESSELS FOR YELLOW FEVER.

By Surgeon H. R. Carter.

There are many points of difference to a quarantine officer between wooden sailing vessels and steamships. The former lie longer in the ports of clearance; the crews have communication with the shore; there are more deserters, and consequently more men are shipped at these ports to take their place. All of these things affect a vessel's sanitary standing.

The points, however, to which it is desired to call attention at present are (1) the treatment of ballast and (2) the disinfection of the hold, and both apply only to wooden sailing vessels.*

(1) TREATMENT OF BALLAST.

This ballast is regarded differently by different boards of health, but by all as at least "suspicious."

Florida regulations require the discharge of all ballast from infected ports before a vessel is allowed to enter. If the vessel is judged infected the ballast aboard must be removed at the refuge station to which she is sent, and new ballast not from an infected port substituted if any is needed. Disinfection of ballast is not recognized.

Louisiana† allows it to be wet *in situ* with bichloride solution and remain aboard during the fumigation; then it is considered safe (1891). Savannah, which ascribes an epidemic to ballast, and Charleston, while requiring all ballast to be discharged at their own quarantine stations, yet allow "dipped" ballast from vessels that have been infected to be there discharged along with ballast from noninfected vessels, thus agreeing to its harmlessness. A vessel of which the ballast may be infected is not allowed at either of these quarantine stations.

Mobile and Mississippi ports allow "dipped" ballast to enter port, and, if need be, to remain aboard or to be discharged ashore.

Is ballast often a source of infection? From Havana, yes. From Brazilian ports, if of rock, no. It depends mainly on its material and whence procured.

From Havana, Cienfuegos, and some other Cuban ports comes a fairly good white stone, a soft, crumbly blue rock, containing talc and mixed with clay, and what is called by masters and in the manifest "sand," but which contains so much old plaster, broken tiles, and bricks that "rubbish" would seem a better name for it.

Twice this last, and once (two cars) the blue-stone, ballast is believed to have been the source of yellow fever in vessels at the Gulf Quarantine since 1887.

Rio, Santos, and the Brazilian ports south of Pará send a gneiss or granite rock, not hard for its kind, but far better than the best Cuban ballast, and a loam due to its decomposition. This is also called "sand" in the manifests, and if dry may be taken for sand, but it is really a loam, setting like cement when wetted. It is alkaline. Few vessels for Gulf or South Atlantic ports bring this "sand," as it is objected to by most quarantine officers, and the masters of vessels are suspicious of it themselves, and when wet it makes a very dirty ship.

*Save schooners and American-built square-rigged craft of small burden (brigantines and barkentines mainly), practically all sailing vessels from yellow-fever ports come in ballast

†The recommendation for a ballast lighter in the report of the Louisiana quarantine physician, 1890, shows that this method was not perfectly satisfactory to him.

From Rio both kinds come from high hills or mountains across the bay from the city, and the locality is considered to be a healthy one, but in 1889 I was informed that there was yellow fever among the quarrymen as bad as elsewhere.

Even with what is called rock ballast there is much small stuff and dust, especially under the hatches where it is taken in. This forms a compact mass with the larger stones under the hatches, there being frequently 100 to 150 tons of this close ballast in a vessel. The finest of it, however, is only granite sand, undecomposed, and does not cohere with water.*

The writer is cognizant of only one case of yellow fever (British bark *Chippewa*, 1890), presumably due to Brazilian ballast, and this may well have been from another source. Nevertheless, in such rock ballast at the Gulf Quarantine have been found rotten boards, articles of clothing, and (once) fæcal matter, all at such a depth in the ballast that they must have come aboard at the port of departure (Rio, in these instances).

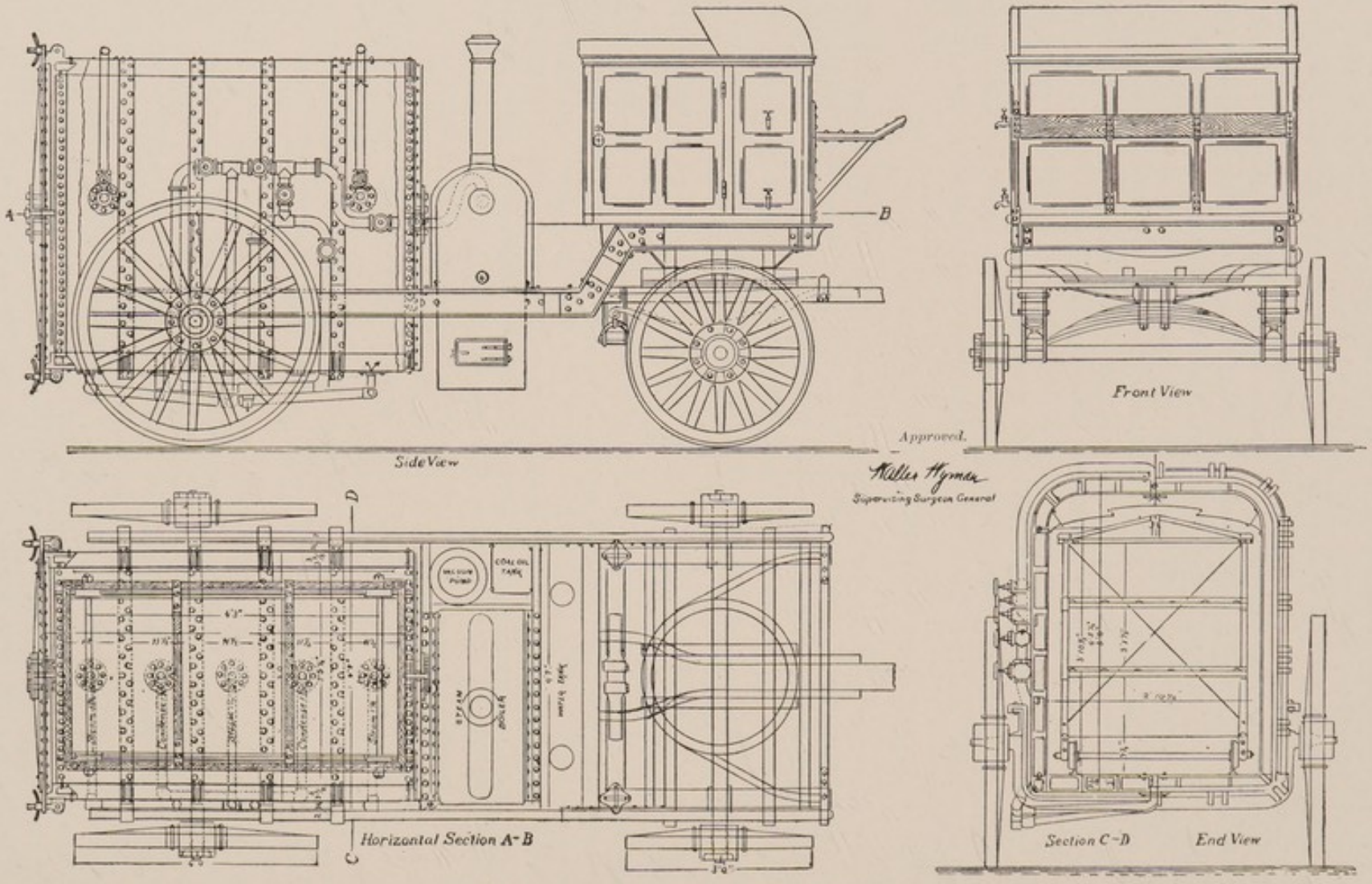
Ballast from Colon is, for rock ballast, the worst possible, and if infected the best fitted to preserve infection. It is a friable, porous stone (coral?), filled with slimy mud, a fresh fracture staining water. Many cases of malarial (chagres) fever were seen, certainly due to working in this ballast, but no yellow fever has been ascribed to it the past four years. Probably little has been at Colon during this time. Cases of yellow fever were ascribed to ballast from Vera Cruz at the Gulf Quarantine (French ship *Emil Postel*, 1891).

Regarding ballast from infected ports, then, as "suspicious" or "probably infected," it may be either (*a*) discharged or (*b*) disinfected. When possible, the former method is of course preferable on the ground of economy, the ballast being discharged by lighter or otherwise in about 8 feet of water. Unfortunately most sailing square-rigged vessels require ballast for their own safety, especially when going from outlying refuge stations to their loading ports, and while ballast logs may be substituted in certain cases, yet in many others, the majority, they are inapplicable. It is therefore in general impossible to leave such a vessel empty of all ballast at a refuge station. Enough close-grained picked rock, no small stuff or trash being allowed, to trim the vessel and render her safe may be disinfected and retained abroad. This disinfection is accomplished by dipping each piece in a solution (acid) of $HgCl_2$, 1 to 800 or 1,000, as it is trimmed in the vessel's hold. The rock is immersed completely in the solution, and stays wet with it some time, besides being continually wetted by the solution running down from those piled on it. Although some boards of health will not allow any ballast from an infected port or vessel to enter their jurisdiction, yet it is believed that this dipped stone, hard and clean, is safe. Certainly if washing a wooden, more or less splintered, keelson with bichloride solution renders it safe to enter port with the vessel, the immersion of a granite rock in the same solution should give it, the rock, the same immunity. Indeed, the risk of conveying infection by picked rock, even without the disinfection, must be exceedingly small.

This is not the slow process it may seem, but is obviously slower than wetting the ballast with a hose as it lies, and a number of experiments were made at the Gulf Quarantine by wetting rock ballast with bichloride solution, opening the pile and testing individual stones for mercury. The solution was served through a 1½-inch hose by a strong steam pump under full pressure, and observations were made aboard the ships *Sardinian*, *Chrysolite*, *Prince Regent*, and *Curlew* and barks *President*, *Mabine*, and others. In every case stones were found some part of which gave no reaction for mercury. As a rule, the parts in contact with other stones had been wet, while the parts not so in contact quite frequently did not show the reaction.

A consequence of this is that where ballast is first fumigated and then wet down with bichloride solution there is some probability of the SO_2 reaching the parts of the stones

* In 1889 when there was a very bad epidemic in Rio the rock ballast from that port was nearly all small stuff. The Government was using large rock on some public works, and the vessels took for ballast what was left on the lighters.



PORTABLE STEAM DISINFECTING CHAMBER.
(Designed by Passed Assistant Surgeon J. J. Kinyoun.)

not wet by the bichloride. This is less apt to take place if the fumigation follows the wetting down.

It seemed as if the liquid followed certain paths in passing through the ballast, and after a certain amount of solution had been used no proportionate increase of wetting was observed by increasing the use of the solution. In these experiments the solution was used considerably in excess of what is usually used in wetting down ballast.

Letters from masters of vessels which had had their ballast so treated elsewhere state that the ballast, rock, and fine stuff was, after the process, in good condition for handling except near the surface and next the keelson; that no sand was carried into the bilge, and that "most of the fine stuff was as nice and dry as if the ballast had not been wet down." The same statements have been made verbally by several masters of vessels.

It seems doubtful, then, if it be possible to certainly wet *all* of a vessel's rock ballast *in situ* by an amount of water short of submerging it, and that, if the ballast be infected, this method is less sure than that of dipping.

Also, if ballast be thoroughly wetted, it is obvious that much sand must pass through the ceiling, stopping the limbers, fouling the pumps, and doing a certain amount of damage to the vessel, and requiring considerable work of the crew to correct it.

Where this method was tried with sand it seemed to wet all of it; at least every piece selected in the two vessels experimented on yielded the mercurial reaction. The sand was leveled so as to be as thin as possible, ditches dug across the hold, and then filled with the solution. After this soaked in, the ridges were turned into the ditches and the place where the ridges had been ditched, and these filled with solution of bichloride. To wet the sand thoroughly required from one-twentieth to one-twelfth of its weight of water.

Colon stone is probably not disinfected by immersion in the solution of bichloride unless the time of immersion be considerably prolonged—hours or days; nor was it ever judged safe to attempt to disinfect the rubbish ballast from Havana.

Of course the ballast is to be disinfected as far as possible *in situ* before discharging any when it is believed that moving it will endanger the workers. But wet ballast is exceedingly disagreeable to handle and is injurious to the vessel, and indeed all work about a presumably infected vessel should be done by the acclimated quarantine crew.

(2) DISINFECTION OF HOLD.

In 1888, 1889, and 1890 a series of rough experiments were made at the Gulf Quarantine to determine the penetrating power of SO_2 in sufficient amount to destroy animal life—ants and cockroaches. These were made in the holds of vessels undergoing disinfection, so as to be under the same conditions as those in which the gas was used in practice. These can not be given in detail here, but they showed that a film of water (sea water) from 3 to 5 inches thick presented such a barrier to the passage of the gas that in forty-eight hours it would not destroy insect life beyond it; that clothes soaked in sea water thick enough to stay wet were equally impenetrable, while the same clothes dry allowed insects to be killed within them; that rotten pine wood, if reasonably dry, was penetrated 4 inches with the grain and less than 2 inches across the grain; that this same wood soaked in sea water was impervious for even 1 inch with the grain.

Dr. Kinyoun informs me that a 10 per cent atmosphere of SO_2 (10 p. vol.) will destroy certain microörganisms through 6 inches of rotten wood containing 16 per cent of moisture, I presume with the grain.

Now, in the hold of a vessel rotten wood is most apt to be found, if anywhere, in the timbers in the ill-ventilated spaces between the skin and ceiling, at the ends of the deck beams, at the water line near the stern, but in every case between the skin and ceiling. In spite of air strakes and ventilators the communication between these spaces and the open hold is very meager, and is rendered still more so by the "stop waters" in all

American vessels—pieces fitted in between the timbers to keep the bilge water from splashing up on the cargo when the vessel lays over in sailing. Obviously, then, if the hold of a vessel be infected the infection is most probably in the rotten wood, a favorite nidus in ill-ventilated spaces, and it is difficult to reach.

It has been the habit to use a large amount of bichloride solution and to leave it in the vessel until she leaves quarantine, so as to splash about as she rolls and soak into her wood as thoroughly as possible. Nevertheless, it is obvious that no liquid can be depended on to reach and saturate all parts of the woodwork under the ceiling. A gaseous disinfectant is necessary if there be infection in these places, and the problem is to make it efficient. After opening every air strake—they are generally closed by battens on arrival in quarantine—the main dependence for reaching these spaces must be by the cracks between the planks in the ceiling. Now, if the vessel be fumigated immediately after she is washed down with bichloride solution, and the washing is done as it should be, all of these cracks and all of the small interstices, where beams, etc., come together, are filled by films of this solution through which this gas can not pass, or passes with difficulty, and the places which most need disinfection can not get it.

This to me seems a more serious objection to using the bichloride solution before fumigating, in wooden vessels, than the fact that $HgCl_2$ is partially converted into Hg_2Cl_2 by the SO_2, although this certainly occurs in pans holding bichloride in solution exposed in the hold of a vessel undergoing fumigation.

Also, to enable the gas to diffuse itself through the cracks into these spaces in sufficient proportion to be efficient as a disinfectant, it is necessary to have it in the hold a considerable time. At the Gulf Quarantine the hold was closed for forty-eight hours and occasionally seventy-two hours. This was done to allow for this diffusion and not because it was believed that so long a contact of the gas with any infecting organisms was desirable.

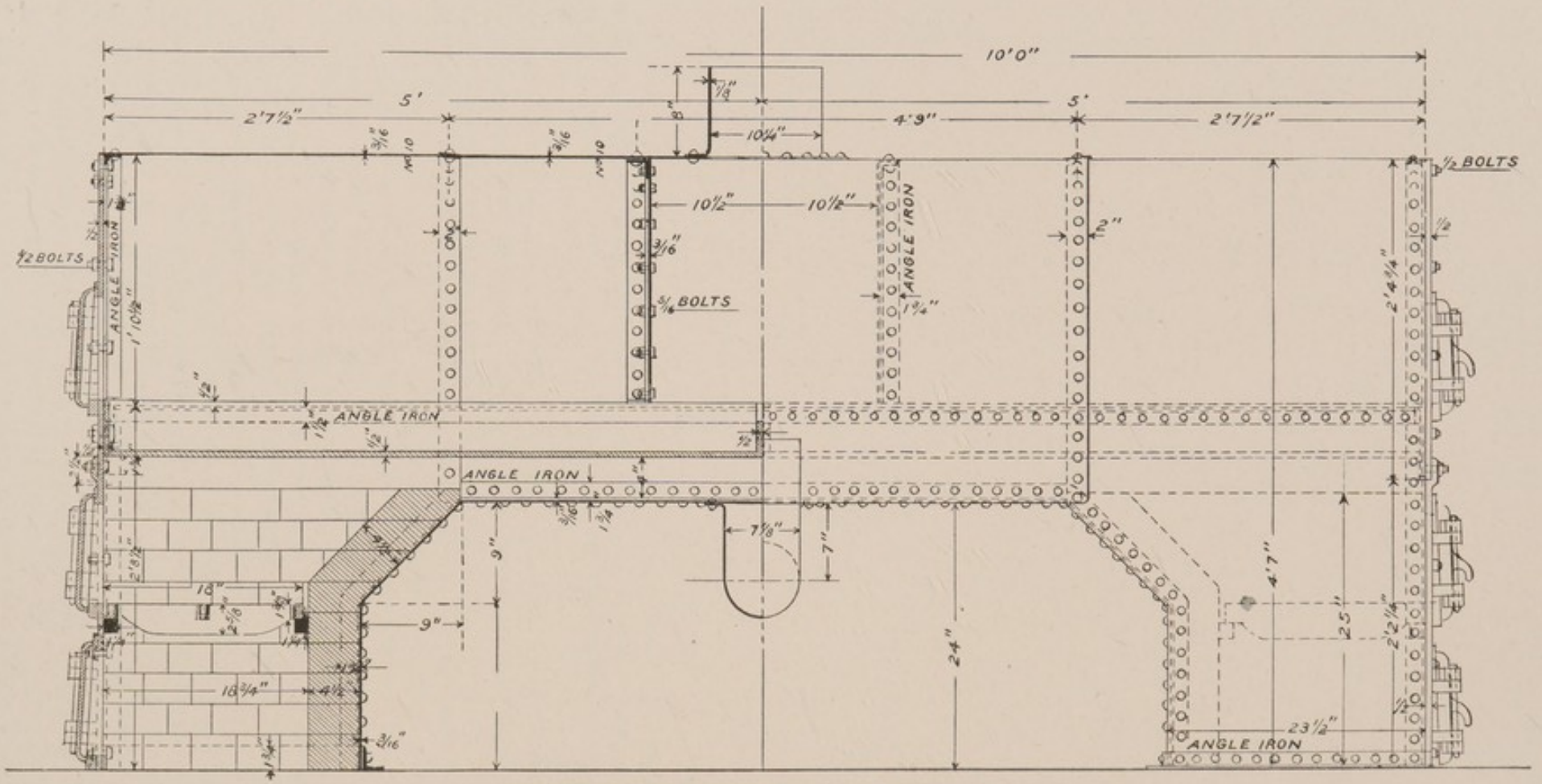
It seems right to state here that infection of the hold of a vessel, not meaning the ballast, is not common in vessels which have the houses on deck, and the contents of the hold, the ballast, is less commonly infected than the dunnage of the forcastle and cabin.

To determine what part of a vessel is infected, beyond a mere probability, is not usually possible; indeed to determine if a vessel be "probably infected" is at times far from easy.

Officially this is determined by the regulations of the quarantine station or port of entry, but a vessel may be officially judged infected and (rightly) submitted to disinfection when in point of fact the probability of her being infected is slight; and (for Middle Atlantic ports) the converse may occur. The fact of a vessel having had yellow fever aboard, especially if only at the port of clearance and not en route, may not be sufficient to class her as "probably infected." The circumstances of the attacks may be such as to show that they were contracted ashore and that the sick men did not contaminate the vessel; or there may be evidence to show that, although there was a source of infection aboard the vessel, it is no longer existing.

For an instance of the first, among many instances, the American ship *Fawne* had six cases of yellow fever developing aboard her while at Rio in 1891, but in every case it developed in seamen who, the log showed, had returned from shore less than thirty-six hours before, and there had been no development of fever among a considerable number, twelve or fourteen, of unacclimated seamen living in the same forecastle and working over every part of the ship for about fifty days since the last case aboard. From this vessel the sick were sent to hospital the first day of their sickness with all of their loose dunnage with them. No supplies taken aboard, no men shipped, and only the master went ashore after the fever developed. This vessel was probably not infected at any time.

As an illustration of the second, far less common than the first, the British ship *Prince Frederick* was infected at Rio in 1889. A number of cases—thirteen, I think—developed



IMPROVED SULPHUR FURNACE FOR MARITIME SANITATION.

Valk & Murdoch, Charleston, S. C.

aboard her under conditions which showed that they were contracted aboard, *i. e.*, in men who had had no recent communication ashore, and one case en route. She came up short-handed to Barbados, having en route destroyed some dunnage—that of the dead—and aired all of the rest, keeping it on lines in the sun all of every day when possible; cleaned and ventilated the houses above decks, and ventilated the hold. The weather the whole time was bright, with light winds. At Barbados the crew was strengthened by shipping new men, among them seven English lads, fresh young fellows from 16 to 21 years old, who had never been south before, the most perfect *témoines* for yellow fever, yet no case developed among them, even when they cleaned ship.

This vessel undoubtedly had a source of infection aboard, but was freed from it, probably, in consequence of the ventilation and other measures adopted.

If there be dunnage packed away aboard which was infected when packed no time limit can be relied on for removing the infection, while presistent airing in bright weather will probably do so. Even washing in cold water, as sailors do, seems to be sufficient to disinfect fabrics from yellow fever.

Several cases are known where aired or washed clothing was handled with impunity by a number of unacclimated persons, from which yellow fever had been contracted by those who unpacked or washed it, and no case of infection from well-aired clothing has ever been known to the writer. Moisture seems necessary for the infection to keep its efficiency.

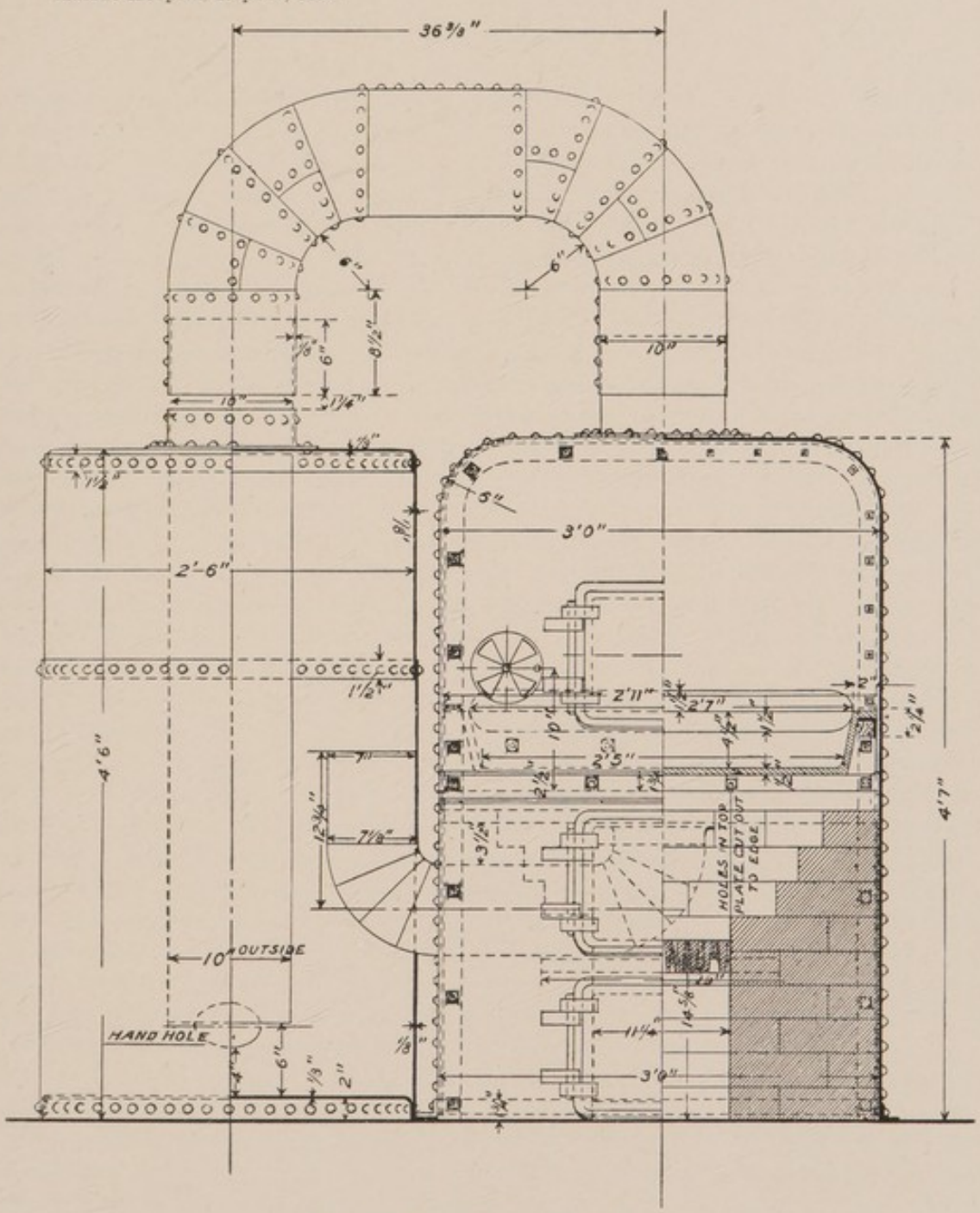
It is not, of course, intended that airing, etc., should ever be relied on for the disinfection of fabrics, only to show that some vessels may clear themselves of infection by this method and ventilation.

EPITHELIOMA.

Amputation by Humphrey's Method.

By Surgeon Henry W. Sawtelle.

Seaman I. S. (white), a large, vigorous man, aged 60 years; nativity, Maine; admitted to Boston Marine Hospital, December 3, 1891, for epithelioma of penis of one year's duration. He was always healthy up to one year ago, at which time two ulcers appeared; one on the upper portion of prepuce, the other on glans penis midway between meatus and upper border of corona glandis. The ulcers spread and the meatus was soon obscured by the growth. The characteristic odor was intensely offensive on admission and indicated pretty clearly the nature of the disease. The penis was greatly enlarged and nodular; skin covering mass tightly stretched; prepuce adherent; no pain; constant discharge of foul sanious matter, though not profuse. A few hours after admission there was a slight hemorrhage from the penis, which the patient stated had been almost of daily occurrence for some time. There was no marked glandular enlargement, but no evidence of syphilis. Had been in another hospital for six weeks, from which he was discharged in November, 1891. December 4, 1891, the day after admission, the parts were cleansed with sublimate solution, and I amputated the penis at the upper third. Iron and quinine were ordered. The stump failed to heal and the upper border of the scrotum became involved in infiltration. Humphrey's operation was then determined upon and was performed January 18, 1892, under ether. The neoplasm of the scrotum was removed and the urethra was dissected out to the extent of about 10 centimeters in length and implanted in the opening made through the scrotum. The mouth of the urethra was stitched to the skin of under surface near perineum. The organ was then amputated at the point of bifurcation of the corpora cavernosa. The parts healed by granulation, and the patient was discharged February 24, 1892, feeling well and able to urinate without difficulty. Under date of June 19, 1892, five months after the operation, the patient reported that he weighed 240 pounds and that he was in excellent health.



IMPROVED SULPHUR FURNACE.

Valk & Murdoch, Charleston, S. C.

CEPHALALGIA—TREPANNING—RECOVERY.

By Surgeon Henry W. Sawtelle.

Seaman J. E., aged 25 years; nativity, Portugal; admitted to the U. S. Marine Hospital, port of Boston, Mass., February 12, 1892, suffering from intense headache. He stated that he had always been healthy up to the 1st of November, 1891, at which date, during a storm, he was struck across the forehead by a swinging boom, which rendered him insensible for three or four hours. Three days later he was sent to a hospital in Halifax, where he remained three weeks. When discharged from hospital he felt well, but about six weeks thereafter he was seized with severe headache, recurring once or twice a week, the attacks lasting four or five hours. For eight days prior to admission to this hospital he suffered almost constant pain of a pulsating character, referred particularly to the frontal region and extending to the occiput, becoming worse at night, and preventing sleep. He is weak and remains in more or less of a stupor, and his haggard expression indicates great suffering. No history of paralysis. Phenacetine and bromides and all remedial agents exhibited gave only momentary relief. A small scar at the center of the left frontal eminence marked the seat of the original injury. Depressed bone was suspected as being the possible cause of the head symptoms, and trepanning was decided upon. Accordingly, I performed the operation on February 18, 1892. The patient was etherized, the head shaved and properly cleansed, a semicircular flap was raised, the periosteum pushed aside, and a button of bone 2½ centimeters in diameter was removed from the left frontal eminence. No fracture or depression; the dura was somewhat tense and pulsating. It was opened by an incision 2 centimeters in length, and about 5 cubic centimeters of clear serous fluid escaped. The membrane appeared to be slightly thickened. The opening in the dura was closed by a continuous suture of fine catgut, and the parts flushed with warm distilled water. All the bleeding vessels being controlled, the button of bone, which had been placed in a solution of carbolic acid (1 to 80), was replaced, the scalp wound closed with catgut sutures, and a small drainage tube inserted; sublimate gauze dressings. The dressings and drainage tube were removed on the fourth day. After the operation the headache entirely disappeared, and did not return again during his stay in hospital. The pulse, which had been subnormal prior to the operation, became normal, and so remained. The wound closed by primary union. Patient comfortable and cheerful; says that he feels as well as he did before the reception of the injury. Discharged March 4, 1892.

June 27, 1892.—A sailor who has seen this man since he left hospital reports that the patient has had no further trouble with his head.

The result in this case is in accord with the experience of recent observers who have opened the skull for various forms of cephalalgia. Horsley advises trepanning in all cases when medical treatment fails to relieve.*

* *Vide* article of Dr. Emory Lanphear, The Journal American Medical Association, December 19, 1891, p. 957.

INVOLUNTARY ASSOCIATED ACTION OF THE FINGERS AND THUMBS OF BOTH HANDS.

By Surgeon George W. Stoner.

At the request of the general superintendent of the United States Life Saving Service, who referred the case to me upon the suggestion of the Supervising Surgeon-General, I, on the 13th day of August, 1892, examined an applicant for reënlistment as a surfman. My report of the case was substantially as follows:

"I have this day examined F. L. L., and find that he is a robust man 30 years old, of full muscular development, including the muscles of the hands and fingers, and apparently free from disease of any kind. He has, however, a peculiar, and, to me, unique affection of the flexor and adductor muscles of the thumbs and fingers, or of the nerves supplying them, which, in my opinion, incapacitates him for duty as a surfman in the Life-Saving Service.

"He is unable to flex one hand without at the same time and to a considerable extent flexing the other hand, and this same anomalous action is shown to a less degree in extending the fingers. It is observed also that after the muscles have been called into action for several moments by efforts at grasping or holding objects of any considerable size—filling the hands—the muscles become fatigued, give up their grasp, and, especially the adductor and flexor muscles of the thumbs, are thrown into a condition of tonic spasm. The case is exceedingly interesting, not only because of its rarity, but also on account of the obscurity of its primal cause. It may be due to some anomalous condition or arrangement of the nerve fibers at the point of decussation in the medulla, or possibly to some abnormal arrangement or pathological process in the nuclei of the spinal cord in relation with the affected muscles.

"The man states that his affection is congenital, but has gradually improved (?) since boyhood. He has a son 3 years of age who is in about the same condition, but other than this the history of the family tree is good and has no bearing whatever on the case."

Dr. A. W. Imrie, of this city (Detroit), saw the man with me, and agreed in the foregoing report and general speculation.

Several weeks later I reported the case at a meeting of the Detroit Medical and Library Association, and my description of it was referred to Dr. David Inglis, professor of mental and nervous diseases in the Detroit College of Medicine, an active member of the association, but absent on this particular occasion.

A day or two later Dr. Inglis wrote, as follows:

"DEAR DR. STONER: The case which you kindly submitted to me is one of unusual interest, for, as far as I can learn, no similar case is on record. In endeavoring to picture the probable seat and nature of the lesion, these points occur to me:

"Associated movements of the arms or hands are involuntary, and therefore usually escape our notice. I presume that the association of both arms is much more common than we realize. The most striking illustration of the fact of this association occurs in the ordinary cases of hemiplegia. Nothing is more strange at first sight than to see a hemiplegic patient, whose voluntary control of one arm is completely lost, suddenly raise the paralyzed arm almost as well as the sound one when he yawns and stretches. Here is complete evidence that the movements of the two arms are coördinated in the spinal cords. There exist clearly connecting paths between the right and left anterior cornua,

and it is certain that an impulse coming down to the anterior cornu from the sound side of the brain, and causing motion upon the corresponding side, also sets up a similar set of coördinated movements in the other side. Now, in your patient it is clear that a similar phenomenon occurs. Whether the motor impulse comes down from the right or left side, the result is the same—a normal movement of the intended hand, but, also, quite beyond the patient's volition, a movement of the opposite hand similar in kind but less in degree. Evidently every motor impulse which starts a motor discharge in one cornu also sends a similar impulse, by way of the commissural fibers, across the cord, and sets up a discharge of the associated centers in the opposite cornu.

"The phenomenon is analogous to that of the associated reflexes, and is evidently due to the same physiological arrangements in the cord. I think it is safe to say that the location of the defect in your patient is in the cervical cord.

"As to the nature of the defect, the symptoms are very suggestive.

"In cases of writers' cramp or other exhaustion neuroses of that type it is a matter of common observation that the phenomena, at first unilateral, tend to become bilateral. In writers' cramp we have, further, the best illustration of spasm of the affected and associated muscles following any prolonged or severe use of the muscles innervated from the exhausted centers.

"Your patient presents the analogous condition. Repeated use of the muscles, especially such use as causes distinct strain, brings out both the weakness of the innervation and the succeeding spasm.

"The nature of the lesion, then, is probably similar to that state of the ganglionic cells which exists in writers' cramp.

"It is noteworthy, too, that it is in similar conditions of ganglionic irritability that the phenomena of associated reflexes occur.

"One more point occurs to me.

"Progressive muscular atrophy very commonly begins by the wasting away of the very groups of muscles involved in your patient, notably the adductors of the thumb. Progressive muscular atrophy, too, resembles the present case in the onset in early years, persistence through life, and hereditary transmission. Again, progressive muscular atrophy depends upon trophic changes in the ganglionic cells of the anterior cornua, and that bilaterally.

"In short the present case would seem to be very closely related to progressive muscular atrophy, and it would not be at all surprising if, either in the father or the little boy, atrophy should ultimately appear.

"I should look upon the case, then, as a hereditary defect of the gray matter of the cervical cord analogous to progressive muscular atrophy, but causing irritable weakness of the cells rather than atrophy.

"Yours sincerely,

"DAVID INGLIS."

"DEAR DR. INGLIS: I am exceedingly obliged to you for your excellent report on the case of, shall I call it, involuntary associated action of the fingers and thumbs of both hands.

"And now, in further consideration of the same and your reference to involuntary associated movements of the arms or hands, as especially observed in ordinary cases of hemiplegia, where 'the hemiplegic suddenly raises the paralyzed arm almost as well as the sound one when he yawns and stretches,' and your statement that 'here is complete evidence that the movements of the two arms are coördinated in the spinal cord through connecting paths between the right and left cornua,' I would like to ask, for my own information, whether in the solution of the problem you place muscles having to do with the movements of the arms in the same category with muscles that act in pairs, as, for example, those of the chest or of the abdomen, or the eyes, which, according to Broad-

bent or Bastian, are so frequently exempt from paralysis, or, at most, only slightly affected, in cases of hemiplegia, for the reason or 'upon the supposition that the nerve nuclei on opposite sides of the cord are so intimately connected by commissural fibers as to be in effect a single nucleus.'

Broadbent, according to Bastian, 'supposes that a combined nucleus of this sort will be in connection with a set of fibers from each hemisphere, and will usually be called into action by both, but it will be capable of being excited by either singly, more or less completely, according as the commissural connection between the two halves is more or less perfect.'

"This, as will be observed, is almost precisely in accord with your own emphatic statement that 'it is certain that an impulse coming down to the anterior cornu from the sound side of the brain (or from either side of a healthy brain), and causing motion upon the corresponding side, also sets up a similar set of coördinated movements in the other side.'

"In looking over the literature of the subject I find that cases of hemiplegia in which a certain amount of late rigidity existed have been reported in which, as Bastian says, 'forcible closure of the hand on the nonparalyzed side, or the fingers of this hand, leads to the production of exactly similar movements in the hands or fingers of the paralyzed side.'

"According to the same author, 'Westphal says that associated movements of this type are most prone to occur in cases of hemiplegia which date from infancy.' And Nothnagel points out 'that in certain cases, when a hemiplegic patient who has ceased to be completely paralyzed extends the paralyzed fingers slowly and with effort those of the unaffected side perform the same movement.'

"But in the case I have reported there is not, nor has there ever been, so far as I can learn, the slightest symptom of hemiplegia, nor indeed of any wasting or atrophy of the muscles, the word 'robust' applying apparently with equal force to every muscle or group of muscles in his body, and yet here is illustrated an involuntary associated action greater in degree than is usually observed even in hemiplegics.

"Progressive muscular atrophy usually begins in the muscles of the hands. Its onset is always slow, but it probably never exists for a period of thirty years without showing at least some degree of the condition from which it derives its name.

"In the occupation neuroses, such as writers' cramp, the affection usually subsides if the person gives up the occupation that has caused it.

"In the case under consideration the associated movement is not confined to the temporary spasmódic action following excessive use of the muscles, but is shown in the ordinary movements of flexing the fingers, and the affection is congenital.

"Sincerely yours,

"GEO. W. STONER."

"DEAR DR. STONER: In reply to your note, it may be well to emphasize the following points:

"Certain spinal centers which stand in relationship to movements habitually bilateral, as, for example, those concerned in respiration, the maintenance of the posture of the trunk, etc.; these centers are in the nature of double nuclei; they are either congenitally, or by training, so linked together as to practically form a single nucleus.

"Certain other centers presiding over motions in themselves unilateral, but dependent upon similar motions of the other side, are bilateral centers, but communicating tracts are easily opened between the two nuclei. This arrangement exists in the centers for the lower limbs, and from it results the well-known fact that young hemiplegic patients almost invariably reacquire a fair use of the paralyzed leg. Training in these cases opens up commissural tracts between the opposite nuclei, and ends in their becoming, to a considerable extent, combined into one nucleus.

"The nuclei for the two arms preside over movements much more complex than those of the legs and much more closely dependent upon volitional control. It is much harder to establish communication between the two nuclei, but such communication habitually exists to some extent and can be increased, as in the case of the leg centers.

"Your case is of unique interest, as showing the existence of such communication to a very unusual degree.

"As regards the relationship of the phenomena of associated movements to hemiplegia, I should put it in this way: Hemiplegia does not cause the association, but enables us to see which movements are volitional and which ones are associated habitually. In a healthy person it is difficult or even impossible to say of any arm movement that it is not volitional, but when the will is clearly cut off by a hemiplegia the movements which occur are evidently associated. Furthermore, it is evident that associated movements are more pronounced in hemiplegics than in the well, owing to the loss of cerebral inhibition upon the paralyzed side. Here again we see the analogy between associated movements and the deep reflexes which are exaggerated on the paralyzed side, and from the same cause loss of cerebral inhibition.

"I am exceedingly glad that you have reported this case, for it illustrates in a beautiful manner the relationship between the deep reflexes and associated movements, between progressive muscular atrophy and the occupation neuroses, and between hereditary weakness and acquired exhaustion.

"Yours, sincerely,

"DAVID INGLIS."

ANEURYSM OF THE POPLITEAL ARTERY.

Ligation of the Femoral at Scarpa's Triangle.

By Passed Assistant Surgeon P. C. Kalloch.

C. H.; age, 58 years; nativity, United States; admitted to the U. S. Marine Hospital, port of Boston, Mass., February 12, 1892.

He says he has always been well, with the exception of having some ulcers on the legs eighteen months ago, caused by contusion. Has had gonorrhœa, but no other venereal disease. Five weeks ago he was struck on the thigh with a block. This gave no pain or inconvenience until three days later, when sharp pains appeared about the knee, radiating in different directions. Swelling then began and the pain became constant. Two weeks later the pain was transferred to the popliteal space, and swelling was noticed on the inner side of the thigh just above the knee. This increased rapidly, and at the time of admission extended nearly to the median line posteriorly and beyond the central line in front. Pulsation was noticed during a greater part of the time over the entire swelling, and was plainly noticeable to eye and touch upon his admission. On February 13, during anæsthesia, the femoral artery was ligated in Scarpa's triangle. The wound healed without pus, the pulsation of the tumor ceasing at once, and absorption of the tumor progressed satisfactorily. When discharged, March 21, he had good use of the part, the tumor was quite small, and recovery was apparently complete.

A CASE OF TRAUMATIC TETANUS—RECOVERY.

By Passed Assistant Surgeon P. M. Carrington.

T. B.; aged 22 years; native of Kentucky; negro race; was admitted to the U. S. Marine Hospital, Evansville, Ind., March 23, 1892, having been injured eight days previously on the steamer *Buckeye State*, and until this date without treatment. Examination revealed a compound fracture of the first phalanx of the ring finger near its distal extremity. The wound was on the palmar surface, and probably entered the joint. A dressing of balsam Peru and a splint were applied. On the 29th patient complained of cramps in the wounded hand. The dressings were removed, and the wound found completely healed, and nothing wrong was noted.

March 30.—On entering the ward at morning sick-call the nurse reported B having a chill; found patient in a profuse sweat, with tetanic spasm affecting the muscles of the face, neck, and arms, rapidly extending to the entire body. The jaws were tightly closed, the head drawn backward, and the limbs rigid, and during the height of the paroxysm there was complete opisthotonus. One drop croton oil was administered immediately, and a large poultice, containing 125 grams of cut-plug tobacco, was prepared and applied to the abdomen. In thirty minutes the convulsion grew less severe, and ceased one hour after the poultice was applied. Complete muscular relaxation and vomiting followed. The bowels moved freely, after which the lower bowel was washed out and potassium bromide and chloral āā 0.66 gram administered per rectum, and continued every two hours by the mouth as soon as the stomach would retain it.

March 31.—Passed a comfortable night; slept well. Had one convulsion at 8:45 this morning which was readily controlled by the tobacco poultice. Had several convulsions of short duration during the day.

April 1.—Convulsions less frequent and not so severe. Complains of violent headache. Has no fever. Ice cap to head.

April 2.—Had two or three attacks last night before midnight; then slept well this morning. Tobacco does not control the spasms so well as at first. Tr. lobelia given, bromide and chloral continued, and morphia, 0.016 gram given twice.

April 3.—Convulsions continue at irregular intervals; hallucinations; sleeps in intervals, and takes nourishment well. Tr. belladonna and morphia added to treatment.

April 5.—Condition has remained about the same since last note; attacks a little less frequent (only one last night) and has less headache.

April 7.—No decided change; attacks continue with varying frequency and severity, but of shorter duration. In intervals is drowsy, but talks intelligently when addressed. Belladonna stopped, and potassium iod. 2 grams every four hours added to the treatment. Appetite good.

April 8.—But few attacks to-day; all slight ones.

April 9.—No spasm since 3 p. m. yesterday; no headache; appetite increasing. In the afternoon had two slight attacks of short duration.

April 10.—Complains constantly of soreness in the joints and head. From this date there were no further convulsions, and the bromide, chloral, and morphia were gradually reduced and discontinued on the 15th, the potass. iod. alone being given.

April 18.—Discharged recovered.

I would have kept this case under observation longer, but the patient insisted on leaving the hospital.

NOTE.—The use of tobacco in this case was followed by such prompt and happy effect that I desire to call especial attention to its use in tetanus. Gross and Hamilton mention its use, but give it no prominence, and I was induced to use it in this case by the statement of Hospital Steward Richardson that it is constantly used by the plantation negroes about New Orleans (under the direction of the overseers) both as a preventive in punctured wounds and as a cure, and that they regard it as an almost infallible curative agent. He also stated that he had seen the tobacco poultice used with good effect in the practice of army surgeons. Of course I do not conclude from this single case that tobacco is a specific for tetanus, but its good effect in the above related case would seem to warrant a further trial.

VESICAL CALCULUS: SUPRAPUBIC CYSTOTOMY.

By Passed Assistant Surgeon P. M. Carrington.

P. T.; age, between 35 and 50 years; nativity, Kentucky; negro race; was admitted to the U. S. Marine Hospital, Evansville, Ind., February 18, 1892.

History.—For three years past has suffered with urinary troubles; frequent and painful micturition, ardor urinæ, and occasionally passing small blood clots. Was treated at various times for these troubles, but the bladder was not searched, and he grew constantly worse. During the past year he has noticed an occasional sudden stoppage of the flow of urine before the bladder was emptied, the urine again flowing upon changing the position of his body. Hæmaturia has been constant during the past six months. Recently a surgeon in Evansville searched his bladder and informed him of the presence of a stone. When received into the hospital patient was greatly emaciated; had valvular disease of the heart, and traces of albumen in his urine, which also contained mucus, pus, and blood. Examination being made of the bladder moderately distended with Thiersch's solution, the presence of a stone was readily demonstrated, and after ten days' preliminary treatment suprapubic cystotomy was done in the following manner on February 28, 1892: A hypodermic of morphia was administered and the patient etherized. The field of operation was shaved, washed, and disinfected. The rectum, previously emptied by enema, was distended by introducing the rubber rectal bag and filling it with water. One hundred cubic centimeters Thiersch's solution were injected into the bladder through Thompson's stone searcher, the latter removed, and the fluid retained by tying the penis with a rubber catheter.

Incision through the skin and fascia was then made in the median line, extending from the symphysis pubis 3 inches upward, the muscles separated and held aside, and the other tissues divided on a grooved director. The fat covering the bladder was pushed upward by the finger, when the bladder appeared in the opening and was transfixed by a tenaculum and held, while a stout ligature was passed through the bladder wall on each side the median line, by which the bladder was drawn well up into the abdominal incision. Incision was then made through the bladder wall, which was greatly thickened, and the left index finger passed into the bladder and the stone located; the right index finger being then introduced, the stone was grasped between the two fingers and carefully withdrawn. The stone was an irregular spheroid in shape, 45 millimeters long and 19 millimeters in diameter, weighing 14.06 grams. The bladder was carefully explored and irrigated, and the wound stitched by continuous catgut suture up and down, and the abdominal wound was packed with iodoform gauze and a light dressing applied.

A soft rubber catheter was introduced through the urethra, and tied in place for drainage, and renewed every twelve hours. The catheter being connected, by a rubber tube, with a vessel on the floor, gave good drainage, but set up an ulceration near the meatus and a general urethral discharge, necessitating its permanent removal on the third day, after which the urine was drawn at regular intervals. There was slight fever on the first and second days, and anorexia for eight days. On March 5 the urine, which had been passing by the urethra, began to leak through the abdominal wound, and continued to do so until the 11th, after which time the urine was voided naturally, the wound granulated and closed up rapidly, and the patient was discharged cured April 6, 1892.

The fact that the bladder had apparently healed and that the urine did not discharge through the wound till the sixth day after the operation seems to illustrate the wisdom of leaving the abdominal wound open, for even had the bladder been drained through the perineum, the drainage tube would have been removed before the sixth day, and extravasation of urine might have occurred had the abdominal wound been closed.

A CASE OF UNILATERAL FACIAL ATROPHY.

By Passed Assistant Surgeon L. L. Williams.

S. A.; aged 23; negro roustabout; was admitted to the U. S. Marine Hospital, Memphis, Tenn., May 27, 1892. He had contracted mumps a few days previously and applied for treatment for that disease. A glance at his face revealed a marked difference in size between the right and left sides, and when, a few days later, the swelling of the parotids subsided, this difference became still more apparent. The following notes are taken from the "clinical report:" Patient states that at the age of 5 years he was burned on the right cheek and that the right side of his face has been smaller ever since. There is a slight scar perceptible at the corner of the mouth. He presents the characteristic lesions of facial hemiatrophy. The entire right side of the face is decidedly smaller than the left; the skin is much thinner, the adipose tissue less in amount, the muscles wasted. The muscles of mastication, including the temporal, are especially affected, and chewing on that side is practically abolished. The most marked atrophy is shown in the right upper maxilla and malar bone, which are scarcely half as large as their fellows. The lips on the affected side are much thinner and the mouth is drawn to the right. Patient can whistle to a slight extent. There is no indication of paralysis of the facial nerve. With the mouth open the atrophy of the upper maxilla is well shown by the eccentric position of the median raphé of the hard palate. There is decided atrophy of the right side of the tongue and of the right side of the soft palate. When the tongue is protruded it deviates to the right, showing weakness of the detrus or muscles on that side. Sensation and secretion are normal and the growth of hair is not interfered with. Patient experiences no inconvenience from his deformity except that he can not chew on the right side. The left temporal muscle is for this reason unusually well developed.

So far as I am informed, this rare disease has not before been noted in the negro race.

PUNCTURED FRACTURE OF SKULL.

By Passed Assistant Surgeon L. L. Williams.

J. H.; aged 32; native of Illinois; admitted to U. S. Marine Hospital, Memphis, Tenn., October 12, 1891.

Three days before admission he engaged in a fight and was struck on the head by a brick. When examined, there was a small suppurating scalp wound in the right posterior parietal region near the median line. At the bottom of the wound roughened bone could be felt with the probe. There were no symptoms of brain injury. Operation on the following day. An oval flap was raised exposing the fracture. A small triangular depression was found in which was firmly wedged a sharp fragment of brick. This was removed and the trepan applied. Owing to the proximity of the longitudinal sinus, the crown of the instrument was made to traverse the center of the fracture instead of including the whole of the depressed portion. The depressed fragment near the median line was then cut away with the rongeur. A thin extra-dural clot was found beneath the fracture. Wound closed, with drainage. Patient recovered without incident, except that healing was slow on account of the presence of syphilitic disease.

TREATMENT OF BUBOES BY EARLY INCISION.

By Passed Assistant Surgeon R. M. Woodward.

In the past few months I have adopted the following plan of treatment in the indurated stage of buboes: The entire *mons veneris* is shaved and the skin scrubbed with bichloride of mercury and a nail brush. A spray of ether is played upon the enlarged gland from a hand-bulb atomizer until it is insensible. It is then freely incised from end to end and deep into the gland, the incision running parallel to the groin. The hemorrhage is insignificant. The wound is well packed with iodoform gauze, then covered with corrosive sublimate gauze, oiled silk, and a bandage. This dressing is renewed daily. In twenty-four, or at most forty-eight hours, the tenderness has entirely disappeared, and there is an appreciable lessening in the size of the tumor. No suppuration ensues unless pus had formed before the operation. From one to two weeks will suffice for a perfect recovery in all ordinary cases. The scar left is linear, much smaller than the incision, absolutely without any puckering, and after the hair reappears is entirely hidden.

Have tried the method of removing these glands as a whole, but although following strict antiseptic precautions, the operation has frequently been unsatisfactory, the convalescence prolonged, and the cicatrix large and unsightly.

The operation I describe is done quickly, easily, without a general anæsthetic, and has so far been followed by brilliant results.

TWO UNUSUAL INJURIES AT THE ANKLE JOINTS.

By Passed Assistant Surgeon R. M. Woodward.

Fracture of Leg—Both Bones.

D. G.; age, 47 years; entered the U. S. Marine Hospital, Cairo, Ill., March 22, 1892. While intoxicated patient caught his left foot in a railroad track near the river and fell. Both tibia and fibula were snapped off just above the malleoli, it being possible to move the foot in a variety of directions. Crepitus was distinct. In a short time intense swelling and ecchymosis ensued. The limb was placed in a molded felt splint for three days. The swelling having largely subsided, a plaster cast was then applied from the toes to the knee, and allowed to remain eighteen days. On removing it good union was found. The joint was apparently a little wider than its fellow. The callus showed the lines of fracture. Some motion was possible at once. A molded felt splint was applied for three days, succeeded by a rubber bandage. An elastic anklet was furnished the patient, and he was discharged May 30, 1892. He walked everywhere with only a cane, and but a slight limp. The widening of the joint before mentioned was all that remained to mark the injury. He returned to pursue his usual vocation—firing steamboat boilers.

Forward Dislocation at Ankle Joint With Fracture of Fibula.

S. B.; age, 26; was admitted to the U. S. Marine Hospital, Cairo, Ill., April 20, 1892. Patient jumped over a coil of rope, his left foot turning to the outer side, throwing him on the deck. On examination his foot was found extended upon the leg, the instep very prominent, the hollow between the tendo achilles and astragalus deepened, and the os calcis projecting backward abnormally. In this position the foot was fixed, except that there was preternatural mobility over the region of the lower end of the fibula. No crepitus was made out, but after recovery the callus showed that the fibula had been fractured about 2 inches above the malleolus. A forward dislocation of the ankle joint was diagnosticated. He was anæsthetized, and reduction made by flexing the knee, practicing extension at the toes and heel, counter-extension in the popliteal space, with direct pressure on the lower ends of the tibia and fibula. A distinct flop marked the restoration of the parts, but it was not accomplished easily. A plaster cast was at once applied and left on three weeks. On removal a good joint was found, with fair motion, and union of the fractured fibula. A rubber bandage, massage, and passive motion were now adopted. He was discharged May 21, 1892, walking without crutch or cane, and I was later informed that he immediately shipped on a steamboat, and wheeled coal all the way from Cairo to New Orleans.

HERNIA.

By Passed Assistant Surgeon H. T. Goodwin.

Is the surgeon justified in advising a ruptured patient to submit to an operation for radical cure? This is a question upon which surgeons differ, and though two years ago I should probably have answered in the affirmative I am now inclined to agree with those who advise against it.

I do not, of course refer here to strangulated and irreducible hernia where operative interference is imperative; nor to those of enormous bulk which a truss will not retain in place, but to those cases of ordinary hernia where the patient is wearing a truss and suffers no extraordinary inconvenience. No operation has as yet been devised which has proved uniformly successful, and until such a one is, I scarcely consider it justifiable to advise an operation. It is the surgeon's place to explain the situation, telling of his failures as well as his successes, and let the patient himself decide whether he cares to undergo the operation with its attendant risks for the sake of a possible cure. The recurrence of the rupture, probable under the most advantageous circumstances, is doubly so when the patient belongs to the working classes, and must return as soon as possible to his usual avocat ion. Could he afford to remain idle for at least a year after the operation, or even obtain some clerical work which would allow him to remain seated most of the time the chances of a permanent cure would be greatly enhanced; but to go back within a few wee ks to work necessitating muscular and, generally, violent muscular effort renders the operation a signal failure. And it is in this class of patients that the great majority of ruptures occur. Often they are men with large families dependent on them, and are therefore obliged to take the first work that is offered. If the patient seeks the surgeon and tells him he is willing to run the risk, well and good, let the surgeon operate; but unless an operation is expressly desired it should not be advised.

I had the honor of assisting the late Surgeon Long in some sixteen or eighteen operations for the radical cure of hernia. In the majority of cases we saw subsequently the hernia returned. When these patients were discharged from the hospital, the cure seemed perfect; prolonged and violent coughing failed to produce the slightest impulse; some of them were exhibited before the Cincinnati Academy of Medicine and there examined by several surgeons who congratulated Dr. Long on his success, and yet in less than six months many of these patients returned in the same condition as before the operation. Could these men have remained idle for several months after leaving the hospital, I believe the cure would have been permanent. As it was, they went at once to heavy work and the weakened walls were unable to withstand the strain. In reviewing these cases now, and with my later experience, I am inclined to believe that the results would have been better had Surgeon Long insisted that each patient wear some kind of light truss to reinforce the abdominal walls for several months after the operation. Had this been done, there is no doubt in my mind that some, at least, if not all the recurrences would have been prevented.

It is my rule now to fit a Marvin truss on every patient operated upon for hernia as soon as he is ready to walk about, and to direct him to wear it for at least a year after leaving the hospital. I prefer this truss to any other I have seen, for the reason that while affording a good support, it makes no undue pressure, and that its obliquely cut cork pad, instead of pressing apart the edges of the ring, as the conical-shaped wood pad on the ordinary truss does, presses them together.

Opinions differ as to the operation giving the greatest promise of success, some surgeons advocating one method, others another. In about half the cases in which I assisted Dr. Long the McBurney method was used. More than half of these were seen subsequently, and in every one there was a recurrence of the rupture. The method was then abandoned by Dr. Long as unsatisfactory. In this operation a great deal of scar tissue is formed. Scar tissue being very weak and prone to break down, it seems to me that the less gotten of it the greater the chance of success. Green, in his last edition of Pathology and Morbid Anatomy (p. 261) says: "A scar is always a weak point in the system, and a tight scar is always irritable and very liable to break down." The truth of this is verified every day. This being a fact, it follows that the object aimed at in all these operations should be to secure the minimum amount of such tissue. This I always endeavor to do.

I append herewith reports of the last seven cases I operated upon. In addition to these I operated upon one private patient in November, 1891, who as yet has had no recurrence of the trouble.

All the operations are done under the strictest antiseptic precautions. The anaesthetic as a rule is chloroform.

CASE 1.

J. F.; aged 49 years; nativity, Massachusetts; discharged, recovered, from Marine Hospital, Stapleton, Staten Island, December 17, 1891, for organic stricture of the urethra; readmitted the following day for oblique inguinal hernia. Patient states that ten years ago, while lifting a heavy weight, he ruptured himself. He has had to wear a truss ever since, and desires an operation for radical cure. The hernia is on the left side, and descends partly into scrotum. The operation was performed the same day. The sac, which was closely adherent to the cord, was dissected away, ligated at the internal ring, and excised. The wound was irrigated with bichloride of mercury solution 1 to 3,000, and the stump returned to the abdominal cavity. The pillars of the rings were sewed together with a double lock stitch of catgut, and the external wound united with a single lock stitch of catgut.

December 28.—Redressed. Union by first intention.

January 2.—Examined through scrotum. No impulse on coughing. Rings completely closed.

February 8.—A Marvin truss applied, and patient discharged recovered. Result perfectly satisfactory.

Temperature never ascended higher than 37⅘° C.

CASE 2.

S. C.; aged 56; nativity, New York; admitted to Marine Hospital, Stapleton, Staten Island, December 30, 1891.

Patient stated that two months previously he felt a slight pain in the right inguinal region, and, upon examination, found an enlargement about half the size of a hen's egg. The enlargement increased, and is now accompanied by paroxysms of pain which is increased by work. No history of injury or strain. Upon examination a right oblique inguinal hernia was found, which did not descend entirely into scrotum, but formed a large tumor above Poupart's ligament.

January 7.—Operation for radical cure performed. The abdominal opening was very large; no adhesions between cord and sac. The latter was quite small, and fell back into abdominal cavity. The pillars of the rings were scarified and sewed together with a double lock stitch of catgut sutures; external wound closed with a single lock stitch of catgut.

January 21.—Redressed. Union by first intention, but there is a sinus left from one of the sutures from which there is a slight discharge of pus. Temperature, 37° C.

January 22.—Redressed. Discharge continues. Temperature, 37° C.

January 23.—Redressed. Very little discharge. Temperature, 37° C.

January 30.—Redressed. No discharge, but sinus not entirely healed.

February 5.—Completely healed.

February 23.—Patient discharged at his own request. Result the least satisfactory of the cases heretofore operated upon. There is a small nodular swelling over site of internal ring, with slight impulse on coughing. Examination shows ring to be completely closed, except a small opening only sufficiently large for passage of cord. A Marvin truss applied, and patient instructed to watch the swelling and report here in two months, or in less time if there was a recurrence of the rupture.

Up to the present time he has failed to report.

Case 3.

T. J. T.; aged 33 years; nativity, New York; admitted to Marine Hospital, Stapleton, Staten Island, January 19, 1892.

Patient stated that he had been ruptured since he was 12 years of age. Could not remember exactly when it was first noticed. He had worn a truss since he was a boy. Upon examination a large oblique inguinal hernia was found on the right side, descending into scrotum.

January 20.—Operation performed for radical cure. The sac and cord were so intimately adherent they were separated only with the greatest difficulty. The upper portion of the sac was greatly thickened, the lower about normal. It was ligated, excised, and the stump returned to abdominal cavity. The edges of the opening were scarified, and sewed together with the usual suture. The external wound was also closed in the usual way.

January 28.—Redresed. Union by first intention.

February 3.—Redressed. A small sinus has appeared in wound since last dressing, from which there is a slight serous discharge.

February 8.—Redressed. Discharge has ceased. Wound healed.

February 17.—Patient examined while standing. Result all that could be desired. Not the slightest impulse on coughing. Marvin truss applied, and patient allowed to walk about the ward.

March 8.—Discharged, recovered.

In this case the temperature never ascended above normal.

Case 4.

C. K.; aged 33 years; nativity, Norway; admitted to Marine Hospital, Stapleton, Staten Island, February 6, 1892.

Patient stated that he ruptured himself two years ago while straining at work. For the past year he has worn a truss. Upon examination a small right oblique inguinal hernia was found.

February 10.—Operation for radical cure performed. The external ring was very large; the sac, which was not adherent to cord, was small and dropped back into abdominal cavity. The edges of the abdominal opening were scarified and sutured with the usual lock stitch of catgut. The external wound was also closed with catgut and sealed with a dressing of iodoform gauze painted over with iodoform collodium. 2:30 p. m.: Has considerable pain. Temperature, 37⅕° C. R. Magendie's solution hypodermatically.

February 11.—A. m.: Considerable pain in abdomen. Temperature, 37° C. R. Pulv. opii .03 every two hours while necessary. 6 p. m.: Pain continues. Temperature 37⅗° C.

February 12.—A. m.: Pain less Temperature, 37⅗° C.

February 13.—Better. Temperature, 37° C. Discontinue opium.

February 18.—Redressed. Union by first intention.

March 2.—Examined while standing. Rings closed. No impulse on coughing. Result entirely satisfactory.

March 28.—Discharged, recovered. Marvin truss applied.

CASE 5.

P. H.; aged 23 years; nativity, Newfoundland; admitted to the Marine Hospital, Stapleton, Staten Island, February 23, 1892; died, March 11, 1892.

History.—Patient stated that the hernia was first noticed on him when he was about 10 years of age. It was reduced at once, and had never troubled him again until two months ago, when, after some straining, it descended into scrotum. Since then it had caused him a great deal of inconvenience, and he desired an operation for its cure. Examination showed it to be a right oblique inguinal hernia, forming a large pear-shaped tumor in the scrotum, and somewhat distending the tissues over the inguinal canal.

February 29.—He was anæsthetized (chloroform) and the usual incision for hernia made. Upon reaching the sac it was found that the mass was omentum, which was contained in the same sac as the testicle, the latter having undergone considerable atrophy. An incision was made in the sac, the knife being guided by the left index finger of operator passed between the sac wall and contents. The omentum was found thickened and greatly congested. It was drawn well out, ligated with heavy catgut, the ligature being carried around the mass three times and tied at each turn and the mass cut off. The stump was returned to the abdominal cavity, and the incision in sac sewed with catgut. The edges of the ring were freshened and sewed with a double whip stitch of catgut; as small an opening being left as was consistent with the safety of the cord. The external wound was also closed with catgut, and sealed with a dressing of iodoform gauze and iodoform collodion. The operation was performed under the usual aseptic precautions. 6 p. m.: Patient has a good deal of abdominal pain. ℞. Morph. sulph. .02 at once hypodermically. Repeat during night whenever necessary to relieve pain.

March 1.—9 a. m.: Pulse, 102; temperature, 38.2°. Rested fairly well, but has been troubled with cough since last night. No abdominal tenderness; scrotum swollen, red, and painful. Apply ℞. L. and O. wash to scrotum; protect bandage with oil skin; ℞. Chloroform cough mixture every three hours.

March 2.—9 a. m.: Pulse, 110; temperature, 38°. Nausea since yesterday, stomach rejecting cough mixture, but retaining most of the nourishment; pain and tenderness over right side of abdomen, the pain coming on in paroxysms; scrotum not so swollen as yesterday, and pain much less; tongue very much coated, but moist. Cracked ice to be given for nausea. Discontinue chloroform cough mixture. ℞. Morphia sulph. .26, ext. digitalis, .26, quinia sulph. 2.33. M., div. caps. No. xij. sig., one four times a day. 2 p. m.: Patient rejects everything taken, both medicine and nourishment. Discontinue morphia and substitute codeine .02 every three hours while in pain. This change was made as it was thought that it was possibly the morphia causing the nausea. An enema of chloral hydrate 1.33 at once. Add limewater to all milk given. Turpentine stupes to abdomen. 6 p. m.: Pulse, 100; temperature, 37.1°; respiration, 22; now resting very nicely; has only vomited once since 2 o'clock.

March 3.—9 a. m.: Pulse, 92; temperature, 36.8°; respiration, 24. Rested well last night, and feels better this morning. Has not vomited since yesterday. Not so much pain in abdomen and no distension whatever. Scrotum still painful, but swelling has disappeared. Tongue a little dry. Complains that the bandage feels tight and hurts him. The wound being protected by the sealed dressing the bandage was cut, but not removed. ℞. Sherry wine, 40 c. c. every three hours. Repeat enema of chloral if vomiting recommences. 6 p. m.: Pulse, 108; temperature, 37.1°. Cough again troublesome; matter expectorated thick and purulent. Tongue still a little dry. Not the

slightest distension of abdomen; scrotum still tender. Bowels constipated. On percussion dullness is found over base of right lung and increased resonance over the left; this dullness extends over lateral region. Lungs not examined posterially because of impossibility of turning patient without causing him pain. Respiratory murmur over left lung increased; indistinct over the right. No râles. ℞. Tr. opii. deod. 30, spts. aromat. ammo. 30, syr. senega 15, syr. pruni. virg. ad. 100. Sig. 5 c. c. every two or three hours while coughing. ℞. Rochelle salts, gm. 20 at once. Repeat every three hours until bowels move.

March 4.—2:30 p. m: Has been better all day. Tongue not so dry, but still coated. Cough better. No abdominal pain except an occasional lancinating stitch. Pulse, 76, and quite good. Now complains that he did not sleep well last night. ℞. Sulphonal Bayer one gram at 4 and 7 p. m. 6 p. m.: Sulphonal given at 4 o'clock was vomited. Bowels still locked up. Calomel .03 every half hour while awake until bowels move.

March 5.—9 a. m.: Pulse, 66; respiration, 21. Rested nicely and feels very well except for a pain in left knee. Tongue still coated, but quite moist. No abdominal pain. Bowels still constipated. Vomited once this morning after taking milk. Cough mixture ordered yesterday causes nausea. Dullness at base of left lung more pronounced. Sputa purulent and nummular; auscultatory sounds the same as yesterday. ℞. Calomel, .03 every fifteen minutes. Discontinue the cough mixture and give codeine.

March 6.—9 a. m.: Pulse, 86; temperature, 37.1°; respiration, 28. Feels very well. Tongue moist, but still a little coated. Cough is less, and but slight expectoration. Dullness over left side is a little less. Bowels not yet opened. ℞. Rochelle salts, 15 at once. 6 p. m.: Pulse, 86; temperature, 38.8°. Bowels moved three times. Resting well.

March 7.—9 a. m.: Pulse, 98; temperature, 39.4°; respiration, 32. Tongue drier. No distension of, or tenderness over, abdomen. Cough very slight; dullness over lung less. ℞. Phenacetine, 2; quinine sulph., .66; M., div. caps. No. X. Sig. one every four hours.

March 8.—9 a. m.: Pulse, 88; temperature, 37°; respiration, 26. Patient looks and feels better. Tongue still dry but more moist than yesterday. No abdominal distension nor tenderness. Wound dressed, and is found to have healed by first intention. ℞. Ol. terebinth .66 t. i. d.

March 9.—9 a. m.: Pulse, 90; temperature, 38°; respiration, 34. Complains this morning of a pain in shoulder, which is so severe that he can not move the arm. Tongue quite dry. Has taken no nourishment. Some tenderness but no distension of abdomen. Respiration labored. Trouble in lung does not appear to have extended. Discontinue capsules of phenacetine and quinine and give salol. .33 every three hours. 2:30 p. m.: Suffering excruciating pain in abdomen, which comes on in paroxysms. A sinus is found in line of incision, from which a considerable quantity of pus is exuding. When examined yesterday the edges of wound seemed to have united perfectly. Abdomen tender and a little tympanitic. Respiration, 34, and labored. ℞. Substitute whisky 30 c. c. every three hours for wine. ℞. Morphia sulph. .02 at once, and repeat as often as necessary to control pain. 6 p. m.: Pulse, 84; temperature, 37.2°; respiration, 24. Has slept since the morphia was given, and has only awaked now when touched on the wrist to feel pulse. Sleep appears natural but for *coma vigil.* Partially delirious. Respiration not so labored as this afternoon. Entire line of incision has opened this afternoon, and dressing saturated with a thin bloody discharge, part blood and part pus. Surgeon's hands rendered aseptic and finger passed into wound for examination. The pus is in cellular tissue. The ring is closed and muscular tissue appears healthy. The wound was thoroughly irrigated with solution bichloride 1 to 3,000; iodoform dusted in, and over this iodoform gauze was packed; over this several layers of bichloride gauze were placed and covered with absorbent cotton.

March 10.—9 a. m.: Pulse, 134; temperature, 37.3°; respiration, 35. Abdomen very much distended and tympanitic. Tongue very dry. Sinking. ℞. Tinc. digitalis .66 every four hours. He continued to grow worse and died the same night, 12:15 o'clock.

Necropsy (thirteen hours post mortem).—Body well nourished; *rigor mortis* well marked; hypostatic congestion posteriorly. Abdomen somewhat distended. Wound in groin open, dry, and underlying tissues appear healthy. Pillars of the ring united and catgut sutures absorbed. On dissecting through the ring a small quantity of pus oozes through. A considerable amount of foul-smelling gas escapes from abdominal cavity. Pericardium contains normal amount of fluid. Heart normal; cavities filled with ante-mortem clots, that of the right extending through the pulmonary arteries into the lung. Left lung deeply congested, almost hepatized. Lower lobe of right in same condition. Ligature which was placed around the stump is absorbed, and the stump is nodular and inflamed. The entire mesentery very much inflamed. A considerable amount of purulent fluid in peritoneal cavity much more noticeable in locality immediately surrounding stump. Intestines in the same region inflamed and covered with lymph. Liver large and pale. The right lobe is soft, almost pulpy; the left lobe is normal in consistence. Spleen pulpy. A few mesenteric glands enlarged; one or two being almost as large as a pigeon's egg. Kidneys large, extremely fatty, and cortical portion very thin. Capsules nonadherent.

Case 6.

E. McI.; aged 26 years; nativity, Maine; admitted to Marine Hospital, Stapleton, Staten Island, March 14, 1892.

Patient stated that he ruptured himself ten years ago while pulling on a sail. The rupture has increased steadily in size until now he can get no truss to hold it in place. At times it causes him a great deal of pain. Upon examination, a right oblique inguinal hernia is found descending into scrotum, and of enormous size. A truss was fitted on but failed to keep the hernia from descending.

March 14.—Operation for radical cure performed. Hernia found to be congenital. Sac not opened. The edges of the ring freshened and sewed together in usual manner.

March 28.—Redressed. Line of incision appears healthy, but has not united firmly. Temperature, which in the evening of the 26th was 39° C., is now 37° C.

April 1.—Redressed. Upper portion of incision healed; lower portion a little open.

April 10.—6 p. m.: Had a chill about 10 o'clock this morning; now has headache; tongue coated brown. Temperature, 39° C. ℞. Quinæ sulph. .66 at once.

April 11.—Feeling better. Temperature, 37⅘° C. ℞. Quinæ sulph. .66.

April 12.—Redressed. Wound healed. Examined while standing. No impulse on coughing, but there is a large mass of hard tissue surrounding the cord and extending from testicle to external ring. It has the appearance of a hernia, but examination shows it to be newly-formed cicatricial tissue.

April 30.—Condition about the same. Truss applied, and patient discharged improved.

Case 7.

J. D.; aged, 26; nativity, France; admitted to Marine Hospital, Stapleton, Staten Island, March 16, 1892.

Patient states that two years ago he fell from a ladder and struck himself in left inguinal region. It caused him a great deal of pain, and two days later he noticed an enlargement in the inguinal region, which he found to be a rupture. It increased in size, and of late he has been unable to keep it up with a truss. Upon examination, a left oblique inguinal hernia is found extending to, but not into the scrotum, though patient states that at times it does.

March 22.—Operation for radical cure performed. Sac dissected from cord, ligated, and excised. Abdominal opening and external wound united in usual way. The latter hermetically sealed, as in case No. 6.

March 23.—A. m.: States that he has a cough which at times is very troublesome; has had a slight cough for several months, but paid no attention to it; no dyspnœa. Sometimes, after a severe paroxysm of coughing, expectorates a little blood. Has lost flesh steadily for past few months. No night sweats; expansion good; vocal fremitus slightly exaggerated over right apex. In infraclavicular region of left side there is a circumscribed spot which is a little higher pitched on percussion than the right. Auscultation reveals roughened breathing in both lungs, prolonged expiratory murmur over left apex, and a few moist râles at the end of expiration. Temperature, 37⅕° C.

March 24.—Scrotum swollen and discolored. Temperature, 37° C.

March 27.—Feeling well. Swelling in scrotum subsiding. Temperature, 37⅘° C. 6 p. m.: Feeling well, but temperature is 40° C.; pulse, 80.

March 30.—Redressed. Union by first intention. Temperature continues elevated, with evening exacerbations, ranging between 37⅘° and 38⅕° in the morning to 39° C. in the afternoon. But for this and a slight cough, neither of which is affected by treatment, patient appears quite well.

April 17.—Result of operation for hernia entirely satisfactory. Discharged, recovered, and readmitted for tubercle of lung.

A few days later patient left the hospital looking and feeling very well, but still having an elevated temperature.

EMPYEMA—ESTLANDER'S OPERATION.

By Passed Assistant Surgeon H. T. Goodwin.

The following case illustrates the importance of early surgical interference in empyema, and the excellent results which may be expected from Estlander's operation, or some modification of same, in cases apparently hopeless, this being the second case within a year upon which I have operated with the most gratifying results.

A. C.; aged 20; nativity, Ireland; was transferred April 14, 1892, from the medical to the surgical ward. He had been in the medical ward since January 5, where he had suffered two distinct attacks of lobar pneumonia. When I first saw the patient, April 13, he was emaciated almost to a skeleton; so weak he had to be moved in bed. There were bedsores over the sacrum, and his nervous system so shattered he would sob like a child for the slightest provocation; a simple question from the attending physician eliciting tears instead of a reply. The case appeared hopeless, and death near at hand.

Physical examination.—Emaciated almost to the last degree; appears like a skeleton held together by skin; feet œdematous; chest expansion on left side almost *nil*, the right lung apparently doing all the work; left chest wall somewhat sunken in; apex beat of heart about a centimeter to the right of sternum; vocal fremitus diminished over left side: dullness on percussion over entire left lung; tympanitic resonance over right; respiratory murmur absent over base of left lung, feeble above; roughened over right; pulse, 118; temperature, 38.1°; respiration, 32. The temperature was always a little higher in the afternoon than in the morning.

A hypodermic needle was introduced between the fifth and sixth ribs in the axillary line on the left side, but failed to draw off any fluid. An aspirating needle was substituted, and about 5 c. c. of pus evacuated. There was no doubt in my mind but that surgical interference was the only possible chance of prolonging the patient's life, and even that seemed to offer such a slender hope in his present weakened condition that at first I hesitated to interfere. In the first place, I was uncertain as to whether an anesthetic could be safely employed; in the second, I feared he could not withstand the shock of the operation I contemplated; and in the third, he appeared so near death's door that an operation seemed almost useless. However, it was his only possible hope. Without an operation he must inevitably die in a few days; with an operation there was a chance, slender though it was, of his improvement. I decided to operate and give him his only chance.

On April 18 he was taken to the operating room, anesthetized (chloroform), and an incision made in the middle axillary line, extending from the ninth rib, directed a little forward towards the anterior boundary of the axilla, and terminating just above the fourth rib. The soft tissues were dissected away from the ribs and held aside with a retractor by one of the assistants. The periosteum of the eighth rib was incised longitudinally, peeled up carefully from the external and internal surface of the rib with an elevator, and a piece of the rib about 5 centimeters in length excised with a pair of bone forceps. As the forceps did not make a clean cut, but crushed the ends of the bones, a chain saw was introduced under the rib and the crushed ends sawed off. The seventh, sixth, fifth, and fourth ribs were treated in like manner, the length of excised bone progressively decreasing with each upper rib. A small scalpel was then plunged through the pleura towards the lower end of the incision, and an opening made sufficient in size

to allow the introduction of a large drainage tube. Through this opening the pus gushed out in a large stream. About 1,000 c. c. were evacuated. A large drainage tube was pushed well into the plural cavity, the external wound irrigated with bichloride solution, 1 to 3,000, protected, as far as possible, from the discharge through the tube, closed with catgut sutures, and dressed with iodoform gauze. Over this a thick layer of sterilized oakum was placed. The patient bore the operation well and rallied quickly. Ordered the wound dressed daily.

April 20.—Pulse, 119; temperature, 37.1°; respiration, 30. Feels better. A large amount of pus draining through tube. R. Ext. malt 10 c. c. with whisky 20 c. c. t. i. d.

April 24.—Pulse, 130; temperature, 37°; respiration, 28. Continues to feel better. Appetite improving. Discharge less than the past three or four days. Line of incision healed by first intention except around drainage tube where the tissues are irritated by the constant discharge.

April 25.—Appears about the same, but pulse continues rapid. Respiration, 22. R. Tr. digitalis .66 c. c. t. i. d.

April 29.—About the same. Discontinue digitalis; give tr. strophanthus 28 c. c. t. i. d.

May 5.—Some improvement; but pulse still rapid, to-day 122; respiration, 30. Now has an enormous appetite. Is placed each day in a reclining posture in a wheeled chair. R. Tr. digitalis .66, tr. strophanthus 28 c. c. t. i. d.

May 11.—Improving. Discharge continues profuse. Irrigate pleural cavity daily with bichloride solution 1 to 20,000.

May 15.—Has improved wonderfully; face brighter and fuller. Discharge less.

May 21.—Continues to improve. Apex beat of heart now displaced only about 2 centimeters to right of normal position. Left chest wall considerably collapsed. No dullness on percussion. Inspiratory murmur exaggerated; expiratory quite prolonged. A few moist râles at base of left lung. A loud blowing mitral regurgitant murmur heard at apex of heart. Discharge continues to lessen.

May 25.—Improving steadily; his face now shows some color. Pulse, 112; respiration, 22.

May 30.—Pulse, 84; respiration, 22. Sits up now, and yesterday walked about the ward a little without assistance. Discharge slight. Temperature has been normal since the early part of the month.

June 3.—Pulse, 98; respiration, 22. Gaining steadily; feels stronger every day. Œdema of feet has disappeared.

June 10.—Pulse, 102. Now walks about the ward. When dressing the wound to-day large draining tube was found to have been pushed out of the pleural cavity. It was replaced by one of smaller size.

June 18.—Improving rapidly. Weighs at least 10 kilograms more than a month ago and steadily increasing. Walks about the grounds. The discharge is slight and lessening every day. Wound only dressed every second or third day. His color is good and his spirits cheerful. The man who on April 13 appeared so near death's door seems now on the high road to recovery.

June 20.—Gaining every day.

ADDITIONAL NOTES ON "A SUPPOSED CASE OF MORVAN'S DISEASE."

By Assistant Surgeon A. C. Smith.

This case is the same one described in the last annual report of the Supervising Surgeon-General by Assistant Surgeon C. P. Wertenbaker under the title quoted above. I desire, therefore, merely to add a few notes on the progress of the case after it passed under my care, at St. Mary's Infirmary, Galveston, Tex., about July 1, 1891. At that time the only ulcerating or inflamed spots upon the patient's person were situated on the soles of the feet. These extended a little into the cutis vera, and produced slight discharge. The hands were deformed and anesthetic, as described in the previous report of the case. Occasionally some symptom of inflammation, such as redness or a small blister, appeared upon some portion of the hands, but these quickly subsided under treatment, and no additional deformity took place. The ulcers on the soles of the feet showed a tendency to extend beneath the edges of the thick cuticle. These improved slowly under rest and treatment, and healed, leaving pigmented spots behind. The anesthesia in both upper and lower extremities seemed to become less in extent, and was quite superficial, as a specimen of skin from the margin of an ulcer could not be got without causing the patient considerable pain. At one time the patient had a number of boils in succession, in the bend of one ankle, on chest, eyelid, and buttock. These disappeared, leaving no marks. A specimen of skin, taking in the thickness of the derma, was cut from the margin of one of the ulcers on the soles of the feet, and was given to Prof. Allen J. Smith, of the medical department University of Texas, to be examined with reference to the presence of the bacillus of leprosy. He reported no leprosy bacilli present in the specimen submitted for examination.

The treatment pursued was as follows: The medicine given almost constantly and chiefly relied upon was a mixture containing tincture of the chloride of iron and sulphate of strychnine, in good sized doses. No other medicine which was tried acted as well. All ulcerating spots were kept clean and were protected with antiseptic dressings, and whenever any tendency to fresh inflammation appeared flaxseed poultices, made up with bichloride solution, were applied. For a short time chaulmoogra oil was used, both internally and externally, apparently with the result of making the patient actually worse.

The patient was discharged from the hospital January 23, 1892. At this he was considerably improved so far as symptoms are concerned, the feet being almost entirely healed and the anesthesia of the extremities being less conspicuous; the patient's general health was also very good. He went to work again on a barge plying in Galveston Bay, and was without treatment for more than two months. He applied to be admitted to the hospital once more on April 7, 1892, but was not admitted. At this time all the worst symptoms had returned, and the patient had been having whitlows, or small abscesses, in both hands and feet; and he informed me that a small piece of bone had again been discharged from one of the fingers. He afterwards became a patient of the John Sealy Hospital, of Galveston, Tex., where, I understand, the same diagnosis that of Morvan's disease, has been made upon his case.

U. S. MARINE-HOSPITAL SERVICE,
DISTRICT OF THE GULF, PORT OF GALVESTON, TEX.,
Surgeon's Office, August 22, 1892.

SIR: I have the honor to request, if not too late, that a remark may be added to a special report of a medical case forwarded by me on the 1st ultimo, bearing the title, "Additional Notes upon 'A Supposed Case of Morvan's Disease.'" I desire to add that I have recently had opportunity to observe the case after an interval of some months and am satisfied that it is a case of the anesthetic variety of leprosy. Unmistakable signs of that disease have developed, of which may be mentioned some thickening of the integument of the nose, brows, and forehead, giving a characteristic expression to the countenance, and the existence of brownish, scaly blotches in the skin of the extremities and body. The disease is evidently progressing somewhat rapidly at present.

Very respectfully, yours,

A. C. SMITH,
Assistant Surgeon, M. H. S.

To the SUPERVISING SURGEON-GENERAL M. H. S.

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ENTERIC FEVER FROM DRINKING RIVER WATER.

By Assistant Surgeon E. R. Houghton.

U. S. MARINE-HOSPITAL SERVICE,
NORTHERN ATLANTIC DISTRICT, PORT OF VINEYARD HAVEN, MASS.,
Surgeon's Office, January 16, 1893.

SIR: Surgeon H. W. Sawtelle's report on the danger of using impure water on vessels calls attention to a subject much neglected by ship captains. I have the honor to submit the following facts taken from the clinical data of this hospital, and from conversation with sailors in confirmation of that report.

In the past three years seventeen cases of enteric fever have been treated in this hospital, the infection in each case having been traced to river water. Of these, four cases were from Bangor, Me. These men stated that the Penobscot water has such a reputation for purity that not only empty tanks were filled, but filled tanks were emptied to be refilled with this water. This water is dipped up from the river at the dock.

Owing to the difficulty of shipping from here, and the proximity of the larger ports of Boston and New York, captains do not put their sick men into this hospital unless absolutely necessary, and, so, many mild cases are undoubtedly carried by. This was ascertained in conversation with a master who said that he had filled his tanks with "pure river water" at Bangor, and that while all his men were attacked with diarrhœa, some even having chills, he did not think them sufficiently ill to come to the hospital. The man he brought had a well-developed attack of enteric fever, and it is fair to assume that others of the crew were similarly affected. One captain gave as an argument in favor of Bangor River water the fact that "it gave them all a good clearing out."

The captain of the schooner *Marcellus* was in this hospital July, 1891, with enteric fever due to drinking river water from Bangor. When discharged he was told the cause of his illness and warned against polluted water. Last summer he brought in a man suffering with the same disease and from the same cause. When asked if he did not remember the warning given him the year before, he replied that he remembered it very well, but that it was so handy to fill the tanks from the river, and that every sea captain did the same, so he guessed he would take his chances with the rest of them.

In view of the fact that in spite of warning, and with a full knowledge of the danger, these men insist on using polluted drinking water, a circular of warning issued to masters, as suggested by Surgeon Sawtelle, would probably be useless, some more stringent measure being necessary for the protection of the American seaman.

To the SUPERVISING SURGEON-GENERAL M. H. S.

REPORT OF SERVICES RENDERED DURING THE CRUISE OF THE REVENUE STEAMER RUSH IN BERING SEA.

By Assistant Surgeon C. H. Gardner.

U. S. MARINE-HOSPITAL SERVICE,
DISTRICT OF THE PACIFIC, PORT OF PORTLAND, OREGON,
Surgeon's Office, November 4, 1892.

SIR: I have the honor to submit the following report of services rendered by me during the recent cruise of the U. S. revenue cutter *Rush* in Bering Sea.

There were eighteen cases relieved on the vessel during the cruise, and thirty-five at ports in Bering Sea. Of these latter, however, fifteen were not entitled under the regulations to marine-hospital treatment.

At the reqnest of the master of the bark *Mermaid*, I made physical examination of five seamen, one of whom being physically incapacitated for duty, the master was directed to discharge.

There were many more cases entitled to relief from the Marine-Hospital Service, which were attended by medical officers of the naval vessels on duty in Bering Sea.

The health of the officers and crew of the *Rush* was good, only four cases occurring when excuse from duty was necessary.

As to the sanitary condition of the vessel I can say nothing, as I was not asked during the cruise to make an inspection of the ship nor of the food or water.

No cases of sufficient interest to report came under my notice during the cruise.

Repectfully, yours,

C. H. GARDNER,
Assistant Surgeon, M. H. S.

To the SUPERVISING SURGEON-GENERAL M. H. S.

Extract from Report of Commanding Officer of Revenue Steamer Rush to the Secretary of the Treasury.

SIR: The health of the officers and crew have been uniformly good, no severe cases of illness having occurred, and only on two or three occasions has it been necessary to excuse anyone from duty. Medical assistance has been given at all of the villages where the vessel has called, and the services of Dr. Gardner have been tendered and given, with necessary medicines, to any and all seafaring men, when solicited. A number of surgical operations has been performed by the doctor. A detailed statement showing number of cases treated on our own vessel, as well as those on other ships and on shore, is herewith inclosed. The need of a suitable house at Unalaska or Dutch Harbor, where sick and disabled seamen, those who are too sick to be properly cared for on board ship, or those being wounded that require absolute quiet, could be temporarily quartered, is a growing necessity and one that ought to be provided for at an early day.

During the season of 1892 there have been in the harbor of Unalaska about 50 vessels of the American merchant and whaling fleet. Thirty-three of these were whaling vessels. The number of persons employed on these vessels will not fall much short of 1,500 persons. They are entitled to medicines and medical treatment, if necessary, and for this reason, it seems to me a summer hospital ought to be located at Unalaska or Dutch Harbor, as the most important and most frequented port in Alaska.

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To the Hon. SECRETARY OF THE TREASURY.

LOBAR PNEUMONIA—RAPID PULSE AND RESPIRATION.

By Acting Assistant Surgeon A. R. Booth.

A. M.; age, 20 years; negro; was admitted to hospital at Shreveport, La., on May 1, suffering from pneumonia, involving the lower lobe of the right lung.

The case was typical, and did not present symptoms of importance, except the respirations.

He had been ill four days when admitted, and on examination the following was observed: Temperature, 41° C.; pulse, 130; and respiration, 28. He was of medium build and well proportioned, and just the kind of his race who could stand the onslaught of a disease like pneumonia.

The only point in this case worthy of note was the frequency of the respirations, and the long period at which they were maintained. There was no evidence of the "respiratory center" being involved, nor was the persistence with which this man was tormented by the number of the respirations commensurate with the gravity of his disease.

From the hour of his admission the respirations began to accelerate, and continued growing more and more frequent until they reached 98 per minute, and were maintained at this number without material change eleven days.

So unusual is this in ordinary cases of pneumonia that I had observations made every three hours, day and night, and every therapeutic measure used failed to abate this symptom, that looked as though it would wear the life away.

On the eleventh and twelfth days of the disease there was slight delirium, not very marked, and from which he was easily aroused, when his mind was remarkably clear, and would relate the occurrences transpiring since my last visit. Even while the respirations were so rapid his pulse did not indicate the labor he was performing, nor was there an index in the temperature.

I submit herewith a chart giving the mean of the daily temperature, pulse, and respirations as taken from the eight observations made day and night during the illness.

Day (May).	Temperature.		Pulse.		Respirations.		Day of disease.
	M.	E.	M.	E.	M.	E.	
1	.....	41	.....	130	.....	28	4
2	40	39	134	126	46	48	5
3	39	40	132	134	54	54	6
4	39	39	140	136	64	70	7
5	38.3	38.1	138	140	80	88	8
6	38.1	38	138	134	96	98	9
7	38.2	40.1	130	126	98	98	10
8	40.1	41.2	126	140	98	98	11
9	41.1	41.3	146	148	98	98	12
10	40	40.1	140	145	98	96	13
11	39.3	39.3	140	148	94	94	14
12	39	39.1	148	152	96	96	15
13	38.2	38.1	162	168	98	96	16
14	38	38	160	150	98	96	17
15	38	38	140	140	94	98	18
16	37.3	37.3	140	140	98	96	19
17	37.3	37.3	136	136	94	90	20
18	37.3	37.3	130	130	88	88	21
20	37.3	37.3	130	130	86	86	22
21	37.2	37.2	130	124	84	84	23
22	37.2	37.3	120	120	80	80	24
23	37.3	37.3	110	108	64	60	25
24	37.3	37.3	104	100	58	54	26
25	37.3	37.3	100	98	40	40	27

Day (May).	Temperature.		Pulse.		Respirations.		Day of disease.
	M.	E.	M.	E.	M.	E.	
26	37.3	37.3	98	98	36	30	28
27	37.3	37.3	96	90	24	24	29
28	37.3	37.3	90	86	22	22	30
29	37.3	37.3	76	76	22	20	31
30	37.3	37.3	76	72	20	20	32
31	37.3	37.3	72	72	18	18	33
32	37.3	37.3	72	72	18	18	34
33	37	37	72	72	18	18	35

From this date on convalescence was rapid and he was discharged from the hospital, cured, on June 4, 1892.

I can not account for the frequency of the respirations on the gravity of the case, for never was the case considered a very grave one, or was there evidence of serious involvement of the respiratory center. And to attempt to account for it from any pathological conditions present, I can not.

The only fear I entertained for the safety of my patient was due to the laborious work performed in the rapid respirations. This is the only point in the case worthy of note.

METHOD OF KEEPING PROPERTY RECORD.

U. S. MARINE-HOSPITAL SERVICE,
PORT OF NEW YORK, SURGEON'S OFFICE,
February 10, 1893.

SIR: I have the honor to transmit herewith a report made to me by Hospital Steward Albert Roehrig upon the method of keeping track of nonexpendable Marine-Hospital property at this port, with specimen pages.

Believing that this report may be of some interest and utility, I transmit it herewith.

Respectfully, yours,

JOHN GODFREY,
Surgeon, M. H. S.

To the SUPERVISING SURGEON-GENERAL M. H. S.

MARINE-HOSPITAL SERVICE, MIDDLE ATLANTIC DISTRICT,
SURGEON'S OFFICE, PORT OF NEW YORK, N. Y.,
February 10, 1893.

SIR: I have the honor to submit herewith, as directed, a statement with specimen pages of the method of keeping track of nonexpendable property in the marine hospital at this port.

I have made a copy of one page (except in the case of surgical instruments, etc., where two pages are made) of each classification in the property return from page 1 to 38, inclusive. This is necessary in order to make the method clear, as each classification has to be ruled or headed differently, *e. g.*, in the first class (furniture in office, etc.) there are twelve columns, whereas in the next class (hospital and other furniture) thirty columns are ruled. Under kitchen and table furniture, fifteen columns are provided, and eight columns under laundry furniture; stock, stable furniture, etc., have three each; garden implements, four, and hospital clothing and bedding forty columns, etc.

In five classes, viz: Furniture in office, etc., hospital and other furniture, kitchen and table furniture, hospital clothing and bedding, and miscellaneous articles, double pages are used in order to locate the property which is scattered, and where there are not a sufficient number of items in one place to warrant a special column, but must be entered in order that they may be located when required and properly "checked" when inventory is taken.

In the seven other classifications, viz: Laundry furniture; stock, stable furniture, etc.; garden implements; tools; surgical instruments, etc.; pharmacal implements and books, where the articles are not distributed in so many different places, single pages are sufficient to properly locate them. The sample pages referred to, and which accompany this report, indicate the manner in which they are divided; the pages containing list of surgical instruments showing how these single pages are used consecutively.

The first column in each class contains the total number to be accounted for, and figures on the line, beginning with the second column, added together from left to right, should equal the number in the first column; should it not add correctly the error can be discovered at once, and the article looked after.

All figures are written with pencil, in order to be readily erased and changed when the location of an article is changed, *i. e.*, when blankets are returned they are stored in the linen room, the number so returned is added opposite the item and in the column under linen room, and subtracted from the place whence returned, etc.

Any article changed from one location to another should be reported immediately by the person making the change in order that the proper record may be made.

Much labor is involved in ruling and preparing a book of this kind, but this could be obviated to a great extent if a book were printed with the items from page 1 to 38 of our property return (Form 1903), and ruled as shown in these specimen pages, without the headings, for the reason that the several places are differently designated in most, if not all, of the marine hospitals. The book should be provided with light flexible covers for preservation.

This method is in successful operation in this hospital, without which I would have great difficulty in keeping track of the service property.

Respectfully submitted,

ALBERT ROEHRIG,
Hospital Steward, M. H. S.

To Surgeon JOHN GODFREY, M. H. S.

U. S. Marine-Hospital Service, specimen pages of method of keeping accounts of nonexpendable property at the port of New York, N. Y.

Furniture in office, etc.	Total to be accounted for.	Surgeon's office.	City office.	Steward's office.	Surgeon's quarters.	P. A. surgeon's quarters.	Asst. surgeon's quarters.	Sr. steward's quarters.	Jr. steward's quarters.	Interne's room.	Dispensary.	General store.	Condemned-property room.	Remarks.
Baskets, waste-paper..No...	7	2	1	3	1	.....	.....	.....	.....	.....	.....	.....	.....	
Bells, call.....No...	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Blower stands.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Bells, electric.....No...	14	.....	.....	1	.....	1	1	.....	.....	1	1	.....	.....	2 in ward A, 1 in B, 1 in C, 1 in D, 1 in E, 1 in kitchen, 1 in dining room, 1 in engine room.
Carpets, Brussels.....yds...	54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	54	
Carpet lining..... ....yds...	54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	54	
Cases for instruments..No...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 in operating room.
Cases for medicine.....No...	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	1 in ward A.
Chairs.....No...	23	3	.....	.....	7	4	2	.....	2	2	.....	.....	.....	2 in operating room, 1 in lodge.
Chairs, revolving.....No...	6	3	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Copying press.....No...	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 in hall (first floor).
Copying-press bowls...No...	3	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1	1	
Copying-press stand...No...	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 in hall (first floor).
Closets, common.....No...	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2 in engine room.
Desks..... .....No...	7	3	.....	2	1	.....	1	.....	.....	.....	.....	.....	.....	
Door mats.....No...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 in main hall.
Droplights .....No...	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	
Desk, off. parlor table..No...	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lamps, student.....No...	2	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	
Letter boxes.....No...	3	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 in carpenter shop.
Lounges .....No...	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Mats, cocoa.....No...	40	1	1	6	5	2	2	4	2	1	1	.....	2	3 in linen room, 3 in ward A, 1 in B, 1 in C, 1 in E, 1 in laboratory, 1 in clerk's room, 1 in nurse (third floor), 1 in lodge.

Specimen pages of method of keeping accounts, etc.—Continued.

Hospital and other furniture.	Total to be accounted for.	Surgeon's office.	City office.	Steward's office.	Surgeon's quarters.	P. A. surgeon's quarters.	Asst. surgeon's quarters.	Senior steward's quarters.	Junior steward's quarters.	Interne's room.	Dispensary.	General store.	Condemned-property room.	Hospital kitchen.	Hospital dining room.	Watchman's office.	Hallmen's room, No. 1.	Hallmen's room, No. 2.	Nurse's room (third floor).	Nurse's room (fourth floor).	Night nurse's room.	Cook's room.	Clerk's room.	Laundress's room.	Lodge.	Ward A.	Ward B.	Ward C.	Ward D.	Ward E.	Nurse laundry building.	Remarks.
Basins, agate.....No...	157	.....	3	.....	.....	.....	2	.....	.....	.....	3	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	33	35	40	.....	27	.....	
Bath tubs, portable.....No...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 in basement (south end).
Bedpans, delf.....No...	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	3	.....	1	.....	
Bedsteads, wooden.....No...	8	.....	.....	.....	2	2	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Bedsteads, iron.....No...	202	.....	.....	.....	3	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	4	3	2	3	3	3	1	2	1	31	44	44	17	35	2	1 in private room.
Bed springs.....sets...	8	.....	.....	.....	2	2	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Beds, water.....No...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	
Bellows, fire.....No...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Benches.....No...	6	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 in laundry, 1 in third hall (stairs).
Boards, fire.....No...	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	2	2	.....	1	.....	.....	.....	.....	1	1	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	
Bookcases.....No...	4	.....	.....	.....	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Buckets, fire.....No...	42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12 in first hall, 12 in second hall, 10 in third hall.
Bureaus.....No...	10	.....	.....	.....	3	2	2	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Chiffoniers.....No...	4	.....	.....	.....	.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Carpets, stair.....yds...	33½	.....	.....	.....	33½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Crumb cloth.....No...	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Chairs, rolling.....No...	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	3	1	3	1	.....	
Candlesticks.....No...	6	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4 in carpenter shop, 1 in engine room.
Chairs.....No...	208	.....	.....	3	5	4	6	.....	.....	3	1	2	6	.....	.....	2	4	4	.....	.....	.....	.....	.....	2	1	32	38	42	17	33	1	2 in bath room (first floor).
Chairs, cane-seat.....No...	39	.....	.....	.....	6	10	13	6	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	2	2	.....	1	.....	1 in private room.
Chairs, close.....No...	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Chairs, reclin'g parlor...No...	8	.....	.....	.....	4	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Chairs, parlor.....No...	8	.....	.....	.....	.....	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Chairs, rocking.....No...	20	.....	.....	.....	5	5	4	2	1	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Chamber pots.....No...	15	.....	.....	.....	2	2	2	.....	1	1	.....	5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Coal vases.....No...	3	.....	.....	.....	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Specimen pages of method of keeping accounts, etc.—Continued.

Kitchen and table furniture.	Total to be accounted for.	Surgeon's quarters.	P. A. surgeon's quarters.	Asst. surgeon's quarters.	Senior steward's quarters.	Junior steward's quarters.	Hospital kitchen.	Hospital dining room.	Ward A.	Ward B.	Ward C.	Ward D.	Ward E.	General store.	Condemned-property room.	Laundry.
Apple corers.....No...	4	1	1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Apple parers.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Butcher's block.....No...	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bread raisers.....No...	3	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Baskets, bread.....No...	23	.....	.....	.....	1	.....	.....	5	.....	.....	.....	.....	.....	1	15	1
Baskets, knife. .....No...	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boiler, fish.....No...	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buckets, granite*.....No...	25	1	1	1	1	.....	10	.....	.....	.....	.....	.....	.....	10	.....	.....
Boards, bread.....No...	5	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Boilers, ham, porcelain-lined.....No...	11	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	2	6	.....
Boilers, stock.....No...	5	.....	.....	.....	.....	.....	4	.....	.....	.....	.....	.....	.....	.....	1	.....
Bowls, chopping.....No...	6	1	1	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	.....
Bowls, delf†.....No...	749	2	11	8	7	1	3	130	2	1	1	.....	1	187	420	2
Bowls, sugar.....No...	7	1	1	1	.....	1	.....	3	.....	.....	.....	.....	.....	.....	.....	.....
Boxes, bread.....No...	7	1	2	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boxes, cake.....No...	2	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Boxes, spice.....No...	4	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Broilers.....No...	4	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buckets, galvanized-iron‡.....No...	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Buckets, tin.....No...	19	2	.....	.....	.....	.....	7	.....	.....	.....	1	.....	2	5	2	.....
Cake turners.....No...	5	1	.....	1	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	.....
Cannisters, coffee.....No...	4	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cannisters, tea.....No...	4	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Can-openers.....No...	3	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	2	.....
Cans, milk.....No...	7	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	3	2	.....

*1 in paint room. †3 in operating room. ‡1 in city office.

Specimen pages of method of keeping accounts, etc.—Continued.

Laundry furniture.	Total to be accounted for.	Surgeon's quarters.	P. A. surgeon's quarters.	Asst. surgeon's quarters.	Senior steward's quarters.	Junior steward's quarters.	Hospital laundry.	General store.	Condemned-property room.
Posts for drying grounds.....No...	36	4	3	.....	4	.....	25	.....	.....
Clothes baskets.....No...	18	1	1	1	1	.....	5	4	5
Clothes boilers.....No...	6	1	1	1	1	.....	1	1	.....
Clotheshorses.....No...	5	1	1	1	1	.....	1	.....	.....
Clothes wringers.....No...	9	1	1	1	1	.....	3	1	1
Iron-stands.....No...	8	1	1	1	.....	.....	2	3	.....
Ironing boards.....No...	4	1	1	.....	.....	.....	1	.....	1
Laundry truck.....No...	1	.....	.....	.....	.....	.....	1	.....	.....
Polishing irons.....No...	5	2	1	.....	.....	.....	2	.....	.....
Sad irons.....No...	31	5	5	5	.....	.....	15	1	.....
Starch boiler.....No...	1	.....	.....	.....	.....	.....	1	.....	.....
Steam generator .....No...	1	.....	.....	.....	.....	.....	1	.....	.....
Washboards.....No...	14	1	1	1	1	.....	4	4	2
Washtubs.....No...	31	.....	3	3	4	.....	11	8	2
Washing machine.....No...	1	.....	.....	.....	.....	.....	1	.....	.....
Laundry stove.....No...	1	.....	.....	.....	.....	.....	1	.....	.....

Specimen pages of method of keeping accounts, etc.—Continued.

Stock, stable furniture, etc.	Total to be accounted for.	Barn.	General store.	Condemned-property room.	Stock, stable furniture, etc.	Total to be accounted for.	Barn.	General store.	Condemned-property room.
Ambulances.....No...	1	1	.....	.....	Hoof pick.....No...	1	1	.....	.....
Blankets, horse.....No...	7	6	.....	1	Horse covers, linen.....No...	2	2	.....	.....
Boots, ankle.....No...	1	1	.....	.....	Halters.....No...	3	3	.....	.....
Brushes, horse.....No...	2	1	.....	1	Harness, double.....sets...	1	1	.....	.....
Brushes, dander.....No...	4	1	3	.....	Harness, single.....sets...	3	3	.....	.....
Carts.....No...	1	1	.....	.....	Horses.....No...	3	3	.....	.....
Combs, mane.....No...	1	1	.....	.....	Horse covers, rubber.....No...	2	2	.....	.....
Currycombs.....No...	2	1	1	.....	Robes, lap.....No...	4	4	.....	.....
Check reins.....No...	3	3	.....	.....	Surcingles.....No...	3	3	.....	.....
Chest protectors.....No...	2	2	.....	.....	Wagons.....No...	1	1	.....	.....
Forks.....No...	1	1	.....	.....	Whips.....No...	3	1	1	1

Specimen pages of method of keeping accounts, etc.—Continued.

Garden implements.	Total to be accounted for.	Barn.	Surgeon's house.	Engine room.	General store.	Condemned-property room.
Cultivators.....No...	2	2	.....	.....	.....	.....
Forks, garden.....No...	2	2	.....	.....	.....	.....
Garden line.....No...	1	1	.....	.....	.....	.....
Grass hooks.....No...	1	1	.....	.....	.....	.....
Harrow.....No...	1	1	.....	.....	.....	.....
Hoes.....No...	2	1	.....	.....	1	.....
Hose and coupling.....feet...	500	50	50	300	50	50
Mattocks.....No...	1	1	.....	.....	.....	.....
Mowers, lawn.....No...	2	2	.....	.....	.....	.....
Picks.....No...	2	2	.....	.....	.....	.....
Plows.....No...	2	2	.....	.....	.....	.....
Post diggers.....No...	1	1	.....	.....	.....	.....
Pots, watering.....No...	1	1	.....	.....	.....	.....
Rakes, iron.....No...	5	2	.....	.....	1	2
Rakes, wood.....No...	6	1	.....	.....	2	3
Shears, pruning.....No...	1	1	.....	.....	.....	.....
Scythes and swaths.....No...	4	2	.....	.....	.....	2
Shovels.....No...	4	1	.....	.....	2	1
Spades.....No...	2	2	.....	.....	.....	.....
Wheelbarrows.....No...	4	1	.....	1	.....	2

Specimen pages of method of keeping accounts, etc.—Continued.

Tools.		Total to be accounted for.	Engine room.	Carpenter shop.	General store.	Condemned-property room.	Remarks.
Anvils	No...	1	1	.....	.....	.....	
Augers	No...	5	5	.....	.....	.....	
Awls	No...	4	3	.....	.....	1	
Axes	No...	3	2	.....	.....	.....	1 in wood room.
Auger handles	No...	1	1	.....	.....	.....	
Bung borers	No...	1	1	.....	.....	.....	
Bench vise	No...	2	2	.....	.....	.....	
Bitts	No...	8	6	.....	.....	2	
Braces, ratchet	No...	1	1	.....	.....	.....	
Box openers	No...	2	1	.....	.....	1	
Calipers	No...	1	1	.....	.....	.....	
Chisels, plain	No...	3	2	.....	.....	1	
Chisels, cold	No...	5	2	.....	1	2	
Crowbars	No...	1	.....	.....	.....	.....	1 in barn.
Dies	No...	13	11	.....	.....	2	
Drawing knife	No...	1	1	.....	.....	.....	
Drills	No...	13	13	.....	.....	.....	
Drilling machine	No...	1	1	.....	.....	.....	
Files, rattail	No...	9	6	.....	2	1	
Files, flat	No...	19	6	.....	10	3	
Files, saw	No...	17	5	.....	6	6	
Forge	No...	1	1	.....	.....	.....	

Specimen pages of method of keeping accounts, etc.—Continued.

Hospital clothing and bedding.	Total to be accounted for.	Surgeon's quarters.	P. A. surgeon's quarters.	Assistant surgeon's quarters.	Senior steward's quarters.	Junior steward's quarters.	Interne's room.	Ward A.	Ward B.	Ward C.	Ward D.	Ward E.	City office.	Operating room.	Linen room.	Condemned-property room.	Clerk.	First cook.	Second cook.	Third cook.	First night nurse.	Second night nurse.	Night watchman.	Second nurse, ward A.	First nurse, ward B.	Second nurse, ward B.	First nurse, ward C.	Second nurse, ward C.	Nurse, ward E.	First hallman.	Second hallman.	Third hallman.	First dining-room attendant.	Second dining-room attendant.	Laundryman.	First laundress.	Second laundress.	Gateman.
Blankets, white, single.....No..	92	13	12	8	5	3	.....	.....	5	.....	.....	2	.....	.....	30	1	2	....	....	2	....	....	....	2	2	....	....	.....	....	....	....	2	....	....	2	....	1
Blankets, white, double*.....No..	315	2	1	4	5	2	5	41	46	65	.....	37	.....	3	35	29	3	2	2	2	2	2	2	....	....	2	2	6	3	2	....	....	2	2	....	....	2
Bolsters, hair.....No..	4	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	....	....	....	....	....	....	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....
Bolsters, feather..No..	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	....	....	....	....	....	....	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....
Counterpanes ....No..	240	6	4	4	3	2	4	41	48	48	.....	40	.....	.....	.....	20	2	1	1	1	1	1	1	1	1	....	....	1	....	1	1	1	1	....	....	1
Mattresses, hair, double. .....No..	9	3	2	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....	....	....	....	....	....	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....
Mattresses, cotton..... .....No..	94	4	2	3	3	.....	2	4	23	6	13	26	.....	.....	.....	1	....	....	1	1	....	....	....	....	1	....	....	.....	....	....	1	1	....	....	2	....	....
Mattresses, hair..No..	116	.....	.....	.....	.....	.....	.....	27	22	38	3	9	.....	.....	.....	1	1	1	....	....	1	1	1	1	....	1	1	2	1	1	....	....	1	1	1	....	....	1
Mosquito netting.....yds..	999	60	50	20	15	10	28½	150	218¼	164	.....	123	.....	.....	160¼	. . . .	....	....	....	....	....	....	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....
Pillowcases, cotton..... .....No..	856	15	3	16	6	4	6	135	148	151	.....	116	.....	.....	12	181	4	3	3	3	3	3	2	3	4	3	3	8	4	3	....	3	2	3	3	....	....	3
Pillows, feather..No..	242	5	8	5	6	2	4	37	36	44	.....	37	.....	.....	33	1	1	1	1	1	1	3	2	1	1	1	1	2	2	....	1	1	1	1	....	1	1	....
Pillows, hair.....No..	213	1	1	3	.....	.....	.....	31	57	52	2	40	.....	.....	8	2	1	1	1	1	2	.....	.....	1	2	2	1	2	.....	2	1	1	1	1	2	1	1	2
Rubber sheeting .....yds..	109	.....	.....	.....	.....	.....	.....	15	13	15	.....	10	.....	.....	.....	56	....	....	....	....	....	....	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....	....
Rubber gloves†....pr..	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	....	....	....	....	....	....	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....
Sheets.....No..	1,075	17	18	16	8	3	9	141	141	159	.....	115	.....	.....	264	115	4	3	3	3	3	3	3	3	4	3	3	10	4	3	2	3	3	3	3	....	....	3
Shirts.....No..	600	.....	.....	.....	.....	.....	.....	83	95	102	.....	88	.....	.....	.....	232	....	....	....	....	....	....	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....	....
Towels, huckaback.....No..	283	23	37	30	22	22	8	5	8	7	.....	18	20	....	21	57	4	....	....	....	1	....	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....	....
Towels, roller.....No..	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	....	....	....	....	....	....	....	....	....	....	....	.....	....	....	....	....	....	....	....	....	....	....

*4 in ambulance.

†2 in general store, 2 in deadhouse.

Specimen pages of method of keeping accounts, etc.—Continued.

Surgical instruments and appliances, etc.	Total to be accounted for.	Instrument case.	Ward A.	Ward B.	Ward C.	Ward D.	Ward E.	City office.	Condemned-property room.	Remarks.
Aspirators.....No...	3	2	.....	.....	.....	.....	.....	.....	.....	1 in laboratory.
Atomizers, steam.....No...	2	.....	1	.....	.....	.....	.....	.....	.....	1 in dispensary.
Atomizers, hand.....No...	11	.....	1	1	1	.....	1	.....	4	1 in dispensary, 2 in general store.
Artery compress.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Antrim drill, Pope's.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Bandage roller.....No...	1	.....	.....	1	.....	.....	.....	.....	.....	
Bone chisels.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Bone brushes.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Bougies à boule.....No...	12	12	.....	.....	.....	.....	.....	.....	.....	
Bougies, conical.....No...	31	21	.....	.....	.....	.....	.....	10	.....	
Bougies, filiform.....No...	12	6	.....	1	.....	.....	1	4	.....	
Bougies, olive-pointed.....No...	10	.....	.....	.....	.....	.....	.....	10	.....	
Bougies, rectal.....No...	11	11	.....	.....	.....	.....	.....	.....	.....	
Bone scraper.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Bistouri, tonsil.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Bistouri, straight.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Cannula, Belloc's.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Catheters, double current.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Catheters, Eustachian.....No...	3	1	.....	.....	.....	.....	.....	2	.....	
Catheter gauges.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Catheters, tunneled.....No...	4	3	.....	.....	.....	.....	.....	.....	1	
Catheters, silver.....No...	2	.....	.....	.....	.....	.....	.....	1	1	
Catheters, spiral.....No...	5	5	.....	.....	.....	.....	.....	.....	.....	
Chisels.....No...	2	2	.....	.....	.....	.....	.....	.....	.....	
Directors.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Divulsors, Holt's.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Divulsors, Gouley.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Dix's spuds.....No...	1	.....	.....	.....	.....	.....	.....	1	.....	
Drainage-tube carriers.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Dilators, rectal.....No...	2	2	.....	.....	.....	.....	.....	.....	.....	
Dynamometer.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Ecraseurs .....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Electric batteries.....No...	2	.....	.....	.....	.....	.....	.....	.....	1	1 in operating room.
Elevators and raspatories...No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Endoscopes .....No...	1	.....	.....	.....	.....	.....	.....	1	.....	
Forceps, ligature.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Forceps, phunosis.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Forceps, artery, plain.....No...	2	1	.....	.....	.....	.....	.....	.....	1	
Forceps, spring-catch.....No...	2	1	.....	.....	.....	.....	.....	1	.....	
Forceps, bone-cutting.....No...	3	3	.....	.....	.....	.....	.....	.....	.....	
Forceps, bone-gouging.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Forceps, bone-holding.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Forceps, bullet.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Forceps, dissecting.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Forceps, dressing.....No...	4	2	.....	.....	.....	.....	.....	2	.....	
Forceps, eye.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	
Forceps, lithotomy.....No...	3	3	.....	.....	.....	.....	.....	.....	.....	
Forceps, needle .....No...	4	4	.....	.....	.....	.....	.....	.....	.....	
Forceps, strabismus.....No...	3	2	.....	.....	.....	.....	.....	1	.....	

Specimen pages of method of keeping accounts, etc.—Continued.

Pharmacal implements.	Total to be accounted for.	Dispensary.	City office.	Laboratory.	Ward A.	Ward B.	Ward C.	Ward D.	Ward E.	General store.	Condemned-property room.	Remarks.
Basins, marble.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Blowpipes.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Bunsen burners.....No...	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1 in senior steward.
Cork extractors..... ...No...	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Corkscrews.....No...	21	2	1	.....	1	.....	1	.....	.....	6	6	1 in medical store, 1 in subsistence store, 1 in P. A. surgeon, 1 in assistant surgeon.
Drawpulls.....No...	32	32	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Evaporating dishes.....No...	9	6	.....	.....	.....	.....	.....	.....	.....	3	.....	
Funnels, glass.....No...	7	3	2	.....	.....	.....	.....	.....	.....	1	1	
Funnels, rubber.....No...	3	1	.....	.....	.....	.....	.....	.....	.....	1	.....	1 in surgeon's quarters.
Graduates, glass.....No...	32	6	4	.....	.....	1	1	.....	.....	16	4	
Horn scoops.....No...	4	1	.....	.....	.....	.....	.....	.....	.....	.....	1	2 in medical store.
Jars, ointment.....No...	40	20	.....	.....	.....	.....	5	.....	.....	.....	.....	15 in record room.
Jars, infusion.....No...	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Mortars.....No...	15	7	2	.....	.....	.....	.....	.....	.....	4	2	
Pestles.....No...	21	11	2	.....	.....	.....	.....	.....	.....	8	.....	
Percolators.....No...	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Retort stands.....No...	3	1	1	1	.....	.....	.....	.....	.....	.....	.....	
Scales, prescription.....No...	4	2	1	.....	.....	.....	.....	.....	.....	.....	1	

Specimen pages of method of keeping accounts, etc.—Continued.

Books.	Total to be accounted for.	Surgeon's quarters.	Surgeon's office.	City office.	Steward's office.	Dispensary.	Remarks.
Annual reports M. H. S.....No...	15	.....	15	.....	.....	.....	
Anatomy.....No...	1	.....	1	.....	.....	.....	
Chemistry.....No...	2	.....	2	.....	.....	.....	
Color-blindness.....No...	1	.....	.....	1	.....	.....	
Dictionary.....No...	1	.....	1	.....	.....	.....	
Dictionary, medical.....No...	3	.....	2	1	.....	.....	
Dispensatory .....No...	4	.....	1	1	1	1	
Diseases of rectum.....No...	1	.....	1	.....	.....	.....	
Ear, diseases of.....No...	2	.....	2	.....	.....	.....	
Eye, diseases of.....No...	1	.....	1	.....	.....	.....	
Histology.....No...	1	.....	1	.....	.....	.....	
Hygiene.....No...	2	.....	2	.....	.....	.....	
Jurisprudence.....No...	1	.....	1	.....	.....	.....	
Materia medica and therapeutics.....No...	3	.....	2	1	.....	.....	
Nomenclature of diseases.....No...	7	.....	2	1	1	.....	1 in ward A, 1 in B, 1 in C.
Pathology.....No...	1	.....	1	.....	.....	.....	
Pharmacopœia.....No...	2	.....	.....	.....	1	1	
Physiology.....No...	2	.....	2	.....	.....	.....	
Practice of medicine.....No...	4	.....	4	.....	.....	.....	

Specimen pages of method of keeping accounts, etc.—Continued.

Miscellaneous articles.	Total to be accounted for.	Surgeon's quarters.	P. A. surgeon's quarters.	Asst. surgeon's quarters.	Sr. steward's quarters.	Jr. steward's quarters.	Surgeon's office.	City office.	Steward's office.	Ward A.	Ward B.	Ward C.	Ward D.	Ward E.	General store.	Condemned-property room.	Remarks.
Air cushions.....No...	13	.....	.....	.....	.....	.....	.....	.....	.....	7	2	.....	.....	.....	3	1	
Arm rests.....No...	2	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	
Bed trays.....No...	18	.....	.....	.....	.....	.....	.....	.....	.....	1	4	4	.....	2	6	1	
Bed-ticket frames.....No...	150	.....	.....	.....	.....	.....	.....	.....	.....	30	44	44	.....	32	.....	.....	
Bellows, insect-powder.....No...	6	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1	1 in hospital kitchen.
Bill files.....No...	6	.....	.....	.....	.....	.....	2	.....	3	.....	.....	.....	.....	.....	.....	.....	1 in laundry.
Board clips, letter size.....No...	7	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	4 in hospital kitchen, 1 in deadhouse.
Brackets, lamp.....No...	11	1	1	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	3 in laundry, 1 in cook's room, 1 in nurse (fourth floor), 1 in night nurse, 1 in clerk.
Brooms, hair.....No...	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1 in first hall, 1 in second hall.
Brushes, kalsomine.....No...	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2	4 in engineer.
Brushes, nail.....No...	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	3 in operating room.
Brushes, paint.....No...	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	2	2 in paint room.
Brushes, sash-tool.....No...	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	1 in paint room.
Bushes, stove.....No...	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	9	.....	1 in laundry, 1 in first hallman.
Brushes, varnish.....No...	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	2 in paint room.
Brushes, wall.....No...	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1 in first hall.
Brushes, whitewash.....No...	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	
Blow binder.....No...	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Coal sifters.....No...	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1 in coal vault, 1 in basement (south end).
Crutches.....pair...	18	.....	.....	.....	.....	.....	.....	.....	.....	4	4	.....	.....	.....	5	3	2 in splint room.
Coal scoops.....No...	12	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	8 in basement (1 at each furnace), 1 in coal vault.
Files, cabinet.....No...	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	
Toilet-paper fixtures.....No...	20	1	1	1	.....	.....	.....	.....	.....	1	1	1	.....	1	1	.....	4 in water-closets (first floor), 5 in water-closets (second floor), 3 in record room.
Faucets.....No...	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3	3	4 in medical store, 1 in subsistence store.
Fire horse.....feet...	200	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100	100 in first hall.

REPORT ON BERIBERI.

By Rounsevelle Wildman, United States Consul at Singapore.

[Received through the Department of State.]

MAY 1, 1892.

One of the most loathsome diseases of the Asiatic coast is beriberi. It is seen amongst the Chinese population at Singapore in its most advanced stages. It, with leprosy, are the two most horrible diseases of these latitudes. To me they are fascinating in their repulsiveness. In conjunction with my consular surgeon, Dr. E. W. von Swezelmann, who was at the same time colonial surgeon in charge of the Tan Tock Seng Hospital, I have made a study of these, at present, peculiar Asiatic epidemics. In my opinion the medical fraternity of our country should pay more attention to the study of both leprosy and beriberi, as at any moment they may find a foothold on the Pacific coast and sweep off thousands. I have the honor to submit our researches into the cause and effect of beriberi, submit experiments made by Dr. von Swezelmann in its treatment, and to express the hope that they will be received graciously by the medical world.

BERIBERI.

Among the 600 to 700 patients, mostly Chinese, always under treatment in the Tan Tock Seng Hospital at Singapore, the largest hospital in the Straits Settlements, there are always a large number suffering from beriberi, a disease unknown in Europe and America, and one, therefore, much less studied than its importance and the havoc it works on a large section of humanity call for.

DEFINITION.

It may be defined as a chronic, noncontagious, zymotic (perhaps) disease, characterized clinically by the occurrence of œdema, paralysis of muscles, and sensory disturbances, each varying indefinitely both in degree and in distribution, and pathologically by the presence of wide-spread degeneration of the peripheral nerves.

ETIOLOGY.

The disease is endemic throughout the Malay Peninsula and a great part of the Archipelago, in certain parts of Hindostan, and in Japan, countries which are either tropical or in which the temperature for a portion of the year is continuously high, as in Japan. It prevails especially in low humid districts with a large rainfall. Any disturbance of the soil in such district, as in clearing jungle, *e. g.*, is apt to be followed by a severe outbreak of the disease. It attacks only such persons as have resided for a considerable period in places where it is prevalent, newcomers being unaffected for at least a month or six weeks.

Women are very much less liable to it than men though by no means entirely exempt; their comparative exemption is due largely to their not being so often exposed to the exciting cause as are field coolies, miners, etc., who are the chief sufferers, though this seems not to be the sole reason. The fact that the active periods of life, from puberty to forty, are those of the greatest liability to the disease is similarly explicable. I have never seen it before puberty.

One attack predisposes to another.

The exciting cause of the disease is almost certainly a microbe. Prof. Peckelharing, of Utrecht, head of the Dutch commission for the study of beriberi in the Netherlands Indies, claims to have cultivated from the blood of beriberi patients a specific micrococcus, forming white colonies, which, when injected repeatedly into rabbits and dogs caused symptoms and post mortem changes similar to those of beriberi in man, viz: paralysis of the hind limbs and nerve degeneration. His researches, however, require confirmation. There is abundant evidence that the poison is air borne; it appears sometimes to be conveyed on fomites, and the fact (1) that it may cling obstinately to buildings and to ships attacking batch after batch of healthy men quartered in such, (2) that such structures can be purified by the use of germicides, are strongly in favor of its microbe nature. It appears to have little power of multiplication within the human body, continual fresh doses of the poison being necessary to maintain the disease; and there is no reason for believing patients to be infectious.

The disease has been attributed to unwholesome food, especially spoilt rice, to overcrowding, intestinal parasites, to malaria, scurvy, etc, but on quite inadequate grounds. Bad food, overcrowding, and other causes of impaired nutrition are without doubt predisposing causes.

Race, *per se*, is without influence, though the better fed European is much less often affected than the poorly fed Asiatic.

PATHOLOGY.

Naked-eye phenomena.—Usually there is some serous effusion in the subcutaneous areolar tissue, and in that of the deeper organs often there is a great deal. The pericardium usually contains an excess of fluid, sometimes an enormous excess; pleuritic and peritoneal effusions are less common. Occasionally the lungs are œdematous. Frequently there are eschymoses on the person's members, produced in the death agony, asphyxia being the common cause of this. The muscles may be swollen and streaked here and there with fat, or they may be yellowish brown and atrophied.

The right heart is as a rule dilated and hypertrophied; much less often the left heart is similarly affected. The abdominal viscera, beyond venous congestion, show nothing beyond what is usually found in autopsies in the tropics, malarious changes.

Microscopic changes in the nervous system are, however, well marked and characteristic. Briefly, the various stages of Wallerian degeneration are invariably to be found in the peripheral nerves usually most advanced in those of the lower limbs, notably the peroneal and anterior tibial; the medullary sheath being broken up, or in advanced stages, almost vanished, the sheath of Schwann thrown into folds, the intercellular nuclei multiplied, forming fusiform thickenings, etc., the proportion of their fibers is also markedly increased. These changes become less marked as the central nervous system is approached, and the described changes in the spinal cord are insignificant.

In the muscles many of the fibers are swollen, their situation lost, and their nuclei proliferated; fatty degeneration in various stages is observable.

SYMPTOMS.

The key to the infinitely varied symptomatology of beriberi is to be found in the facts (1) that the primary and characteristic symptoms are due to impaired or totally lost functions of the peripheral nerves, and (2) that almost any nerve may be affected, though some are much more liable than others. The stress of the disease may fall on the vasomotor and cardiac nerves producing œdema, variously distributed, cardiac affections, œdema of the lungs, etc., and their respective consequences; or on the motor and sensory nerves; or irregularly on both, correspondingly there are two well-marked clinical types, dropsical and atrophic, connected by intermediate forms.

Initial symptoms.—The onset of the disease is always gradual; the earliest detectable signs are (1) lessened irritability of certain motor nerves and muscles, particularly the

peroneal nerve and the muscles it supplies to both the continuous and the interrupted electric current; and (2) increase in the diameter of the tactile areas over a limited portion of the calf of the leg, associated with a subjective sensation of heaviness in the legs. Then occur (1) slight œdema along the crest of the tibia, and (2) a swollen, pasty appearance of the face. The tactile sense in the lower limbs becomes much diminished, and various paræsthesiæ occur, formication, tingling, etc. The patient complains of palpitation, the pulse quickens markedly on the slightest exertion, and slight increase of cardiac dullness towards the right can be made out. There is usually an unpleasant sensation of the epigastrium, variously described as "fullness," "sinking," "acting," etc., sometimes actual pain, probably due to degeneration affecting the abdominal distribution of the vagi.

Symptoms of the established disease.—A general œdema is usually most marked in the lower limbs; it begins, however, above the ancles, showing that it is not cardiac; often a distinctly limited area of œdema of a few square inches may be seen in the upper part of the leg, *e. g.*, in one such case I found in the tunica externa of the artery supplying the patch a distinctly degenerated vaso-motor fiber. The upper limbs may be more affected than the lower ones, and the œdema may be unilateral, being then often associated with distinct differences in the radial pulses, made very evident by the sphygmograph. The œdema at first is soft, but if it lasts long may become very hard and brawny. General œdema is not uncommon, it is usually associated with cardiac failure.

Anæmia, though often present, debilitated persons being more liable to beriberi, is not in itself a symptom of the disease.

Temperature.—This is very variable and in no way characteristic. As most beriberi patients have been exposed to the existing causes of malaria, they very commonly have pyrexial attacks of very variable type. The disease is never ushered in with fever. Heart failure is often associated with subnormal temperature, though not always. In very chronic cases of beriberi, with extreme widespread wasting of a muscle, the temperature is often subnormal and readily influenced by external conditions.

B. General.

(1) *Nervous system.—Sensory phenomena.*—The nerve trunks are often very tender and painful on pressure. Violent shooting pains are often experienced, painful starting of muscles, and various paræsthesiæ, tingling, formication, etc. The tactile sense may be quite lost, sometimes over a very wide area. The temperature sense is usually defective. These subjective phenomena are very difficult to investigate in Asiatic patients through the medium of an interpreter; so that in my patients I never obtained very trustworthy observations. The cremasteric, abdominal, and epigastric reflexes are usually present.

The knee jerk is nearly always lost early; occasionally it persists; I have even seen it slightly exaggerated. Patients discharged as cured, and subjectively quite strong and well, I find usually have no knee jerk.

Motor phenomena.—The muscles may be swollen, hard, and painful on pressure, or later, much atrophied and painless. Paralysis is usually most marked in the area of the peroneal nerve; rarely in the upper limbs; sometimes a condition very like the wrist-drop of lead palsy is observable in these latter. There is at first lessened and then completely loss of irritability of both muscle and nerve to the interrupted current, and diminished irritability of both to the constant current.

The paralytic phenomena are of course as infinitely varied as is the distribution of the paralysis. The grasp of the hand is much weakened, the fine movements of the fingers are usually lost early. The gait is non-characteristic, depending on the muscles affected. Any muscle may be affected; the sterno-mastoid, pectoralis major, and trapezius, however, are very rarely affected; the flexors of the knee, the adductors and flexors of the thigh, and the biceps cubiti, are among the last to be affected. The eyeball and

tongue muscles usually escape. The laryngeal muscles very commonly suffer. The diaphragm may be paralyzed; the intercostal muscles; rarely the muscles of the abdominal walls.

I have never seen the sphincters affected, nor the iris. The visual and auditory nerves always escape; taste and smell are more difficult to test in natives, and I attach little value to occasional apparent absence of one or other of these senses which I have observed.

(2) *Circulatory system.*—Dilatation of the right heart is very common, evidenced clinically by angina, palpitation, and by the usual physical signs.

The pulse is often very frequent, occasionally very infrequent; differences in the radial pulses are common.

(3) *Respiratory system.*—Œdema of the lungs is a not uncommon late phenomenon, sometimes preceding death a few days, more often a few hours.

Digestive system.—This affords no symptom of importance; gastric crises with vomiting sometimes occur analogous to those of locomotor ataxy. In the early phases of the disease there is usually constipation.

Urinary system.—As a consequence of cardiac failure the urine may be extremely scanty.

SYMPTOMS OF EXACERBATION.

Occasionally beriberi, in a very early stage, when the patient hardly knows he is unwell, may undergo a sudden exacerbation, with pyrexia and violent cramps and pains in the muscles, which then rapidly atrophy. If the respiratory or cardiac muscles be thus affected, death may occur in a few hours.

Sequelæ.—When all active manifestations of the disease have ceased, the degeneration and wasting of muscles, consequent on irreparable injury to the nerves, may still progress, sometimes to almost absolute paralysis, with various distortions. Similarly, the dilated and hypertrophied heart may fail to recover itself, and the patient gradually succumbs to slowly progressing general œdema, the process sometimes being extremely chronic, and the proportions attained by the bloated body almost incredible.

The modes of death are mainly three—(1) cardiac failure, (2) respiratory paralysis, and (3) œdema of the lungs. Possibly pericardial effusion is an occasional cause; it is rarely sufficient in bulk for the purpose. Occasionally, also, a patient seems to die with falling temperature, simply because he has insufficient muscle to supply his heat requirement.

Course.—The disease is essentially chronic, its duration being never less than five to six weeks; more often three to four months.

Diagnosis.—In the earliest stage this can only be made by aid of the electric current. Later there can be no difficulty.

Prognosis.—Seeing how high is the mortality and how grave the accidents to which the beriberi sufferer is liable, this must always be serious. The immediate prognosis depends, of course, upon the character of nerves involved; the ultimate prognosis upon the number and extent of the lesions, the resistive powers of the patient, and extraneous conditions.

Mortality.—The following table illustrates this:

	Number.
January 1, 1887:	
Patients in hospital	60
Admitted during year	193
Total treated	253
Discharged well	159
Dead	59
Average cured	62.84
Average mortality	23.32

	Number.
January 1, 1888:	
In hospital	35
Admitted during year	204
Total treated	239
Recovered	148
Died	65
Average recovered	61.50
Average mortality	27.19
January 1, 1889:	
In hospital	26
Admitted during year	215
Total treated	241
Recovered	115
Died	84
Average recovered	47.71
Average mortality	34.85
January 1, 1890:	
In hospital	42
Admitted during year	347
Total treated	389
Recovered	129
Died	164
Average recovered	33.11
Average mortality	42.59
January to July, 1891:	
In hospital	96
Admitted	224
Total treated	320
Recovered	166
Died	62
Average recovered	51.87
Average mortality	19.37

These high death rates are in all probability above the average, due largely to the fact that the Tan Tock Seng Hospital is in a very unhealthy situation, practically in a marsh, and in part, also, to the fact that the inadequate medical staff makes it impossible to give due individual attention to so large a number of patients.

Treatment.—The most important items of this are (1) the removal of the patient as speedily as possible from the place in which the disease prevails, so that he may receive no fresh doses of the poison, and (2) the supplying him with as abundant a nitrogenous diet as he can assimilate. The complete disappearance of beriberi, or kakké, as it is termed in Japan, from the Japanese navy, concurrently with an improvement in diet, which previously was deficient in proteids, is a most remarkable fact. Doubtless other factors, *e. g.*, the sanitary and disinfecting measures simultaneously resorted to, had some share in producing this happy effect. At the Tan Tock Seng Hospital the addition of 30 ounces of wheat flour to the diet of every beriberi patient, which was done in December, 1890, coincided with a remarkable fall in the death rate which has been maintained up to date (September, 1891). The relation is probably one of cause and effect, though here again I think other factors have aided. As regards drug treatment, no drug seems to be of much use, except such as obviate the ill effects of those dangerous crises, partic-

ularly cardiac failure, so common in this disease. Among these drugs, nitroglycerine is preëminently useful. In cases of acute engorgement of the lungs, probably due to sudden vasomotor paralysis, it often averts a fatal issue by the hydrostatic effects of the general dilatation of peripheral arteries, which it causes. As a heart tonic comparable to alcohol, it seems to be even more useful, given at least every hour (v minims of the 1 per cent solution). In cases of gradual heart failure, in which the pulse becomes sometimes very frequent and very small, sometimes infrequent, small, and irregular, with increasing œdema and failing temperature, I find digitalis of great service; as the dose required from a half to one drachm of the tincture every three hours, or oftener, often causes vomiting, I have often had resource to digitalin, subcutaneously, with marked success. Strophanthus I have found much less effectual.

In the chronic after stages, when all muscular tenderness has ceased, the hypodermic injection of liq. strychniæ, m ii-iii *bis* or *ter die*, seems to accelerate the processes of repair. It is also useful occasionally when there are symptoms threatening respiratory paralysis.

The muscular tenderness of the earlier stages seems sometimes to be relieved by small doses of potass. iod. and tinct. aconit., but as the evidence is based entirely on subjective signs, it is open to question.

As regards other treatment, the judicious use of laxative stomachics, etc., only require mention.

I am, sir, etc.,

ROUNSEVELLE WILDMAN,
United States Consul.

REPORTS OF FATAL CASES, WITH NECROPSIES.

REPORTS OF FATAL CASES, WITH NECROPSIES.

INFLUENZA.

Peritonitis with intestinal obstruction.

C. O.; aged 35 years; nativity, Sweden; admitted to the U. S. Marine Hospital, Mobile, Ala., December 5, 1891; died December 20, 1891.

History.—On admission patient had fever of an irregular type; cough, with scanty expectoration; headache, with slight delirium in the evening, and was much prostrated. He soon began to improve and was much better until four days before his death, when he became worse, suffering with vomiting which in two days was stercoraceous. Very slight pain in the abdomen and slight constipation, but an enema produced a copious alvine evacuation two days before his death. Marked prostration soon occurred, and the patient rapidly grew worse and died in a few days.

Necropsy (twenty-three hours after death).—External appearances; *Rigor mortis* slight. Post mortem lividity marked; body much emaciated. Thoracic cavity: left lung very small, slightly congested, otherwise normal; weight, 290 grams. Right lung normal; weight, 380 grams. The heart weighed 290 grams. Abdominal cavity: the lower part of the ileum was found bound down by firm adhesions to the right iliac fossa. These adhesions had so constricted the intestine as to cause complete obstruction. The gut at this point was gangrenous and had ruptured. A perforation at least 1½ centimeters long was found. The peritoneum was much thickened and inflamed; the intestines covered with flakes of fibrin. About 500 cubic centimeters of pus were in the abdominal cavity, which bathed the intestines. The liver weighed 2,240 grams. The spleen was enlarged, weighing 340 grams. Kidneys were of same size, each weighing 155 grams. Pancreas normal; weight, 100 grams.

ENTERIC FEVER.

Case 1.

T. C.; aged 36 years; nativity, Ireland; admitted to the Marine Hospital, Stapleton, Staten Island, New York, June 14, 1892; died June 23, 1892.

History.—Upon his admission patient stated that he had been sick for one week, his sickness having commenced with a headache, a feeling of lassitude, and soreness and pain in hips and knees. No swelling of limbs. Has a fever, but no chills nor sweating. No cough, dyspnœa, nor palpitation of heart. Has anorexia and insomnia, but no nausea nor vomiting. Bowels regular. No difficulty in passing his urine.

Physical examination.—Body well nourished. Chest expansion good. Chest well developed. Vocal fremitus not increased. No dullness on percussion over lungs. No râles heard on auscultation over chest. Systolic murmur heard at apex of heart. Spleen normal. Liver somewhat enlarged. Temperature, 40.4° C.; pulse, 98.

June 15.—A. m.: Temperature, 38.4°; pulse, 96, and weak. Tongue coated. Complains of feeling very weak. Has nausea and vomiting. No soreness in limbs. P. m.: Temperature, 38.2°; pulse, 94, strong and full.

June 16.—A. m.: Temperature, 38°; pulse, 104, and weak. Tongue still coated, and complains of headache. No rose colored spots found on body. No diarrhœa. P. m.: Temperature, 40°; pulse, 92, and still weak. Tongue still coated. Mind unbalanced, and patient very restless.

June 17.—A. m.: Temperature, 39°; pulse, 100, and still weak. Tongue dry and coated. Sordes on teeth. Mind still unbalanced. P. m.: Temperature, 40.4°; pulse, 100, and still weak. Tongue still dry and coated. Bowels open freely.

June 18.—A. m.: Temperature, 40.2°; pulse, 104, and still weak. Tongue still dry and teeth covered with sordes. Patient resting quietly. P. m.: Temperature, 39.2°; pulse, 92, intermittent and weak; respiration, 28. Tongue coated white. Patient still delirious.

June 19.—A. m.: Temperature, 39.4; pulse, 100, regular and not so weak; respiration, 28. Abdomen somewhat swollen and a tympanic note on percussion. Rose-colored spots found on body, which disappear on pressure and reappear on removal of pressure. Mind clearer. Tongue still dry and coated.

June 20.—A. m.: Temperature, 39.4°; pulse, 102, and still weak; respiration, 28. Perspiring profusely. Tongue dry and coated white. Sordes on teeth and lips. P. m.: Temperature, 39.8°; pulse, 116, and still weak; respiration, 28. Tongue still dry and coated brown. Bowels move freely, and passes his urine frequently. Restless and still delirious.

June 21.—A. m.: Temperature, 39.4°; pulse, 104 and still weak; respiration, 28, but not labored; tongue coated white, but not so dry; mind much clearer.

June 22.—A. m.: Temperature, 39.2°; pulse, 112 and still weak; respiration, 28; bowels open; tongue dry, and patient very restless and delirious. P. m.: Temperature, 39°; pulse, 124 and still weak; respiration, 30; a tympanitic note over abdomen on percussion; difficulty in swallowing.

June 23.—A. m.: Temperature, 38°; pulse, 124 and very weak; respiration, 40 and labored. Patient continues to grow weaker. P. m.: Temperature, 39⅘°; pulse in wrist not perceptible; respiration, 40 and still labored. Patient is in a cold perspiration and is rapidly growing weaker. Patient continued to grow weaker, and died as given above.

Necropsy (*thirteen hours after death*).—Body fairly well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Lungs were deeply congested, otherwise they were normal. Left kidney quite small, less than half the size of the right; right kidney larger than normal and in the calices a small amount of purulent urine. Spleen congested and very pulpy, being about the consistency of a blood clot. Liver, pale. Upper part of intestines congested. The jejunum and ileum deeply inflamed, the latter looking almost gangrenous; the first part of the colon in the same condition. There were no perforations, but several large ulcers found in ileum, the long axis of ulcer being in the long axis of the intestine. Heart normal.

Case 2.

J. H.; aged 45 years; nativity, New York; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., October 23, 1891; died October 28, 1891.

History.—Upon admission to the hospital patient gave the following history: He had been sick ten days; his sickness commenced with pain over body, nausea, vomiting, cough, chill, fever, followed by sweating. Had no more chills, but had chilly sensations all the time, being unable to get warm. Suffered from anorexia, diarrhœa, and insomnia.

Physical examination.—Body fairly well nourished, chest expansion good, tongue coated, vocal fremitus normal, no râles heard on auscultation, and no dullness on percussion over lungs. Heart sounds normal; area of dullness not increased on percussion. Liver and spleen appear normal in size.

October 24.—9 a. m.: Temperature, 39°. Pulse full and strong; slight pain over cardiac region. On auscultation no friction murmur was heard.

October 25.—Appears better; temperature, 38°; pulse good.

October 27.—In a stupor; this change was very sudden. Temperature, 39.6°; pulse full. Sordes on lips and teeth. Tongue heavily coated, of a dark brown color. No

rose-colored spots over body. Incontinence of urine. Notwithstanding stupor, pressure over abdomen causes patient to resist, as if in pain. 6 p. m.: Temperature, 41°; respiration, 42.

October 28.—Temperature, 41°; respiration very irregular. Patient gradually grew weaker and died at 1:45 p. m.

Necropsy (twenty-four hours after death).—Body well nourished, hypostatic congestion posteriorly. *Rigor mortis* well marked. Pericardial sac contained 75 cubic centimeters of fluid. Heart normal. Ante-mortem clot in left ventricle. Lungs congested, particularly the left. Mesenteric glands enlarged. Stomach: Mucous membrane inflamed; small intestines very much inflamed; large intestines contained a large amount of yellowish fecal matter. Peyer's patches inflamed but not ulcerated. Liver fatty. Kidneys, pale, capsules not adherent. Spleen normal. Bladder wall very much thickened.

CASE 3.

Perforation.

P. G., aged 22 years; nativity, Ireland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., August 31, 1891; died September 7, 1891.

History.—Upon admission patient stated that he had had a headache for two weeks, which had got so much worse the last two days that he had been obliged to stop work. He had no rigor, but had suffered from general malaise. His nose bled a little the morning of admission. He had eaten nothing for a week, and had been troubled with diarrhœa for two weeks; stools contained no blood. Suffered from a slight cough, but expectorated very little; the expectoration being of a whitish color. Never had syphilis, but had gonorrhœa six months ago. Complained of sore throat, and found it difficult to swallow.

Physical examination.—Chest expansion good. Rose-colored spots on abdomen. No dullness on percussion. No râles heard on auscultation over lungs. Vocal fremitus not increased. Heart's area of dullness not increased; no abnormal sounds heard. Tongue coated, with red edges. Liver and spleen appear normal in size. Gurgling heard in right iliac fossa.

September 3.—P. m.: Complains of pain in right iliac region, and has attacks of vomiting. Bowels moved twice—typical typhoid stools.

September 4.—A. m.: Was quite sick during the night; severe pain in stomach; abdomen very tympanitic; bowels moved frequently. Pain continues in lower portion of abdomen. Pulse not as strong as usual. Sweating profusely.

September 5.—A. m.: Abdomen tympanitic. Pulse weaker.

September 6.—A. m.: Patient is rational. Pain not so severe as during the night; slept fairly well after midnight. Pulse, 135, fairly full. Temperature normal. Considerable tympanitis, causing dyspnœa. Vomits less than yesterday. Bowels have not moved this morning.

September 7.—A. m.: Abdomen very much swollen. Very restless; delirious at times. Pulse, 140, weak. Respiration interfered with by distended abdomen. No vomiting. Bowels constipated.

Necropsy (twenty-four hours after death).—Body well nourished. *Rigor mortis* marked. Hypostatic congestion posteriorly. Pericardium contained 10 cubic centimeters of fluid. Heart pale, flabby, somewhat soft; valves appear normal. Lungs: Both lower lobes congested and œdematous. Peritoneum, a deposit of lymph was between intestines and peritoneum, gluing them together in some places. Liver very fatty. Spleen enlarged. Kidneys, both very pale. Stomach: Mucous membrane inflamed. Intestines: Lower portion of ileum highly inflamed, almost gangrenous, with a small perforation from which fecal matter had passed into peritoneal cavity. Intestinal glands were all more or less involved, Peyer's patches being in many places considerably ulcerated.

CASE 4.

C. F.; aged 35 years; nativity, Norway; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., October 22, 1891; died October 28, 1891.

History.—Patient had been sick for eleven days; his sickness commenced with pain over body, headache, sore throat, nausea, cough, chill, fever followed by sweating; after that he had chill and fever every day, anorexia, constipation, insomnia. No epistaxis nor eruption.

Physical examination.—Body well nourished; chest expansion good; tongue slightly coated; no râles heard over lungs on auscultation, and no dullness on percussion; heart sounds normal; and area of dullness not increased on percussion. Liver and spleen appear normal in size.

October 24.—Temperature, 38.8°; pulse, weak; tongue, coated slightly and dry.

October 25.—Temperature, normal; 6 p. m.: 39.6°.

October 26.—Patient is again constipated; posterior portion of throat inflamed. 6 p. m.: Throat is better; pain in stomach on percussion; over right hypochondrium; pain is very severe.

October 27.—2 a. m.: Suffering excruciating pain in abdomen. 9 a. m.: Pain not so severe. 11 a. m.: Pain continues in right hypochondrium and comes on in paroxysms; tongue clean and deviated to the right. Patient continued to grow worse and died on date above given.

Necropsy (*seven hours after death*).—Body well nourished. Hypostatic congestion posteriorly. *Rigor mortis* well marked. Pericardial sac contained 100 c. c. yellowish turbid fluid; heart normal; pleuræ inflamed; right lung and lower lobe of left congested; mesenteric glands very much enlarged. Stomach: Mucous membrane very much inflamed; small intestine distended with gas and also very much inflamed. Peyer's patches highly inflamed, but were not ulcerated. Liver pale and very large; gall bladder distended with reddish brown fluid. Kidneys: Both were pale in color; cortical portion thin; the capsules were nonadherent; the right kidney was somewhat nodular in shape; spleen large, nodular in outline and of such softness that its substance oozed under pressure.

CASE 5.

L. A. L.; aged 21 years; nativity, Norway; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., October 23, 1891; died October 27, 1891.

History.—Upon admission to hospital patient was in a stupid condition, and it was very hard to obtain a history from him; after considerable questioning it was ascertained, that he had been sick two weeks, his sickness commencing with pain over body, headache, nausea, vomiting, epistaxis, chills and fever, followed by sweating. Chill repeated every subsequent day. Bowels regular, and he sleeps well.

Physical examination.—Body well nourished; chest expansion good; tongue not coated. No râles heard over lungs on auscultation and no dullness on percussion. Heart sounds normal; and, area of dullness not increased on percussion. Liver and spleen appear normal in size.

October 24.—2 a. m.: Patient very delirious, so that restraint had to be used to keep him in bed; pulse fairly full and strong; temperature, 38.8°. 9 a. m.: Sleeping quietly. 6 p. m.: Still asleep. Some subsultus tendinum. Pulse, 70 and weak. Temperature, 37°.

October 25.—3 a. m.: Pulse, improved, but still weak; respirations, irregular; urinates freely; no movement of bowels. 9 a. m.: Skin hyperæsthetic, can not be aroused; sordes on lips; no rose-colored spots on body; no tympanites; pupils act under stimulation of light. On pressure over abdomen he gives signs of pain, particularly over the right iliac region. 6 p. m.: Pulse, 96, improved in strength; respiration, 27; temperature, 39°.

October 26.—No change in patient's condition; he continued to weaken, and died on date above given.

Necropsy (twelve hours after death).—Body well nourished; hypostatic congestion posteriorly; *rigor mortis* well marked. Pericardial sac contained 90 c. c. fluid. Heart pale, two or three vegetations on the tricuspid valves. Lungs: Left lower lobe congested; right, somewhat congested. Liver large and pale. Spleen large, so pulpy as to appear as a blood clot which oozes out when pressed. Kidneys pale, mottled. Mesenteric glands very much enlarged. Intestines contain thin, brownish fecal matter; smaller intestines highly congested. Several ulcerations in lower portion of ileum.

CASE 6.

J. O.; aged 36 years; nativity, Sweden; admitted to U. S. Marine Hospital, Chicago, Ill., January 9, 1892; died January 12, 1892, at 1:30 a. m.

History.—At the time of admission the patient was unconscious, delirious, with arms constantly in motion. He had been brought 5 miles through a snowstorm; had a rosy, nontypical abdominal rash, diarrhœa, and nose bleed. He reacted next morning and remained so till January 11; then temperature rose, nostrils sank in, lungs collapsed. By midnight temperature was 42° C.

Necropsy (nine hours after death).—Circumference at shoulder 17 c. m.; general nourishment poor; post mortem lividity and *rigor mortis* marked; pupils unequally dilated. Heart weighed (after opening) 300 grams, its pericardial sac normal; valves competent; ventricles empty; walls flaccid. Nares somewhat bloody from recent nose bleeds. Each lung weighed 530 grams; atelectasis; congestion of posterior lobes and less of other parts; pleural cavities normal. Abdominal organs were congested; intestines distended with gas; peritoneum showed local areas of hyperæmia; mesenteric glands conspicuous. On the teeth was sordes. Stomach was distended with gas. In small intestines there were hyperæmic patches; six or eight inflamed Peyer's patches and one or two ulcerated in lower part of ileum. Liver was congested and swollen; color, normal; weight, 1,995 grams. Left kidney weighed 180 grams, the right 170 grams; both were congested. Bladder was empty. Spleen weighed 350 grams; was deeply congested. Brain and spinal cord not examined.

CASE 7.

G. R.; aged 28 years; nativity, New Brunswick; admitted to the U. S. Marine Hospital, Chelsea, Mass., January 11, 1892; died January 21, 1892.

History.—His illness began three weeks before admission, with a chill. Several days later there was considerable cough and expectoration; this continuing until the termination of the case. The bowels were moved two or three times daily, stools yellow and partly formed. The tongue was coated but not as red as usual in typhoid. There were abundant subcrepitant râles, and, upon percussion, slight dullness, over the lower part of the right lung. The temperature ranged from 39° to 40° C. during the nine days of residence in hospital. There was no history of epistaxis and no rose spots could be discerned. The patient was moving about and probably eating a variety of food up to the time of his coming under treatment.

Necropsy.—The lungs were somewhat œdematous, and at the lower border of the right, corresponding with the area of dullness noticed during life, there were several black spots, indurated, triangular in shape, and containing blood, which exuded from the surface on pressure. The heart was of normal appearance, except slight fatty infiltration along the lines of the coronary vessels. The abdominal cavity contained 500 c. c. of straw-colored fluid. The spleen was slightly enlarged and dark colored; weight, 280 grams. The lower part of the ileum was thickened, and thickly studded with ulcers and enlarged glands. The ileo-cæcal valve was thickened from inflammation. Kidneys normal.

CASE 8.

Pneumonia.

C. J.; age, 25 years; nativity, Sweden; admitted to U. S. Marine Hospital, Baltimore, Md., January 18, 1892; died February 4, 1892.

History.—Fireman on tug *Dupont*. About five days prior to admission came out of fireroom on deck in a cold rain and got wet, since which time has not felt well. On admission complains of pains in head, chest, back, and extremities, with considerable cough. Lungs normal on percussion; bowels and urinary organs normal. Pulse, 93; temperature, 39.4° C. Ordered a hot bath; put to bed. ℞. Tr. aconite, 3 c. c., tr. gelsemium, 12 c. c., tr. opium camph., 20 c. c., spts. Mindererus to 250 c. c. M. Sig. tablespoonful every three hours.

Diagnosis, influenza. 6 p. m.: Pulse, 108; temperature 40.4°. Continue fever mixture.

January 19.—A. m.: Pulse, 96; temperature, 39.8°. P. m.: Pulse, 102; temperature, 40.5°. ℞. Quinia sulph., gms. 2, antipyrine, gms. 2. M. Make papers. No. 3. Sig. 1 paper every four hours.

January 20.—A. m.: Pulse, 86; temperature, 38.5°. Bowels constipated. ℞. Castor oil, 30 c. c. at once. Repeat quinia and antipyrine. P. m.: Pulse, 90; temperature, 38.8°. Resume fever mixture.

January 21.—A. m.: Pulse, 92; temperature, 40°. Cold sponging every six hours. P. m.: Pulse, 104; temperature, 40.2°. Continue treatment.

January 22.—A. m.: Pulse, 99; temperature, 40.4°. Continue treatment. P. m.: Pulse, 96; temperature, 40.4°. Continue treatment.

January 23.—A. m.: Pulse, 96; temperature, 40°. Indications of enteric fever, tympany, gurgling in right iliac fossæ. P. m.: Pulse, 102; temperature, 40.4.°

January 24.—A. m.: Pulse, 96; temperature, 40°. Continue treatment. P. m.: Pulse, 100; temperature, 40.3°. Rose-colored spots on abdomen.

January 25.—A. m.: Pulse, 90; temperature, 40°. P. M.: Pulse, 94; temperature, 40.5°. Diagnosis, enteric fever.

January 26.—A. m.: Pulse, 93; temperature, 40°. Continue fever mixture and sponging. P. m.: Pulse, 96; temperature, 40.4°.

January 27.—A. M.: Pulse, 102; temperature, 40°. Numerous rose spots on abdomen. P. m.: Pulse, 99; temperature, 40.2°. Continue treatment.

January 28.—A. m.: Pulse, 96; temperature, 40. P. m.: pulse, 96; temperature, 40.8. Enema for tympany.

January 29.—A. m.: Pulse, 102; temperature, 40°. P. m.: Pulse, 102; temperature, 40.2°. Since first day patient has had no cough or pain. Lungs thoroughly auscultated this morning and found perfectly resonant.

January 30.—A. m.: Pulse, 96; temperature, 40°. Continue treatment. P. M.: Pulse, 96; temperature, 40.2°.

January 31.—A. m.: Pulse, 96; temperature, 40°. P. m.: Pulse, 96; temperature, 40.5°.

February 1.—A. m.: Pulse, 102; temperature, 40.4°. P. m.: Pulse, 108; temperature, 40.8°; respiration, 34. Complains of pain in left hypochondrium. Has cough, with sanguino-purulent sputa. Examination shows dullness and absence of respiratory sounds in lower lobe of left lung, and he is now suffering from croupous pneumonia, as well as enteric fever.

February 2.—A. m.: Pulse, 108; temperature, 40.2°; respiration, 36. P. m.: Pulse, 100; temperature, 40°; respiration, 39; delirium.

February 3.—A. m.: Pulse, 138; temperature, 42.2°; respiration, 39. P. m.: Pulse, 132; temperature, 39.5°; respiration, 44; very weak. ℞. Ammonia carb., 10 gms., tr. digitalis, 15 c. c., syr. prunus virg., 30 c. c., water to 200. M. Sig. 15 c. c. every three hours. Egg nog freely. Delirious.

February 4.—A. m.: Pulse, 150; temperature, 40°; respiration 42; delirious. 2 p. m.: Failing. Sponge with dilute alcohol, whisky. 7:39 p. m.: Died.

Necropsy (February 5, 4 p. m.)—Extreme *rigor mortis*. Body fairly well nourished. Bloody exudate from mouth. Post mortem hypostasis posteriorly. Brain not examined. Thorax: Heart normal and a splendid specimen. Right lung firmly adherent to chest walls and posterior segment in a state of red hepatization. Left lung not adherent to chest walls, but the entire lower lobe in a condition of extreme hepatization, which, on section, exudes venous blood, and sinks in water. Abdomen: Liver normal, spleen enlarged and very dark in color, and friable. Small intestine distended with flatus. Apendix vermiformis, about 12 centimeters in length, enlarged and filled with fæces. Ileum, in lower portion, externally showed numerous black spots. On removing and splitting up about 60 centimeters of the ileum, 8 masses of elevated, angry, suppurating Peyer's patches were observed. Mesenteric glands enlarged from the size of a coffee bean to that of an almond, the latter absolutely black. Omentum inflamed. Other organs normal.

Case 9.

V. D. F.; aged 24 years; nativity, Mississippi; admitted to marine ward of Mercy Hospital, Pittsburg, Pa., January 16, 1892; died January 22, 1892.

History.—Patient had been sick two or three weeks before he was brought to hospital. Upon admission his temperature was 39.5° C., pulse 112, tongue coated brown and cracked, rose-colored eruption on abdomen and chest, and slight deafness. Abdomen distended and tender under pressure.

Medication proved of no avail in this case. The patient became more prostrated, and, after a stage of coma, death occurred six days after admission.

Necropsy (twelve hours after death).—Post-mortem lividity slight; *rigor mortis* marked; general nourishment fair; pupils normal. Heart normal; weight (after opening), 315 grams; valves competent. Lungs: Left, weight, 512 grams; right, weight, 660 grams. slight pleural adhesions, laterally. Peritoneum, congested; stomach, hyperæmic. The glands of the small intestines are extremely ulcerated, most marked at the ileo-cæcal valve. Liver: Color, normal; weight, 2,580 grams. Gall bladder normal. Kidneys, congested and slightly softened; left, weight, 240 grams; right, weight, 218 grams. Spleen greatly enlarged with firm tissue; weight, 840 grams.

Case 10.

Perforation.

J. H. E.; age, 20 years; nativity, Delaware; admitted to the marine ward of the German Hospital, Philadelphia, Pa., September 4, 1891; died September 7, 1891.

History.—When admitted had been sick for three weeks. Suffering from general malaise, diarrhœa, fever, etc. Physical examination showed flushed face and rapid respiration; tongue dry and coated; slight dullness over base of right lung behind, râles, but neither cough nor expectoration. Heart action good. Tenderness over abdomen with marked distention. Bowels loose; temperature, 39.4° C. General condition markedly typhoid. Twenty-four hours before death patient passed into a state of profound collapse, with temperature of 36.1° C., and wet skin.

Necropsy.—Body in good condition. Pneumonic patch in lower lobe of right lung behind; red hepatization. Hypostatic congestion of left lung. Heart was normal. Liver slightly enlarged and a little fatty. Spleen enlarged. All of the abdominal viscera had a peculiar dry sticky feel; no fluid. Typhoid ulcers were found in the ileum, one of which had perforated, but there was no peritonitis. Kidneys were normal.

CASE 11.

Death from perforation and peritonitis.

E. J.; aged 21 years; nativity, Russia; admitted to the marine ward of the German Hospital, Philadelphia, Pa., September 19, 1891; died September 22, 1891.

History.—Upon admission had temperature of 40° C.; dry tongue; pain in abdomen; urine scanty; rapid pulse and respiration. No previous history could be obtained.

Necropsy.—Body in excellent condition. Chicken-fat clots in left side of heart; right heart dilated; no valvular lesions. Lungs: Œdematous from hypostatic congestion; red and congested at bases in front, but no pneumonia. Liver: Large, but otherwise normal. Spleen large. Kidneys normal. Intestines: Peritonitis, resulting from the perforation of a typhoid ulcer in the ileum; large quantity of fecal matter in the peritoneal cavity, plastic adhesions; entire bowel was deeply congested. There were six or eight commencing typhoid ulcers, with enlargement of the follicles throughout the entire gut.

CASE 12.

Perforation of the intestine.

E. S.; aged 26 years; native of England; entered U. S. Marine Hospital at San Francisco, Cal.; died February 13, 1892.

History.—When he entered this hospital he complained of pain in his abdomen, vomiting, loss of appetite, and malaise. In a few days he became delirious, his delirium taking the turn of boat renting and things pertaining to boats in general, and became so bad that it was necessary to keep him constantly guarded. He remained in this condition—first delirious, then in a stupor—for several days. Finally, one morning, he complained of a very severe pain in the abdomen, radiating toward the back. He gradually fell into a comatose state again, and remained so till death.

Necropsy (the day following his death).—Deceased was in a greatly emaciated condition which was especially manifest in the muscular tissue. The abdominal cavity was found to be partially filled with a yellowish fluid, containing fecal matter. The ileum was found to be ulcerated in four different places, one of the ulcerations having perforated the intestines. The heart was examined and found to be dilated and flabby and in an advanced state of fatty degeneration.

CASE 13.

H. O.; age, 20 years; nativity, Sweden; admitted to the U. S. Marine Hospital, San Francisco, Cal., July 13, 1891; died July 31, 1891.

History.—He was ill seventeen days before coming to the hospital, the attack having begun with chill and fever. There were typical signs of enteric fever when he was admitted, and the disease ran rather a mild course, with the exception of the intercurrent delirium which was quite severe at times. Convalescence had apparently begun, when on July 31, during a state of temporary delirium, the patient arose from bed and started towards his clothes with evident intention of dressing himself. The heart in its enfeebled condition of fatty degeneration suddenly became paralyzed and the patient fell back and died in spite of the professional aid which he received immediately.

Necropsy.—The lungs (especially the left) were deeply congested, principally at their posterior aspect, probably as a result of the inhalation of bronchial pathological products. The heart was slightly distended with blood. Its walls were flabby and very light colored on section. probably from fatty degeneration. The intestines showed, at the lower part of the ileum, a few small ulcers which were quite clean, the ulcerative process having ceased.

CASE 14.

Intestinal perforation.

F. H. W.; age, 39 years; nativity, Massachusetts; admitted to the U. S. Marine Hospital, at San Francisco, Cal., August 8, 1891; died August 30, 1891.

History.—He had been ill one week before admittance with pains in the back and fever of an intermittent type. There was no epistaxis nor diarrhœa at any time. The tongue was coated, and had reddened edges; pulse small and weak; and a few suspicious rose-colored spots, which were not typical, were present. During the third week abdominal pain, meteorism, extreme tenderness to the touch, and symptoms of nervous shock, denoted the presence of peritonitis. These were followed by death in two days.

Necropsy.—The peritoneum was covered with fibrinous exudation, the coils of intestines being fastened together. The lower ileum contained four small ulcers, one of these having perforated the intestine; the others were apparently undergoing cicatrization. Spleen slightly enlarged and softened.

CASE 15.

J. W.; age, 27 years; nativity, England; admitted to the U. S. Marine Hospital, San Francisco, Cal., July 10, 1891; died July 20, 1891.

History.—He had been ill about two weeks before coming to the hospital, the symptoms having been pain in back and chest, diarrhœa, and occasional epistaxis.

The following signs were noted during the latter part of his illness: Coated tongue with red edges, flushed face, dilated pupils, tenderness over the abdomen, and petechiæ in small numbers, but typical. There was profuse diarrhœa, some of the evacuations containing blood. During the last week there were symptoms of shock, apparently from slight perforations. These, however, passed away to some degree, the patient dying from the intensity of typhoid infection.

Necropsy (fifteen and one-half hours after death).—The lower portion of the ileum was extensively ulcerated, some of the ulcers having hard brown edges, others extending almost through the peritoneal coat. This part of the intestine was very dark in color, and there was a layer of thick mucus and blood in the region of the ulcers. There were two slight adhesions with extravasation of blood in the outer surface of the ulcerated portion. The spleen was enlarged and softened. Kidneys slightly enlarged, with rounded border. Liver pale. Heart normal.

DYSENTERY.

CASE 1.

J. H.; age, 57 years; nativity, Maryland; admitted to U. S. Marine Hospital, Baltimore, Md., December 1; died December 11, 1891.

History.—Had been sick for five weeks with pain in abdomen, diarrhœa, bloody stools, tenesmus, and has an irresistible desire to evacuate bowels every half hour day and night. Passes about 30 cubic centimeters bloody mucus at each stool. Has no fever. Treatment was active, embracing, in the course of the disease, the exhibition of oil of turpentine, opium, ipecac, belladonna, bismuth, camphor, etc., both per os and per rectum, and a supporting treatment of brandy, wine, boiled milk, beef essence, etc.; yet the patient steadily grew weaker and died from exhaustion December 11, 1891.

Necropsy (December 12).—Rigor mortis. Body much emaciated. Brain not examined. Heart pale but normal. Old pleuritic adhesions of both lungs. Liver enlarged and paler than usual. Spleen large, darker and softer than usual. Kidneys normal. Stomach congested and stained with bile. Intestines distended with flatus; small gut congested throughout; large intestine highly inflamed, nearly denuded of epithelium, with numerous ulcerated patches scattered over its entire length.

CASE 2.

Perforation of the colon; peritonitis.

H. G.; aged 25 years; nativity, Missouri; admitted to U. S. Marine Hospital, Memphis, Tenn., September 17, 1891; died September 19, 1891.

History.—Originally admitted September 8, 1891, for intermittent fever, but soon developed symptoms of dysentery; severe abdominal pain; frequent bloody stools which later became very offensive; tenesmus and great prostration. Treatment by salol, bismuth, and opiates was without effect; enemata of weak mercuric chloride solution and nitrate of silver were successively tried, but without result.

Necropsy.—The colon was the seat of numerous and deep gangrenous ulcers; large areas of the mucous membrane were covered by diphtheritic deposit; at junction of sigmoid flexure and rectum a large perforation existed; the omentum was adherent to the colon at this point and also to the cæcum; the abdomen contained a moderate quantity of foul pus and the peritoneum exhibited the usual appearance of recent inflammation. Other organs normal.

CASE 3.

R. C.; age, 47 years; nativity, Texas; was admitted to the U. S. Marine Hospital, New Orleans, La., March 14, 1892; died March 17, 1892.

History.—Patient was taken sick suddenly, eight days prior to admission, with pains in stomach, vomiting, chill, and frequent bowel movements, which were passed with considerable straining. The alvine dejections were variable in amount, usually very small, containing blood, pus, and mucus. The evacuations had a foul, offensive odor, and often contained shreds and patches of tissue, which were recognized as necrotic particles of mucous membrane. Patient had lost strength very rapidly. On admission, he was too feeble to walk, and looked worn and emaciated. Tongue thickly furred. Appetite gone. During the eight days of his sickness previous to admission to hospital he had received no medical attention, nor had he taken any medicine, save a dose of castor oil a few days previously. He stated that he had had gonorrhœa five or six times; sores on his penis also some five or six times; suppurating inflammation of the lymphatic glands of groin once. Temperature on admission was 38.2° C., from which point it steadily fell to subnormal as the patient passed into the algid stage of dysentery.

Although treatment effected an alleviation of symptoms, patient did not rally from the exhausted condition which he was in on admission. The pulse became rapid, feeble, and small; respiration shallow; skin dry and parched; conjunctiva and lips bloodless; extremities cold; temperature in axilla subnormal; features shriveled and sunken; tongue heavily furred; breath offensive; and great muscular weakness. Consciousness remained until near the last; patient died quietly without convulsion. Tincture of opium was given for the relief of pain, sherry wine as a stimulant, and milk in small amounts, frequently repeated, was the only nourishment that patient could be induced to accept. But the main treatment depended on was a plan of therapeusis which has been used with gratifying success in cases of dysentery in this hospital during the past few months. It consists in copious flushings of the lower bowel with large antiseptic or weak astringent enemas. The injections are given warm, at a temperature of about 38° to 39° C., through a soft gum catheter passed its full length, 14 inches, into the bowel, the clyster being delivered from a fountain syringe held from 3 to 4 feet above the body of the patient, who lies on right side with hips elevated and head low. 2,500 c. c. of a 10 per cent. solution of peroxide of hydrogen in boiled water was first used; but as the blood continued in the passages a 2 and finally a 4 per cent solution of alum was employed. The enemas were not well retained, but their object in thoroughly washing out the lower bowel and cleansing the diseased mucous membrane was accomplished, and after the first

injection of the alum solution no more blood appeared in the evacuations. The injection escaped alongside of the catheter at the same time it was being forced in. At first much offensive matter, having a foul, gangrenous odor, was flushed out. The operation was continued until the return flow was as clear as the solution used. The injections always afforded a certain amount of relief; but temporary only. He declared it made him feel better. The bowel movements ceased for a few hours following each enema, which were given twice daily, and the relief as far as tenesmus was concerned, was immediate and lasting.

Necropsy (eighteen hours after death).—Body that of a much emaciated negro. Post-mortem lividity not apparent. *Rigor mortis* well developed. Pupils dilated. The whole lower bowel from the head of the colon to the anus was in a high state of inflammation, with many irregular patches of ulceration; and in places gangrenous and soft, so that the finger, with very little pressure, could be pushed directly through the coats of the bowel. The patches of ulceration were deep, irregular, variable in size and position, forming a continuous chain extending throughout the entire extent of the large intestine. The mucous membrane was red, injected, and covered with muco-purulent exudate. The small intestines were to all appearances quite normal, the disease being quite sharply limited by the ilio-cæcal valve. The peritoneum was dry and avascular, but showed no signs of inflammation. There was no perforation. The thoracic and all the other abdominal organs were normal in appearance.

INTERMITTENT FEVER.

Case 1.

Congestive chill.

J. S.; age and nativity, unknown; was admitted to the U. S. Marine Hospital, St. Louis, Mo., August 15, 1891, at 6 p. m.; died August 16. He was unconscious, and remained so till he died. When admitted, his temperature was 38⅘° C., and continued to rise till he died, except when he was put in a bath, the temperature of which was 36° C., and reduced to 33° C. This reduced his temperature from 41.2° to 39°. As soon as he was removed from the bath the temperature began again to rise, and was 42° at the time of his death.

Necropsy.—All internal organs congested; spleen enlarged and very soft. Except for congestion, internal organs normal.

Case 2.

Pernicious.

L. H.; aged 47 years; nativity, New York; admitted to the marine ward of the German Hospital, Philadelphia, Pa., October 26, 1891; died October 27, 1891.

History.—Came into hospital about 12 o'clock with symptoms of a malarial attack. Had just come from Savannah. At 2 o'clock, same day, he became comatose and collapsed. Continued in this condition until 12 o'clock midnight, when he died.

Necropsy.—Made by the coroner's physician. No lesions of any kind could be found. Every organ of the body was examined excepting the spinal cord. The brain was normal. Probable cause of death was pernicious malaria.

Case 3.

H. R.; aged 32 years; nativity, Norway; admitted to the marine ward, St. Mary's Infirmary, Galveston, Tex., August 27, 1891; died August 28, 1891.

History.—The patient was brought to the hospital in a comatose condition at about 5 o'clock in the afternoon. No sufficient account was given by those who brought him

of the manner in which he was taken sick or of the duration of his sickness. His temperature at that time was 38° C., and a few hours later fell to normal. The skin and eyes were deeply jaundiced. When seen at 8:30 p. m. he was comatose, with widely-dilated pupils. The heart's action was good, and respiration was fairly deep though jerking. No replies nor sign of intelligence could be elicited from the patient by any effort. There was no response to moderate stimulation of the skin, but the prick of the hypodermatic needle and the hot mustard foot bath provoked resistance. Strychnine and quinine were injected beneath the skin, as well as a small quantity of whiskey. The following morning his condition was unchanged. The hypodermatic injection of strychnine and quinine was repeated and the patient was forced to swallow some calomel and bicarbonate of sodium. The urine was drawn with the catheter, both at night and in the morning, and was examined with the following result: Sp. g., 1.014; quantity small; acid in reaction; clear, and of a color to suggest both bile and blood pigments; albumen present before and after filtration. The fever returned in the afternoon, the temperature rising to nearly 41° C., and the patient died soon after. It was learned later that he had been sick with malarial fever for about twenty days and had refused to seek a physician's services.

Necropsy (sixteen hours after death).—The hue of icterus was present on all the external surfaces. *Rigor mortis* well marked. General nourishment fair. Pupils natural in size. The heart was pale and flabby. A small patch of pericardial thickening was found upon the surface of the right ventricle. The endocardium of the left ventricle was covered with a deposit of lymph and there were small vegetations on the borders of the cusps of the mitral valve. The cusps of the right auriculo-ventricular valve were thickened and red. All the valves seemed to be competent. Extensive adhesions were present in both pleural cavities, the left one being more affected than the right. The lungs were healthy in appearance. The liver was dark in color and large and its tissue was very friable. The gall bladder was moderately filled. The gross appearance of the kidneys was normal. The spleen was of about four times the normal size, and its tissue was of a color and consistency like tar.

Case 4.

Colitis.

R. H. S.; age, 57 years; nativity, Maryland; admitted to the U. S. Marine Hospital, Chelsea, Mass., September 13, 1891, with the diagnosis of intermittent fever; died September 19, 1891.

History.—Patient stated that he had been living most of his time south of latitude 4° north, on the Atlantic coast. He was unable to walk; temperature in morning 37° C., and afternoon ranged from 39° to 40° C. Patient was very anæmic and presented marked malarial cachexia. After repeated doses of quinia sulphate (0.66 gram t. i. d.), temperature became normal, and patient seemed improved. Then quinia sulphate was given only in tonic doses, combined with iron. On morning of September 16 dysentery set in, which was treated with opium and gallic acid. On the day following, patient became semicomatose and remained in this state up to the time of his death. Symptoms of peritonitis set in two days before death.

Necropsy (seventeen hours after death).—*Rigor mortis* well marked. Body emaciated. Lungs normal, with the exception that there was marked hypostatic congestion in both lungs. Weight of right lung, 750 grams; weight of left lung, 924 grams. Heart normal. Weight of heart, 210 grams; valves normal. Liver normal, except anæmic. Weight of liver, 1,620 grams. Gall bladder very large; weight, 75 grams; contained 150 cubic centimeters of bile and coffee-ground matter. Spleen very large; weight, 485 grams. Both kidneys very large. Weight of right kidney, 167 grams; weight of left,

185 grams. Peritoneum showed signs of recent inflammation, clouded and slightly thickened. Transverse and descending colon, sigmoid flexure, and rectum showed signs of inflammation. Thickening in rectum and sigmoid flexure very marked.

Case 5.

Congestive chill.

H. H.; age, 30 years; nativity, Norway; admitted to the U. S. Marine Hospital, port of Boston, Mass., November 4, 1891; died November 6, 1891.

Previous history unknown, except the fact that the patient had lived in malarial districts for an uncertain period of time. Symptoms on admission: Coma, icterus of skin and conjunctivæ; pupils insensible to light; pulse, 165; temperature, 39° C; extreme depression; respiration quick and shallow; incontinence of urine and fæces; urine scanty and highly colored; percussion revealed enlarged liver; extremities cold; deglutition impossible. On admission: Heat applied; urine drawn off; bowels relieved by 30 grams of sulphate of magnesium; hypodermic injections of sulphate of strychnine. Tincture of digitalis, nitroglycerine, and whisky were administered during the night as required.

November 5, 1891.—Condition of patient greatly improved; able to swallow milk and stimulants; talked more or less coherently; pulse stronger (100); temperature, 37¼° C.; respiration, 28, also good. ℞. Digitalis tinct. 6 c. c., nux vomica tinct. 6 c. c., water to 50 c. c. M. Sig. 5 c. c. t. i. d. 8 p. m.: Temperature, 40.8° C.; respiration, 38; pulse, 180. General depression; constant stimulation was maintained. Temperature reduced to 39° C. by means of cold pack. About 12 p. m., condition improved; about 2 a. m., general collapse. As a *dernier ressort* artificial respiration was tried without success.

Necropsy (held seven hours after death).—Body somewhat emaciated. *Rigor mortis* present. Heart: Weight, 350 grams; left ventricle slightly hypertrophied; pulmonic valves insufficient; numerous large and firm ante-mortem clots were present, extending into the aorta and pulmonary artery. Lungs: Left lung normal in appearance; weight, 410 grams; left pleural cavity normal; right lung greatly congested; weight, 570 grams; right pleural cavity completely obliterated. Liver: Dark and opaque in appearance; weight, 2,360 grams. Gall bladder: Distended; length, 7 centimeters; contained 75 cubic centimeters of bile. Spleen: Congested; tissue friable; weight, 550 grams. Left kidney: Somewhat congested; otherwise normal; weight, 410 grams. Right kidney: Somewhat congested; otherwise normal; weight, 570 grams.

MALARIAL FEVER.

Case 1.

Remittent.

J. B.; age, 30 years; nativity, Pennsylvania; was admitted to the marine ward, St. Vincent's Hospital, Norfolk, Va., June 29, 1891; died July 6, 1891.

History.—Upon admission his pulse was full and strong with 110 beats per minute, his temperature 39.7° C., his skin dry and hot, and tongue covered with a thick brown coating. He complained of headache, backache, and great weakness. He had been sick about five days, being first seized with a chill. He had not been able to leave the vessel and had received no treatment. While in the hospital his condition did not improve, the temperature did not fall below 39° C., except temporarily under drugs, and the pulse grew weaker and more rapid until his death.

Necropsy (twenty-four hours after death).—Body fairly nourished. Slight *rigor mortis.* Pleura healthy, containing about 100 c. c. of fluid; no adhesions. Both lungs congested with a condition almost of hepatization in the bases. A few tubercular spots in the apex

of right lung. Heart distended with blood, but not unsound; stomach empty, its lining very much reddened. The liver weighed 4,300 grams, and was deeply congested, but its structure did not appear to be altered. The spleen weighed 2,100 grams. Other organs were normal. The membranes of the brain were in a congested state, and the attachment of the pia to the brain was very close. The brain substance seemed sound, nor was there much fluid in the subarachnoid space or brain ventricles.

BERIBERI WITH PERICARDITIS AND HEPATITIS.

W. O.; aged 24 years; nativity, Norway; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., November 17, 1890, and was discharged April 14, 1891, improved. He was readmitted June 18, 1891; died July 11, 1891.

History.—On admission in November, 1890, patient stated that his legs became swollen three weeks before, and after swelling commenced to disappear he had pain, a sensation of burning, and tingling. Ten days before first admission he was taken with a pain in his stomach, persistent nausea and vomiting; vomited blood several times. Condition when admitted: Vomited a great deal; unable to retain food; tongue coated with a thick yellow fur. Legs very sore and stiff, being unable to support his weight. Temperature normal. When readmitted June 18, 1891, he stated that he had been sick four days and had been taken acutely on the morning of the 14th when he awoke with great oppression over his chest, a dry cough, and dyspnœa. On deep breathing he experiences great pain in both sides of chest. Has had headache. Bowels regular. Appetite poor and he sleeps badly.

Physical examination.—Palpitation and irregular action of the heart; dyspnœa, and great pericardial oppression; muscles soft; no anæsthesia; paralysis of extensor muscles of feet; tongue coated; bowels constipated; temperature, 39°. Patient improved until morning of June 24 when a complication of pericarditis was discovered; area of heart dullness was increased and a friction murmur was heard over base. Temperature, 38°. Pulse fuller and more regular; respiration much improved; some tympanites.

June 25.—A. m.: Temperature, 37.4°; respiration, 22; pulse, 96; friction murmur still present. Swelling on left side of abdomen probably due to enlargement of spleen. Condition improved.

June 27.—A. m.: Temperature, 38°. Very little dyspnœa; friction murmur very much diminished; area heart dullness about the same.

June 29.—A. m.: Temperature, 37.6°; pulse, irregular, but stronger than yesterday; apex beat still perceptible. Churning movement heard over base of heart. Spleen still enlarged.

July 8.—Still rough grating sounds heard over the heart, but intensity diminished very much. During last few days some sibilant and sonorous râles were heard over left lung. Respiratory sound over right lung slightly roughened, but no râles heard. Sensation normal over entire body. No paralysis. A weakness of metatarsal joints which prevents him from rising on his toes. No pain or swelling over spleen, but the whole abdomen is tympanitic. Pulse 65, irregular, compressible, and hard to count at the wrist. Apex beat of heart is quite well marked even on inspection. Cough still troublesome; dyspnœa has improved.

July 9.—Cough continues; no blood expectorated; pain in chest on deep inspiration; pulse 85, irregular; some œdema of ankles.

July 10.—5:30 a. m.: He became very weak; covered with a cold, clammy perspiration; great dyspnœa; many râles heard over lungs, particularly the left. 9 a. m.: Continues very weak; perspiration continues; râles still heard over both lungs; dyspnœa improved; slept from 6 a. m. 9:30 a. m.: Respiration labored; pulse feeble; hypostatic congestion; hands and anterior portion of body bluish-mottled cast; tongue heavily

coated; epithelial accumulation of pale yellow color. Palpation shows liver enormously enlarged; left lobe very tender to touch and extending to nearly the left hypochondrium. Patient suffering from acute inflammation of liver with (probably) perihepatitis. 6 p. m.: Breathing still labored; pulse very weak; had about nine stools. Temperature normal.

July 11.—9 a. m.: Patient about the same as yesterday. Bowels slightly moved. Patient died at 12:50 p. m.

Necropsy (twenty-three hours after death).—*Rigor mortis* well marked. Body well nourished. Hypostatic congestion. Abdomen distended. Legs and scrotum œdematous. Pericardium very much thickened. Cavity contained 700 c. c. thick, greenish fluid, with flakes of coagulated lymph. Inner side coated with a large plastic exudate. Heart adherent to pericardium and outside covered with villous-like projections. Valves competent. Lungs: Left collapsed and adherent to chest wall; right partially collapsed and adherent to chest wall. Both were adherent to diaphragm. Peritoneal cavity contained 1,000 c. c. of fluid. Liver about twice normal size and nutmeg in appearance. Spleen very much enlarged. Both kidneys were enlarged and the naked-eye appearances were normal.

PYÆMIA.

G. J. (colored); age, 32 years; nativity, Alabama; permit No. 281; admitted to the U. S. Marine Hospital, Cairo, Ill., May 31, 1892; died June 25, 1892.

History.—Patient had an abrasion on the back of the left hand followed by inflamed glands in the axilla. After incising the latter, facial erysipelas ensued and spread over the entire trunk. Pyæmia now developed, large multiple abscesses forming in the subcutaneous tissue. These were opened and irrigated daily with bichloride solution. Alcohol, iron, and quinine were given in full doses.

Necropsy (three hours after death).—*Rigor mortis* marked. Pupils dilated. General nourishment poor. Heart weighed 299 grams; normal. Pericardial sac contained about 40 c. c. serous fluid. Vessels, nares, larynx, and trachea, normal. Weight of left lung 238 grams; normal. Weight of right lung 285 grams; normal but retracted. No adhesions or fluid in pleural cavity. Glands in peritoneum enlarged and injected. Alimentary tract normal, except at ileo-cæcal valve, where several scars of old ulcers were found. Liver weighed 1,539 grams; anæmic. Gall bladder small. Pancreas weighed 57 grams; normal. Left kidney weighed 199 grams; right the same; both normal. Other urinary organs normal. Spleen weighed 325 grams; normal. Brain and cord not examined.

SECONDARY SYPHILIS.

Case 1.

With degeneration of the arteries and probable embolism in the brain.

W. H. W.; aged 43 years; nativity, Kentucky; admitted to the U. S. Marine Hospital, New Orleans, La., December 7, 1891; died at 1:30 p. m., December 23, 1891.

History.—W. was first admitted to this hospital January 14, 1891, when he was brought from a steamship in the ambulance in a helpless condition. He was cook on the boat and while at work had a swimming in the head and fell. The notes at the time state: "He shows an indisposition to talk or move and curls up in bed when left to himself. He appears somewhat dazed, like a person who has been in an epileptic fit. Heart beats are slow and irregular. Temperature a little subnormal. * * * Left hand is entirely powerless, and also the arm. He has passed fæces involuntarily. Seems to have some power of motion in both legs. Pupils normal." Patient gradually recovered the full use of all his extremities. All brain symptoms disappeared and he was discharged, recovered, on February 15, 1891. Since then he has been in hospital four times with the

diagnoses of malarial fever intermittent, malarial cachexia, anæmia, secondary syphilis, and hemiplegia. Patient always improved under a treatment including quinine and antisyphilitic remedies and, although he denied ever having had syphilis, nevertheless his tolerance to potassium iodide and the bichloride of mercury and the signal service which these drugs seemed to render him made his statement doubtful, and positive signs of syphilis were noted since his last admission.

The last time he was admitted to hospital, December 8, 1891, he complained of weakness, being hardly able to stand. No pain. About 2 o'clock p. m. of the following day he was taken sick at the stomach; tried to vomit; fell over; did not loose consciousness, but lost all power in left arm.

Examination on December 11 disclosed loss of power of the left arm. No wasting evident. No trophic changes. Sensation, both tactile and temperatum sense, normal. The entire left upper extremity was in a spastic state, all the joints flexed, reflexis markedly increased, and occasional clonic movements of the arm and forearm were noted on several occasions. There was an evident crossed paralysis, the right side of the face being affected. This paresis of the face gradually and rapidly cleared up so that in a few days no traces of it remained, although he never regained complete control of the muscles around the right corner of his mouth. Left pupil slightly larger than right. The pupils do not respond to light. Patient is stupid.

The heart beats regularly—no murmur; pulse full and easily compressible. Patient's paralysis a second time gradually disappeared, but he became unconscious, at times delirious; steadily failed; bed sores appeared on the right heel and over sacrum, and he died comatose. The urine contained albumen. Casts were not noted.

Necropsy (three hours after death).—Body that of an emaciated male mulatto, considerably past middle age. Post mortem lividity not evident. *Rigor mortis* not present. Pupils dilated. Pericardial sac normal. The heart was of normal size, the muscle firm and hard, and the cavities of the ventricles so contracted that they would not admit an index finger. Concentric hypertrophy was immediately suspected, but after soaking twenty-four hours the muscle became softer and more flabby, and the cavities of normal capacity, proving that the heart stopped in systole. The arch of the aorta showed many patches of atheroma, thick fibroid knots, and scaly calcareous plates. The aortic valves showed comparatively few changes, only a moderate fibroid infiltration, which did not interfere with their mechanical functions. The orifice to the left coronary artery was large and patulous, but no opening could be found for the right coronary, which, after careful examination, was discovered to be totally effaced and blocked by a mass of fibroid tissue growing directly over the mouth of the vessel. In tracing this coronary up it was found to end in a blind pouch imbedded in this same mass of fibrous tissue. It was not thrombosed, and doubtless anastomosis was so complete with the other coronary that perfect circulation was established. The mitral valves contained but a few patches of atheroma. The rest of the heart was normal. There were a few adhesions at the apex of the left lung. The right lung was rather firmly adherent at the apex, and contained the scars of an old tuberculosis. The liver was of nutmeg appearance, and proved to be the seat of fatty infiltration. The gall bladder and ducts were normal and patulous. The kidneys were contracted; capsules very adherent; surfaces granular; the cortex thinned, weight of each, 110 grams. The scalp: Calvarium and membranes of the brain were normal, and nothing abnormal could be seen throughout the entire encephalic mass.

Case 2.

Gummata and softening of the brain.

W. P.; aged 50 years; nativity, New York; admitted to Marine Hospital, Stapleton, N. Y., July 19, 1890; died March 20, 1892.

History.—Patient was transferred to this hospital from Oswego, N. Y. When admitted to hospital patient stated that about nine months before he retired at night feeling well.

About midnight he arose to micturate, and while walking across the room suddenly fell; with great difficulty he regained his feet. Next morning he was unable to leave his bed, but was not suffering any pain. Since that time the whole of right side of body has been paralyzed. At first one side of his tongue was also paralyzed, but since then he has regained its use. He states that ten years ago he had a sore on his penis followed soon afterward by a bubo. Physical examination: Paralysis of right side of face; some ataxic aphasia; otherwise no apparent impairment of mental faculties. Heart and lungs normal. Treatment failed to produce any amelioration of symptoms. About a week prior to patient's death he had a peculiar woe-begone expression with a loss of memory, remembering events for only a few hours, but with no symptoms of either aphasia or aphemia. Death took place suddenly at 4:45 p. m., March 20, 1892, after apoplectic stroke.

Necropsy (eighteen hours after death).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. The calvarium being removed, the following conditions were revealed: Meninges and surface of brain slightly congested. Left hemisphere larger than right and showing a slightly greater degree of congestion. Successive lateral and parallel planes of incision were made through brain substance. The ventricles contained an abnormally great amount of fluid. The white cerebral substance composing upper border of posterior cornu of left ventricle was broken down, soft in consistency, and yellowish in hue. Choroid plexus was congested and œdematous. The posterior portion dipping into posterior cornu, degenerated into small sacs containing a white gelatinous substance. From the nest of broken-down tissue situated near posterior surface of left occipital lobe was peeled a hard well-defined tumor 7 by 9 centimeters. A small hemorrhagic focus was found in the outer third of the nucleus lenticularis, nearly opposite the genu of the internal capsule, due to a rupture of one or more of the lenticulo-striate filaments of the Sylvian artery. Another tumor was removed from near the border of the anterior cornu of left lateral ventricle. This tumor was slightly larger than the one removed from the posterior cornu, oval in shape, and about 8 by 10 centimeters in circumference. The naked-eye appearance resembled gumma, but in consistence it was unusually hard. Remaining organs not examined.

Case 3.

J. B.; aged 44 years; nativity, Canada; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., November 10, 1891; died January 12, 1892.

History.—Patient stated that he had a sore on his penis, probably chancre, of which he was cured. He now had sore throat, an ulcer in the roof of his mouth and on the side of his tongue, and pains in his right arm. Between the nates there was an abrasion which caused him a good deal of pain. While in the hospital he suffered frequently from pains in his stomach, nausea, constipation, headache, and vertigo. The headache was almost continual, treatment relieving it only temporarily. Later a mixed eruption appeared over the upper and lower extremities and on the back. He was put on specific treatment, and did well up to two weeks of his death, when the nausea became worse, and he was unable to keep food or medicine on his stomach. Three or four days before death the pains became so great that morphine was ordered for its relief. Although only one dose of this was taken by the patient, it was noticed the following morning that he was stupefied, his pupils contracted, the respiration slow and shallow, with stertor, and the pulse quick and feeble. He improved during the day, under stimulants, but by night his condition became worse, his respiration falling to 8 per minute, and his pulse being 120 per minute. The following morning he was again better, but gradually failed during the day and died at 9 p. m.

Necropsy (seventeen hours after death).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Rupial sore at the outer border of the nates on the right side; another rupial sore at the end of the spine; typical maculæ on

the arms and legs. Enlarged epitrochlear gland on the right arm. Ante mortem clot in the left side of the heart; aortic valves competent; mitral and tricuspid valves thickened and containing minute calcifications. Left lung congested and hyperæmic; upper lobe of right lung congested and hyperæmic, lower lobe slightly congested. Liver enlarged, fatty, somewhat friable. A large hæmorrhagic infarct was found near the apex in one of the pyramids of the right kidney; another was also found directly at the apex in a pyramid of the same kidney; the cortical substance of the left kidney was thinned. Spleen congested, somewhat pultaceous. Dura mater a little thickened, and the vessels were congested; the cortical substance of the brain was congested; the choroid plexus was pale; there was no lesion of any kind found in the brain. There was a softened and slightly disintegrated condition of the upper segment of the sternum.

CASE 4.

Multiple gummata of the brain.

G. L.; aged 25; nativity, Germany; admitted to the Marine Hospital, Stapleton, N. Y., January 14, 1891; died April 7, 1892.

History.—Patient stated that five months previous to his admission to the hospital a swelling appeared behind his right ear. This swelling was very painful. A short time afterwards the right side of his neck began to swell, an abcess formed under his chin, and pus was discharged. More or less pus had been discharged from the abcess ever since. His lower jaw pained him very much and it was especially painful for him to open his mouth wide. He denied all history of syphilis, but stated that he had had gonorrhœa five years before. Upon physical examination the inner surface of the inferior maxilla was found to be necrotic to a considerable extent. February 5, 1891, the patient was taken to the operating room, chloroform administered, and a piece of necrosed bone removed from the inferior maxilla. The wound healed very slowly, and a fistula was left into the buccal cavity from which saliva was constantly discharged. The patient continued to have severe pain in the jaw and facial neuralgia; so on April 1, 1891, he was again taken to the operating room, anesthetized, and a portion of dead bone of the lower jaw on each side of the median line removed. In the course of the next two months the wound healed completely and the patient had no further trouble in his jaw, but he began to suffer from vertigo, headache, and insomnia. His face became paralyzed on the right side. He was put upon antisyphilitic treatment, although he still denied that he had ever had an ulcer on his penis. On October 22, 1891, however, he acknowledged that he had had a chancre. The patient grew worse in spite of this treatment, and his mind became impaired. On January 28, 1892, he was transferred to ward A. He was then suffering from general muscular paresis, unsteady gait, impaired intelligence, and facial paralysis. March 26, 1892, he had an epileptoid convulsion, which lasted a quarter of an hour. This was followed by right hemiplegia, incontinence of urine and fæces, inability to swallow, coma, and finally death at 8:40 p. m., April 7, 1892.

Necropsy (*fourteen hours after death*).—Body fairly well nourished. Hypostatic congestion posteriorly. *Rigor mortis* well marked. Brain greatly congested. Pia mater thickened and congested. The cortex of the brain was unusually firm. Upon section the brain substance was filled with puncta hemorrhagica. Nine gummata were found in the brain, three in the right hemisphere, five in the left hemisphere, and one extended into both hemispheres. The first gumma was of an oval shape, 4 centimeters in diameter. It was situated on the border of the longitudinal fissure just beyond the upper external anterior extremity of the corpus callosum, on the right side. The second gumma, slightly larger than the first, was also found at the anterior border of the corpus callosum in the bottom of the longitudinal fissure, connecting both anterior lobes. The five gummata found in the left hemisphere were situated between the meninges and the cerebral substance at the base of the brain. They were oblong in shape and about

3 centimeters in circumference. In the right hemisphere a gumma 3 centimeters in circumference was found in the anterior cornu of the lateral ventricle. Another, the same size, was found at the base of the lateral ventricle near the middle commissure. The choroid plexus was intensly congested and of a dark red color. The caudate and lenticular nuclei on the left side were in a state of advanced softening. The softening also involved the upper part of the optic thalamus. Nothing abnormal was found in the cerebellum, pons Varolii, or medulla oblongata. Other organs not examined.

Case 5.

Abscess of the brain.

G. O.; aged 27 years; nativity, Norway; was admitted to the marine ward, St. Vincent's Hospital, Norfolk, Va., May 18, 1891; died August 9, 1891.

History. He had been treated on two previous occasions at Norfolk for syphilis and had also been in other marine hospitals. While on his vessel he suddenly became paralyzed in his left side and while in that condition was admitted to hospital. The suddenness of his attack and his previous history led to the belief that a cerebral hemorrhage had occurred. Under the influence of large doses of iodine the paralysis gradually passed away, until he was able to walk about slowly and use the left hand somewhat, but it was noticed that intellection did not improve and there was great loss of memory and some aphasia. About August 1 he had a slight chill and then a high fever with much headache and a return of the paralysis; his appetite failed, his pulse gradually grew weak, and he died of exhaustion August 9.

Necropsy (twenty hours after death).—Body poorly nourished and well marked *rigor mortis.* Skull opened and dura mater found adherent to inner plate of skull in many places. Arachnoid space contained a little clear fluid. The pia mater was deeply injected and adherent quite closely to the brain on the left side, but on the right not so. In the middle lobe of the right hemisphere there was a poorly defined cavity containing pus and broken-down brain matter, involving probably one-third of the whole lobe, but not reaching to the lateral ventricles. The rest of the brain showed no signs of disease. With the exception of an enlarged heart the thoracic organs were sound. The liver was enlarged, weighing 3,050 grams, very pale, almost of a waxy consistency. The mesenteric glands were enlarged and indurated in many instances. The kidneys contracted and hardened. The spleen weighed 750 grams. No marked evidences of disease were observed in any other abdominal organs.

Case 6.

Gummata of the liver.

E. R.; aged 37 years; born in England; admitted to the St. Vincent's Hospital (marine ward), Portland, Oregon, June 6, 1891; died August 3, 1891.

History.—Patient upon admission presented the following symptoms: Subjective; occasional dull pain over epigastrium, anorexia, malaise, and other signs of disturbance of the functions of the digestive organs Objective; an enlargement was apparent over the region of the stomach, smooth and regular in outline. Palpation and percussion revealed this to be the enlarged left lobe of liver, which extended to the margin of the left ribs (seventh and eighth). There was no tenderness on pressure, no œdema, no icterus, tongue slightly coated; stools semisolid, two or three during the twenty-four hours, light gray in color. Morning temperature, normal; evening, ranged from 37° to 40° C. Condition remained much the same for about six weeks. On July 20 he had a severe rigor followed by a rise in temperature to 41.5° in the evening, and subsequently till his death the rigors continued at irregular intervals.

The patient's history, as given by himself, was plainly indicative of constitutional syphilis of ten or more years' duration and was confirmed by the many indelible cicatrices on his legs and body. He had also been a liberal user of intoxicants for many years. Said he first noticed "swelling over stomach" about two months before admission to the hospital.

He was put on the combined mercurial and iodide treatment which several times had to be modified because of weakness of the stomach. Treatment then became tentative and supporting. He died on the 3d day of August from acute pyæmia.

Necropsy (twelve hours post-mortem).—Rigor mortis slight. Body of a man of apparently 60 years of age and greatly emaciated. Heart floating in 300 cubic centimeters of pericardial fluid; valves competent; large ante mortem clots in right auricle and left ventricle, extending into vessels. The heart was in diastole. Lungs: Gross, appearances normal. Liver: Enormously enlarged in all its lobes; surface studded with a large number of nodular masses of a yellowish color ranging in size from 1 millimeter to 10 centimeters in diameter, and of the consistency of cartilage. One of the larger ones showed upon cross section degeneration at the center of the mass, with formation of a purulent fluid. Section of the liver through various lobes discovered numerous nodules throughout. The long oblique diameter across the liver from the border of the right lobe to the border of the left measured 50 centimeters; through the right lobe anteroposteriorly, 15 centimeters; weight, 330 grams.

ALCOHOLISM WITH FATTY LIVER.

P. C.; aged 24 years; nativity, Ireland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., July 2, 1891; died July 6, 1891.

History.—The patient stated that he had been sick about three weeks. His sickness began with a chill followed by fever. He had a severe pain in his chest, a bad cough, and he expectorated blood. He sweated profusely at night and he often suffered from dyspnœa. He had been confined to his bed and had only been able to leave it in order to come to the hospital. When he was admitted he had no fever or cough or pain in his chest, but the most marked symptom that he presented was a trembling and shaking of his whole body, especially if anyone noticed him. This trembling was so great that it was almost impossible to make a physical examination. He at first denied having drank any alcoholics recently, but upon further questioning he admitted that he had taken several drinks the day he was admitted. Physical examination revealed no dullness on percussion over lungs, and no râles heard over either lung on auscultation. No abnormal murmur heard over the heart. Pulse rapid but weak. Liver and spleen were not enlarged. The respiratory movements were hurried. The patient gradually improved for the first three days that he was in the hospital. His respiratory movements were more natural and his pulse slower and stronger. His trembling continued but was not so great as before. On the evening of the 5th instant he grew worse. He had violent delirium and he was so restless that the humane restraint had to be used. These symptoms continued until the next afternoon when he suddenly died.

Necropsy (nineteen hours after death).—Rigor mortis moderate. Body well nourished. Lungs: The left was bound by old adhesions to chest wall posteriorly. Lower lobe congested and slightly œdematous. The right lower lobe congested and slightly œdematous. Pericardial cavity contained about 10 c. c. of fluid. The heart was normal; the right cavity contained a small ante mortem clot. The liver was very fatty. Both kidneys were apparently normal. The stomach was normal.

OSTEO-ARTHRITIS.

Case I.

T. McN.; aged 25 years; nativity, Ireland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., July 23, 1885; died August 14, 1891.

History.—Six months before admission patient had an attack of inflammation of the right knee, which he attributed to an injury; after that time his ankles, knees, wrists, and shoulders became distorted, and at times painful. History of rheumatic diathesis in his family. When admitted to the hospital his joints were anchylosed, with thighs flexed on abdomen and legs on thighs; the feet were œdematous and turned outward. There was slight movement in upper extremity at the elbow and wrists. He was utterly helpless, and remained a pitiable, bed-ridden creature during the six years he lived in the hospital. All treatment was without effect.

Necropsy.—Hypostatic congestion. *Rigor mortis* well marked. Thighs and legs emaciated, distorted, and anchylosed; feet œdematous, turned outward; ankle joint anchylosed. Thighs flexed on abdomen, legs on thighs, knee joints standing out prominently. Fingers contracted and hand misshapen; muscles of left hand atrophied. Right hand œdematous. From an incision in any portion of body serous fluid poured out. Both pleural cavities filled with fluid. Lungs almost entirely collapsed; on section fluid exuded in great quantity. A few adhesions to chest wall over right lung. Pericardium thickened and adherent to posterior portion of heart. Heart large, pale, and very flabby. Ante mortem clot in left side. Abdominal cavity contained a great quantity of fluid. Liver large, very hard and fatty. Spleen congested. Kidneys: Capsules adherent, small, fatty; cortical portion thin; Malpighian pyramids indistinct. Joints anchylosed and required great force to break down adhesions. Upon cutting into joints the anchylosis was found to be fibrous; the ends of the bones were denuded of cartilage, cancellous, and very soft. The patellæ were ossified to the outer condyles of femurs, and as firmly adherent as if one bone. Capsular and other ligaments were very much thickened. The flexed condition of thighs and legs was due to contraction of the tendons of flexor muscles.

Case 2.

Suppurative osteo-arthritis of hip joint and lumbo-sacral articulation.

N. W.; age, 43 years; nativity, Argentine Republic; admitted to Marine Hospital, Wilmington, N. C., January 17, 1891; died September 11, 1891.

History.—He was transferred from Newbern, N. C., to Wilmington as a patient of the service, with a history of chronic rheumatism. He was admitted with this diagnosis, but arthritic trouble was suspected from the position of the right lower limb and persistent pain in the vicinity of the hip joint and knee. The diagnosis was changed to suppurative arthritis, on April 28, 1891, on which date excision of the head of the femur was done. The head of the bone and acetabulum were found diseased, and removed. Several large sinuses connected with the joint were opened and packed with iodoform gauze. The limb was placed on a long splint with a space connected by a bar opposite the joint, for drainage. The case improved for a short time, then grew worse, and the large quantity of pus discharged made it evident that there was implication of the os innominatum or lower part of the vertebral column. He gradually grew worse, and died September 11, 1891.

Necropsy (*six hours after death*).—Body much emaciated; open wound at right hip joint from operation of excision of head of femur; right leg was œdematous. Lungs: Right, the seat of old tubercular deposit; general pleural adhesions. Left lung normal. Pericardial sac entirely obliterated by adhesions between visceral and parietal layers; pericardium much thickened. Heart normal. Left kidney much congested and enlarged. Right kidney normal, with the exception of a slight congestion. Spleen enlarged and adherent to parieties of abdomen. At the junction of the last lumbar vertebra with the sacrum there was a collection of about 100 cubic centimeters of pus, and the last lumbar vertebra was eroded to the depth of 1 centimeter. Connected with this abcess there was a similar one between the rectum and sacrum. The first abcess was connected by a sinus with the operation named.

CANCER OF THE TONGUE.

Lobar pneumonia; valvular disease of the heart; thrombosis of the splenic artery.

B. G.; aged 42 years; nativity, Tennessee; admitted to U. S. Marine Hospital, Memphis, Tenn., March 11, 1892; died March 22, 1892.

Clinical history.—The following notes were entered on the "clinical record" the day after admission: Has had a cough and dyspnœa for a year; has been worse during past month; has lost flesh during past six months; last autumn noticed a lump under left side of lower jaw and at the same time an ulcer under the tongue. Says that he had a chancre and enlarged glands ten years ago. Complains of constant pain at epigastrium.

Physical examination.—Normal resonance over lungs; area of heart dullness somewhat enlarged; fine râles over posterior aspect of both lungs, most marked on right side; they are heard on inspiration; breath sounds rather feeble; apex murmur heard most plainly near xiphoid cartilage; a slight but distinct murmur is heard at the base with the second sound. Every fourth heart beat is irregular, the interval between the first and second sounds being shortened and the second sound followed by a longer pause. Superficial arteries are atheromatous and pulsate visibly. Under the left ramus of lower jaw there is a hard nodule as large as a hickory nut. Under the tongue, mostly on left side, is a large, unhealthy-looking ulcer involving tongue, frenum, and floor of mouth; its edges are hard, and there is considerable induration of the tissues surrounding it. No albumen in urine. Temperature normal. On March 14 and 15 there were slight intermittent elevations of temperature; after the 16th fever gradually rose with signs of evident pneumonia of right lung, which proved rapidly fatal.

Necropsy.—Rigor mortis. Body emaciated; an ulcer, apparently cancerous, occupied the floor of mouth and involved the under surface of tongue and portion of gum. Edges and base of ulcer quite hard; lymphatic glands at angles of jaw enlarged and hard. Right lung: Pleural cavity obliterated by recent adhesions; entire lung engorged; a small area, involving portions of lower and middle lobes, is completely hepatized. Left lung: Partly adherent; engorged and œdematous; some of the bronchial glands are enlarged and hardened, others are normal. Heart: Pericardial sac contained about 100 c. c. of serum; two broad bands of adhesion of old date united the opposing surfaces of the membrane; a patch of old, organized exudation, about 3 cm. in diameter, occupied the anterior and lateral surface of left ventricle. The heart weighed 570 grams. All of the cavities contained large ante mortem clots; one found in the right auricle appeared to be of old date, the muscular structure of the heart wall being torn in attempting to remove it. The mitral, tricuspid, and aortic valves were deformed. All of these valves were incompetent, especially the tricuspid. The ascending aorta was moderately dilated, but not otherwise abnormal. Most of the arteries encountered during the necropsy were atheromatous and friable. Liver normal; kidneys small, irregular on the the surface and undergoing fibroid change, the cortical portions of both glands being quite thin. The spleen was small and pale and of a firmer texture than normal. The free edges of the organ were scalloped by marked indentations. The cut surfaces showed several white patches which looked like old cicatricial tissue One of the main branches of the splenic artery was calcified and could be crushed like softened bone. Its caliber was filled by a calcareous mass, probably the remains of a thrombus. Other organs apparently normal.

SCIRRHUS OF THE ŒSOPHAGUS.

Case 1.

S. C.; age, 40 years; nativity, New York; admitted to the U. S. Marine Hospital, San Francisco, Cal., February 12, 1891; died September 3, 1891.

History.—When admitted patient suffered from persistent vomiting. After several weeks the vomited matter contained considerable blood, the patient becoming extremely anæmic.

Soon after this a peculiar discoloration of the skin (cachexia) was noticed, pointing to the existence of cancer. There was, however, no tumor to be found by careful physical examination. He was for a time supported by rectal nutrient enemata. The area of hepatic dullness was diminished, and there was great emaciation.

Necropsy.—The organs were pale, the liver hard and contracted, the lower end of the œsophagus was surrounded by scirrhus cancer, ulcerated on its inner surface. This had also caused a slight breaking down of the posterior border of the right lung from adhesive inflammation.

CASE 2.

Epithelial cancer of the œsophagus.

D. E.; aged 72 years; a native of Ireland; was admitted to the U. S. Marine Hospital, St. Louis, Mo., December 16, 1891. He died February 24, 1892.

History.—Four years ago he was sick in a hospital in La Crosse, Wis. He then had diarrhœa. He has had gonorrhœa five or six times. He never had any sores on his penis. He has been a persistent smoker all his life. His present sickness began one year ago. He had then great difficulty in swallowing. When admitted there were three small ulcers on the right side of his pharynx. The soft palate was swollen and inflamed. Any attempt at swallowing solid food produces vomiting. The pharynx is covered with a thick tenacious mucus. With the laryngoscope two nodular growths are seen just above the two vocal cords. These nodular growths conceal the left vocal cord posteriorly, except when the cords are approximated. Most of his pain seemed to be in his œsophagus. The cervical glands were enlarged. The tender point to pressure was back of the hyoid bone.

Necropsy (seven hours after death).—The body was much emaciated. There was in the œsophagus an epithelial cancer. The cancerous growth extended downward from the upper border of the thyroid cartliage a distance of 10 centimeters. The mucous surface was ulcerated, and in places the mucous surface of the œsophagus had been undermined and hung in shreds. The whole circumference of the œsophagus was involved. There were some cancerous nodules in the pleuræ of both lungs. The other viscera were normal

CANCER OF THE PYLORUS.

CASE 1.

J. S.; aged 27 years; nativity, North Carolina; admitted to U. S. Marine Hospital, Baltimore, Md., August 8, 1891; died October 12, 1891.

History not noted. On admission complains of pain in gastric region, vomiting and constipation. ℞. Hydrargyri chloridi mitis, 0.20 gms. every two hours until three doses are taken, followed by sal Rochelle and an enema. This resulted in two copious stools. ℞. Acidi carbolici 2 c. c., tr. iodi. 1 c. c., aquæ q. s. ad. 75 c. c. M. Sig.: Teaspoonful three times a day. Diet: Milk, beef tea, etc.

August 18.—Improving; bowels acting daily.

September 1.—Complains again of gastric pains; vomits two or three times daily; matter ejected grumous and fœcal in appearance. ℞. Bismuth sub. nitrate, lactopeptine āā. 12 gms, morphia sulphate 0.20 gms. M. ft. chts. No. xxiv. Sig: One cht. three times a day. Milk, beef tea, etc.

September 15.—Failing perceptibly; indications point to carcinoma of stomach.

October 12.—Died 7:30 a. m.

Necropsy (Twenty-five hours post mortem.—Rigor mortis absent. Body much emaciated. Thoracic organs normal. Stomach distended and much thickened; proximal half of pylorus a mass of cancerous tissue, the wall of which was an inch thick; lumen almost occluded, less than one-fourth inch in diameter; all other abdominal organs normal.

CASE 2.

Cancer of stomach.

C. B.; aged 60 years; nativity, Ireland; admitted to U. S. Marine Hospital, Chicago, Ill., October 23, 1891; died March 1, 1892.

History.—When admitted he had been constipated some days and was suffering from vomiting and great pain and burning sensation in epigastric region, coming on soon after eating. Bowels were made to move freely but pain and vomiting continued and grew worse. Temperature was variable; sometimes below normal.

Necropsy (four hours after death.)—Height, 1 meter 63 centimeters; circumference at shoulders 87 centimeters; post-mortem lividity and *rigor mortis* not marked; general nourishment poor; pupils normal. Heart muscle was flabby, light colored and friable; valves competent; walls normal; left ventricle contained an ante mortem clot; pleural cavities were normal. Left lung weighed 400 grams; right 590 grams. At pyloric end of stomach was a carcinoma, but not completely closing this orifice; intestines were distended with fæces; spleen was shriveled; other organs not examined, but apparently normal.

CANCER OF THE PANCREAS.

M. H.; aged 42 years; nativity, Scotland; admitted to the U. S. Marine Hospital, San Francisco, Cal., September 28, 1891; died October 23, 1891.

History.—Ill six weeks before admission. He suffered during his residence in the hospital from persistent vomiting, no food of any amount being retained by the stomach. He was fed by nutrient enemata, but became extremely emaciated, with sunken abdominal walls. There was a cachectic coloring of the skin, but no abnormal growth could be found by palpation, though, from the symptoms, the presence of cancer was suspected.

Necropsy.—The greater part of the pancreas, beginning with the head, was occupied by a firm cancer, apparently scirrhus. The pyloric orifice of the stomach was also involved in the disease. There was not at this point, however, sufficient thickening to have been discovered through the abdominal walls by palpation.

CHRONIC ULCER OF THE LEG—NECROSIS OF THE TIBIA—AMPUTATION.

B. F. P.; aged 56 years; a native of Ireland; was admitted to the marine division of the St. Francis Xavier Infirmary on January 26, and died February 7, 1892.

History of an injury to the left leg twenty years since. Chronic ulceration with, finally, necrosis of tibia resulted.

Present condition: Marked cachexia; skin thick and muddy; tongue furred; bowels loose; fæcal discharge thin and white; anæmia; heart action weak; nervous prostration; hiccough; and intense pain in the leg. The ulcer extended from the ankle 10 centimeters upward; foul and malodorous; the tibia was at center of ulcer entirely destroyed; the fibula intact. At his friends' solicitation the limb was amputated below the knee; the tibia at point of election being sound. An immense varicosity of the veins was found in the flaps difficult to be secured. It had been hoped that the removal of the leg would give relief from pain, but this was not the result. From changes in the nerves there was even greater pain in the stump than in the limb prior to operation. Reaction from anæsthetic poor; pain demanded morphia freely; hiccough increased; jaundice supervened; death from exhaustion.

Necropsy (ten hours post mortem).—Body of white male adult, 170 centimeters long; emaciated; skin of a saffron yellow color and mottled with hypostatic spots. Left leg recently amputated 8 centimeters below knee; dressings removed showed stump clean; flaps nonunited; deep structures covered with a grayish superficial slough. There had been no attempt at repair. Median section of abdomen showed all the veins of its walls immensely distended and varicose. Liver was contracted and firm, capsule adherent to

mesentery and intestines (perihepatitis); the cut surface gave large areas of yellow atrophy and there was general fatty degeneration; cyst contained 30 c. c. grumous bile; radicles of portal vein were small and empty; much fibroid change. Hepatic veins dilated, from primary condition; an intense odor of "garlic" was noticed; common duct patent. Intestinal tract normal; spleen normal; kidneys congested. Heart and lung normal; brain and cord not examined. Microscopic examination of fresh sections from liver, with hæmatoxylin, gave some normal cells; many undergoing fatty change; aggregations of fragmented nuclei; and areas of cell necrosis were frequent, with peripheral accumulations of leucocytes. Eosin stained sections gave much recent connective tissue formation; many small vessels entirely obliterated; bile ducts atrophied.

TUBERCULOSIS OF LUNGS.

Case 1.

Bright's disease.

C. A.; aged 26 years; nativity, Sweden; admitted to Marine Hospital, Chelsea, Mass., December 27, 1890; died February 20, 1892.

History.—He contracted a cough twenty-one months before admission, but was able to work until six months before coming to hospital. When admitted he was unable to sleep at night.

Physical signs.—Mucous and subcrepitant râles at apices of lungs. There were pleuritic friction sounds at times, and constant pain in the chest. He vomited after meals from excessive coughing. Three months before death there was œdema of the lower extremities and face with marked anæmia; albumen abundant in urine.

Necropsy (sixteen hours after death).—Rigor mortis present. Some emaciation. Heart: Weight, 280 grams; numerous ante mortem clots in both auricles and ventricles, extending into great vessels; mitral and aortic valves insufficient. Right lung: Weight, 1,020 grams; studded with miliary tubercles; numerous cavities, varying in length from one-half to 5 centimeters; considerable effusion in pleural cavity; numerous firm adhesions. Left lung: Weight, 910 grams; deeply congested; miliary tubercles and a few small cavities in lower lobe. Liver: Weight, 1,470 grams; color light; gall bladder contained 60 c. c. of bile. Right kidney, weight, 340 grams; left kidney, weight, 330 grams; both of large white variety. Spleen: Weight, 330 grams; dense and lobulated. Other viscera normal.

Case 2.

Empyema.

C. O.; aged 37 years; nativity, Russia; admitted to the U. S. Marine Hospital, port of Boston, Mass, July 10, 1890; died May 16, 1892.

Previous history.—Good to three years before admission. First troubled with rheumatism involving right knee joint and both hip joints. In October, 1890, contracted cough after exposure. Patient noticed that he was getting weak; sweating at night; diarrhœa. Symptoms on admission: Mucous râles in apex of left lung; displacement of heart to right by large pleuritic effusion in left pleural cavity. Percussion showed effusion to extend up to level of fifth rib. Patient weak physically; cough at night; characteristic sputum; night sweats. Pleuritic pains varying in intensity. Aspiration of pleural cavity revealed the fact that the effusion was sacculated.

October 30, 1891.—Condition somewhat improved. Left chest aspirated at various times between November 10, 1891, and May 12, 1892. Total quantity of pus removed by aspiration 20,500 c. c.

Necropsy (twenty-one hours after death).—Post mortem lividity present. General nourishment poor. Pupils dilated. Pericardial sac normal; both ventricles of heart dilated;

walls hypertrophied and fatty; weight, 337 grams. All valves competent; firmly organized ante mortem clots in all cavities of heart. Right lung tubercular and nodulated in upper lobe; middle and lower lobes nearly normal, but containing a few tubercles. Posterior portion much congested (hypostatic). Whole of right lung firmly bound by pleuritic adhesions, some of which had to be cut before the lung could be removed. Left lung entirely gone and cavity filled with caseous masses adherent to the chest walls and very fœtid pus. Necrosis of a portion of the intertostal muscles in the fourth interspace, making an opening through which gas was forced between the chest wall and integument, causing puffiness just above left nipple, which disappeared whenever chest was aspirated. Other organs not examined.

CASE 3.

S. S.; aged 27 years; nativity, Massachusetts; admitted to the U. S. Marine Hospital, port of Boston, March 29, 1892; died May 10, 1892.

Previous history.—Had a cough for a year before coming to hospital. Voice hoarse for four months. A good deal of expectoration. Some shortness of breath. Has lost flesh.

March 30.—Dullness at both bases and right apex; slight dullness at left apex. Dry and medium râles; resonance and fremitus slightly increased. Treated for cough and put on tonics. Used stimulants quite frequently after April 27. Cough quite severe at night, and expectoration very copious. Sleep much disturbed by cough.

May 6.—Dropsical effusion in both ankles and right hand, for which he took Fowler's solution, three drops three times a day.

Necropsy (ten hours after death).—Post mortem lividity present. Very little *rigor mortis*. Considerable emaciation. Pericardial sac normal. Ventricles of heart dilated; walls thinned and fatty; weight, 305 grams; all valves competent; large, firm ante mortem clot in right ventricle. Right lung very heavy and nodulated; fibroid throughout whole extent and tubercular in every part; weight, 1,188 grams. Upper lobe of left lung nodulated, fibroid, and full of tubercles; lower lobe nearly normal in appearance, but containing a few tubercles. Both pleural cavities contained slight serous effusions; slight pleuritic adhesions near the apex of each lung. Liver congested and felt quite hard; color dark; weight, 2,110 grams. Kidneys congested; weight, left, 272 grams; right, 255 grams. Spleen congested; weight, 310 grams.

CASE 4.

T. Ar. T.; aged 30 years; admitted to the U. S. Marine Hospital, port of Boston, Mass., March 23, 1892; died June 2, 1892.

History.—A very small man in stature. Duration of present disease, three months. Cough, fever, chills, headache. On admission, bowels constipated; occasional night sweats. Dyspnœa on exertion; no voice. Occasional slight attacks of hæmoptysis; extremely weak.

Necropsy (fourteen hours after death).—*Rigor mortis* marked. General nourishment very poor; pupils moderately dilated. Pericardial sac contained about 50 cubic centimeters amber-colored fluid. Weight of heart, 163 grams; cavities and walls normal. Aortic and tricuspid valves competent; mitral slightly incompetent; soft vegetations on mitral. Lungs: Left, slight pleuritic adhesion at apex; filled with miliary tubercles; weight, 485 grams. Right, general pleuritic adhesions; large cavity at apex and several small cavities at base, which were filled with caseous nodules; weight, 900 grams. Kidneys normal; weight, left, 105 grams; right, 110 grams.

CASE 5.

Tubercle of spine.

C. M.; aged 31 years; nativity, Massachusetts; admitted to the U. S. Marine Hospital, port of Boston, October 2, 1891; died April 7, 1892.

History.—Family and personal, negative. Has been an invalid four years. About two years ago a curvature of the spine was observed, for which a "plaster-of-Paris" jacket was applied in 1889. Has been troubled with slight cough. Dullness at apices of lungs and increased vocal resonance.

March 18, 1892.—A large, fluctuating swelling noticed to-day, just below Poupart's ligament on the left side, which was subsequently opened just outside of Scarpa's triangle, and about 1,000 cubic centimeters of creamy pus evacuated. Drainage tube inserted.

Necropsy (fifteen hours after death).—*Rigor mortis* present. Great emaciation. Walls of heart slightly hypertrophied. Appearance somewhat anæmic; weight, 380 grams. Ante mortem clots present, extending into aorta. Both lungs so strongly adherent to chest walls and diaphragm as to make removal impracticable. From section in situ, it appeared that there was great increase in connective tissue and marked thickening of bronchial tubes. Calcarous nodules were found at apices. The liver was found to be firmly adherent to diaphragm and stomach; weight, 1,670 grams. There appeared to be some fatty infiltration. Kidneys above normal size and fatty. Spinal abcess extended along course of psoas muscle, under Poupart's ligament to the apex of Scarpa's triangle. Upon examination, caries of first, second, and third lumbar vertebræ was found; also angular curvature of spine at second lumbar vertebra.

Case 6.

C. R. S.; age, 27 years; nativity, Sweden; admitted to the U. S. Marine Hospital, Boston, Mass., August 22, 1891; died September 23, 1891.

History.—Fever high in evening and absent in morning; temperature, a. m., 37°; temperature, p. m., 39° C. Under quinia sulphate temperature became normal and remained so for several days. Later on fever became remittent in character, rising in evening to 40° C., in morning 38° C. The bowels became very loose. No night sweats and very little cough. Creasote in small doses was given, also digitalis and strychnine

Necropsy (three hours after death).—Body badly nourished; pleura firmly adherent to lungs and parietes of chest. Lungs infiltrated with miliary tubercle cavities from size of pea to almond, distributed alike in all of the lobes. The bronchial and mesenteric glands, liver, and kidneys were also filled with tubercles of a similar character. Heart normal, weight, 281 grams; left lung, 867; right lung, 1,213; liver, 1,485; spleen, 201; right kidney, 142; left kidney, 144.

Case 7.

J. C.; age, 51 years; nativity, Newfoundland; admitted to the U. S. Marine Hospital, Boston, Mass., August 6, 1890, with tubercle of lungs; died October 10, 1891.

History.—Patient was made comparatively comfortable until his death.

Necropsy (twenty-five hours after death).—No *rigor mortis.* Body badly nourished. Lungs: Right lung weighed 782 grams; considerable hypostatic congestion in lower portion of lower lobe. Small cavities in apex the size of beans. Pleural cavity completely obliterated. Adhesions so firm and fibrous that lung was torn where there was any attempt made to separate it from chest walls. Middle lobe completely infiltrated, with cavities ranging in size from that of an egg to that of a pea. Left lung weighed 602 grams. Hypostatic congestion in base of lung; small abscesses in apex. Adhesions not marked. Heart: Weight, 190 grams; valves normal; pericardial fluid normal. Liver: Weight, 1,395 grams; congested; adherent to capsule. Spleen: Weight, 174 grams; pale; otherwise normal. Kidneys: Weight of right kidney, 192 grams; weight of left kidney 172 grams; congested; otherwise normal. Arteries: Aorta, femoral, radial, and ulnar atheromatous. Glands: Bronchial and mesenteric enlarged. Intestinal tract: Small intestine presented a large number of tuberculous ulcers. Peritoneum: Thickened and opaque; considerable effusion into cavity of peritoneum.

CASE 8.

C. P.; age, 26 years; nativity, Maine; admitted to Marine Hospital at Boston, Mass., October 15, 1891; died December 4, 1891.

Previous history.—Good to two years ago, when he contracted a cough which has been steadily growing worse.

Symptoms on admission.—Severe cough, worse at night, and attended by expectoration of nummular sputa, insomnia, anorexia, physical weakness, and vomiting after eating; is troubled with night sweats, slight diarrhœa, pleuritic pains in left side. Patient stated that he had been suffering for three weeks with intense pains in his throat during the act of deglutition; could not speak above a whisper.

Physical examination.—Auscultation revealed mucous and subcrepitant râles in left apex; small area of consolidation in left apex. In right lung moist râles were diffused throughout. Percussion revealed nothing. An examination of the larynx could not be made, as anæsthesia under cocaine could not be obtained. Treatment was chiefly hygienic and expectant, and consisted of tonic and cough mixtures. Steam spray of tincture of benzoin, in water, was used as an inhalation. For a time patient improved both in strength and appearance, but about twelve days before his death his condition became suddenly worse. This was doubtless due to the small amount of nourishment taken. About twenty-four hours before death hemorrhage from lung supervened. This was controlled by hypodermic injections of fluid extract of ergot. About eight hours before death patient had general collapse, which it was impossible to relieve.

Necropsy (twelve hours after death).—*Rigor mortis* present. General nourishment poor. Heart: Weight, 240 grams; aortic valves incompetent. Pleura firmly adherent to lung and chest wall on left side. Lungs: Left lung weighed 1,070 grams; numerous small abscesses in apex, varying in size from that of a pea to that of an almond. Lower lobe, seat of tubercular infiltration. Right lung weighed 1,340 grams; small abcesses in apex; completely infiltrated with tubercular deposit. Larynx and trachea: Mucous membrane of trachea, seat of tubercular infiltration, down to bifurcation. Hypertrophy of mucous membrane over the vocal cords. Several ulcers were noticed in the mucous membrane lining larynx. Left vocal cords partly destroyed by ulceration. Liver: Weight, 1,520 grams; normal. Spleen: Weight, 140 grams; normal. Kidney, right, weight, 180 grams; normal. Kidney, left, weight, 190 grams; normal.

CASE 9.

W. I. (colored); age, 18 years; nativity, Tennessee; admitted to the U. S. Marine Hospital, Cairo, Ill., January 14, 1892; died February 1, 1892.

History.—Patient was weak-minded. Had been in hospital twice before; complained of little but weakness, but gradually emaciated. Showed physical signs of pulmonary tuberculosis.

Necropsy (twelve hours after death).—*Rigor mortis* slight. General nourishment poor. Pupils dilated. Pericardial sac contained 125 c. c. clear serum. Heart weighed 285 grams; normal; vessels normal. Nares, larynx, and trachea normal. Left pleural cavity contained 25 c.c. clear serum; slight adhesions at base. Left lung weighed 404 grams, œdematous. Right pleural cavity contained 75 c. c. clear serum; adhesion at base. Right lung weighed 570 grams; tubercular consolidation at apex. Abdominal contents bound tightly together by old adhesions from a former peritonitis. Stomach and intestines could not be unraveled. Liver weighed 2,052 grams; normal. Kidneys normal, each weighing 206 grams. Spleen weighed 327 grams; softened. Brain and cord not examined.

CASE 10.

J. K.; age, 30 years; nativity, Missouri; permit No. 202, admitted to the U. S. Marine Hospital, Cairo, Ill., February 8, 1892; died April 10, 1892.

History.—Patient had been in hospital several times, usually suffering from an intense asthma. On his last admission signs of tuberculosis were found. He failed rapidly, and vomited a great deal. General tonic and symptomatic treatment was adopted.

Necropsy (twenty hours after death).—Post mortem lividity slight. *Rigor mortis* marked. Pericardial sac obliterated by adhesion. Heart weighed 370 grams; normal. Vessels normal. Left lung weighed 798 grams, containing tubercular deposits at its apex, about 50 cubic centimeters fluid in pleural cavity; right lung weighed 769 grams, with deposits of tubercle at apex; pleural cavity nearly obliterated by old adhesions. Gastro-intestinal tract normal. Liver weighed 1,547 grams, and contained a few tuberculous nodules. Kidneys each weighed 85 grams; contained small cysts. Ureters, bladder, and urethra normal. Spleen, soft, weighing 313 grams. Brain not examined.

CASE 11.

Acute miliary following pleurisy.

H. T. (colored); age, 39 years; nativity, West Virginia; admitted to the U. S. Marine Hospital, Cairo, Ill.; September 2, 1891; died November 19, 1891.

History.—Entered hospital after being ill one week. Onset by a chill and "stitch in the side." Had shortness of breath and inability to lie down. Dullness, absence of fremitus, and absence of breath sounds on right side below fourth rib. Tapped four times, removing in all 1,900 cubic centimeters serum. Followed by the symptoms of acute miliary tuberculosis.

Necropsy.—Height 1.6 meters. *Rigor mortis* marked. General nourishment poor. Pupils dilated. Heart weighed 228 grams; valves and walls normal. Pericardial sac and large vessels normal. Nares, larynx, and trachea normal. Left lung weighed 456 grams, and had miliary tubercles scattered throughout. Pleural cavity normal. Right lung weighed 684 grams, and was packed with tubercles; pleural cavity obliterated at base. Peritoneum normal. Tongue dry. Pharynx, œsophagus, stomach, and small intestines normal. Descending colon filled with fæces for half its length; rectum also full. Liver contained a few tubercles; color normal; weight, 1,482 grams; gall-bladder and ducts normal. Left kidney weighed 172 grams, containing a few miliary tubercles, Right kidney weighed 142 grams, and presented the same condition. Pelvis and ureters normal. Bladder contained 120 cubic centimeters of urine. Urethra and prostate normal. Spleen weighed 228 grams, normal. Scalp, skull, membranes, and brain normal. Spinal cord not examined.

CASE 12.

J. W. (colored); aged 43 years; a native of South Carolina; was admitted to the marine division of the St. Francis Xavier Infirmary, Charleston, S. C., on September 9, suffering from advanced tubercle of the lung, and died November 3, 1891.

History.—Tuberculosis in other members of family; cough of several years' standing; chronic diarrhœa two months prior to entrance. Examination gave evidence of extensive lung disintegration on both sides. Right apex flat on percussion; base full of coarse râles; loss of elasticity marked: but little vesicular murmur. Left apex cavernous; amphoric resonance; lower lobe gave good respiration. Heart action good; accentuated second sound. Expectant treatment; generous diet. Sputum examined and found full of pus and red blood cells; elastic fibers; micrococcus tetragonus; a diplococcus, and numberless tubercle bacilli. Death occurred from exhaustion due to frequent but slight hemorrhages.

Necropsy (eight hours post mortem).—Body of an adult colored male; 170 centimeters high; emaciation extreme; slight cadaveric rigidity. Abdomen opened, peritoneum and retroperitoneal glands normal; mesenteric glands enlarged; small intestine catarrhal, but no ulcerations; liver fatty, weight, 1,500 grams; spleen, 175 grams; ductus choledochus patent; bile, light yellow. Heart and blood vessels normal. Lungs infiltrated with pus and badly disintegrated; left upper lobe contains a large abscess; pleuræ obliterated.

CASE 13.

G. C. (colored); aged 22 years; a native of South Carolina; was admitted to the marine division of the St. Francis Xavier Infirmary on the 2d, and died on the 25th of November, 1891.

History.—Tuberculosis in mother and brother. Had been in hospital on several permits for tubercle of lung. Physical examination revealed large cavities in both upper lobes; amphoric resonance; loud bubbling râles; but little alveolar breathing. Stated that hemorrhage was frequent and copious; expectoration free and purulent; hectic fever, and heavy night sweats. Tubercle bacilli had been isolated during a preceding period of hospital treatment, and were now found in much larger numbers. Treatment was symptomatic. Death came from severe hemorrhage.

Necropsy (six hours post mortem).—Body of a colored male adult, 165 centimeters tall; emaciated and exsanguinated; slight *rigor mortis*. Abdomen opened; intestinal tract normal; liver fatty, weight, 2,000 grams; spleen, 350 grams; kidneys, 157 grams, right; left, 180 grams. Heart and blood-vessels normal, save slight hypertrophy of right ventricle; pleural cavities obliterated; general adhesions; lungs in advanced disintegration; upper lobes almost pus sacs; lower, full of purulent material and cheesy débris. Cover slips from these cheesy masses were seen to fairly swarm with bacilli after staining with aniline-gentian violet solution. Brain and cord not examined.

CASE 14.

Tubercle of the larynx and pharynx.

L. K.; aged 35 years; a native of Norway; was admitted to the marine division of St. Francis Xavier Infirmary, Charleston, S. C., on October 22, 1892, suffering from chronic ulceration of the pharynx; died January 6, 1892.

History.—An obscure history of syphilis was obtained. The post pharynx was almost obliterated on the left side by adhesion with the uvula. The entire soft palate was œdematous and ulcerated. Some hoarseness of voice indicated a commencing implication of the cords and larynx. From the history and the appearance the case was entered as one of syphilis, and treated accordingly. Whilst under treatment I noticed a disposition on the part of the ulceration to heal at some points and again break down. This led to the determination to scrape the ulcers and stain for tubercle bacillus. Cover-glass preparations gave large numbers of these bacilli differentiated from numerous micrococci. At this time careful examination of the lungs gave evidence of commencing tubercular infiltration in the right apex; the expiration was prolonged and harsh, and percussion note was decidedly raised in pitch. No baccilli in sputum. Diagnosis changed to indicate condition. Treatment expectant and to relieve suffering, which increased as the larynx was invaded. Emaciation extremely rapid; right lungs became rapidly involved, and death from exhaustion on January 6, 1892.

Necropsy (five hours post mortem).—Body of a white male adult, 167 centimeters long; much emaciated. Cadaveric rigidity moderate; no distinguishing marks. Thorax opened. Pleuræ normal; right lung studded with gray tubercles, many of them caseating; left lung normal; bronchial tubes catarrhal. Larynx and portion of trachea removed. Epiglottis destroyed and the mucosa of larynx and pharynx honeycombed and thickened; vocal cords obliterated. Heart and pericardium normal; liver normal; kidneys congested; intestinal tract normal; neither brain nor cord examined. Microscopic examinations gave tubercle bacilli in scrapings from throat ulceration; later the sputum gave only a few of them, and I thought them derived from the larynx; sections of the tubercular mucosa gave the bacillus in small numbers, evidently because of the rapid disintegration.

CASE 15.

Tubercle of intestines.

E. J. ; aged 34 years ; nativity, Sweden ; admitted to U. S. Marine Hospital, Chicago, Ill., January 28, 1892 ; died March 7, 1892.

History.—Persistent vomiting in early part of disease, later diarrhœa and emaciation. There was pain in intestines in later stages and an evening rise of temperature.

Necropsy (two hours after death).—No post mortem lividity. *Rigor mortis* slight. General nourishment poor. Heart weighed (after opening) 280 grams ; pericardial sac contained 10 c. c. fluid ; heart valves competent ; in left ventricle an organized clot. Left lung weighed 740 grams ; many small cavities at apex ; in lower lobe extensive tubercles ; left pleural cavity obliterated posteriorly by adhesions. Right lung weighed 820 grams ; cavity at apex, tubercles scattered through upper and middle lobes ; some firm adhesions of right pleura at upper and posterior situations. There were a few small tubercular ulcers in the ileum ; also numerous tubercular ulcers in the large intestine ; one had perforated the tranverse colon near the hepatic flexure. Liver was normal, it weighed 1,719 grams ; gall-bladder empty. Left kidney, 160 grams ; right, 200 grams ; a few tubercles scattered over cortex of each. Spleen weighed 40 grams ; appeared normal. Brain and spinal cord were not examined.

CASE 16.

J. M. ; aged 37 years ; nativity, New York ; admitted to U. S. Marine Hospital, Chicago, October 17, 1891 ; died January 3, 1892.

History.—The patient presented the usual signs and symptoms of tubercle of lungs ; had also an obstinate tubercular laryngitis. After December 1, with fever and night sweats, anorexia, and emaciation, he lost ground very rapidly.

Necropsy (twenty-two hours after death).—Post mortem lividity not marked. *Rigor mortis* slight. General nourishment very poor. Pupils normal. Heart (after opening) weighed 270 grams and pericardial sac contained about 5 c. c. fluid ; heart valves competent ; wall of left ventricle thick and flabby ; of right, flabby, but very thin. Pleural cavity on either side was obliterated by adhesions, notably tough. Both lungs were so broken down that to remove them was impossible ; they were examined in situ, and found infiltrated throughout with tubercular nodules, and with large cavities in apex of each. The mesenteric glands were enlarged ; stomach empty ; large and small intestine distended with gas. Liver was furrowed deeply ; parenchyma very friable ; color darker than normal ; weight, 1,580 grams ; gall bladder and ducts full. Left kidney weighed 140 grams ; right, 145 grams ; in each the cortex seemed somewhat wasted. Spleen weighed 125 grams ; parenchyma congested and pulpy. Brain and spinal cord not examined.

CASE 17.

C. K. ; age, 41 years ; nativity, Germany ; admitted to U. S. Marine Hospital, Chicago, Ill., October 13, 1891 ; died January 14, 1892.

History.—The disease was diagnosed and the patient treated for tubercle of lungs from the beginning. A cavity was found to exist at the apex of right lung, with consolidation in the lower lobe ; also consolidation in the left lung. The patient died suddenly with hemorrhage at 11:50 p. m., after passing a very good day.

Necropsy.—Post mortem lividity not marked. *Rigor mortis* slight. General nourishment fair ; pupils normal. Heart not examined. Left lung weighed 810 grams ; tubercles found disseminated throughout this lung ; lower lobe congested ; several firm adhesions in left pleural cavity. Right lung weighed 710 grams ; in its apex was a cavity of a capacity of 150 c. c., with firm, thick walls. Ulcerative processes had invaded large pulmonary vessels, causing rupture into aforesaid cavity. Tubercular nodules dissem-

inated throughout the entire lung; a small cavity in lower lobe with thin walls and a capacity of about 10 c. c. Right pleural cavity was partially obliterated by adhesions. Abdomen not opened; brain not examined.

CASE 18.

E. McD.; age, 27 years; nativity, Illinois; admitted to U. S. Marine Hospital, Chicago, Ill., October 17, 1891; readmitted January 13, 1892; died February 6, 1892.

History.—Patientcame to hospital to be treated for fistula in ano; for this affection he was operated upon, but union was never secured notwithstanding careful and prolonged after treatment. Patient began to grow weak, lose strength, and develop other symptoms of a progressive case of tubercle of lung. He was accordingly readmitted under this diagnosis, and placed on sustaining diet and given treatment indicated. History was obtained of a more or less troublesome cough for last two years, together with gradual failing of digestive and nutritive functions. His physical symptoms made clear tubercular affection of lungs. During the last three weeks before death he had a persistent, exhaustive diarrhœa.

Necropsy (seventeen hours after death).—Height 170 centimeters, circumference at shoulder 84 centimeters. Post mortem lividity slight *Rigor mortis* marked. General nourishment very poor. Heart (after opening) weighed 215 grams; pericardial sac contained about 3 cubic centimeters of fluid; heart valves competent; walls and cavities normal. Left pleural cavity was obliterated by adhesions; left lung weighed 980 grams; large cavity in its apex, of a capacity of 150 cubic centimeters; upper lobe and upper portion of lower lobe infiltrated with tubercular nodules. Right pleural cavity was the same as left; right lung weighed 1,135 grams; upper, middle, and upper part of lower lobes contained numerous small tubercular cavities, the contents of many of which had undergone caseous degeneration. Liver weighed 1,710 grams; light in color; gall bladder and ducts almost empty. Left kidney weighed 165 grams; parenchyma normal; capsule easily detached. Right kidney weighed 140 grams; normal. Spleen weighed 140 grams. Brain and spinal cord were not examined.

CASE 19.

G. J.; aged 25 years; nativity, Sweden; admitted to Marine Hospital, Chicago, Ill., October 20, 1891; died December 25, 1891.

History.—Patient gave a history of tubercle of the lungs, covering a period of about four years. Examination: Auscultation and percussion revealed several large cavities in the left lung and two of considerable size near the apex of the right lung. During the last six weeks the patient had a severe laryngitis, producing such extreme dysphagia that it was difficult to feed him, and he rapidly yielded to the disease.

Necropsy (fourteen hours after death).—*Rigor mortis* marked. Post mortem lividity slight. General nourishment very poor. Heart (weight after opening), 270 grams; valves competent; pericardial sac normal. Larynx, with epiglottis, shows extensive tubercular ulcerations. Lungs: Left, strongly adherent throughout, so broken down and honeycombed with cavities that it could not be removed entire; right, weight, 780 grams; adherent on all sides, infiltrated throughout with tubercular nodules; two large cavities in upper lobe. Liver: Parenchyma friable; capsule easily stripped; apparently fatty; weight, 2,010 grams; color, yellowish brown. Kidneys: Pale and somewhat fatty; weight, right, 115 grams; left, 120 grams.

CASE 20.

Chronic gastritis.

T. C.; aged 50 years; nativity, Ireland; admitted to Marine Hospital, Chicago, Ill. August 22, 1891; died September 22, 1891.

History.—Patient was transferred from Milwaukee, Wis. The patient stated that his father and mother had died of phthisis, and that he has had cough and night sweats for several years; has lost weight rapidly for the past few months; expectoration free; clubbed fingers. Auscultation revealed a large cavity of the right apex and consolidation of the left apex. There was persistent vomiting, which no medical nor dietetic treatment could subdue. Died in spasm.

Necropsy (six hours after death).—Post mortem lividity slight. *Rigor mortis* marked. General nourishment poor. Heart (weight after opening), 340 grams; flabby and fatty; valves competent. Lungs: Left, apex infiltrated with tubercles, several small cavities filled with pus; right lung, extensive cavity of the apex. Stomach sacculated, greater portion of the mucous membrane destroyed; inner muscular coat destroyed in places; surface covered with a slate-covered pultaceous substance; veins conspicuous. Liver: Color light; weight, 1,200 grams; fatty degeneration well marked. Kidneys, both extremely fatty.

CASE 21.

General tuberculosis.

C. J.; age, 26 years; nativity, Russia; admitted to U. S. Marine Hospital, Chicago, Ill., April 2, 1891; died February 11, 1892.

History.—This patient was never subject to any venereal affection. He attributes the commencement of his illness to an unaccustomed sexual indulgence during previous winter, after which he suffered from burning pains in meatus after urination, and the passage of slimy lumps; with dry tongue and great thirst. These symptoms continued unabated for more than two months, about which time, having had a sound or catheter passed, the trouble became worse; pain in urethra from being intermittent became almost constant and seemed to invade the deeper parts of the urethra and the prostate gland, and the desire to urinate, hitherto frequent, became aggravated and constantly associated with a desire for stool. Urine became more cloudy, slimy shreds of greater bulk would pass, which, by obstructing flow of urine, excited deep urethral pain, only relieved by their ejection; finally nocturnal incontinence of urine succeeded. There had never been hematuria, nor quick, sharp pain upon jarring misstep. Some nervous symptoms developed, such as muscular twitching, sacral and iliac crest neuralgia, etc. He had since beginning of illness drunk great quantities of water, but almost ceased to sweat, whereas when in health he perspired freely. At time of admission there was constant dribbling of urine while asleep, frequent calls to closet by day. He rarely passed over 75 c. c. of urine at a time, cloudy, full of pus, with some mixture of round, ciliated epithelium. No albumen, no symptoms of pyelitis. Temperature normal in morning; 37.4° to 37.5° in evening. After use of catheter he sometimes passed a few drops of blood; a fleshy shred thus brought away revealed an enormous amount of round, spindle-shaped ciliated epithelium, with some appearance in places of a nested arrangement. The case was at first diagnosed as acute cystitis, and treated as such; later the diagnosis was changed to tuberculosis of bladder. Salol, balsam copaiba, buchu, uva ursi, sulfonal, etc., were tried in various combinations. Irrigation with boric acid, sulphate of zinc, acetate of lead, and bichloride of mercury was tried. But no encouraging results followed any kind of treatment, and the bladder tenesmus steadily increased. Sounding for stone could not be satisfactorily performed, owing to sensitive state of bladder and spasmodic contraction of the neck. The urethral mucous membrane was probably too congested and swollen. June 2 an examination with the cystoscope was made, with almost negative result. Then a perineal section was performed, by which free drainage was established and the tenesmus relieved. Irrigation through perineal opening was performed daily, when a supra-pubic cystotomy was done, to enable more perfect exploration of bladder. Subsequently boric acid, bromine solution, and bichloride of mercury were employed in turn to flush bladder, injection into supra-pubic

opening making its exit at perineal opening, and *vice versa*. Internally he was given cod-liver oil, stimulants, and morphia to quiet pain, which was great and more or less constant. About December 8, bedsores were noticed over trochanters on both sides. Emaciation progressed rapidly, pains night and day were increased, patient generally very irritable, frequently crying and restless, and, on February 11, died.

Necropsy (three hours after death).—Height, 1 m. 70 cm.; circumference at shoulders, 95 cm. Post mortem lividity absent. *Rigor mortis* well marked. General nourishment very poor; pupils normal. Heart weighed (after opening) 210 grams; its pericardial sac contained a tubercular nodule that had undergone cheesy degeneration; heart seemed contracted, and there was a noticeable absence of fat; valves were competent, and size and thickness of walls normal. There were slight patches of atheroma in ascending portion of the thoracic aorta. Extensive adhesions were found throughout left pleural cavity and some in upper portion of right. Left lung weighed 220 grams, was partially collapsed, and contained tubercular nodules in upper lobe. Right lung weighed 670 grams; there were evidences in it of chronic bronchitis; there was an abscess in the upper portion of the duodenum, towards right side. Liver weighed 1,270 grams; congested, with capsule firmly adherent, otherwise normal. Left kidney weighed 250 grams; nodular; capsule not adherent; some Malpighian tufts had undergone cheesy degeneration. Right kidney weighed 220 grams; a number of tubercular nodules in cortex; parenchyma was broken down and converted into a series of large pus cavities, seven in number, about size of hickory nut, some greater, some less. Bladder much contracted, partly destroyed by ulceration and sacculated; there were small tubercular cavities at the fundus and in various portions of the thickened bladder wall. Spleen weighed 220 grams; its capsule was adherent. Small rudimentary or secondary spleens about size of a hazel nut were found, one on the upper inner aspect of the principal spleen, and another attached to the stomach. Along the psoas muscle, on the right side, were inflammatory, doubtless tubercular, changes of structure, and the muscle itself destroyed and in its place a mass of pus.

CASE 22.

L. C.; aged 41 years; nativity, Canada; admitted to Marine Hospital, Chicago, Ill., December 17, 1891, suffering from alcoholism, and on the 22d having become sobered and rational was found to have tubercle of lung and lobar pneumonia.

History.—On the evening of the 22d had a copious hemorrhage of the lungs. Examination on the 23d revealed a cavity of the apex of the left lung; consolidation of the upper lobe of the right lung and high pitched respiration. Patient would not keep in bed nor take medicine as ordered. Great mental agitation. On the afternoon of the 28th, after passing what was apparently the best day of his stay in the ward, while sitting on the side of his bed, he fell backward and died within fifteen minutes.

Necropsy (eighteen hours after death).—Post mortem lividity marked. *Rigor mortis* marked. General nourishment, fair. Heart (weight after opening), 460 grams; whole organ in diastole; left ventricle, size of cavity slightly more than normal; ante mortem clots found in right ventricle and in right and left auricles. Lungs: Weight, left, 575 grams; pleural cavity, firm adhesions throughout, old; in the apex was found a cavity of about 75 c. c. capacity, with thick elastic walls of cirrhosed tissue; disseminated nodules throughout the whole lung; right, weight 1,000 grams; pleural cavity obliterated by adhesions; several tubercular nodules were found in the apex of the lung; pneumonic consolidation of the upper lobe posteriorly; œdematous and congested throughout. Liver: Color, lighter than normal; weight, 1,990 grams. Kidneys: Left, weight 250 grams; parenchyma friable; color, on section, pale; capsule easily detached; right, weight, 220 grams. Conditions the same in less degree.

CASE 23.

Tuberculosis of larynx—Empyema.

J. F.; age, 40 years; nativity, Canada; admitted to Cleveland City Hospital March 16, 1892; died April 8, 1892.

History.—Attack of influenza in March, 1891; cough continuous since then. Received hospital treatment at this port in August, 1891, at which time there was consolidation at both apices. At last admission there was general infiltration of both lungs.

Necropsy (seven hours after death).—Body emaciated, livid posteriorly; no *rigor mortis.* Heart, normal, but rather large; pericardial sac normal. Thoracic aorta, slight atheromatous deposit just beyond aortic valves.

Larynx, ulceration above vocal cords. Right lung: Pleural cavity contained adhesions at apex, and a considerable amount of clear fluid. A small cavity in upper lobe; middle lobe alone crepitant; other lobes quite solid, yet containing very few nodules visible to eye. Left lung: Pleural cavity nearly obliterated by firm adhesions, except in axillary region where was a sac containing 50 cubic centimeters of pus (it was at this site he complained of sharp pain on coughing). Upper lobe riddled with cavities, many of which were ruptured in detaching lung; lower lobe solid, contained a larger number of nodules than opposite lung. All other organs apparently normal.

CASE 24.

Empyema.

A. M.; age, 24 years; nativity, Ohio; admitted to Cleveland City Hospital December 9, 1891; died February 15, 1892.

History.—Cough for eighteen months, following attack of influenza; occasional hæmoptysis during this time. On admission there was a region of flatness corresponding very closely to the position of the lower lobe of right lung. A change of position brought no alteration in percussion sound. In the same locality the respiratory murmur was scarcely audible, and bronchophony present. Dullness, subcrepitant râles and bronchophony at left apex. A hypodermic needle inserted into right back failed to reveal any fluid. During January, frequent night sweats and hæmoptysis, dyspnœa increasing, rapid loss in body weight. February 7, 8, 9, severe hemorrhages from lungs.

Necropsy (three hours after death.)—Body emaciated. No *rigor mortis.* Pericardial sac contained 15 c. c. of clear fluid. Puff of gas on opening of left pleural cavity. A few firm adhesions at left apex. A pus cavity, size of a pea, in apex of left lung. Miliary tubercles scattered through left lung, fewer in lower lobe. Right pleural sac completely obliterated in front. Behind was found a cavity filled with turbid fluid, extending from just below the apex to diaphragm, narrow above, below occupying about half the right portion of diaphragm. Walls of sac very thick and covered with soft débris, easily removed. The right lung occupied the anterior half of right chest, was crepitant, contained no cavities, but many miliary nodules.

CASE 25.

Tubercle of trachea and larynx.

T. R.; age, 30 years; nativity, Michigan; admitted to Cleveland City Hospital November 28, 1891; died March 20, 1892.

History.—Father died of pulmonary disease. Patient has been intemperate. Cough began two years ago. On admission there was consolidation in both upper lobes. Night sweats frequent and profuse. Evening temperature 38° to 40° C. Increasing aphonia.

Necropsy (twenty-two hours after death).—Rigor mortis marked. Lividity slight. Heart normal. A slight adhesion in pericardial sac at cardiac apex. Thoracic aorta normal.

Entire surface of mucous membrane from epiglottis to bronchial subdivisions thickly covered with ulcerations. Firm adhesions in left pleural cavity at apex and posteriorly nearly to base. Pus cavities in left lung from apex to middle of lower lobe; tubercular nodules through whole lung. Right pleural cavity contained adhesions over apex. Right lung: Numerous small and large pus cavities through upper lobe; middle lobe showed a few pus collections and was dense with miliary nodules; lower lobe full of nodules, but crepitant. All other organs were apparently normal.

CASE 26.

G. M.; age, 41 years; nativity, Pennsylvania; admitted to Cleveland City Hospital July 21, 1891; died June 8, 1892.

History.—This man had been under treatment at this station for tuberculosis of lungs for several years. He was very deaf, had perforation of both membranæ tympani, but gave no history of suppurative inflammation. Diarrhœa frequent during last year of life. Considerable hoarseness for last two years, but no ulcers could be found in larynx. Sputum contained elastic fibers and many tubercle bacilli.

Necropsy (twenty-four hours after death).—Heart normal. No ulceration in larynx. A few superficial ulcers on anterior surface of trachea. Left lung: Firm adhesions of pleura at apex; lung deeply pigmented; miliary tubercles throughout; small cavities at apex; right pleural cavity contained about 500 c. c. sero-purulent fluid; firm adhesions at apex and posteriorly. Right lung infiltrated with miliary tubercles; one large cavity at apex and several smaller ones lower. No ulceration in stomach or any portion of intestine. Liver small, especially in thickness, and pale.

CASE 27.

J. P.; aged 23; born in Kentucky; admitted to the U. S. Marine Hospital, Louisville, Ky., April 30, 1892; readmitted June 7, 1892; died June 11, 1892.

History.—On first admission had a severe cough which was diagnosticated as acute bronchitis. It steadily increased, cavities became apparent, and death resulted from exhaustion.

Necropsy (twelve hours after death).—No pleuritic adhesions; both lungs tuberculous, the left lung particularly so; large cavities in the apices, and deposits of purulent matter in the right. No appearance of disease in other organs except mesentery, which was studded with cheesy tubercles.

CASE 28.

G. T.; age, 26 years; nativity, Alabama; admitted to the U. S. Marine Hospital, Memphis, Tenn., June 26, 1891; died July 16, 1891.

Clinical history.—Before readmission for present disease had been under treatment for several weeks for influenza and left-sided pleurisy. Subsequently developed the usual symptoms of phthisis, constant fever, progressive emaciation, and troublesome cough. Physical examination showed involvement of both lungs. There was evidence of a large cavity in lower portion of left upper lobe with marked cavernous breathing and cracked-pot sound.

Necropsy.—Rigor mortis present. Body emaciated; bed sores on sacrum. Left lung: Adhesions on anterior surface of upper lobe; large cavity in lower portion of upper lobe; numerous caseating masses in apex; a few tubercles scattered through the remainder of lung tissue. Right lung: Adherent at apex; apex contained scattered tubercles but no cavities; upper lobe in first stage of pneumonia; bronchial glands enlarged. The kidneys were congested; other organs normal.

CASE 29.

L. H.; aged 21 years; nativity, Kentucky; admitted to U. S. Marine Hospital, Memphis, Tenn., April 11, 1892; died May 26, 1892.

Clinical history.—Was originally admitted January 18, 1892, for secondary syphilis. At that time he gave a clear history of specific infection, and was suffering from an extensive maculo-papular eruption on both legs. About the middle of February he had iritis, and at the same time an attack of la grippe. The latter disease assumed the pulmonary type and a severe attack of bronchitis supervened. About the middle of March slight dullness and crepitation were noticed at the apices of the lungs. The subsequent history was that of rapidly progressive phthisis.

Necropsy.—Rigor mortis. Advanced emaciation. Right lung: Pleural cavity contained small quantity of serum; lung adherent; weight, 1,200 grams. There were several small cavities in apex. The remainder of upper lobe contained a number of small masses of tubercles with patches of pneumonic consolidation surrounding them. Lower lobe free from tubercles and in first stage of pneumonia. Left lung: Weight, 1,400 grams; adherent to chest wall; lower lobe in first stage of pneumonia; upper lobe was merely a large abscess cavity with ragged walls. The heart weighed 290 grams and was soft and flabby. There was a small patch of old exudation on the surface of left ventricle. Other organs normal.

CASE 30.

L. M.; aged 26 years; nativity, Alabama; admitted to U. S. Marine Hospital, Mobile, Ala., September 5, 1891; died September 8, 1891.

History.—Patient had only been sick two months previous to his admission to the hospital. Had fever, which somewhat resembled the temperature curve in typhoid fever; slight cough, with scanty expectoration; some diarrhœa, and marked debility. On examination dullness on percussion over both lungs was noticed, increase in the vesicular murmur, and bronchial breathing over the apices.

Necropsy (twenty hours after death).—External appearance: *Rigor mortis* marked; post mortem lividity absent. Body fairly nourished. Thoracic cavity: Right lung weighed 860 grams, and was firmly adherent to chest wall, being studded throughout its entire structure with yellow and gray tubercles; left lung weighed 800 grams; it was consolidated with tubercles, and contained a small cavity in its apex. Heart was normal; weight, 285 grams. Abdominal cavity: The abdominal viscera were macroscopically normal. Liver weighed 1,960 grams. Kidneys normal; right weighed 160 grams; the left, 165 grams. Spleen weighed 240 grams, and pancreas 90 grams. Brain and spinal cord not examined.

CASE 31.

N. S.; aged 29 years; nativity, Maine; admitted to the U. S. Marine Hospital, Mobile, Ala., July 19, 1891; died July 23, 1891.

History.—Patient when admitted was suffering with hæmoptysis. He gave a history of having had a cough for several months; much emaciated, and dyspnœa on exertion. The physical signs of tubercle of lung were recognized on examination. He had several attacks of pulmonary hemorrhage, all of which were very profuse; these so reduced him that he died a few days after his admission.

Necropsy (twenty-one hours after death).—External appearances: *Rigor mortis* very slight. Post mortem lividity absent, and body much emaciated. Thoracic cavity: The pleural cavity on the right side was almost entirely obliterated, the right lung being firmly adherent to the chest wall on that side. Right lung weighed 430 grams. It contained several patches of tubercles, and a small cavity, about the size of a nut, was found in the upper lobe. Left lung weighed 610 grams. The upper lobe was contracted and irregular in outline from the contraction of adhesions and tuberculous areas. A cavity about the size of an orange was found in the apex, which was filled with recent coagulum.

The lower lobe was œdematous, emphysematous on the surface, and contained several patches of tubercles. The bronchial glands were enlarged and tuberculous. The heart was small, pale, and flabby; it weighed 250 grams; cavities were empty; normal in structure. Liver enlarged; weighed 1,500 grams; lower part of right lobe was inflamed, otherwise normal in structure. Spleen softened, weight 250 grams. Stomach normal, contained 150 cubic centimeters of mucus and blood. No tubercles in the intestines. Kidneys normal; the right weighed 130 grams; the left, 120 grams. Brain not examined.

CASE 32.

A. B.; age, 27 years; nativity, Louisiana; was admitted to the U. S. Marine Hospital, New Orleans, La., January 18, 1892; readmitted January 31, 1892; died April 12, 1892.

History.—On admission patient stated that he had had a slight cough about three weeks. There were a few scattered râles in chest and the case was diagnosed as bronchitis. But the symptoms and signs developed so rapidly that in a few days it was apparent the case was one of acute phthisis. Patient presented all the ordinary symptoms of a rapid spreading of the tuberculous process, the evidences of degeneration of lung substance, and the hectic of tox-albumose poisoning.

Necropsy (ten hours after death).—Body that of a very much emaciated mulatto. *Rigor mortis* not pronounced. Post mortem lividity not evident. General nourishment very poor. Pupils dilated. The pericardial sac contains about 150 c. c. of a clear straw-colored fluid. Pericardium appears to be normal. Heart is small; the walls thin. The cavities all contain chicken-fat clots which are firmly attached to the walls, to the columnæ carneæ, papillary muscles, and even surround the chordæ tendineæ attached to the anterior flap of the mitral valve. The clots extend some distance into the aorta and pulmonary artery. The valves all prove to be normal in appearance and competent. The openings of the coronaries are patulous. There is no atheroma of aorta, the caliber of which is small. Heart, after opening, weighs 245 grams. Both pleural sacs have firm strong adhesions, and the lungs are taken out only with the exercise of considerable force. Both lungs are infiltrated throughout almost their entire extent with miliary tubercles. At the apices are cavities, places of caseous degeneration, and intertubercular catarrhal pneumonic consolidation. The left lung weighs 1,470 grams. The right, 910 grams. The intestines and all the abdominal organs are firmly adherent to each other. Adhesions exist everywhere. No signs of a recent inflammation can be observed. The spleen is large; weighs 340 grams; is firm. The Malpighian corpuscles are plainly visible to the naked eye, and present the appearance of amyloid degeneration. Tincture of iodine causes them to change to a mahogany-brown color. The kidneys are large; the capsule strips readily; the surface is smooth and mottled; the cortical substance increased and yellowish in appearance. The pyramids are slightly twisted out of shape. Pelvis and ureters normal. Weight of right kidney is 290 grams; left, 340 grams. The liver is large, has an amyloid appearance, with sharp edges, but does not give the color reactions peculiar to amyloid change. Nothing else noteworthy.

CASE 33.

Tubercle of the small intestine.

P. B.; aged 30 years; nativity, Nova Scotia; was admitted to the U. S. Marine Hospital, New Orleans, La., December 23, 1891; died January 24, 1892.

History.—Patient was transferred in a moribund condition to this hospital from the Charity Hospital of this city. But an imperfect story of his sickness could be elicited on account of his feeble condition. He said that he was sick about two months with diarrhœa and cough. Progressive emaciation; no night sweats; no chills; severe pain in legs and back every evening. Examination disclosed a very spare frame, poor muscular development, very much wasted. The chest was long and narrow, the costoxiphoid

angle being very acute. Respirations shallow; heart sounds normal; prolonged, high-pitched expiration, and small moist râles at right apex. The most prominent symptom was the colliquative diarrhœa. There were from two to ten bowel movements every twenty-four hours, the dejections being large, watery, and very offensive, often containing curds of milk and pieces of undigested food. Urine normal. The treatment consisted in a carefully selected regimen, stimulants, and remedies to correct the diarrhœa. But the patient did not rally, grew weaker every day, and finally died in extreme exhaustion.

Necropsy (two hours after death).—Body that of a very much emaciated white man. Post mortem lividity absent. *Rigor mortis* not yet developed. Pupils dilated. General nourishment very poor. The pericardium was normal, though the sac contained about 100 c. c. of a clear, pale, straw-colored fluid. The heart was small; weight, 180 grams; its muscle pale and flabby, and the walls of both ventricles thin, though not dilated. Both ventricles contained dark fluid blood; no clots. The valves were all competent and normal. The aorta was smaller in caliber than normal, and showed no trace of atheroma. The left pleural sac proved to be normal. The left lung was emphysematous about the edges and showed signs of œdema; otherwise normal. The right pleural sac was almost obliterated throughout by strong, firm, fibrous adhesions. The right lung was heavy; weight, 600 grams. Also emphysematous about the edges. The base and whole lower lobe were the seat of marked hypostatic congestion and œdema. On section the surface appeared glazed and exuded an abundant sanious fluid, but the tissue did not sink in water. At the lower portion of the upper lobe and the upper portion of the middle lobe were found several groups of miliary tubercles and one or two foci of degeneration and softening. No cavities. The peritoneal cavity contained an excess of a clear, watery, serous fluid. A patch of unorganized, greenish-yellow, soft lymph was found adhering to and matting together a coil of the ileum. Another patch of lymph of similar character was found adhering to the surface of the spleen. The lymph could be stripped from the surface of the peritoneum without difficulty, and it was afterwards noted that its location in the small intestines corresponded in position to the deepest ulcerations found in the mucous membrane. The entire length of the small intestine for a distance of about a meter and a half was found to be inflamed, the mucous membrane in several places ulcerated, and the whole internal surface of the gut was bathed with an excess of secretion, and the lumen filled with a foul, fluid, fecal mass. The individual ulcers in the mucous membane had a transverse direction to the long axis of the bowel. The edges were sharply defined and had a punched-out appearance. In places the ulceration extended through the muscular coat, and a very thin membrane separated the cavity of the intestine from the peritoneal cavity. It was at this location that the mass of lymph was found. No perforation was discovered. The disease was more pronounced in the ileum near its entrance into the colon, which latter was normal. Nothing noteworthy was found in the stomach or remaining part of the intestinal tract. The mesenteric glands were enlarged. The right kidney showed signs of beginning amyloid change. The pelvis and ureter were dilated with urine, but moderate pressure forced the contained urine into the bladder, and further examination could find no point of constriction or obstruction. Weight of right kidney, 190 grams. The left kidney was normal in appearance, weighing 150 grams. The spleen was small; normal in consistency; weight, 90 grams. The liver was typically amyloid.

Case 34.

A. J.; age, 34 years; nativity, Russia; was admitted to the U. S. Marine Hospital, New Orleans, La., March 2, 1892; died April 25, 1892.

History.—Patient came from Pensacola, Fla., to the U. S. Marine Hospital, this city, with advanced tuberculosis of the lungs. He presented all the physical signs and customary symptoms of extensive involvement and destruction of both lungs.

Necropsy (seventeen hours after death).—Body that of a much emaciated white man. Post mortem lividity at dependent parts. *Rigor mortis* present. Pupils dilated. The pericardial sac contains a slight excess of clear watery fluid, otherwise normal. The heart is dilated. The muscle looks pale. The walls of the ventricles thinned. All the valves are competent and normal. No atheroma in aorta. Coronaries patulous. Weight of heart, after opening, 314 grams. Both pleural cavities contain firm adhesions. Both lungs show evidence of extensive and advanced tuberculosis; at the apices are large cavities, surrounded by smaller ones; also nodules of consolidation, and points of softening and caseation. Towards the lower borders and bases of each lung are many miliary (gray) tubercles. The right lung weighs 1,070 grams; the left, 1,107 grams. The liver weighs 1,950 grams; is hobnailed on the surface, and on section gives evidence of cirrhosis and fatty degeneration. The kidneys are normal; weight of each organ 170 grams. The spleen soft, flabby, and readily torn; weight, 219 grams. Stomach and intestines are normal.

CASE 35.

Tuberculosis of kidney.

T. C.; aged 36 years; born in Ireland; admitted to the U. S. Marine Hospital at New Orleans, La., August 25, 1891; died September 3, 1891, at 12:30 a. m.

History.—Patient was treated at this hospital from June 10, 1891, to July 20, 1891, for organic stricture of urethra and Bright's disease, leaving hospital much improved; and again from August 4, 1891, to August 24, 1891, for malarial fever, intermittent, and diarrhœa. When admitted August 25, 1891, he was very weak and much emaciated. Patient stated that he had been growing progressively feebler for the past month. He had no pain. Very little cough; expectorated a small amount of white frothy sputa; no hæmoptysis; no chills. Patient was placed on a general supporting and stimulating plan of treatment, but continued to grow worse. Examination discovered the left chest much retracted and the supra and infra clavicular fossæ shrunken. This side of the chest did not move at all with respiration. The right side was bulging and expanded freely with each inspiration. On auscultation the respiratory murmur was found to be deficient all over the left lung, broncho-vesicular in character, with numerous small mucous râles. Over the right lung the respiratory sounds were puerile and exaggerated, with only an occasional fine moist râle. The area of hepatic and splenic dullness was normal to percussion and the abdomen seemed normal to a superficial examination, a thorough examination not being permitted on account of the very feeble condition of the patient. The urine contained an abundance of albumen, but no casts were noted.

Necropsy (ten hours after death).—Body that of a middle-aged white man, much emaciated. Post mortem lividity poorly marked, and *rigor mortis* well developed. The heart and pericardium were normal in all respects; the valves being competent and free from change. The left pleural sac was obliterated with firm adhesions so that the lung was removed only with considerable difficulty and after exercising some force. The lung showed evidences of an old fibroid phthisis with recent caseous foci. The right lung contained a few old scars at the apex around which were pleuritic adhesions, easily torn away. No cavities, but the whole lung structure was infiltrated by fresh miliary (gray) tubercles. The right kidney, pelvis, and ureter were normal, but the left kidney was in a state of advanced pyonephritis. The organ was transformed into a single large abscess containing about 750 c. c. of lumpy, greenish-yellow, foul-smelling pus. No kidney substance could be distinguished in the walls of the abscess, which were friable, rather thick, and surrounded with a layer of fibrous tissue, which included the pelvis and the ureter for a short distance. There was no connection evident between the abscess and the bladder, which appeared to be normal. The liver, spleen, and stomach were normal. The remaining organs were not examined.

CASE 36.

H. C.; aged 24 years; nativity, Sweden; admitted to Marine Hospital, Stapleton, N. Y., January 14, 1892; died April 23, 1892.

History.—Upon admission patient stated that he had been troubled with a cough for the last two years. This cough was accompanied by a purulent expectoration, yellow in color, the consistency of which varied, some times being soft, at other times hard, and occasionally admixed with blood. For the last month patient has had pains in his chest, which are increased by coughing and inspiration. Colliquative sweating; anorexia; bowels regular; sleeps well. Family history negative. Physical examination: Body fairly well nourished; chest expansion good; tongue clean; vocal fremitus slightly increased on left side; slight dullness over apices of both lungs; vocal resonance increased on both sides; mucous râles heard over apices of both lungs; heart sounds normal. Patient's condition became gradually worse, death taking place at 11:15 a. m., April 23, 1892.

Necropsy (twenty-three hours after death).—Body poorly nourished. *Rigor mortis* well marked. Heart normal. Right lung adherent to chest walls and filled with tubercle throughout. Left lung adherent to chest walls and filled with tubercle at apex. Liver fatty. Kidneys normal. Spleen soft in consistency. Other organs not examined.

CASE 37.

Tubercle of kidneys.

W. B.; aged 48 years; nativity, Florida; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., April 20, 1892; died April 29, 1892.

History.—Patient stated on his admission to the hospital that he had been sick for three months. His sickness commenced with a chill, followed by fever and sweating. He suffered from cough, dyspnœa, pain in his chest, and sometimes nausea and vomiting. He expectorated a quantity of dark muco-purulent matter. He had to pass his urine very frequently, and passed only a little at a time. No family history could be obtained. Physical examination: Body poorly nourished; deep depressions above and below the clavicles on each side; chest expansion poor; vocal fremitus increased on left side; dullness on percussion over the left lung; fine mucus râles heard throughout the left lung; heart sounds normal: liver and spleen not enlarged. The patient was very weak and in the last stages of the disease. He gradually grew worse and died at 2:45 p. m., April 29, 1892, as stated above.

Necropsy (nineteen hours after death).—Body emaciated. *Rigor mortis* well marked. The first portion of the arch of the aorta was slightly atheromatous. Valves of heart competent. Left lung adherent to side of chest, filled with tubercle throughout. The right lung was also one mass of tubercles. Liver fatty. Right kidney normal, but the left kidney was small and filled with cysts containing cheesy matter, the whole kidney having undergone a tubercular degeneration.

CASE 38.

Empyema.

J. K.; aged 48 years; nativity, Ireland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., March 18, 1892; died June 19, 1892.

History.—Upon his admission, patient stated that he had had a cough for three months, and an expectoration of mucus; sputum whitish in color and soft in consistency. This expectoration lasted for about one month when it became mixed with blood, and this bloody expectoration still continues. Has pains in chest occasionally, also complains of pain in legs and swelling of feet, ankles, and legs. No dyspnœa. Has

palpitation of heart, and has slight vertigo and dimness of vision. Anorexia. Bowels regular. He passes his urine frequently, but it is diminished in quantity without mixture of blood or change in color. Physical examination: Body fairly well nourished; chest well developed; chest expansion good; vocal fremitus and vocal resonance slightly increased over right lung; and dullness on percussion over apex of right lung. Respiratory murmur roughened over both lungs and moist râles heard over both apices. No abnormal murmurs heard over the heart. Liver and spleen not enlarged. Patient has been having night sweats, cough, and muco-purulent expectoration for the last three months, and has been losing flesh since the beginning of his sickness. Patient remained in hospital under treatment, from which he derived no benefit, and gradually grew worse and died as stated above.

Necropsy (*nine hours after death*).—Body emaciated. Hypostatic congestion posteriorly. *Rigor mortis* well marked. Heart normal. Pericardium contained normal amount of fluid. Right lung thoroughly collapsed and studded with tubercle. Left lung also studded with tubercle, with a small cavity in lower lobe. The right side of thorax contained about 1,200 c. c. of pus. Liver congested. Spleen normal. Kidneys apparently normal.

CASE 39.

P. C.; age, 26 years; nativity, England; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., August 29, 1891; died October 15, 1891.

Patient first entered this hospital April 28, 1891, and was discharged June 15, improved. He reëntered July 13 and was discharged July 20, improved.

History.—Patient had been sick since February; his sickness commencing with a pain in his chest, cough with considerable expectoration containing some blood, dyspnœa, palpitation of heart, fever with night sweats, anorexia, diarrhœa, and insomnia. Physical examination: Body fairly well nourished; expansion of chest good; deep depression above and below clavicles; dullness on percussion over right apex of lung; flat over left lung, especially beneath clavicle. On auscultation prolonged expiration, a somewhat tubular sound, and a few crackling râles heard over apex of left lung; sonorous râles heard over apex of right lung. From the time of his admission he continued to have some fever, and occasional attacks of diarrhœa; he gradually grew weaker and died as above stated.

Necropsy.—Body fairly well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Pericardium congested and contained 60 cubic centimeters of fluid. Heart normal and contained fibrinous clots. Lungs: Both pleuræ firmly adherent to chest wall; both lungs filled with tubercle, with cavities in the right. Liver slightly fatty and somewhat nutmeg in appearance on section. Spleen somewhat enlarged. Kidneys fatty; capsules not adherent.

CASE 40.

T. S. C.; aged 36 years; nativity, New Orleans: admitted to the Marine-Hospital Stapleton, Staten Island, N. Y., June 1, 1891; died July 6, 1891.

History.—Patient stated that he was taken ill about a month ago; the attack coming on with hæmoptysis followed by loss of flesh and strength. He complained of great dyspnœa and cough, the latter being worse at night. Physical examination: Chest barrel-shaped; retraction above clavicles; slight dullness over left apex, and moist râles heard over same spot. Expansion poor; expiratory murmur slightly exaggerated.

Necropsy (*nine hours after death*).—Body fairly well nourished. *Rigor mortis* well marked. Pericardial cavity contained about 60 cubic centimeters of fluid. The heart cavities contained post mortem clots. The mitral valve was thickened and incompetent. Lungs: The left was firmly bound to chest wall and the whole of it was a tubercular mass. The right was also bound to chest wall and studded with tubercle. Liver somewhat nutmeg and a little fatty in appearance. Kidneys and spleen were normal.

CASE 41.

Perineal abscess.

J. M.; aged 26 years; nativity, Ireland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., September 14, 1890; died October 5, 1891.

History.—Patient was discharged from hospital on September 1, 1890, having been under treatment for thirty-one days for tubercle of lungs. Shortly after his discharge he felt a pain in the perineum, which gradually grew worse, causing him to seek readmission. Upon examination it was found he had a small perineal abscess, which was incised, evacuated, and dressed. Discharged recovered from the abscess September 14, and readmitted for tubercle of lungs. Physical examination revealed the apex of right lung consolidated. Chronic pleurisy also present. He had considerable cough and expectorated freely.

November 3.—Had recurrence of perineal abscess.

November 7.—Taken to operating room and two fistulæ laid open. No anæsthetic used. Packed with iodoform gauze and dressed antiseptically. The perineal abscess never healed entirely and the patient continued to grow worse, having occasionally attacks of diarrhœa, which were quite troublesome.

Necropsy (thirty-three hours after death).—Body very much emaciated. *Rigor mortis* poorly marked. Hypostatic congestion posteriorly. Lungs: Right, adhesions to chest wall; a tuberculous mass; very little normal tissue left. Left, upper lobe apparently normal; lower lobe contained tubercular deposits scattered throughout. Heart small, valves competent. Liver very large, fatty, somewhat nutmeg in appearance on section. Spleen very large and congested. Kidneys somewhat enlarged and pale. Mesenteric glands very much enlarged.

CASE 42.

H. M.; aged 38 years; nativity, Ireland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., November 22, 1889; died October 16, 1891.

History.—Patient was taken sick eighteen months previous to admission to hospital, the disease commencing with hoarseness and hæmoptysis; several days later he suffered with a pain in left side; he had no chills or fever; the sputum was bloody occasionally for five months; night sweats; bowels regular; appetite varies; ankles and feet swollen. Physical examination: Heart normal, except slight reduplication of first sound and very rapid. Inspection shows emaciated chest, with slight expansion. Palpation about same on both sides. Percussion, dullness at both apices, in front and behind especially. Auscultation: At right apex in front breathing is higher pitched than normal, but still has some vesicular quality; also fine crackling râles; posteriorly, râles over whole of right lung; those at apex are fine; those over lung sonorous and sibilant; whisper is intense and bronchial. Left lung, a few râles in front; prolonged, high-pitched expiration over whole lung; cavernous whisper posteriorly; marked cavernous whisper over scapula and sonorous and sibilant râles, but no fine râles detected; over lower lobe breathing nearly normal, but above the breathing is cavernous in spots and distinctly tubular. Patient remained in hospital for two years, the disease gradually progressing, and he died on date above given.

Necropsy.—Body fairly well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Pericardial sac contains about 30 c. c. of fluid. Heart normal. Lungs: Left, pleura firmly adherent to chest wall, and both lungs studded with tubercles, the left having cavities at apex. Liver slightly fatty. Kidneys normal. Meninges of brain deeply congested. Surface of cerebrum congested, vessels between convolutions ingorged with blood, and tubercular deposit on vertex of both lobes on border of longitudinal fissure. Lateral ventricles filled with fluid. Cerebellum also congested.

CASE 43.

T. T., aged 50 years; nativity, Ireland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., October 19, 1891; died November 25, 1891.

History.—Upon admission patient stated that he had had a cough for two weeks with an expectoration of a whitish thick mucus with no blood; that he was losing flesh rapidly; had no pain, no night sweats nor fever, but some dyspnœa. No family history of phthisis, but there was an alcoholic history.

Physical examination.—Body fairly well nourished; chest expansion good; no dullness anteriorly or posteriorly on percussion. On auscultation, breathing was tubular and expiratory murmur was prolonged in both lungs. Heart sounds normal; area of dullness not increased on percussion. Liver and spleen appeared normal in size. Treatment had no effect; patient having a febrile exacerbation every day and gradually lost strength.

November 13.—Physical examination showed chest expansion to be still good. Vocal fremitus decreased on left side; normal on right. On auscultation breathing was roughened, and expiratory murmur prolonged in both lungs; a few crackling râles heard over apex of left lung; on percussion some dullness over apex of left, but normal over right. Heart sounds normal. Liver and spleen appeared normal in size. Patient rapidly grew weaker and died as above given.

Necropsy.—Body somewhat emaciated. *Rigor mortis* fairly well marked, hypostatic congestion posteriorly. Heart normal and contained ante mortem clots. Left pleura adherent to chest wall at apex; the right pleura thoroughly adherent to chest wall. Lungs both studded with tubercles, with cavities at apices. Liver fatty. Spleen normal. Kidneys apparently normal; capsule not adherent.

CASE 44.

A. F.; aged 29 years; nativity, St. Thomas; admitted to Marine Hospital, Stapleton, Staten Island, N. Y., October 10, 1891; died December 28, 1891.

History.—Upon admission patient stated that he had been troubled with a cough for one week. This cough was accompanied by an expectoration of yellow mucus, and pains over region of sternum, which were increased by coughing. No chill; anorexia; constipation. Sleeps well No specific history. Physical examination: Body poorly nourished; chest expansion poor; depression of chest above clavicles; vocal fremitus increased on left side; no dullness on percussion and no râles heard on auscultation over right lung. Dullness on percussion and crepitant râles heard on auscultation over left lung. Heart impulse weak; area of dullness not increased on percussion. No abnormal sounds heard over heart. Liver and spleen not enlarged. No pain over abdomen on percussion. Temperature 38.2° C. Patient's decline was rapid. No response to treatment.

Necropsy (twelve hours after death).—Body poorly nourished. *Rigor mortis* not well marked. About 60 c. c. of straw-colored fluid were found in pericardial sac. Heart small, and contained small ante mortem clot; aortic valves normal; mitral valves slightly thickened. Left lung completely adherent to parieties of thorax and contained one large cavity near apex; remaining portion of lung containing innumerable small cavities, filled with tubercular matter. Right lung hypostatically congested posteriorly; lower lobe hyperemic and somewhat œdematous; middle lobe contained a few cheesy or tubercular deposits; disseminated tubercles in upper lobe. Liver slightly enlarged, somewhat fatty, and pale. Spleen slightly enlarged, nodular, and pale externally. Right kidney: Capsule nonadherent, normal in size, pale, cortical portion thin. Left kidney: Capsule nonadherent, normal in size, pale, cortical portion thin. Other organs not examined.

CASE 45.

W. C. A.; aged 34 years; nativity, Virginia; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., July 16, 1891; discharged August 20, 1891, improved. Reëntered hospital December 29, 1891; died, January 14, 1892.

History.—When patient was admitted he stated that he had been sick about eighteen months. His sickness having commenced with fever, night sweats, cough with a white expectoration containing at times blood, dyspnœa, anorexia, nausea, vomiting. Bowels were regular, and there was œdema of feet. He also gave a phthisical history. Physical examination: Body fairly well nourished. Chest expansion poor. Tongue clean. Vocal fremitus decreased. On auscultation sibilant and mucous râles are heard anteriorly and posteriorly, and on percussion dullness is heard over both lungs. Heart sounds normal. Liver and spleen are not enlarged. Patient gradually grew weaker, medicines having no influence to stop the progress of the disease, and suddenly expired from heart failure as above given.

Necropsy (eight hours after death).—Body fairly well nourished. *Rigor mortis* well marked. Pericardial sac contained about 120 cubic centimeters straw-colored fluid. Heart normal. Lungs adherent to chest walls, making one tuberculous mass filled with cavities. Liver slightly fatty. Spleen normal. Kidneys normal, capsules not adherent.

CASE 46.

P. S.; nativity, Sweden; age, 33 years; was admitted to the marine ward, St. Vincent's Hospital, Norfolk, Va., February 16, 1891; died July 27, 1891.

History.—When admitted, was suffering from tuberculosis and the exhaustion consequent upon exposure during heavy weather at sea. After a few days' rest in hospital his condition improved, but the improvement was but temporary, and he again began to lose both strength and flesh until he finally died.

Necropsy (eighteen hours after death).—Body very much emaciated. Pronounced *rigor mortis.* Pleural cavity dry, with many firm adhesions binding the lungs to the ribs. Numerous cavities in the upper lobe of right lung, mostly small. Extensive deposits of miliary tubercles throughout the middle lobe of right lung, while the lower lobe was much congested; nearly the same conditions obtained in the left lung, the upper lobe having some small cavities and many small cheesy deposits, while the lower lobe was the seat of great congestion. The heart was enlarged, but its valves were perfect. The mesenteric glands were enlarged and in some cases softened. The liver was pale, but not the seat of disease. No marked deviations from healthy structure were found in any of the abdominal organs. The brain was not examined.

CASE 47.

J. J. L.; aged 29 years; nativity, West Indies; admitted to the marine ward of the German Hospital, Philadelphia, Pa., July 1, 1891; died July 9, 1891.

History.—Patient has suffered for three years with great weakness, cough, and progressive loss of flesh and strength. Has been in the hospital several times during the inclement seasons of the year. Has had repeated exhausting night sweats, great disturbance of the digestive tract, and profuse expectoration for a long time.

Necropsy.—Body emaciated. Nothing remained of the left lung but the root. The right lung was very much enlarged and filled with tubercle, undergoing cheesy change. The pericardium was adherent to the heart, which was very large and soft. Dilatation of the stomach. No ulceration of the intestines.

CASE 48.

J. C.; aged 22 years; nativity, Sweden; admitted to the marine ward of the German Hospital, Philadelphia, Pa., July 1, 1891; died October 5, 1891.

History.—Is said to have contracted the disease at another hospital, where he was under treatment for bronchitis and was placed in a bed next to a patient with chronic phthisis. This was eight months ago. Since that time his disease has run the regular course.

Necropsy.—Body much emaciated. Both lungs infiltrated with tubercle. Very large cavity at apex of right lung; smaller ones throughout. Slight adhesions at apex on right side; none on left. Heart very large; much pericardial fluid. Extensive tubercular ulceration of larynx. Liver and kidneys normal. Spleen large. Intestines normal; no peritonitis; no ulceration.

CASE 49.

Pleurisy with effusion.

H. H.; aged 40 years, nativity, Norway; admitted to the marine ward, German Hospital, Philadelphia, Pa., March 9, 1892; died April 29, 1892.

History.—Being employed on Light-ship No. 40, patient has for some time past been exposed to variable weather, and attributes the beginning of his illness to this exposure. Upon admission there was noticeable a severe cough attended with profuse purulent expectoration. The act of respiration was painful, and there was also marked dyspnœa. Patient has been free from hemorrhages. Physical examination elicited over base of left lung, both anteriorly and posteriorly, a movable area of dullness, a bulging in this locality also obliterating the intercostal spaces. Examination of right lung elicited dullness, not movable, at apex. Bronchial breathing was also marked here. The temperature curve gave evidence by its hectic type of the destructive process going on. An occasional abdominal tenderness also led to the belief (later verified by the necropsy) that the tubercular process had involved the intestines. The examination of the sputum for bacilli revealed their presence in considerable numbers. The general appearance of patient was one of marked anæmia, coupled with a gradual wasting away, leading to his death on April 29, 1892.

Necropsy.—Left pleural cavity contained a considerable quantity (about 1,000 c. c.) of a thin, purulent effusion. Left lung was compressed, rather hard, and noncrepitant. The upper lobe of right lung was the seat of a tubercular deposit, infiltrating this area quite uniformly. The mesenteric glands showed a very apparent enlargement throughout, while in the ileum two distinct tubercular ulcers were discoverd. The other organs showed but little abnormality.

CASE 50.

W. B. B.; aged 42 years; nativity, Delaware; admitted to marine ward, Mercy Hospital, Pittsburg, Pa., January 11, 1892; died May 17, 1892.

History.—Patient stated that about one month before admission, while in a condition of excessive perspiration, he retired and slept in a cold and damp atmosphere, aboard his vessel. His first symptoms were a feeling of languor, followed by chilliness and fever, and looseness of bowels. On admission he had from six to eight greenish-yellow stools a day. Tongue furred, showing points of denuded epithelium; appetite and digestion impaired; cough, with slight expectoration; extreme weakness and emaciation. As the disease progressed, physical examination indicated the formation of cavities in the lungs. Medication was of no avail. Patient grew weaker and weaker, became extremely emaciated, and died from asthenia, four months after admission.

Necropsy.—External appearances: Height, 5 feet 5 inches; post mortem lividity absent; *rigor mortis* marked; general nourishment very poor; pupils normal. Heart weight (after opening), 315 grams; muscles soft and flabby; valves competent. Respiratory organs: The lungs were filled with miliary tubercles and cavities were found in the apices of both lungs. Abdomen: Stomach somewhat ecchymosed. Intestines: Tubercular ulcers occupied the whole extent of the mucous membrane from the duodenum to the transverse colon, but were more numerous in the lower end of the ileum and at the ileo-cæcal valve, the majority of the ulcers running transversely to the long axis of the intestine. The mesenteric glands were congested and enlarged, varying in size from a bean to a pigeon's egg. Liver normal in size; nutmeg, with fatty degeneration. Kidneys small; otherwise normal. Spleen slightly enlarged and of a dark-brown color; tissue friable.

CASE 51.

G. G.; aged 23 years; nativity, Norway; was admitted to the U. S. Marine Hospital, Portland, Me., December 31, 1891 (transferred from Bath, Me.); diagnosis of valvular disease of heart. He was readmitted May 2, 1892, for tubercle of lungs, and died May 28, 1892, at 8:30 p. m.

History.—Had been sick more or less during the past two years; pain in both lungs, especially the left, slight cough, weakness, night sweats, and had lost considerable flesh in the past year; had slight hemorrhage several times during the past six months. On close examination, May 1, 1892, a large cavity was revealed in the lower lobe of left lung, and also in middle lobe of right lung.

Necropsy (fourteen hours after death).—*Rigor mortis* absent. Body very much emaciated; hypostatic congestion well marked in dependent parts; India ink marks on right and left arm; body weighed about 35 kilograms. Heart weighed 250 grams; valves competent; pericardial sac contained about 15 cubic centimeters fluid. Left lung weighed 310 grams; upper lobe entirely destroyed, and large abscess in lower lobe. Right lung weighed 860 grams; upper and middle lobes contained several small and medium-sized abscesses; the whole lung was studded with tubercular deposits and there were extensive pleuritic adhesions of both lungs anteriorly and posteriorly. Liver weighed 1,370 grams; was pale and anemic—otherwise normal. Spleen weighed 270 grams; condition same as liver. Left kidney weighed 180 grams; normal. Right kidney weighed 150 grams; normal. Stomach contained some undigested milk; normal. Mesentery was studded with tuberculous deposits. Bladder empty; normal. Brain not examined.

CASE 52.

A. A.; aged 24 years; nativity, Sweden; was admitted to the U. S. Marine Hospital, Portland, Me., July 14, 1891; died February 22, 1892.

History.—Was admitted to this hospital June 11, 1890, suffering from malarial intermittent fever, which he had contracted at Savannah, Ga. He recovered from this malady, was discharged on July 13, 1891, and readmitted to hospital July 14, 1891, for tubercle of lungs. He stated that he had lost about 20 pounds in weight during the six months previous; had slight cough; pain in chest, and night sweats. Treatment consisted of varied food, stimulants, and sedatives.

Necropsy (ten hours after death).—Left lung contained in the upper part a large cavity, lower part studded with tuberculous deposits; weight 1,120 grams. Right lung also contained tuberculous deposits; weight 1,410 grams; large cavity in apex. Liver weighed 1,920 grams; normal. Spleen weighed 260 grams; normal. Right kidney atrophied; weight 969 grams. Left kidney normal; weight 200 grams. Heart normal. Intestines contained tubercular deposits. Bladder empty.

CASE 53.

J. O.; born in Finland; aged 25 years; admitted to the U. S. Marine Hospital, Port Townsend, Wash., March 26, 1892; died May 28, 1892.

History.—On examination the patient gave the usual history and physical signs of tubercle of the lungs. The left lung being principally affected. On auscultation, signs of a cavity in its upper lobe were detected. His general condition was fair and he seemed to improve until about four days before his death, when he suffered from a severe hemorrhage from the lungs, which was with difficulty checked by the application of ice to the chest and by hypodermics of ergotin. After this, hemorrhages occurred at frequent intervals till the day of his death.

Necropsy (six hours after death).—*Rigor* slight. Body well nourished. Heart fatty. Right lung infiltrated with turbercle. Left lung, lower lobe almost a solid mass of tuberculous deposit. Upper lobe contained several cavities, one of which being filled with a recent blood clot, showed the seat of the hemorrhages which caused death. Abdominal organs normal.

CASE 54.

E. B.; aged 32 years; a native of Virginia; was admitted to the U. S. Marine Hospital, St. Louis, Mo., on November 19, 1891; died January 4, 1892.

History.—He had been treated in the hospital for malarial fever and tubercle of the lungs. When admitted the last time he was brought in a wagon, and assisted into the hospital by a man on each side of him. He complained of a severe cough, pain in the chest, in the back over the sacrum, and in the bowels; he had diarrhœa, accompanied with purging and a "sensation of burning" in the bowels. The stools numbered ten or twelve in a day. There were coarse râles over the lower lobes of both lungs. There was tympanitic resonance over the left upper lobe. There was dullness over the left lower lobe. There was cavernous respiration over right upper lobe. There was extreme emaciation. Dyspnœa became urgent after the slightest exertion. There was a bedsore on the back at the lower end of the sacrum. His appetite was variable. His failure was constant.

Necropsy (twelve hours after death).—Left lung wholly broken down into one large cavity partially filled with pus. The left pleural cavity was entirely obliterated by firm old adhesions. The right pleural cavity was also obliterated by adhesions less firm. There were cavities in the right upper and middle lobes, many in number, and varying in size. There were cysts in both kidneys. Other viscera congested, otherwise normal.

CASE 55.

Necrosis of the first metatarso-phalangeal joints of both feet.

M. D. (colored); aged 19 years; a native of Tennessee; was admitted to the U. S. Marine Hospital, St. Louis, Mo., January 25, 1892; died February 19, 1892.

History.—His father and mother are living. His only brother died of consumption. In 1887 he had malarial fever. He has had a cough every spring for four or five years. The cough left him in the last part of May or the first part of June. He has a sore on each foot beneath the distal end of the first metatarsal bone. This ulcer is connected with the metatarso-phalangeal joint. All of the tissues about the joint were swollen and tender. These joints have been inflamed for the last three years. He would get well enough to make one or two trips and then go to a hospital for treatment. He has a small ulcer on his left leg. He has pain in his chest over both lungs. He coughs nights and mornings. He has lost 10 pounds of flesh since Christmas. His appetite is fair. There is dullness over the apex of both lungs. There is a pleuritic friction sound over the apices of the lungs, with coarse râles.

February 15.—A piece of bone 2 centimeters long was removed from the distal end of the first metatarsal bone of the right foot. He recovered quickly from the effects of ether.

February 16.—He rested well till 2 a. m. At that hour the pressure of the splint annoyed him. His temperature was normal.

February 17.—He complained of pain in his right ankle. The wire splint was removed and the foot placed on a pillow. His temperature was normal.

February 18.—He rested well all night. He has no pain in his foot. His temperature was normal. He feels well. He had been nauseated once or twice during the day. He was given milk and lime water every fourth hour. His temperature was 39°.

February 19.—He was free from nausea during the night. He slept well. He felt very well when he awoke. At 7:15 in the morning he was sitting up in bed talking. He died suddenly at 7:30 in the morning.

Necropsy (seven hours after death).—There were tubercular deposits in both lungs. There was a small cavity in the left upper lobe. The operation wound was in good condition. The skin had united by primary adhesion except at one end; at that part the granulations were healthy.

CASE 56.

Intermittent fever.

G. G. (colored); aged 50 years; a native of South Carolina; was admitted to the U. S. Marine Hospital, St. Louis, Mo., April 25, 1892; he died May 19, 1892.

Family history.—His father is living. His mother and only sister are dead. He did not know the cause of their death.

Personal history.—He said he had a chill every afternoon for several days, followed by a fever. He also complained of pain in his chest and a severe cough. His appetite was poor. He had a feeling of lassitude. There was dullness over both upper lobes of the lungs. There was cavernous respiration and tympanitic resonance over the upper lobes of both lungs.

Necropsy (ten hours after death).—Both upper lobes were full of cavities of large size. The lower lobes of both lungs contained many small cavities.

CASE 57.

E. B. (colored); aged 24 years; a native of Mississippi; admitted to the U. S. Marine Hospital, St. Louis, Mo., March 29, 1892; he died April 12, 1892.

History.—His family history was good. When admitted he complained of pain in his chest which was increased by coughing. Expectoration was easy and abundant. There were coarse râles over both lungs and localized areas of dullness. His sickness began several months before he was admitted to hospital.

Necropsy (twenty-four hours after death).—There were cheesy deposits and many cavities in various parts of both lungs. The cavities were of small size.

CASE 58.

R. R. (colored); aged 25 years; a native of Tennessee; was admitted to the U. S. Marine Hospital, St. Louis, Mo., December 15, 1891; died April 4, 1892.

History.—His father is living. His mother died with consumption. When admitted to the hospital he complained of cough, dyspnœa on exertion, swelling of the feet during the day. He has night sweats. There is dullness over the left upper lobe, and coarse râles in the area of dullness. The disease made constant progress. On April 3 he had a slight hemorrhage. April 4 he felt well at the morning visit. He slept well and coughed very little. At half past 12 in the afternoon of April 4 the nurse came after me saying that this patient was having a hemorrhage. Before I could get to the ward he was dead.

Necropsy (twenty hours after death).—The body was much emaciated. The bronchi of both lungs were filled with blood. Both lungs contained cavities of various sizes. Other viscera normal. The origin of the hemorrhage was from a rupture of an artery which extended across a cavity in the left upper lobe. The artery had broken before its lumen had been closed.

CASE 59.

Aortic and mitral disease of the heart.

F. S. (colored); aged 35 years; a native of Missouri; was admitted to the U. S. Marine Hospital, St. Louis, Mo., August 6, 1891; died September 11, 1891.

History.—Cough of six months' duration; pain in right chest; dyspnœa; poor appetite; loss of flesh and strength; dullness over upper lobes of both lungs; cavernous respiration, with coarse râles over both upper lobes. There was a diastolic murmur over aortic valves, and over mitral valves a systolic murmur.

Necropsy.—Heart dilated, and aortic and mitral valves inefficient. Mitral orifice admitted four gloved fingers and aortic three. Lungs: There were large cavities in the upper lobes of both lungs, and very many small ones.

CASE 60.

A. M.; age, 65 years; nativity, Cape St. Lucas; admitted to the U. S. Marine Hospital, San Francisco, Cal., July 22, 1891; died July 24, 1891.

History.—When admitted he was extremely feeble and emaciated, being unable to walk. There was cough and expectoration of a large quantity of purulent matter. The lungs presented well marked physical signs indicative of tuberculosis.

Necropsy.—The lungs were filled with miliary nodules in the process of caseation. There were cavities in both apices of considerable size. The left lung was extensively adherent to the chest wall and the right lung to a less degree.

CASE 61.

A. H.; age, 48 years; nativity, England; admitted to the U. S. Marine Hospital, San Francisco, Cal., September 10, 1889; died December 20, 1891.

History.—Had been treated for cardiac trouble for some years, but during last two months had no symptoms of cardiac disease, though he became more and more emaciated, with anorexia. He had no cough or expectoration.

Necropsy.—Found heart normal in size; the aortic valve stiffened by a calcareous deposit, but was competent. Mitral valve apparently normal. The right lung was consolidated by a tubercular deposit, only its lower one-third vesicular. The left lung had some tuberculous deposit near the apex. Both lungs were bound down by old pleuritic adhesions.

CASE 62.

J. P.; age, 20 years; nativity, Sweden; admitted to marine ward, St. Joseph's Infirmary, Savannah, Ga., October 10, 1891; died October 16, 1891.

History.—Gave history of intermittent fever for several days prior to admission. Had a cough, with muco-purulent expectoration; no fever for several days, but temperature rose on the 15th to 39.5° C., without decided chill. Died suddenly, between 10 and 12 o'clock p. m., October 16.

Necropsy (ten or twelve hours after death).—*Rigor mortis* and post mortem lividity. Fair nourishment. Small tubercular deposits disseminated throughout both lungs, but none of them broken down. Muco-purulent exudation from cut ends of bronchi. Several lobules of upper lobe right lung in red hepatization, and adhesion of pleura at the apex. Two hundred cubic centimeters of fluid in the pericardium. Heart small and flabby; walls thin. Liver enlarged, dark, and bled freely on section. Spleen greatly enlarged and soft.

CEREBRAL HEMORRHAGE.

CASE 1.

C. W.; age, 55 years; nativity, Germany; admitted to Cleveland City Hospital June 14, 1892; died June 15, 1892.

History.—Occupation, cook. General health had been poor for some weeks. Was heard to fall from his berth on steamship, picked up unconscious, and brought to hospital. Never regained consciousness.

Necropsy (twelve hours after death).—Pericardial sac, heart, and aorta normal. Slight adhesions in both pleural cavities. Lungs in state of extreme congestion. Peritoneum normal. Liver, kidneys, spleen normal. A small cyst in pelvis of right kidney. No contusion of scalp. Unusual amount of blood flowed from incision of scalp. Surface of all convolutions covered with blood clot, thicker on the left. Brain compressed and convolutions separated from each other by the clot, especially so in the fissure of Sylvius on the left where the hemorrhage probably had its origin, but the rupture could not be located. Ventricles contained excess of fluid, but no blood. Section showed minute extravasations in substance of pons Varolii.

CASE 2.

Fibroid degeneration of the kidneys—Hypertrophy of the heart.

J. S.; aged 55 years; nativity, New York; admitted to U. S. Marine Hospital, Memphis, Tenn., May 12, 1891; died May 12, 1892.

Clinical history.—A few hours before admission, while engaged in his usual avocation, became dizzy and in a few minutes completely lost control of left half of body; did not lose consciousness; when admitted was perfectly rational. There was complete paralysis of left arm and leg; no paralysis of face or tongue; sensation normal. The urine contained albumen. Patient had never had syphilis, but during his entire life had been in the habit of consuming alcoholic liquids in enormous quantities. About six weeks after admission there was slight return of motion in toes of left foot. Improvement went on slowly and patient was finally able to walk a little. Improvement took place in paralyzed arm to a less degree, but the limb remained useless, and contraction of the flexor muscles of forearm gradually supervened. On May 11, 1892, he was suddenly seized with a convulsion and became insensible. Was seen an hour later and the following symptoms noted: Tonic spasm of all four extremities; legs and feet extended; forearms flexed across chest; stertorous respiration; conjugate deviation of head and eyes to the left; profound coma. During the examination there was a slight convulsion, limited to the left arm. Death occurred twenty-four hours later.

Necropsy (four hours after death).—No *rigor mortis.* Body well nourished. Thorax: Lungs normal; left ventricle of heart considerably hypertrophied and muscular tissue very firm; small patch of atheroma in transverse aorta. Abdomen: Both kidneys small, hard and nodular and show typical fibroid degeneration; other abdominal organs apparently normal. Brain: In detaching calvarium a slender osteophyte became separated from its inner surface near the vertex and remained attached to the dura, to which it was firmly adherent. The meninges and surface of cerebrum were normal. Right hemisphere: A cavity as large as a pigeon's egg and containing softened brain tissue was found in the lenticular nucleus close to the knee and posterior segment of the internal capsule; this was no doubt due to the first attack of hemorrhage, causing left hemiplegia. Left hemisphere: The lateral ventricle was distended by a large recent clot, causing the septem to bulge into the lateral ventricle of the opposite hemisphere. The optic thalamus was extensively lacerated and softened. The hemorrhage had evidently occurred in the substance of this body and torn its way into the lateral ventricle. The arteries composing the circle of Willis and their branches were all more or less atheromatous and rigid; the Sylvian arteries were conspicuously diseased.

CASE 3.

T. R.; age, 40 years; nativity, American; permit No. 102; was admitted to hospital at Milwaukee, Wis., October 22, 1891; died November 12.

History.—He had suffered from headache and dizziness for two or three months before his admission, and at admission had constant headache, with chills and evening exacerbations of headache; pulse and temperature normal. The headaches were almost entirely relieved by purgation and phenacetine. November 2, on making my visit to hospital, I found him dull and stupid and difficult to rouse, and his articulation was noted to be very imperfect. Some facial paralysis was also observed. The next day the left side was partially paralyzed, and by November 6 he had complete left hemiplegia of face and upper and lower extremities. Fæces and urine were passed involuntarily. November 6, 1891, I discharged him on permit No. 102, and readmitted him, permit No. 117, for hemiplegia. There was no rise of temperature; pulse feeble and 120 to the minute. November 8 he was about the same, but was unable to swallow.

Necropsy (sixteen hours after death).—As the symptoms during life seemed typical of lesions of the motor area of the brain, I removed only the brain at the hospital dead-house,

and examined it at my office, four physicians being present besides myself, one of whom is a specialist in nervous and brain diseases; yet, although a very careful examination was made of the brain, no lesion whatever was found. That organ seemed to be in all respects normal.

CASE 4.

D. B. M.; aged 65 years; nativity, New Jersey; admitted to the Marine Hospital, Stapleton, N. Y., April 25, 1892; died April 26, 1892.

History.—Two days before the patient was admitted to the hospital, he suddenly lost consciousness and fell to the deck. He had been in a comatose condition ever since, and unable to move. Upon examination, it was found that he was completely paralyzed on the left side, his breathing stertorous, and his pulse weak. His pupils were equally contracted, and his tongue could not be protruded. There was no dullness on percussion over the lungs, and no râles heard on auscultation. The heart sounds were feeble, but no abnormal murmurs could be heard. The patient could not swallow, he passed his urine involuntarily, and his bowels were constipated. An alcoholic history was obtained from his friends. The next morning he was still unconscious. His pulse was better, but his breathing had not improved. He gradually grew worse, and died at 10:20 p. m., April 26, 1892, as stated above.

Necropsy (twelve hours after death).—Body fairly well nourished. *Rigor mortis* well marked. Very little hypostatic congestion. Tissues of the heart were very soft. Valves competent. First portion of aorta very much dilated. Right lung bound down by old adhesions, œdematous, and congested. Lower lobe of left lung œdematous and congested. Liver pulpy and deeply congested. Spleen soft and friable. A hard cyst was found on the outer border of the right kidney. Both kidneys were small, and the left kidney contained a small amount of pus in one of the calices. The bladder walls were thickened. The cerebral membranes and the brain substance were congested. A large hemorrhage was found in the middle and posterior lobes of the right hemisphere. When the clot was removed, a large cavity was left in the right hemisphere, occupying nearly a fourth of its substance. The hemorrhage was caused by the rupture of one of the large branches of the middle cerebral artery passing to the caudate nucleus.

CASE 5.

Hemorrhage in the brain—White softening.

W. H.; age, 69 years; nativity, England; admitted to Marine Hospital, Stapleton, Staten Island, N. Y., October 2, 1884; died December 1, 1891.

History.—Six months prior to admission to hospital patient suddenly during the night lost the use of the left side. This condition continued until death. Family history negative. Previous condition: Always healthy, with the exception of continuous and excessive indulgence in drink, mostly spirituous liquors. Physical examination: Hemiplegia of left side, body included; dilatation of pupils of both eyes; difficult deglutition and aphemia. Patient's condition grew progressively worse without any amelioration of symptoms until death, which was caused by exhaustion.

Necropsy (thirteen hours after death).—Body somewhat emaciated. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Calvarium removed and dura mater found firmly adherent, thickened, and engorged, showing evidences of pachymeningitis. The arachnoid and pia mater were likewise thickened and engorged. There was found upon the posterior portion of the right lobe of the cerebellum an extensive cicatrix of an old lesion. This cicatrix covered nearly the whole of the posterior portion of the right lobe, and extended deeply into the substance of the cerebellum. Successive and parallel planes of incisions through the brain substance revealed the following conditions: The velum interpositum was thickened and congested; the internal capsule and the optic thalamus were soft and partially broken down, and of a dirty yellowish color, probably the result

of an old hemorrhage from the lenticulo-striate artery. This lesion was extensive, involving the greater portion of the lenticular nucleus, the genu, and a portion of the posterior third of the internal capsule. The branches of the basilar artery were in a state of atheromatous degeneration. Other organs not examined.

CASE 6.

J. McL.; aged 34 years; nativity New York; admitted to Marine Hospital, Stapleton, Staten Island, N. Y., August 7, 1891; died December 30, 1891.

History—Patient states that two days prior to admission, while preparing to retire for the night, he suddenly lost all motion and sensation of right side (this was complete, extending from neck to foot), falling suddenly to the floor, but not becoming unconscious. This paralysis of motion and sensation still continues. Patient has no pain, but is constipated and has anorexia and insomnia. A feeling of weakness and general malaise was noticed forty-five hours prior to the attack. Patient had pericarditis and rheumatism four years ago, and has been troubled with dyspnœa ever since. Father probably died of phthisis. No specific history. Physical examination: Tongue deflected to right side; anæsthesia and loss of motion of right arm and leg; chest rachitic; speech slightly affected; a distinct systolic bruit is heard over a large area about the heart. There was not much variation in patient's condition from admission to death with the exception of some limited motion of the thumb of right hand. Patient's heart was examined several times without any discernible change. On December 30 there was noticed a dropsy of the left leg. The cardiac action was quite tumultuous, patient experiencing uneasy sensations and having an anxious look. Death took place at 3:15 p. m.

Necropsy (twenty-two hours after death).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion general. Chest narrow and prominent (rachitic). The calvarium was removed. Dura mater normal. The cortical portion of brain was deeply congested. Successive and parallel incisions were made through brain substance at different levels, and the following conditions revealed: There was considerable fluid found in left lateral ventricle, apparently due to a solution of continuity of one of the branches of the middle cerebral artery lying along the floor of the third ventricle. The choroid plexuses of both sides were found engorged and thickened, that of the left side being markedly so. There was, however, no evidence of softening. The thorax was opened; the pericardium was found to contain about 50 cubic centimeters of fluid. Heart considerably larger than normal, and stopped in diastole, the left ventricle being filled with blood. Aortic valves competent and normal. Mitral valves contained vegetations, and were incompetent. Leaflets of tricuspids slightly thickened. Liver normal. Other organs not examined.

CASE 7.

Hemiplegia.

E. D.; age, 62 years; nativity, Massachusetts; admitted to the U. S. Marine Hospital, San Francisco, Cal., June 3, 1891; died November 1, 1891.

History.—While asleep, about two weeks before coming to the hospital, the patient became paralyzed on the right side of the body, including the face. This gradually passed away to a great extent, so that until his later attack he had fair use of the affected side, there being noticeable only slight impairment of the power of motion. Early in October there was noticed loss of mental power with delusions, making it necessary to keep him under surveillance. Then suddenly there occurred an almost complete paralysis of the side before affected. Later came a condition of stupor, the patient sleeping almost continuously until death.

Necropsy.—The dura mater was thickened and very firmly adhered to the calvarium. Beneath the inner layer of this membrane there was a collection of serous fluid, this layer of the dura being thickened and opaque. The pia mater was congested, and there

were over the convolutions of the superior longitudinal sinus several spots of curdy deposits. The vessels at the base of the brain were extensively atheromatous, some of the smaller branches being apparently closed by thickening of the inner coat. In the lenticular nucleus of the left side there was a spot of softening about the size of a filbert. The consistence of the tissue at this spot was semifluid.

Case 8.

Softening.

M. S.; aged 49 years; a native of Ireland; was admitted to the U. S. Marine Hospital, St. Louis, Mo., November 8, 1888; died June 4, 1892.

History.—In 1890, when I came to the station, he complained of stiffness in the left leg and numbness of the same. He said the knee often failed him when he was walking along the floor. For awhile the knee would work all right, then it would bend suddenly and let him fall. He could not walk without a cane. With continued use of the faradic current he became able to walk without a cane. He had several slight hemorrhages into the crus cerebri. He had a severe hemorrhage into the crus cerebri in November, 1891. He was then confined to his bed and was unconscious for ten days. In two months he had regained his former strength. He suffered with headaches occasionally. His bowels were constipated. His reflexes were good.

Necropsy (eighteen hours after death).—Dura mater firmly adherent along both sides of the longitudinal fissure of the brain. There were atheromatous patches in both vertebral arteries and in the basilar artery. There was an area of softening in the right crus as it passes into the cerebrum. The convolutions were well marked and the sulci deep. No recent hemorrhage was found.

INFLAMMATION OF THE BRAIN AND ITS MEMBRANES.

Case 1.

E. J.; aged 40 years; nativity, Texas; admitted to the marine ward, St. Mary's Infirmary, Galveston, Tex., July 20, 1891; died July 21, 1891.

History.—The patient was brought to the hospital in a dying condition by relatives, who gave the following account of his sickness: About four weeks previously, while ashore shooting, he was seized with sudden dizziness and speedily became unconscious. He was brought to Galveston, and after recovering from the immediate effects of the attack was found to be suffering from hemiplegia of the left side. He was more or less irrational, and this feature of his case became more marked, until, three days before his death, growing violent, his friends became afraid of him and had him sent to the city jail. Shortly afterwards they were notified that his condition was serious and that he had not long to live. On admission to the hospital he was in a state of coma from which he could not be aroused. His breathing was stertorous, with fallen jaw; pupils uniformly contracted; reflexes and all power apparently lost in the lower extremities, but present in the upper. His temperature upon admission was 40° C.; a few hours before death it rose to 41° C. The pulse was thread-like and rapid. The rough œdematous rattle of the respiration made it impossible to catch the sounds of the heart beat. There were no certain external evidences of syphilis. The chest was that of a tuberculous patient, and the body generally emaciated. The urine drawn by the catheter, was found to contain a moderate amount of albumen. A seaman in the hospital who knew the patient stated that he had been a hard drinker.

Necropsy (two hours after death).—*Rigor mortis* strongly marked. General nourishment very poor. Pupils moderately contracted. The body heat was retained to an unusual degree. A number of scars were presented, chiefly upon the arms and legs, and the fore and middle fingers of the right hand had been amputated in the metacarpus. The scars upon the arms appeared to be from knife wounds, while those upon the legs might have

been due to former syphilitic sores. The heart was contracted and nearly empty of blood or clots; its valves were competent. The lungs, examined in situ, were found adherent to the costal pleuræ about their apices and over about half of their posterior surfaces. They were studded with tubercles, the right lung being more affected than the left. In the abdominal cavity a peritoneal adhesion existed between its wall and the surface of the right lobe of the liver. The liver was slightly pale in color and harder in consistence than normal; its size was small. The kidneys showed congestion. The spleen was normal in appearance. The calvaria was removed and the brain and its membranes were examined. Extreme congestion of all the superficial vessels of the encephalon existed. An unusual amount of cerebrospinal fluid was present in the meninges and also in the lateral ventricles. The Pacchionian bodies were highly developed and the dura mater was closely adherent to the brain for a distance of 5 to 8 centimeters along the longitudinal sinus on each side. The dura mater was everywhere much thickened, and the arachnoid membrane was thickened and adherent to the convolutions of the cerebrum. The brain substance was abnormally soft and difficult to handle in making the examination. The entire encephalon was examined in sections, but no hemorrhagic point was discovered in it. The puncta cruenta stood out numerous and conspicuous. In the internal capsule of the striate body of the right side was found a softened area, and on the left side another of apparently less extent was found. Owing to the general softened condition of the brain the examination of these points was unsatisfactory. Deep in the pons Varolii, on the left of the raphē, were found two tumors of about 0.5 centimeter in diameter each. They were situated one above the other, 3 or 4 millimeters apart, near the crus cerebri. Each was tough externally, with a small point of cheesy degeneration in the center. Death was evidently due to an inflammation of the encephalon, which probably originated in the meninges. Whether the cause was syphilitic or tubercular was scarcely possible to say.

Case 2.

J. F.; aged 33 years; nativity, Maine; admitted to U. S. Marine Hospital, Mobile, Ala., February 12, 1892; died February 12, 1892.

History.—Patient had been suffering with otorrhœa for some time, and complained of pain in his head, being delirious at times. On admission his condition was very grave, and the nervous symptoms were severe. Marked delirium was present; pulse quick, feeble, and irregular; pupils widely dilated, and he had one or two slight convulsions.

Necropsy (twenty-four hours after death).—External appearances: Post mortem lividity marked. *Rigor mortis* slight, and body well nourished. Thoracic cavity: Pericardium normal; heart weighed 350 grams, normal; left pleural cavity obliterated, the result of numerous adhesions, produced by a previous attack of pleurisy; right pleura was similar to that on the left side; left lung was œdematous; weighed 550 grams; right lung was congested and œdematous; weight, 625 grams. Abdominal cavity: Stomach and intestines normal; liver normal, weighing 1,800 grams; pancreas weighed 95 grams; spleen weighed 300 grams; the kidneys were normal, left weighing 150 grams, right 160 grams. Cranial cavity: The dura mater and pia mater were much congested and inflamed; brain was congested and injected; several small extravasations of blood were found in its substance; weight, 1,600 grams. The lateral ventricles contained about 50 cubic centimeters of pale straw-colored fluid.

Case 3.

Cerebral meningitis—Sequel of rheumatism.

J. W.; aged 38 years; a native of England; was admitted to the U. S. Marine Hospital, St. Louis, Mo., March 31, 1892; he died April 8, 1892.

History.—He had been treated in the hospital several times for rheumatism. When admitted he complained of pain in his foot and in the knee and ankle joints. The right

foot was extremely sensitive to touch. He was an irascible patient; sometimes he would take his medicine, and sometimes he would not. A few days after admission the pain in his joints disappeared and he began to have pain in his head. The pain in his head seemed to disappear as symptoms of compression of the brain appeared. He lay in bed perfectly listless, and gave no indications of life unless disturbed. Reflex motions of legs were made when the feet were tickled. No coherent answer could be elicited to any question. Urine and fæces were passed in bed.

Necropsy (*twelve hours after death*).—The dura mater was thickened and had lost its shining surface. It was firmly adherent along the hemispheres at each side of the longitudinal sinus. The convolutions were markedly flattened, and the pia mater could not be raised from the brain without tearing it. There was an increased amount of serous fluid within the cranium.

CASE 4.

Cerebral meningitis—Tubercular.

N. J.; age, 16 years; nativity, Denmark; admitted to Cleveland City Hospital, July 15, 1891; died September 21, 1891.

History.—Onset with slight chills, elevation of temperature, epistaxis, cephalalgia, tympanites, rose-spots (?), and subsultus tendinum. The cephalalgia was persistent and severe. The fever was of irregular type, now high, now low, 38° to 40° C.; pulse 75 to 90. No diarrhœa. Later, noisy delirium set in, followed by stupor and death.

Necropsy.—Lividity present. *Rigor mortis* slight. Body much emaciated. Pericardial sac and heart normal. Thoracic aorta normal. A few slight adhesions in both pleural sacs. Lungs somewhat œdematous. A caseous and pigmented nodule near apex of left lung. Stomach: Small intestines and rectum normal; large intestine hyperæmic in places; a submucous hemorrhage in colon, extending over several square inches, but mucous membrane intact. No ulcerations or cicatrices at any point in intestines. Liver fatty; kidneys normal; spleen, small, firm, dark-colored. Dura mater thickened, not adherent. Superficial hyperæmia of brain. Large excess of fluid in ventricles.

CASE 5.

Tubercular.

E. R.; age, 28 years; nativity, Michigan; admitted to Cleveland City Hospital, May 8, 1892; died June 1, 1892.

History.—In January, 1892, for about a month, he had what the captain pronounced African fever (no chills, but fever, vomiting, constipation, delirium). Three of the crew died with same malady. Soon after he began to cough, and this has persisted until admission to hospital. He also had night sweats and œdema of lower extremities about a month before admission. Family history good. On admission he complained only of weakness and slight cough. With inspiration there was marked retraction of lower portion of right chest. On a horizontal line through the nipples the left chest measured 44.5 centimeters, the right 41.75 centimeters. Extreme expansion of chest 4 centimeters. The whole right lung seemed dull, except towards the apex. Bronchophony over lower right lobe. Crumpling sounds over lower lobe on the left. Heart feeble. May 11, 14, 15 he had night sweats. May 18, 4 a. m., he had a chill. Vomited twice during the day. Temperature on admission 37° C., a. m.; 38°, p. m. This gradually rose until on date last mentioned it was 38° a. m. and 39.5 p. m. It then declined and remained at about 38°. Pulse 86 to 92; respirations 24. May 19: Severe headache. This increased daily, accompanied with occasional vomiting and insomnia. May 22: Diarrhœa added to previous symptoms. Tongue coated, very tremulous. May 28: Slight delirium at night. May 30: Constant delirium, picking at clothes, stupor, involuntary stool, breath offensive. Respirations 34. June 1: Respira-

tions 49 (later Cheyne-Stokes respiration), pulse feeble and intermittent. Sputum examined once on admission; no tubercle bacilli found. Later he always stated there was no sputum.

Necropsy (eighteen hours after death).—General nourishment fair. Pericardial sac contained 60 cubic centimeters of clear fluid. Heart normal. Thoracic aorta, slight evidences of atheroma. Left pleural cavity, no adhesions except at base, but visceral layer generally thickened, white, granular. Left lung filled with blood; crepitant, normal appearance; no tubercle seen. Right pleural cavity obliterated; adhesions especially firm at apex, white, and thickened over upper lobe, and of granular appearance. Right lung normal size, filled with blood; crepitant; normal appearance; no tubercle seen. Stomach contained an ulcer near the cardiac end, 1.5 centimeters in diameter. Intestines normal; deeply tinged with bile; no ulceration. Liver of normal size, yellowish-brown color. Gall-bladder full of bile; no concretions. Kidneys rather large; normal appearance. Spleen small. Membranes of brain: There were several white nodules attached to cortex of brain, and binding it to dura and to the skull. Ventricles contained 100 to 150 cubic centimeters of fluid, the left more than the right. Under the microscope the finely granular material constituting the pleura proved to be almost entirely tubercle bacilli.

ACUTE MYELITIS.

O. G.; aged 20 years; nativity, Finland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., February 5, 1892; died March 23, 1892.

History.—Upon the admission of patient he stated that the day before while aboard ship he fell from the main gaff and has been unable to walk since. He struck his back about the lower dorsal region, and has been suffering considerable pain; his bowels have not moved nor has he been able to pass his urine, but he has sensation and movement of his feet. Appetite good. Physical examination: Pupils respond to light; no paralysis of limbs; no formication or coldness of feet; pulse weak and rapid. No displacement of spine could be made out. The patient's condition never improved; he continued to have an elevation of temperature and pain in legs, the paralysis of rectum and bladder remained. A bedsore formed in the lower dorsal region with girdle sensation; delirium, carphology, subsultus tendinum, and he gradually grew weaker and died as above given.

Necropsy (seventeen hours after death).—Body well nourished. *Rigor mortis* fairly well marked; hypostatic congestion posteriorly. Percardium contained normal amount of fluid. Heart normal, and contained ante mortem clots in cavities. Lungs normal, slight adhesion to parietes of chest. Posterior layer of peritoneum was bluish black in color, and thickened. Liver pale, otherwise normal. Kidneys very fat, large, and inflamed, and contained considerable pus; the pyramidal portion of right appeared disorganized. Capsules were not adherent. Bladder contained a small amount of purulent fluid; its walls were thickened, and the mucous membrane was congested. The lower portion of spinal canal was filled with pus, which oozed out when cut into. The subcutaneous tissue over sacrum was filled with pus. A small piece was broken from spinous process of the last dorsal vertebra. Microscopic appearance of cord was that of a highly inflamed cord.

ABSCESS OF THE BRAIN.

Case 1.

Embolism of the superior longitudinal sinus.

H. G.; age, 56 years; nativity, Massachusetts; admitted to the U. S. Marine Hospital, port of Boston, Mass., August 12, 1891; died October 20, 1891.

History.—Patient complained of nervousness, loss of appetite, and inability to sleep. He was an habitual smoker, and the excessive use of tobacco seemed to be the cause of

his trouble. For awhile he improved under treatment, but he soon complained of numbness in fingers and toes of left side. This gradually increased until there was developed a complete left hemiplegia, accompanied by paralysis of sphincters. Patient lay in a state of stupor up to a few days of his death, when coma supervened.

Necropsy (twelve hours after death).—Rigor mortis present. Body badly nourished. Brain only organ examined. Membranes firmly adherent over vertex. An embolus was found in the middle portion of superior longitudinal sinus. The clot was about 3 centimeters in length; its wall thickened and softened. A small opening was found in the embolus, giving exit to a small quantity of blood, which was extravasated between it and contiguous portion of right hemisphere. The character of the clots would indicate that the hemorrhage had occurred shortly before death. Separated from the embolus by a very thin wall was discovered a pus cavity in right hemisphere, which measured 9 centimeters in length, 5 centimeters in breadth, and which extended down to a level with upper surface of corpus callosum. Nothing of interest was noticed in other vessels. Left hemisphere normal.

CASE 2.

Suppurative inflammation of the middle ear.

E. R.; aged 29 years; nativity, Indiana; Negro race; was admitted to the U. S. Marine Hospital, Evansville, Ind., March 29, 1892; died May 2, 1892.

History.—Patient when admitted complained of severe pain in the right ear and temple; this had existed for two weeks, but beyond the pain there were no symptoms, objective or subjective. Morphia 0.016 and potass. brom. 2 grms., and warm fomentations relieved the pain until April 6, when there was a rather profuse discharge from the ear of thin purulent fluid, slightly fœtid; the pain returned on the 7th with sufficient severity to prevent sleep. The discharge gradually ceased, and the general condition of patient improved, but on April 21 pain again became severe and temperature rose to 38.4° C; appetite poor, and he slept but little, except when under the influence of anodynes. The discharge reappeared on the 26th, and was more fœtid and tenacious. May 1, had a severe chill, temperature afterwards rising to 40.4° C.; pulse rapid, free, and strong; respiration hurried and shallow. Face expressionless, eyes fixed, pupils dilated; delirium and hallucinations following. This condition gradually passed into deep coma on May 2, and death occurred at 4:30 p. m.

Necropsy (fourteen hours after death).—The meninges at the vertex, paticularly along the longitudinal sinus, were inflamed, and the underlying brain tissue softened. An abscess about the size of a hen's egg was found in the posterior inferior portion of the middle lobe of the cerebrum. The dura covering the posterior surface of the petrous portion of the temporal bone was inflamed and thickened, and the bone was necrotic and saturated with pus. The abdominal and thoracic viscera were examined and found to be normal in size and appearance.

CASE 3.

G. B.; aged 49 years; nativity, Maine; admitted to the U. S. Marine Hospital, New Orleans, La., January 21, 1892; discharged as improved April 15, 1892; readmitted May 6; died May 7, 1892.

History.—On first admission the patient had been sent home from Central America as a shipwrecked mariner by an American consul. He gave a confused account of shipwreck and exposure to a tropical sun for nine days in an open boat. After some days' observation it became evident that he was suffering from amnesic aphasia. An expectant treatment was adopted, with small doses of bichloride of mercury, under which he improved rapidly, recovering his speech to a considerable degree, and though taciturn and preferring to be let alone, exhibited activity and skill as a carpenter. On April 15, 1892, he was sufficiently recovered for employment as gate keeper, which position he

filled acceptably until the evening of May 5, 1892, when he was observed acting queerly. A medical officer at once visited him, but he immediately got into bed, and either could not or would not answer any questions, although he evidently understood them. A brisk mercurial purge was administered, with prompt result, and the patient transferred to the general ward. Stupor, with clonic spasm of the muscles, especially on right side, with dilatation of both pupils, supervened. Temperature, 38.8° C., rising to 40.2° C. Pulse, 90; full, though not bounding. Respiration, 20 to 30; normal. He was put on milk diet. Stupor deepened rapidly into coma, terminating in death at 7:40 p. m., May 7, 1892.

Necropsy (eighteen hours after death).—Body that of a muscular, well-nourished, middle-aged white man. Post mortem lividity marked. *Rigor mortis* feeble. All internal organs, except the liver, were loaded with fat. Heart: Weight, 450 grams; empty; pericardial sac enlarged, though otherwise normal; left ventricle hypertrophied and dilated; valves all competent. Lungs: Weight, left, 750 grams; right, 900 grams. Liver cirrhosed; capsule stripped off and hanging; creaking under knife, exuding biliary fluid; color, bright boxwood; weight, 1,450 grams. Gall bladder moderately full of tarry bile. Kidneys intensely congested; weight, left, 275 grams; right, 265 grams. Spleen: Weight, 875 grams; currant-jellylike. Sinuses of skull filled with dark clotted blood. The left hemisphere of the brain contained a large quantity of bright-green, ropy, inodorous pus, about 150 cubic centimeters in quantity. Weight of the encephalon without pus, 1,460 grams.

CASE 4.

Tuberculosis of lung and cirrhosis of the liver.

M. M.; aged 60 years; nativity, Ireland; was admitted to the U. S. Marine Hospital, New Orleans, La., November 4, 1891; died November 11, 1891.

History.—The patient was brought to the hospital in a state of stupor, by friends who could give no account of him other than he was a "hard drinker." No information could be elicited from the patient. On being placed in bed he at once turned upon his right side, drew his knees up to his chest, raised his shoulders, and threw his head well back, returning to this position as often as it was corrected. Temperature, 39.4° C.; respiration irregular, superficial, averaging 40 to minute; pulse moderately soft, compressible, 70 per minute. Pupils respond to light. Examination of chest unsatisfactory by reason of constant spasmodic contractions of superficial muscles of trunk. Urine drawn and presented no abnormal feature upon chemical examination. Tincture of digitalis and whisky, with 1.5 grams sulphate of quinine in broken doses, was given. The quinine was repeated during the night. Patient was restless during the night, but at 8 a. m. next day his temperature had fallen to 36.8° C., and his symptoms otherwise were somewhat ameliorated. The temperature again rose on the evening of the 5th of November, and muttering and shouting delirium supervened. Milk and whisky *ad libitum*, with quinine by the mouth and rectum, failed to reduce the temperature. The stupor gradually deepened into coma, though to the last he would take nourishment, until his death at 3 a. m., November 11, 1891. During the last forty-eight hours the respiratory murmur was almost imperceptible over the whole of both lungs.

Necropsy (twelve hours after death).—Body that of an elderly white man, somewhat emaciated. Post mortem lividity absent. *Rigor mortis* marked. Pupils moderately dilated. Heart loaded with fat; contracted; weight, empty, 320 grams. Ventricular walls hypertrophied; valves, though fatty, otherwise normal. Lungs congested; right hepatized; left superior lobe replaced by cheesy tuberculous mass. Weight, right, 850 grams; left, 515 grams. Left pleural cavity obliterated. Omentum loaded with fat. Liver friable; on section showing interstitial hardening; color reddish; weight, with gall bladder, 1,455 grams. Gall bladder thickened and distended with 100 cubic centimeters of tarry bile. Kidneys contracted; capsules wrinkled and detached; traces

of fatty degeneration; weight, each, 125 grams. Bladder walls somewhat thickened. Spleen small, soft, currant-jellylike; weight, 30 grams. Skull thin. Membranes of brain congested and sinuses filled with dark fluid blood. Brain weight, 1,425 grams. Cerebrum and cerebellum contained numerous large collections of a thick, unctuous, greenish, inodorous pus. Medulla oblongata softened, and superior portion of spinal cord almost liquefied.

EPILEPSY—TREPANNED.

W. B.; nativity, Ireland; age, 30 years; admitted to U. S. Marine Hospital, Chicago, Ill., March 21, 1892; died May 21, 1892.

History.—When 17 years of age he had received an injury to top of head, and a scar was visible over longitudinal sinus. Patient had had epileptic attacks for six years, which had grown more and more frequent. Attacks came on suddenly, without aura; convulsions, both tonic and clonic, were general from the start; passed urine during attack. There were also occasional attacks of petit mal. Examination of retina discovered choked disk in either eye. The patient insisted upon being trepanned, as he said anything was preferable to continuance of the "fits." May 15, operation of trepanning over situation of superficial scar was done by Surgeon Hamilton with chisel and saw. Hemorrhage from scalp was profuse and obstinate, finally controlled by quilting wound with catgut sutures. Owing to the very considerable hemorrhage that had taken place from the scalp and the sinus the dura was not incised. A section of bone was lifted up, leaving the scalp attached. There was adherent dura and a roughened projection of bone against the longitudinal sinus which was lifted out by the elevator; a profuse hemorrhage began from the sinus, but it was at once controlled by iodoform gauze. Patient never rallied, but was drowsy and delirious, and presented symptoms of meningitis with suppuration.

Necropsy.—Height, 167 centimeters; circumference at shoulders, 96 centimeters; post mortem lividity and *rigor mortis* well marked; general nourishment rather poor; pupils moderately dilated; thorax and abdomen not opened. Trepan wound of cranium 3 centimeters square, exhaling a gangrenous odor; bone and subjacent dura denuded and grayish; the latter depressed. Edges of trepan wound necrotic; adjacent bone denuded. There was meningeal infiltration, involving whole surface of right hemisphere and posterior two-thirds of left; base was free. When opening calvarium the dura was sawed through, and at least 40 cubic centimeters of purulent fluid escaped. Brain weighed 1,240 grams. On section no lesion was found except lymph exudate over right hemisphere.

VALVULAR DISEASE OF THE HEART—AORTIC.

Case 1.

H. C.; aged 47 years; nativity, England; transferred from Buffalo, N. Y., and admitted to U. S. Marine Hospital, Detroit, Mich., January 26, 1892; died March 29, 1892.

History.—He dates his illness five years back and attributes it to severe exposure in midwinter while engaged in taking men from a wrecked vessel off Delaware Breakwater. He was carried to Boston and admitted to hospital on Christmas eve, and remained there until April, when he went to Chicago and while there was seized with a severe attack of rheumatic fever and was in hospital six weeks. Was comparatively well after that, except, as he says, "shortness of breath." About a year ago he met with an accident on board vessel and received a severe contusion of the ribs, for which he was under treatment in hospital at Buffalo for four or five months. He sailed part of last season, but was again admitted to hospital at Buffalo, December 1, 1891, where he remained until transferred to Detroit. While here he had several severe attacks of dyspnœa and angina, and it was in one of these attacks, lasting about twenty minutes immediately following his supper, that he expired. He had only slight enlargement of the abdomen and œdema of feet and legs, the latter appearing during the last two weeks of his life.

Necropsy (sixteen hours after death).—Rigor mortis well marked. The back much discolored and livid. The lungs were normal and the pleuræ were not adherent. The pericardium contained 50 cubic centimeters fluid. The aortic valves were incompetent, due to destruction of the apex of each leaflet. A pencil could be easily introduced into the opening left after the leaflets were brought together. The other valves were normal. The aorta was very badly diseased. There were large calcareous deposits in its walls. This condition extended from the valves to the ascending portion. The liver was enlarged and congested. The other organs were normal. Left lung, weight, 750 grams, right, 890; heart, 510; right kidney, 150, left, 170; liver, 1,920.

CASE 2.

Insufficiency.

C. B.; aged 31 years; nativity, England; admitted to U. S. Marine Hospital, Detroit, Mich., May 3, 1892; died May 6, 1892.

History.—The patient on entering the hospital was in a very bad condition. He was suffering great pain in the region of his heart, and also great dyspnœa, and it was impossible to get a correct history of his trouble. About fifteen months previous he had a severe attack of acute rheumatism, lasting nearly ten weeks, from which he never fully recovered, having had frequent, though not so severe attacks ever since. Dating from his first attack he had occasional pains in the cardiac region, and at times had experienced great difficulty in breathing. These symptoms gradually getting worse he was admitted to the hospital at Port Huron, Mich.; and was transferred from there to Detroit, May 3, 1892. The patient was suffering great pain, and was so greatly oppressed for breath that he had to be carried to his bed. May 4, patient suffered greatly during the night and was troubled with severe diarrhœa. Slept some towards morning. On physical examination evidence of obstruction was elicited, and the patient was ordered infusion of digitalis. He complained a good deal all day, but was not thought to be in any immediate danger. May 5, 6:30 p. m.: Patient passed a very restless day. Complained of more pain than usual and suffered greatly from dyspnœa. At 8 p. m. he was given two morphia pills (0.01 grams each) and was very comfortable until midnight. He became restless again, and at 1 a. m., May 6, was given two morphine pills and rested again until about 2:30 a. m., when he awoke suddenly with a great start and died a few minutes afterwards.

Necropsy (seven and a half hours after death).—Rigor mortis well marked. Post mortem lividity slight. General nourishment fair. Heart weighed 710 grains. Left ventricle very much enlarged; wall hypertrophied; calcareous degeneration of aortic valves; mitral valve competent. Left lung weighed 690 grams; right, 900 grams. Liver was pale, friable, and contained calcareous deposits; weight 1,650 grams. Left kidney, weight, 170 grams; right, 190 grams. Spleen weighed 165 grams. Other organs apparently normal.

CASE 3.

Insufficiency.

J. D.; aged 49 years; nativity, Missouri; admitted to U. S. Marine Hospital, Memphis, Tenn., January 23, 1892; died February 19, 1892.

Clinical history.—Has been in hospital several times for aortic disease. Says that he has been a hard drinker. There is a moderate increase of the area of cardiac dullness and a decided murmur at the base replacing the second sound. The pulsation of superficial arteries is very apparent; there is slight aneurismal dilatation of the upper part of left common carotid artery; œdema of face and lower extremities; pulse rapid and rather weak; subcrepitant râles over both lungs, with partial dullness, and feeble respiratory murmur over left upper lobe. Has cough, dyspnœa, and tendency to orthopnœa. The above-named symptoms, noted on the day of admission to hospital, grew gradually worse until death ensued.

Necropsy.—Rigor mortis. Body well nourished; cellular tissue of legs œdematous; marked post mortem lividity. Right lung congested and œdematous; did not collapse when exposed; bloody serum exuded freely on section; adhesion between posterior part of lung and chest wall; pleural cavity contained a considerable quantity of serum. Left lung collapsed and partially adherent; slightly œdematous, otherwise normal. Heart: Pericardial sac normal except one small patch of recent exudation; heart very large, weight, 650 grams; right cavities dilated; left ventricle greatly hypertrophied and dilated; aortic valves thickened and incompetent. The ascending and transverse portions of the aorta had undergone aneurismal dilatation, and were about three times as large as normal; the inner coat of this portion of the vessel was very much roughened. Other organs not examined.

CASE 4.

Insufficiency.

A. S.; aged 38 years; nativity, Russia; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., October 31, 1891; died December 4, 1891.

History.—Upon admission patient stated that for two years he had been suffering from a cough with a whitish expectoration, dyspnœa, and for the past few weeks it had become much worse. There were some rheumatic pains, œdema of feet, ascites, anorexia, nausea, vomiting, and insomnia. Physical examination: Body well nourished; chest expansion good; tongue clean; vocal fremitus normal; a few sibilant râles heard on auscultation over left lung; no dullness on percussion over either lung; an aortic insufficiency murmur heard at base of heart; liver appears enlarged; spleen appears normal in size. Patient for a few days responded to treatment and appeared much better; the œdema of feet and ascites having disappeared and the cough and dyspnœa very much relieved. On November 28 he contracted a severe cold, having an elevation of temperature lasting about five days, and from this he did not appear to recover. On December 4 he suddenly grew weak, with a cold clammy sweat over the body, and he died at 1 o'clock p. m.

Necropsy (twenty-four hours after death).—Body well nourished. Hypostatic congestion posteriorly. *Rigor mortis* well marked. Pericardium somewhat congested and filled with a straw-colored fluid. Heart about twice the size of a normal heart; the aortic valves calcareous and retracted; left ventricle dilated; walls of right side unusually thin. Lungs both congested. Liver nutmeg in appearance on section. Spleen congested. Kidneys: Capsules not adherent; the right was small and cortical portion thin; left appeared normal.

CASE 5.

Aortic and mitral—Pericarditis.

D. L.; age, 36 years; nativity, New York; admitted to U. S. Marine Hospital, Baltimore, Md., July 24, 1891; died April 16, 1892.

History.—For some time prior to admission has been suffering from vertigo, shortness of breath, and violent spasmodic cough. On examination: Heart greatly hypertrophied; action very forcible, so much so as to agitate entire body, with loud bruit manifest over to whole pericardial region, more exaggerated at apex. Distress so great as to confine him bed in a semirecumbent position. Treatment consisted in the administration of potassium iodide, tincture digitalis, and fluid extract ergot, in gram doses of each, three or four times a day. Under this treatment he improved so much that by September 10 he was able to be up and about. In November he had an attack of malarial fever, which was got under control in a few days; thence through the winter he was up, assisting about the ward, and, but for an occasional troublesome paroxysmal cough, felt quite well. On the evening of April 16, 1892, he suddenly fell to the floor of the ward, and before he could be picked up and placed in bed was dead.

Necropsy (fifteen hours after death.)—Rigor mortis. Body well nourished. Hypostasis about neck and posteriorly on chest walls. Brain not examined. The heart was found enlarged to about four times its normal size. The pericardium was firmly adherent to heart, from which it was separated with difficulty, leaving the surface red and roughened, highly characteristic of marked myocarditis and pericarditis. The aorta was small, barely admitting the forefinger. Aortic valves thickened and rigid, causing well defined stenosis. At the base of the aortic valves granular elevations showed the existence of endocardial inflammation. The mitral valves also suffered from the endocardial inflammation, as they were thick and covered with vegetations. The walls of the heart were much thickened from hypertrophy, except near the apex of left ventricle a space about the size of a silver dollar was found so much thinned that in removing the adherent pericardium it ruptured. Both cavities were enormously dilated and filled with black clotted blood. The weight of the heart, after thorough washing from blood, was 1,293 grams. So abnormally enlarged was this heart that it nearly filled the left thoracic cavity, causing complete collapse of the left lung. The right lung was normal, as were also the abdominal organs.

CASE 6.

Aortic and mitral.

J. M. O.; 49 years old; Norway; permit No. 90; was admitted to hospital at Milwaukee, Wis., October 5, 1891; died December 24, 1891.

History.—On admission he was suffering with shortness of breath and asthma, which greatly increased during his stay in hospital, and finally the dyspnœa became so great that he was entirely unable to lie down. The diagnosis made during life was aortic obstructive valvular disease with hypertrophy of heart. Three weeks before death effusion occurred into the left pleura, and 1,200 cubic centimeters of reddish serum were removed by aspiration about two weeks before his death, but with only temporary relief to his breathing. He died December 24, 1891.

Necropsy (twenty-four hours after death).—Anasarca was noticed, though not in very great amount. Both pleural cavities were found to contain reddish serum in considerable quantity. The left pleura was thickened and showed evidences of both old and recent adhesions. The pericardium contained about 120 cubic centimeters of serum, and the abdominal cavity also contained considerable reddish watery fluid. The heart was enormously hypertrophied, especially the left ventricle, and its walls greatly thickened. The aortic and mitral valves were imperfect, entirely changed in shape, and thickened. The left lung was much compressed, and its substance solid and liver like. The kidneys were enlarged and congested, and liver enlarged.

CASE 7.

Aortic and mitral.

H. P.; aged 44 years; nativity, Maine; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., June 22, 1891; died July 11, 1891.

History.—Patient stated that six years ago he was admitted to this hospital, suffering from dyspnœa, præcordial pain, and swelling of the extremities. He left the hospital in 1885 much improved, and up to two months ago had been in very good health. He gives an alcoholic history; also one of syphilis, having had it fourteen years ago. Gives no rheumatic history in himself or family. Two months ago he began to suffer slightly from dyspnœa on exertion as going upstairs, but now he suffers when walking on a level a dull præcordial pain, which is sometimes lancinating in character. He complained of forcible heart action and palpitation for years, but much worse the last two months. Passes urine in usual quantity, but a little darker in color. Bowels more or less constipated. Appetite poor. Physical examination: An abnormal mitral sound heard over heart. Respiratory murmur natural. Pulse hard and wiry. Entire body covered with

copper-colored stains. Liver and spleen are not enlarged. He was very much distressed with dyspnœa until July 8. A. m.: The dyspnœa does not trouble him so much as when first admitted; but continues to have periodical attacks. A cough is troublesome; expectorates no blood. Pulse 102, hard and wiry. Mitral murmur as well marked as when admitted. The pain in feet has subsided. July 9, a. m.: Cough not as troublesome; dyspnœa about the same; no pain over heart; pulse 100, wiry, but more regular. July 10, a. m.: Dyspnœa about the same; he slept well during the night; a little pain in feet. July 11, 2 p. m., patient died.

Necropsy (forty-four hours after death).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion; pericardium somewhat congested; cavity contained about 60 cubic centimeters of serous fluid; heart enormously enlarged; aorta very much dilated; walls thinned and roughened; large ante mortem clots in both cavities; tricuspid valves appear normal; left ventricle hypertrophied; aortic valves thickened with vegetations on each; mitral valves, few vegetations, but not sufficient to interfere to any degree with their action. Lungs: Both bound to chest wall and œdematous. Liver about normal in size; nutmeg in appearance on section. Spleen slightly congested. Kidneys: Right, capsule nonadherent, normal appearance on section; left, capsule nonadherent, number of cysts; cortex thin; Malpighian pyramids indistinct.

Case 8.

All valves affected.

P. C.; aged 63 years; nativity, Ireland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., September 9, 1891; died October 23, 1891.

History.—Patient was admitted for a chronic ulcer of the leg. A few nights after admission he had a very severe attack of spasmodic asthma. Upon being questioned he stated that he had been subject to similar attacks for several years. He was better the following morning, but was again attacked that night; after this he had attacks almost every night. Physical examination: Chest expansion fairly good; high pitched note on both sides over apices on percussion, more especially over left; a few sibilant râles heard over right side, bronchial breathing over left; first and second heart sounds accentuated, but follow each other so rapidly and are so obscured by bronchial breathing that nothing further can be learned of condition of heart; arteries are extremely atheromatous. A few days later the râles and bronchial breathing disappeared and a presystolic murmur was heard over apex of heart. Heart dullness increased. Liver slightly enlarged, legs œdematous. Urine acid in reaction; specific gravity, 1,010; contains a large amount of albumen. Patient grew steadily worse, and died on date above given.

Necropsy (twenty-two hours after death).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Abdomen distended. Feet œdematous and pit on pressure. Pleuræ filled with fluid; right adherent to chest wall. Lungs both œdematous. Heart, calcareous deposit on all valves; cusps thickened at edges. Arteries atheromatous. Liver hard and somewhat nodular. Peritoneum contained considerable fluid. Kidneys pale, capsules easily stripped; cortical portion extremely thin. Malpighian pyramids indistinctly marked. Spleen somewhat nodular.

Case 9.

Aortic and mitral.

J. C.; aged 45 years; nativity, Virginia; was admitted to the marine ward, St. Vincent's Hospital, Norfolk, Va., July 23, 1891; died July 31, 1891.

History.—He had been in bad health for a long while, and when admitted was suffering from dyspnœa and insomnia, and his legs were much swollen. His symptoms grew worse and he only lived one week after coming to the hospital.

Necropsy (thirty hours after death).—Body emaciated, except legs, which were enlarged. No *rigor mortis*. Pleura contained about 250 cubic centimeters of fluid. Bronchi filled with bloody froth; both lungs congested and in their apices were many tubercular spots. Heart enlarged, and the ventricular walls much thickened; weight, 700 grams. The mitral valve was the seat of calcareous degeneration which made its edges rigid and prevented its perfect closure; in fact, the valves did not close more than one-half of the mitral orifice. There was also a thickening and hardening of the aortic valve and dilatation of the aorta in the first part of its course. The abdomen contained about 1,000 cubic centimeters of fluid. Liver weighed 2,500 grams, was soft and slightly granular. Spleen weighed 850 grams, and had an adherent capsule. The left kidney had a small cyst in its cortical substance containing about 5 cubic centimeters of a colorless fluid. All other abdominal organs were sound.

CASE 10.

Aortic and mitral—Abscess of the spleen.

D. McC.; age, 42 years; native of Scotland (white); was admitted to the U. S. Marine Hospital at Portland, Me., September 23, 1891; died December 1, 1891.

History.—Patient before admission had been treated at several marine hospitals, the last being in Detroit, Mich., where the surgeon told him he was suffering from heart disease. Weight of patient when in health, 175 pounds. On physical examination the following facts were ascertained: In general the patient presented a cachectic appearance, œdema of the face, ascites and œdema of the lower extremities; dullness over apex of right lung, with considerable cough, and pain over region of heart (angina pectoris). Found on examination mitral regurgitation and aortic stenosis; urine heavily loaded with albumen. Patient grew better during first two weeks under hospital treatment, œdema and ascites partially disappearing; albumen also diminished in quantity. After this patient gradually grew worse, suffering frequent attacks of angina pectoris, cough, and dyspnœa. As the disease advanced, and about two weeks after being admitted, he began to complain of pain over spleen, which continued until death. Urine became very scanty and heavily charged with albumen. For several days he suffered with uræmic chills, and died in a comatosed state.

Necropsy.—Height, 1.72 meters; circumference at shoulders, 0.91 meter. Post mortem lividity in dependent parts. *Rigor mortis* none. Lungs: Adhesions at posterior surface of right and lower lobe of the left; miliary tubercles throughout both. Heart weight, 350 (after opening) grams. Pericardial sac normal. Aortic valves incompetent; orifice contained calcarious deposit. Mitral valve incompetent; vegetation covering valves. Abdominal cavity: Liver, weight,1, 300 grams. Kidneys: Left, 200 grams; right, 270 grams; parenchymatous dengeneration, both. Spleen weighed 250 grams, and contained a large abscess.

CASE 11.

Aortic and mitral.

S. J.; age, 71 years; a native of United States; was admitted to the Marine Hospital at Portland, Me., October 12, 1891; died November 27, 1891.

History.—Had been treated in this hospital on previous occasions for same trouble; also for hydrocele of tunica vaginalis, which was aspirated. When admitted he was suffering from angina pectoris, anemia, loss of appetite, and frequent attacks of dyspnœa, very distressing.

Necropsy.—Height, 1.7 meters; circumference of shoulder, 0.86 meter. Post mortem lividity in dependent parts. *Rigor mortis* none Heart weight, 560 grams (after opening). Pericardial sac normal. Aortic valve incompetent; orifice calcified, very heavy. Mitral valves insufficient; valves thickened. Respiratory organs normal. Kidneys: Right weighed 160 grams; parenchymatous degeneration; left, 180 grams, normal. Cause of death, paralysis of heart.

CASE 12.

Aortic and mitral—Pericarditis.

H. W.; aged 43 years; nativity, Virginia; admitted to the marine ward of the German Hospital, Philadelphia, Pa., July 1, 1891; died August 1, 1891.

History.—Has had dyspnœa for years, but within the last eighteen months has suffered from ascites and general dropsy. Physical examination showed lesions at both the mitral and aortic orifices.

Necropsy.—Heart was enormous; pericardium was adherent to it and to all surrounding structures; the valves were incompetent; no atheroma. Lungs were œdematous; pleuritic adhesions. No macroscopic evidence of disease of kidneys.

CASE 13.

Aortic.

S. E. (colored); aged 28 years; a native of Tennessee; was admitted to the U. S. Marine Hospital, St. Louis, Mo., December 23, 1891; he died May 2, 1892.

History.—He has had rheumatism twice. He had congestion of the brain six years ago, and was unconscious five or six days. When admitted he had a pain in his chest, cough, and dyspnœa. There was no trouble with micturition. There was a loud systolic murmur over the aortic orifice, and a similar murmur at the apex. There was a diastolic murmur over the aortic orifice. The feet and ankles were considerably swollen. The œdema of the feet and ankles increased, and the skin over the whole leg became painfully tense. During the last two months of his life ascites prevented him from eating much, though his appetite was good. The ascitic fluid was removed by aspiration, but soon reappeared.

Necropsy (twenty hours after death).—The aortic valves were adherent at the angles, and incompetent. Two gloved fingers were admitted into the aortic orifice without disturbing the angles. There was serous fluid in all of the serous cavities, but there was not very much in the pleura or pericardium. Heart was hypertrophied.

CASE 14.

Aortic and mitral.

C. R. (colored); aged 29 years; a native of Kansas; was admitted to the U. S. Marine Hospital, St. Louis, Mo., September 28, 1891; died February 5, 1892.

History.—When he was 9 years old he was sick four months with rheumatism. Soon after recovering from rheumatism he was taken sick with the measles. In 1883 he had a second attack of rheumatism. Three months before admission he was taken with cough, severe pain in the left side of his chest near his heart, accompanied with shortness of breath. In addition to the above symptoms it was found that the apex beat was in the left mammillary line, and 5 centimeters below the nipple. There was a loud diastolic murmur over the aortic valves. The dyspnœa became more urgent, and during the last month of his life the slightest exertion caused him great distress. His feet and legs became much swollen. Later his hands and arms became œdematous. Two months before his death ascites appeared, and became an important factor in his dyspnœa. On the 5th of February, 1892, he got up to the commode and died suddenly from heart failure.

Necropsy (ten hours post mortem).—The aortic and mitral orifices of the heart were enlarged, and the valves inefficient. The aortic orifice admitted three gloved fingers; the mitral four. The heart was hypertrophied and dilated. The walls of the right ventricle were nearly as thick as the walls of a normal left ventricle. The other viscera were normal, but congested.

CASE 15.

Aortic and mitral—Chronic nephritis.

W. H. L.; age, 24 years; nativity, North Carolina; admitted to Marine Hospital, Wilmington, N. C., July 10, 1891; died July 26, 1891.

History.—When admitted complained of pain in the back, slight fever, headache, and vomiting. Urine found albuminous and containing granular and hyaline casts. Subsequent examination discovered a rasping murmur following the first sound of the heart, most marked at the aortic cartilage, and a softer murmur over the mitral area preceding the second sound. There was swelling of the ankles, persistent vomiting, frequent attacks of intense headache, and fits of drowsiness from which he was aroused by subcutaneous use of pilocarpine muriate, 0.01 of a gram. The profuse perspiration which it induced was followed by relief for a short time, but he gradually grew worse. The vomiting increased, the urine became more scanty, loaded with albumen, and at 12:20 p. m., July 26, 1891, he died in coma.

Necropsy.—Height, 1.75 meters; circumference at shoulders, 158 centimeters. No post mortem lividity; general nourishment fair; *rigor mortis* present; pupils dilated. Heart weight, after opening, 521 grams; milky patches on parietal layer of pericardium; fluid slightly increased; stenosis of aortic valve; mitral incompetent, admits four fingers; pulmonary and tricuspid healthy; left ventricle hypertrophied, 1.9 centimeters thick; right ventricle, 0.625 centimeter thick. Thoracic aorta atheromatous in patches; abdominal aorta normal Lungs: Left, weight, 625 grams; hyperæmic; small cheesy deposit on outer anterior face of lower lobe; no cavity. Slight effusion in left pleural cavity; no adhesions. Right lung, weight, 816 grams; hyperæmic; depressed cicatrix at apex. Extensive adhesions in right pleural cavity. Peritoneum normal. Tongue, pharynx, and œsophagus normal. Stomach, seat of chronic gastritis, rugæ very prominent. Small intestine healthy. Diameter of pylorus, 1.25 centimeters. Cardiac orifice, 1.85 centimeters. Large intestine and rectum healthy. Liver attached to spleen by left lobe; structure fatty and friable, most marked in right lobe; left lobe adherent to spleen and stomach; color pale; weight, 1,712 grams. Gall bladder full; ducts patulous. Pancreas healthy; weight, 109 grams. Left kidney: Secreting structure almost destroyed and replaced by a hyaline-looking deposit; hardly a trace of cortical structure left; weight, 159 grams. Right: Small; weight, 96 grams; deeply congested; secreting structure more abundant than in left, and it has evidently done the work of both. Pelvis and ureters show nothing abnormal. Bladder very small; wall much thickened and the seat of a chronic cystitis; urethra shows a gleety discharge. Suprarenal bodies healthy; left weighs 12 grams; right, 6 grams. Spleen slightly enlarged; weight, 322 grams. Brain and spinal cord not examined.

CASE 16.

Mitral insufficiency.

T. O. E.; aged 56 years; nativity, Kansas; admitted to the U. S. Marine Hospital, Memphis, Tenn., May 14, 1892; died May 19, 1892.

Clinical history.—Patient was an inmate of hospital for three weeks in April, 1892. At that time he had moderate anasarca and ascites with dyspnœa on exertion. The area of heart dullness was increased, and there was a loud systolic murmur at the apex. Patient gave a history of syphilis, but has not had rheumatism. Under the use of digitalis and strychnia the symptoms were relieved and he returned to duty. When he again presented himself the symptoms had returned, and the heart's action was very weak and irregular. Death occurred quite suddenly.

Necropsy.—Rigor mortis. Body well nourished; cellular tissues œdematous. Thorax: All of the cavities contained serum, about 1,000 cubic centimeters in each pleural cavity and 100 cubic centimeters in pericardial sac. The lungs were normal. The heart was hypertrophied and dilated, the left cavities being principally affected. The mitral orifice

was very large and the mitral valves thickened, deformed, and insufficient. There were a number of fibrous cicatrices in heart muscle, probablythe result of myocarditis. The heart weighed 585 grams. Abdomen: The liver weighed 1,780 grams and appeared normal, with the exception of a depressed cicatrix of dense structure, which caused a deep fissure in the free border of the right lobe. The left kidney weighed 290 grams, the right, 210 grams. Both organs contained small cysts, were congested, and of a dark reddish-blue color. There was evidence of beginning fibroid change in both organs.

Case 17.

Aortic and mitral insufficiency.

W. E.; aged 33 years; nativity, Virginia; was admitted to the marine ward, St. Vincent's Hospital, Norfolk, Va., November 4, 1891; died December 25, 1891.

History.—When admitted he had been sick about three months, but had not been forced to give up his work, which was that of a steward. He complained greatly of dyspnœa and pain in chest, greatly aggravated when in a horizontal position. A distressing cough added much to his misery, and soon dropsy appeared both in the peritoneum and his legs, indeed to such an extent in the latter as to require repeated incisions. His condition passed rapidly from bad to worse, and he died on Christmas day.

Necropsy (twenty-four hours after death).—Body emaciated in upper part, swollen in belly and legs. No *rigor mortis*. The pleuræ contained about 350 cubic centimeters of fluid, and there were some old adhesions between the two layers. Both lungs were much congested, but not otherwise diseased. The pericardium held about 125 cubic centimeters of fluid. The heart was large and soft and weighed 650 grams. Mitral valve found to be insufficient, not thickened nor calcareous, but there was not tissue enough to properly fill the opening. The aortic valve was likewise insufficient, but not to so great an extent. Liver enlarged, capsule adherent, pale in color; spleen and both kidneys normal. Peritoneum contained probably 1,500 cubic centimeters of fluid; scrotum also dropsical.

Case 18.

Mitral insufficiency.

W. B.; age, 35 years; nativity, Georgia; entered U. S. Marine Hospital, San Francisco, Cal., November 14, 1891; died January 31, 1892.

History.—Complained of shortness of breath, vertigo, swelling of feet, ankles, and legs; also of pain under left nipple. Physical examination revealed a mitral regurgitant murmur. Had heavy night sweats.

January 30, 1892.—Complains of fever and pain located in infrascapula region. All over base of right lung posteriorly there is dullness and bronchial breathing. Over left lung there is a dull spot about the size of a dollar, and for some distance around there can be heard crepitant râles. In part of left lung breathing is exaggerated. Vocal fremitus increased over consolidated portions. Breathing is accelerated and inclined to be labored.

Necropsy.—Pleural cavity found to contain about 120 grams of fluid. Pleura was covered with a white fibrinous material, which we took to be fibrin partially organized. There were old adhesions binding both lungs down posteriorly. Lungs: Left lung weighed 600 grams, and posteriorly a small portion was found consolidated, and more of it was in a collapsed state. Right lung greatly congested and found to be in a fibroid state; connective tissue increased; weight, 1,000 grams. Heart: Enlarged and flabby; weight, 470 grams; mitral valves found incompetent. Liver: In a state of disorganization, so much so that in its removal it came out in pieces. It might be better to say it was mushy, greatly congested, and enlarged; weight, 2,250 grams. Kidneys: In same disorganized state as liver; capsule nonadherent; left, weight, 180 grams; right, weight, 210 grams. Spleen: State same as kidneys and liver; enlarged, and weighed 290 grams.

CASE 19.

Mitral stenosis.

C. N.; nativity, Denmark; age, 25 years; entered U. S. Marine Hospital, San Francisco, Cal., January 4, 1892; died February 11, 1892.

History.—Came into hospital complaining of great dyspnœa and inability to make any considerable exertion. His heart was examined physically and found enlarged to the left; also two distinct murmurs were detected, viz, systolic and presystolic mitral. Had no swelling of the feet until near the end.

Necropsy.—Heart examined and mitral valves found to consist of a ring of solid substance, showing atheromatous degeneration. The left ventricle was found to be hypertrophied. The lungs were highly congested; nothing else apparently wrong with them.

ANEURISM OF THE ARCH OF THE AORTA INVOLVING THE INNOMINATE.

CASE 1.

J. R.; age, 50 years; nativity, Maryland; admitted to U. S. Marine Hospital, port of Boston, Mass., September 29, 1891; died October 26, 1891.

History.—Patient had, in addition to the aneurism, a very tight organic stricture of urethra, extending from bulbous to prostatic portion, due to injections of sulphate of copper to relieve a gonorrhœa. About a week before death there was some œdema of the face and neck, with chronic convulsions due to pressure of tumor on vessels and nerves.

Necropsy (thirteen hours after death).—Rigor mortis marked. Body fairly nourished. Heart: Weight, 550 grams. Mitral valves inefficient, owing to adhesions between the larger segment and wall of left ventricle. These valves were thickened and contained calcareous nodules; other valves normal. Arteries and veins: The aorta presented a fusiform aneurism which extended from aortic origin to its junction with the innominate artery, the lower portion of which was also involved in dilatation. Walls of aneurism very thin. The diameter of the aneurismal sac was about twice that of the normal portion of the aorta. Right innominate vein dilated to twice its normal size. Lungs: Weight of right lung 620 grams; pleura adherent to lung, but not to chest walls; lung collapsed. Weight of left lung 450 grams; pleural cavity completely obliterated; lung collapsed. Liver: Normal; weight, 1,580 grams. Kidneys: Weight of right kidney 90 grams; weight of left kidney 85 grams; both normal. Spleen: Apparently normal; weight, 75 grams.

CASE 2.

G. M. (colored); aged 50 years; nativity, Maryland; admitted to the U. S. Marine Hospital, Cincinnati, Ohio, May 4, 1891; died October 1, 1891.

History.—On admission to the hospital the patient was suffering from dyspnœa and severe substernal pain. These symptoms had been present in constantly increasing intensity for several years. There was a history of syphilis. Physical examination revealed a considerable area of dullness corresponding to the position of the aortic arch; enlargement of the heart; murmurs present, with both cardiac sounds; a thrill distinctly perceptible on palpation, and a bruit transmitted along the principal arteries of the right upper extremity as far as the wrist. The right pulse was appreciably delayed. There were evidences of bronchitis. The liver was enlarged; and the urine albuminous and reduced in quantity. The patient was given moderate doses of potassium iodide, and troublesome symptoms treated as they arose. Two days before death the patient developed œdema of the lungs and became comatose, in which condition he died.

Necropsy (four hours after death).—Rigor mortis not marked. Body poorly nourished. Syphilitic cicatrices on penis, and persisting marks of specific sores on the skin. Jaundice showing on conjunctivæ, palms, and soles. Pericardium contained a considerable

quantity of bloody serum. Heart: Weight (after opening), 660 grams; wall of left ventricle thickened and fatty; endocardium and valves normal. Aorta: Seat of fusiform aneurism, involving the ascending and transverse portions of the arch and the innominate artery; contained white fibrous clots; intima of aortic arch, innominate artery, thoracic and abdominal aorta presented atheromatous cysts and ulcers and calcified plates. Lungs: Weight—right lung, 840 grams; left lung, 1,120 grams; both lungs œdematous; bronchi the seat of chronic catarrhal inflammation. Liver: Weight, 1,980 grams; congested. Spleen: Weight, 330 grams; softened and congested. Kidneys: Weight of right kidney, 210 grams; left kidney, 150 grams; capsules adherent; both kidneys the seat of chronic congestion.

CASE 3.

C. H.; born in Russia; aged 36 years; admitted to the U. S. Marine Hospital, Port Townsend, Wash., June 20, 1892; died June 30, 1892.

History.—On admission to hospital the patient complained of shortness of breath, cough, and slight pain over chest. On physical examination a distinct murmur was found over the aortic valve, and the usual routine treatment for valvular lesion was adopted. His condition continued fair till the morning of June 30, when he died suddenly at 3 o'clock a. m., without speaking a word or awakening from his sleep.

Necropsy (eight hours after death).—Rigor mortis slight. Body in good condition. On opening chest the pericardium was found to be filled with fluid blood, and at the root of the aorta, involving the walls of the ventricles, a false aneurism which would contain about 15 cubic centimeters of fluid was found, whose sudden rupture, occurring while the patient was asleep, caused his death. Other organs normal.

CASE 4.

Aneurism of the thoracic and abdominal aorta.

G. M. (colored); aged 31; a native of Alabama; was admitted to the U. S. Marine Hospital, St. Louis, Mo., July 15, 1891; died July 23, 1891.

History.—When admitted he said he had had a chill every afternoon between 3 and 4 o'clock for several days previous to his admission. These chills were followed by fever. He had a severe pain in the epigastric region and in the back in the region of the tenth, eleventh, and twelfth dorsal vertebræ. He had a temperature of 39.5° C. With quinine the chills wholly disappeared. The pain was not relieved by quinine. It was thought that the constant boring pain might be due to aneurism, but no tumor could be detected nor bruit heard. He died very suddenly on July 23, at 12:30 a. m.

Necropsy.—Rigor mortis well marked. Body fairly well nourished. There was an aneurism of the thoracic and abdominal aorta. The sac had been ruptured, leaving an opening which would admit a gloved finger. The left pleural cavity contained 2 liters of fluid and coagulated blood. The aneurism began in the thoracic aorta, and had been closely held to the spinal column by the crura of the diaphragm. There was an aneurismal dilatation of the aorta below the diaphragm. The constriction of the sac by the crura had caused the sac to assume the form of an hour glass. The sac did not extend beyond the spinal column on either side. The bodies of the tenth, eleventh, and twelfth dorsal vertebræ were much eroded.

CASE 5.

Aneurism of the abdominal aorta.

J. J. (colored); aged 41 years; a native of Tennessee; was admitted to the U. S. Marine Hospital at St. Louis, Mo., August 3, 1891; died August 6, 1891.

History.—Delirious. Seemed to have a pain in his left side. No one came with him. Physical examination ahowed a hard nonpulsating tumor to the left of the median line

in the epigastric region. The tumor was hard, irregular in shape, tender to pressure, and about 10 centimeters in diameter. The tumor seemed painful. He was much emaciated. He grew worse and became uncontrollable. It would have required several men to hold him on the bed. He died on the 6th.

Necropsy.—There was an aneurism of the abdominal aorta, which had ruptured, and the blood escaped between the layer of the mesocolon. This clot had separated the mesocolon from the cæcum to the sigmoid flexure of the colon. The anterior portion of the sac had been filled with a laminated clot, partly organized. It was the part of the sac filled with firm clot that was felt in the epigastric region. The opening in the sac, through which the blood escaped into the mesocolon, was in the posterior wall near the union of the first and second lumbar vertebræ. Atheromatous changes in all the arteries, especially marked in the aorta, carotids, and iliacs.

COLITIS.

C. N. (colored); aged 40 years, a native of Missouri; was admitted to the U. S. Marine Hospital, St. Louis, Mo., August 7, 1891; died August 9, 1891.

History.—Frequent stools for the last six weeks. The stools contained blood and large masses of mucus. The stools numbered from fifteen to twenty daily. Much pain in abdomen, especially along the colon. There was marked tenderness over colon. There was extreme emaciation and a facial expression characteristic of much suffering. The stools became less frequent; but he died from exhaustion on the 9th of August. The exhaustion was probably due to septicæmia.

Necropsy.—Organs healthy, except colon. This was covered on its mucous surface with ulcers of different sizes, from that of a split pea to the size of a silver quarter of a dollar. In places the intestinal walls were much thickened, in others only the peritoneal membrane was between the abdominal cavity and the interior of the colon.

CHRONIC BRONCHITIS.

Case 1.

Pneumonia—Congestion of lungs.

H. H. H.; nativity, New York; admitted to U. S. Marine Hospital, Chicago, Ill., June 2, 1891; died January 15, 1892.

History.—Had been under treatment for chronic bronchitis since admission. Vomiting; diarrhœa; difficult breathing began suddenly a. m. January 13. He rapidly failed, presenting symptoms of congestion of lungs.

Necropsy (*eleven hours after death*).—Post mortem lividity and *rigor mortis* slight; general nourishment good. Heart was fatty; normal in size and other respects. Left pleural cavity normal; left lung weighed 795 grams; was deeply congested and œdematous. Right pleural cavity contained 300 cubic centimeters seropurulent fluid, with masses of fibrinous pseudo-membrane covering lung. There was atelectasis of posterior lower lobe; upper lobe pneumonic; middle lobe congested and almost airless. Old firm pleuritic adhesions to upper lobe. Abdominal contents prominent from gaseous distention; fatty masses about viscera and in mesentary. Gastro-intestinal tract distended with gas and lined with fat. Liver weighed 1,190 grams; brownish-yellow color; fatty and fibrous; capsule removed with difficulty, tearing away granular masses. There was a small extra-capsular, fibrous cyst imbedded in surface. Gall bladder and ducts distended with greenish bile. Left kidney, 120 grams; granular and fatty, capsule stripped easily. Right kidney weighed 110 grams; cortex thin; it was granular and fatty; and capsule stripped easily. Spleen weighed 150 grams.

CASE 2.

Abscess of the lung.

G. O.; age, 75 years; nativity, Greece; admitted to the marine ward, St. Mary's Infirmary, Galveston, Tex., February 13, 1892; died March 5, 1892.

History.—At the time of admission the patient was suffering from considerable general debility, with some symptoms referable to chronic bronchitis. By physical examination of the chest nothing was discovered but the signs of chronic bronchitis. The urine was free from albumen and sugar. The patient had been an inmate of the hospital during several months of last year, under treatment for bronchitis, and his sputum was examined at that time for tubercle bacilli without any being discovered. His debility increased progressively, being out of proportion to the affection of the lungs, and evidently due chiefly to the effects of old age.

Necropsy (twelve hours after death).—*Rigor mortis* was strongly marked. The body was much emaciated. The pupils were natural or slightly contracted. The heart was normal in size. The pericardial sac contained about 50 cubic centimeters of serous fluid. The valves of the heart appeared to be competent and otherwise healthy. The walls of the aorta were quite filled with calcareous plates, and the portion of its arch immediately contiguous to the heart was so much dilated as to approach the character of an aneurism. The intima of this portion was eroded in spots. The coronary arteries were like bony cords. The left lung was healthy in appearance; adhesions existed in its pleural cavity about the base and dorsal surface of the lung. The right lung was firmly adherent to the parietal pleura at its base. The two upper lobes of this lung were healthy in appearance. The lower lobe was not collapsed, and although scarcely in a hepatized condition it seemed filled with purulent sputum. An abscess cavity almost the size of a man's fist was found in the base of this lobe in the median portion closely contiguous to both diaphragm and pericardial sac. The abscess was bounded by a well developed wall and was evidently of long duration; it contained cheesy and calcareous lumps; the liver appeared normal; the kidneys were both somewhat contracted, the cortical portions being quite narrow. Numerous cysts, some of considerable size, filled with urine, existed beneath the capsule of each. The capsules were abnormally adherent. The spleen appeared normal. The other organs were not examined.

CASE 3.

Fibroid degeneration of lung.

C. R; nativity, Maryland; age, 35 years; entered Marine Hospital, San Francisco, Cal., November 21, 1891; died January 19, 1892.

History.—When admitted, complained of chills, cough, and expectoration. Physical examination: Large area of râles over both sides of chest; no dullness, is constipated, appetite is poor. December 19, 1891, mucous râles all over anterior part of chest, at same time his lower extremities became œdematous; later, ascites appeared, and on January 12, 1892, it was found necessary to draw off fluid from the abdominal cavity. He was tapped, and 3,800 cubic centimeters of clear fluid withdrawn, after which he felt much easier. He continued in an apparently easy condition until the day of his death, although the ascites rapidly returned after the tapping. Dyspnœa was present at times, getting worse, and again better. No satisfactory physical examination could be made of the chest, on account of the œdematous condition of the thoracic walls.

Necropsy (January 20, 1892).—*Rigor mortis* well marked. On opening the pleural cavity, it was found to contain considerable fluid. The right lung was bound down posteriorly by old pleuritic adhesions; both lungs were found to be greatly congested; the right as a whole, and part of it would sink in water; its weight was 1,280 grams. The connective tissue was much increased; left lung congested, but no fibroid induration, and it would float in water; weight, 650 grams. Liver seemed softer than normal

and was congested. Kidneys both congested, the medullary portion being most congested; capsule stripped off easily. Left kidney weighed 180 grams; right kidney weighed 200 grams. Spleen congested; weight, 120 grams. Heart enlarged; both ventricular walls thickened; valves, normal; weight, 400 grams.

CASE 4.

Emphysema.

W. W.; nativity, Germany; entered U. S. Marine Hospital, San Francisco, Cal., September 19, 1891; died February 6, 1892.

History.—Complained of cough, expectoration, dyspnœa, and great weakness. Moist râles heard all over chest, anteriorly and posteriorly. January 28, 1892: Over chest anteriorly percussion note is hyperresonant—drum-like—expiration prolonged, showing that emphysema has developed. Posteriorly, there is not exactly dullness, but a sound is produced on percussion which approaches it. There are innumerable moist râles present; the inter costal spaces move in and out at each respiration, and breathing altogether is labored.

Necropsy (February 8, 1892).—Pleura found to be adherent on both sides, but more so on left side, being also adherent to the diaphragm. Lungs: Both greatly congested; the left weighed 700 grams and the right 1,000 grams. There was increase of connective tissue in both lungs, but most marked in the right. Heart flabby and dilated, especially the right ventricle; weight, 370 grams. No other organs were examined.

SPASMODIC ASTHMA.

J. H. S.; age, 48; nativity, District of Columbia; admitted to U. S. Marine Hospital, Baltimore, Md., February 18, 1891; died July 12, 1891.

History.—Has been suffering from asthma for many years, which, latterly, has become distressing. On admission he was carefully examined, and so far as could be ascertained, nothing could be made out in the case except asthma, pure and simple. Subsequently he became dropsical, which condition eventually became general and extensive.

Necropsy was fully and carefully made, but no abnormal condition of any of the organs could be demonstrated.

LOBULAR PNEUMONIA.

H. E.; age, 25 years; nativity, Sweden; admitted to Marine Hospital, Wilmington, N. C., January 1, 1892; died January 15, 1892.

History.—When admitted his skin was covered with a syphilitic macula and he gave a history of chancre of the penis with inguinal lymphatic enlargement preceding the outbreak of eruption. He was attacked by a bronchial catarrh a few days before admission, which was accompanied by some fever and pains in his limbs. No distinct chill was experienced. On admission his temperature was 38° C.; pulse quickened, respiration slightly embarrassed; loud sonorous and sibilant ronchi were heard over both lungs, most marked over the posterior aspect of the right lung. There was no dullness on percussion and the sputum was muco-pus. On the morning of the 12th rusty sputum and dullness over the posterior surface of the right lung was marked for the first time. He improved under treatment until the 14th when the respiration and action of the heart became more embarrassed, and he died on the morning of the 15th, in mixed asthenia and apnœa.

Necropsy (twenty-four hours after death).—Height, 1¾ meters; circumference at shoulders, 1¼ meters. No post mortem lividity. *Rigor mortis* present. General nourishment good; pupils dilated. Heart: Weight (after opening), 420 grams; pericardial sac

normal; valve of heart normal; thoracic and abdominal aorta and other arteries and veins normal. Mucous membrane of nares, larynx, and trachea congested. Lungs: Left, weight, 655 grams; lower lobe congested, upper lobe consolidated, except a small portion at apex; left pleural cavity contains about 34 cubic centimeters of purulent effusion, and numerous recent adhesions. Right lung, weight, 740 grams; consolidated from base to apex; on section infiltration is seen to be softening, and pus is abundant throughout the lung texture. Right pleural cavity almost obliterated; adhesions numerous. Abdomen: Peritoneum normal; pharynx congested; œsophagus and stomach normal. Diameter of pylorus 3 centimeters. Cardiac orific, 1.5 centimeters. Small and large intestine and rectum normal. Liver enlarged, hyperæmic, granular on section; color chocolate-brown; weight, 3,000 grams. Gall bladder empty; duct patulous. Pancreas normal. Kidneys: Left, weight, 190 grams, congested; right, weight, 250 grams; much congested, otherwise normal. Spleen much enlarged, weight, 620 grams. Brain and spinal cord not examined.

LOBAR PNEUMONIA.

Case 1.

Peritonitis and meningitis.

R. M., (colored); age, 28 years; nativity, Georgia; permit No. 153; admitted to the U. S. Marine Hospital, Cairo, Ill., December 21, 1891; died January 2, 1892.

History.—Patient had been sick three days before admission. Onset by a chill; complained of an intense pain about the left ear for several days, but this ceased; cough was not troublesome; fever was excessive and obstinate; delirium slight; treated by ice cap, antipyretics, and stimulants.

Necropsy (eight hours after death).—*Rigor mortis* slight. General nourishment poor; pupils dilated; heart weighed 143 grams, normal; pericardial sac contained about 50 cubic centimeters clear serum; vessels normal. Nares, larynx, and trachea normal. Left lung weighed 1,824 grams, and was in the gray hepatization stage of pneumonia; pleural cavity obliterated; right lung weighed 570 grams, œdematous; pleural cavity normal. Peritonitis, with abundant effusion. Tongue, pharynx, œsophagus, stomach, and small intestines normal. Large intestine showed scars of old ulcers; rectum normal. Liver congested, weighing 2,337 grams; gall bladder and ducts normal; pancreas weighed 76 grams; left kidney weighed 106 grams, normal; right kidney weighed 114 grams, normal; pelvis and ureters normal; bladder empty; urethra and postate normal. Spleen weighed 428 grams; normal. Scalp and skull normal. Meningitis, with effusion, was found; brain weighed 1,425 grams, œdematous; ventricles filled with fluid. Spinal cord not examined.

Case 2.

Bilateral.

T. A.; aged 23 years; nativity, Norway; admitted to U. S. Marine Hospital, Boston, Mass., December 10, 1891; died December 16, 1891.

History.—He was taken ill on December 7 with pain in the head and extremities, cough, chilliness, and extreme weakness. After coming to the hospital the cough increased; there was dyspnœa, a rapid, bounding pulse, and anorexia. The dyspnœa increased. The temperature reached, on the date of death, 40.4° C.

Necropsy.—*Rigor mortis* well marked. Patient fairly well nourished. There were recent pleuritic adhesions over almost the entire surface of the left lung; some of a firmer consistence on the right side. The left lung weighed 1,670 grams, and presented a large area of gray hepatization at the lower part of the upper lobe, the other parts being very deeply congested. Weight of right lung 1,120 grams; gray consolidation at base, other parts œdematous and congested. Weight of heart 400 grams; walls of normal thickness; valves competent.

CASE 3.

H. B.; aged 32 years; nativity, Scotland; was admitted to the U. S. Marine Hospital, Chicago, Ill., May 5, 1892; died May 10, 1892.

History.—He was admitted for harassing cough, fever, and prostration. Two days later pneumonia developed in lower lobe of left lung, and steadily invaded that organ. There was great nervous tremor, great palor, and the pulse rapidly failed. Nothing could be done to rally his strength.

Necropsy (twelve hours and forty-five minutes after death).—Height 160 centimeters; post mortem lividity and *rigor mortis* not marked. Heart weighed (after opening) 320 grams; valves were competent, but muscles flabby. In left pleural cavity there was some serous fluid; in the right some old adhesions. The whole left lung, except the anterior part of upper lobe was solidified; old tubercles in apex. Right lung was normal. Peritoneum was normal in appearance. Stomach was extremely distended with gas. Small intestines appeared normal; the large intestines greatly distended with gas; stria on the colon were abnormally developed; rectum collapsed. Other organs not examined.

CASE 4.

Bilateral—Empyema.

J. M.; aged 24 years; nativity, Mississippi; admitted to U. S. Marine Hospital, Memphis, Tenn., August 25, 1891; died August 30, 1891.

Clinical history.—Two days before admission he fell overboard, and has had a cough and pain in left side ever since. Friction sound over left lower lobe; crepitant râle heard at back of chest at base of each lung; sibilant râles over both lungs, louder over right; characteristic rusty sputa. Patient fell rapidly into a typhoid state, with somnolence and moderate delirium. The teeth became covered with sordes. The circulation was rapid and weak from the beginning of the attack.

Necropsy.—Rigor mortis present. Body well nourished. A quantity of fetid, frothy pus was seen issuing from nose and mouth. Right lung: Pleural cavity partially obliterated by recent adhesions; cavity contains a small quantity of pus; pleura gangrenous in patches; lower lobe of lung and portion of middle lobe consolidated; portion of lower lobe infiltrated with pus. Left lung: Lower lobe partially consolidated and adherent to chest wall; no other lesions observed.

CASE 5.

Bilateral—Pericarditis.

C. P.; aged 24 years; nativity, Alabama; admitted to U. S. Marine Hospital, Mobile, Ala., January 23, 1892; died January 28, 1892.

History.—Patient, when admitted, was suffering with fever, cough, with bloody expectoration, pain in the side, and dyspnœa. On physical examination all the signs of pneumonia were found well marked. He was very sick, and soon all the symptoms increased in severity, the patient dying on the fifth day.

Necropsy (nine hours after death).—External appearances: Post mortem lividity absent. *Rigor mortis* well marked, and the body fairly nourished. Thoracic cavity: There was found an extensive pericarditis; the membrane was much thickened, and covered by a layer of fibrin, 3 millimeters thick. This was of a yellow color, and all the tissues were found much jaundiced. The heart was completely covered by a similar layer of fibrin. Pericardial sac contained about 300 cubic centimeters of a dirty yellow fluid. Left pleura was much thickened and inflamed; the cavity containing about 400 cubic centimeters of a dirty greenish yellow fluid. Right pleural cavity was almost obliterated, numerous firm adhesions being present. Left lung was much inflamed in lower lobe, stage of red hepatization; weight, 420 grams. Right lung congested and in-

flamed; the entire lower lobe and lower portion of the upper lobe in stage of red hepatization; weight, 950 grams. Abdominal cavity: Stomach and intestines healthy. Liver enlarged, weight 2,270 grams, normal in color. Pancreas weighed 100 grams. Spleen weighed 340 grams. The kidneys were normal; left weighed 170 grams; right 165 grams.

CASE 6.

A. A.; aged 39 years; nativity, Alabama; admitted to U. S. Marine Hospital at New Orleans, La., May 6, 1892; died May 12, 1892.

History.—Patient had been quite ill for three days previous to admission. Slightly delirious, pain in left side, augmented by coughing. Expectorated bloody froth after an exacerbation of the cough. Temperature 39° in axilla. Pulse 98 and full. Respiration 26 per minute. Lobar pneumonia second stage; inflammation.

Necropsy (nineteen hours after death).—Length of time occupied in examination one hour and forty-five minutes. Body that of a negro man; height 1.75 meters (68.89 inches); very strongly built; adipose tissue slight in quantity; muscles greatly developed, those of the arm and thigh less so in proportion than those of forearm and leg. Post mortem lividity marked; body generally pale; abdomen slightly swollen; on turning over body a thin, sanguineous fluid escapes from nose and mouth. The face, particularly the left side, is soiled with the fluid above mentioned. Hair of head abundant; the beard full; nose large and straight; front teeth perfect; molar teeth more or lesss carious and defective. No traces of recent injury. Cicatrices on left arm. Some amount of mobility in the large joints, but there are signs of *rigor mortis* in all the smaller articulations. Eyelids only partially closed, the cornea transparent and apparently tense. No foreign body about the nostrils with exception of blood already mentioned. Chest full. Abdomen slightly distended. Cutis anserina slightly marked on the extremities, especially the lower ones. Parts about anus soiled with brown excrement; anus closed. In conclusion there are no signs of external injuries. Brain not examined. Thorax and abdomen: No foreign body in abdominal cavity; position of parts normal; cæcum, transverse colon, and ascending portion of large intestine are much distended, also a portion small intestine, in part with gas and a part apparently fluid. All these parts are congested, the omentum particularly so. The arch of diaphragm on each side is between the fourth and fifth ribs. After removal of the sternum, the lungs came into view, somewhat distended, particularly the left. Pericardium to great extent covered by lungs; pericardium contains 16 cubic centimeters slightly reddish but clear fluid. Heart about the size of a man's fist; valves pale and flabby; aortic competent; mitral slightly incompetent; weight of heart 390 grams. Considerable amount of bloody froth with large bubbles in larynx. Pleura adherent. Left lung in state of gray hepatization throughout; weight, 2,170 grams. Right lung in state of collateral congestion, only a very small space in condition to receive air. Peritoneum congested. Tongue coated white. Pharynx and larynx coated with sticky mucus. Stomach distended. Liver normal in color; weight 2,070 grams. Gall bladder and ducts normal. Kidneys: Left, weight, 280 grams; capsules of both peeled easily; right kidney weighed 275 grams; both kidneys presented the reddish enlarged appearance typical of pneumonic kidney. Spleen soft and pulpy; weight, 180 grams. Spinal cord not examined.

CASE 7.

C. B.; age, 21 years; nativity, Louisiana; was admitted to the U. S. Marine Hospital, New Orleans, La., March 21, 1892; died March 27, 1892.

History.—Patient told a poor story of himself, and from the account given it was not possible to determine the exact day of onset of his illness. He stated that he had a dry cough since December last, but that for the past week or so it had been much worse. On Thursday, March 17, 1892, ten days prior to admission, his nose bled, and the Friday and Saturday following he coughed up blood, probably a very small amount. He was

1892 March.	21	22	23	24	25	26	27															
Day of Disease.	4	5	6	7	8	9	10	(?)														
Time of Day.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	M. E.	
Cent. 41																						Fahr. 106
40																						105 104
39																						103 102
38																						101 100
37																						99 98
36																						
Pulse.	126	84 / 132	120 / 116	122 / 120	124 / 120	132 / 134	118															
Respiration.	40	26 / 46	60 / 34	30 / 44	44 / 36	36 / 38	18															

BLED – 250 c.c.

DEATH

Name, Craig Banks; age, 21 years; disease, lobar pneumonia.

not certain as to just when he had a chill, but thought that he had one on the afternoon of the day before admission, and another the day before that. Did not complain of pain; said he suffered from occasional attacks of dyspnœa and a feeling of oppression in his chest. Examination discovers that respirations are hurried, 40 per minute, and thoracic in character. There are occasional spells of coughing with expectoration of tenacious mucopurulent masses, which remain discrete in a glairy semitransparent mucoid liquid, giving the sputum a characteristic nummular appearance. On auscultation a coarse, pleuritic, friction sound is plainly heard over a rather extended area of the left chest, inferiorly. There are numerous harsh grating râles on expiration, and occasionally a few fine subcrepitant râles can be heard on inspiration over the same area, but these for the most part are masked by the pleuritic friction sound. The respiratory sounds over the right lung are vesicular, and save a few scattered dry râles are normal. Heart sounds are normal. During the first twenty-four hours in hospital patient's bowels moved seventeen times. The bowel movements being rather copious, soft, watery, yellowish, somewhat resembling pea soup, and passed without tenesmus; they contained no blood. Abdomen not distended; no points of tenderness; some gurgling in right iliac fossa. Tongue white coated in the center; red around the edges; moist. He would take nothing but a small quantity of milk. March 24, 1892: The physical signs of consolidation of the lower lobe left lung have well developed. There is dullness on percussion, increased tactile fremitus, and vocal resonance, subcrepitant râles, mainly on inspiration, and bronchial breathing. The right lung and remaining portion of left lung continue normal. He is taking his nourishment and wine somewhat better. Vomited once during the night. Bowels are still loose, having moved fourteen times during the last twenty-four hours. Complains more of pain, of a heavy, dull, oppressive character, in his left breast, which, he says, is always aggravated by a fit of coughing. Coughing continues in spells, and the expectoration is much more abundant. Decubitus is by preference on back or right side; states that he can not lie on his left side. Patient is bright and wakeful; consciousness is clear, and there is nothing to corroborate the suspicion of the possible coexistence of enteric fever except the peculiar "pea-soup" evacuations; pulse is regular, though rapid and rather weak. Examination of the urine discloses the following: Color reddish brown; clear and transparent; sediment cloudy, moderate in amount; odor characteristic; reaction acid; specific gravity, 1.015. Chemical tests: The following tests for albumen showed distinct reactions, viz, the heat and acid test, the ring test, and the citric acid and potassium ferrocyanide test. But this peculiarity was observed: In the application of the nitric acid in the ring test it was noted that, although a perceptible cloudiness appeared at the junction of the two fluids, still a very heavy and dense granular precipitate was thrown down from the surface of the urine, evidently not the coagulum of serum albumen. This cloud settled at the junction of the two fluids, and, as it rested there, gave all the appearance of a heavy ring of albumen. Not dissolved by heat, but some of this "ring" taken up in a pipette and evaporated on a slide crystallized out in arborescent forms. These crystals were soluble in potassium hydrate, but insoluble in nitric acid or pure water. The only medicine the patient was taking which might have answered the test was sulphate of quinine, but the chemical reactions excluded that salt; whereas uric acid and the urates were excluded from the fact that they were not dissolved by heat. Microscopical examination of the urinary sediment found numerous wide granular tube casts. Some few hyaline casts with disintegrated epithelial cells. The patient continued to do fairly well until the evening of March 25, when he became delirious for some time. The notes of March 26 show that he is growing weaker. Takes nourishment poorly. Fever continues high, uncontrolled by sponging. Still vomits occasionally small amounts of slimy matter at irregular periods. Diarrhœa continues, which, on account of the albumen and casts in the urine, is not checked. Pulse rapid and weaker. All the signs of consolidation continue over the area of the left lower lobe. Expectoration of mucopurulent matter continues, brought up with increasing difficulty. Delirious most of the time.

During the night of March 26 patient suddenly became wildly maniacal, with delusions of persecution. He thought somebody was going to kill him. He struggled violently. It took eight able-bodied men to hold him in bed. The delirious ravings increased to a furious pitch. His shoutings were loud and bizarre. All the means employed to quiet the patient, who was rapidly using up his remaining strength, proved only of temporary benefit. As a *dernier ressort*, the man was bled from the left median basilic vein until a perceptible influence was felt in the force and volume of the pulse. About 250 cubic centimeters of blood were removed, with the happy effect of seeing the patient quiet down immediately and pass off into a quiet sleep, from which he awoke in a few hours quite rational, and declared that he felt relieved. Drank a liberal amount of eggnog and wine. He passed a very fair day. The pulse gained slightly in volume and, the temperature dropping to normal, it appeared as though the crisis was at hand; but in the afternoon he suddenly became weaker, sank rapidly, congestion of the lungs supervened, and he died at 2:30 p. m.

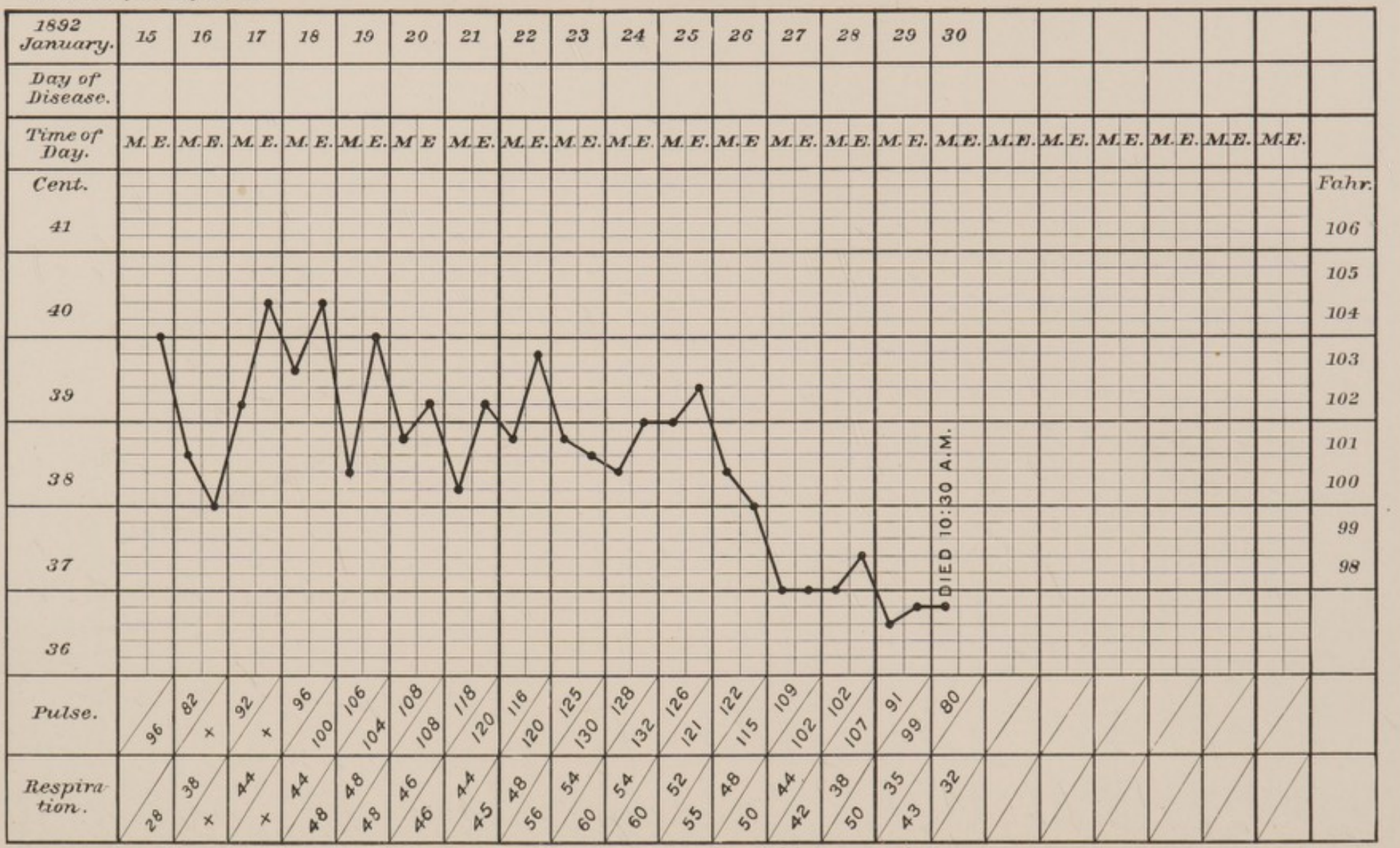
Necropsy (eighteen hours after death).—Body that of a muscular, well preserved negro. Post mortem lividity not apparent. Pupils dilated. *Rigor mortis* very pronounced. General nourishment good. The pericardial sac is adherent to the heart, torn away only with the exercise of some force. The pericardial space entirely obliterated, showing the existence of an old pericarditis. No evidence of a recent inflammation can be discovered. The heart itself shows a general hypertrophy and dilatation, particularly affecting the left ventricle; the cavities are all filled with "chicken-fat" clots. Valves are normal and competent. Weight of heart after opening, 420 grams. Aorta not atheromatous. Coronaries, patulous. The lower lobe of the left lung is as solid and firm as liver throughout. A section sinks in water. The pleura covering this lobe is uniformly buttered with a fibrinous exudate from 2 to 3 millimeters in thickness. This lymph is fresh, soft, and can readily be stripped from the surface of the pleura. There is also a small amount of exudate binding the pleural surfaces of the two adjacent lobes. The remaining portion of the lung is congested and œdematous; otherwise normal. Weight, 912 grams. The right lung weighs 557 grams, and shows evidence of congestion and œdema; nothing else abnormal noted. The mucous membrane of the intestinal tract is normal throughout. No signs of inflammation. Peyer's patches not enlarged. The lumen of the gut filled with a yellowish, offensive, fluid mass. The liver weighs 1,530 grams, and shows signs of beginning fatty infiltration. The kidneys are injected and have a congested appearance. The capsule strips easily. The general size about normal. Weight of each organ, 160 grams. The cortical and medullary portions, to the naked eye, have a normal appearance except the injection of the vessels. The spleen is very slightly enlarged; weighs 212 grams; is soft and dark in section. Nothing else noteworthy noted.

Case 8.

Jaundice.

R. H.; age, 33 years; nativity, West Indies, admitted to the U. S. Marine Hospital, New Orleans, La., January 15, 1892; died January 30, 1892.

History.—When patient applied for admission to hospital, he was suffering severely from dyspnœa, cough, and pain in the right chest. He stated that he had been having chills almost without cessation for the past five or six days, but this statement, as well as others concerning his previous history, is rendered doubtful on account of his imperfect use of the English language. Examination on admission disclosed the fact that he was suffering severe stitch-like pains on the right side—axilary region. The pain was greatly aggravated by cough or deep inspiration. The cough was attended with tough characteristic prune-juice expectoration, brought up without much difficulty, but ejected from the mouth only after considerable trouble, on account of the sticky, tenacious character of the mucus. Numerous tiny streaks of blood were noticed. The



Name, Rapho Hypolite; age, 33 years; disease, lobar pneumonia.

sputa remained discrete and nummular in the spit cup. This characteristic expectoration continued two or three days, when the blood disappeared; but from time to time the sputa was rusty colored or streaked with blood. The paroxysms of coughing were frequent, of short duration, almost always attended with expectoration, and caused considerable pain and distress. Respirations were labored and frequent, usually about 40 per minute, but at times running up as high as 60 per minute. The pulse was regular, and continued of fair volume throughout the disease.

The temperature, as will be noted by the chart, dropped to 38° C. on January 16, being lower in the evening than it was the same morning. A favorable termination was looked for, but during the night the temperature again rose, and before the evening of January 17, it was 40°.2 C., with an aggravation of all the other symptoms. This, it is supposed, indicated the time when the inflammatory processs spread to the upper lobe of the right lung. Physical examination discovered short, irregular, and jerky respirations—many inspirations being cut short suddenly by a sharp pain. The respiratory movements were abdominal in character; very slight motion of the chest wall could be noticed, equable on both sides. On palpation there was increased tactile fremitus on the right side, both anteriorly and posteriorly, below and in axilla. Percussion found dullness over the same area, and on auscultation bronchial breathing, subcrepitant râles, and bronchophony were heard over an area corresponding to the middle and lower lobes of the right lung. In a few days these signs were evident over the entire right side of chest. On January 20 it was noted that patient's conjunctiva looked yellow, and on the following day they were deeply jaundiced, which symptom was also observed in the discoloration of the matrix of the finger nails and the mucous membrane of the under surface of the tongue. The bowel movements from this time on were light putty-colored, despite the occasional administration of small subdivided doses of calomel with phosphate of sodium. An examination of the urine on January 18 showed it to be dark brown in color; moderate cloudy sediment; acid in reaction; no albumen; nothing noteworthy on microscopical examination. Patient's appetite was at no time good, although he seldom refused his nourishment, which was given in moderate quantities every three hours during the day, and consisted of milk, eggnog, bouillon, oyster soup, beef tea, and soft-boiled eggs. Whisky and strychnia were the main stimulants depended upon for the heart and respiration. The tongue was dry, cracked, and brown-coated, and there was a tendency to the collection of sordes on gums and lips. To obviate this the mouth was cleansed as often as practicable with listerine solution, 25 per cent, and the tongue and lips frequently moistened with glycerine, diluted 1 to 8 in rose water. According to the general practice in all febrile affections, at this port, where malarial diseases are so common, quinine was given from the beginning, and continued in variable doses for its antipyretic as well as its tonic effcts. On January 26 the fever terminated by crisis, as will be seen by the accompanying temperature chart. The pulse and respiration also seemed better, but the patient did not rally. Exhausted by his long siege of sickness he sank into a typhoid condition, and died at 10:30 a. m. January 30, 1892.

Necropsy (*two hours after death*).—Body that of a well-preserved negro. Post mortem lividity not evident. *Rigor mortis* not developed. General nourishment fair. Pupils dilated. All the tissues and organs were more or less discolored from the icterus; this staining disguises to a certain extent the macroscopical appearance of the various organs. The pericardial sac contained a moderate excess of fluid, which is more viscid than normal, consisting of a mass of yellowish, clear, transparent matter about the consistency of white of egg. There was likewise a small thin patch of soft fresh lymph on the right ventricle, near the interventricular septum, in area about the size of a silver dime. In other respects the pericardium appeared normal. The heart showed general dilatation, and very little if any hypertrophy. The valves are all normal and competent. Contrary to expectation the right auricle contained but a moderate amount of dark fluid blood and post mortem "currant jelly" clots which extended some distance into the ascending and descending cavæ. The remaining chambers of the heart contained no

clots at all, and upon opening *in situ*, a moderate amount of dark fluid blood exudes. The valves were all normal and competent, and but a few small scattered patches of fibroid endarteritis were noticed in the aorta. The left pleural cavity was free from adhesions and the left lung appeared normal except a very pronounced œdema and some congestion. The bronchi were filled with glairy, white, frothy mucopurulent matter, resembling the expectoration. The right plural sac contained numerous old, tough, fibrous adhesions about the apex, and many more recent, soft and easily separated adhesions. No excess of fluid. The whole right lung was solid and as heavy as liver; weight 1,315 grams. Upon section it presented a typical picture of the third stage of pneumonic consolidation; gray hepatization. A careful examination of the entire system of biliary and pancreatic ducts failed to disclose any point of constriction or obstruction. The liver was a trifle larger than normal, extending about a finger's breadth below the margin of the ribs; in other respects appeared quite normal; weight 2,350 grams. The kidneys were normal; weight of each organ 265 grams. Nothing else noteworthy observed.

CASE 9.

J. C.; aged 42 years; nativity, Massachusetts; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., December 2, 1891; died December 12, 1891.

History.—Upon his admission patient stated that he was taken sick with a cough nine days before, with no expectoration. About a week after he suffered with a pain in his chest, which has continued ever since. The pain is increased by coughing, but not by inspiration. He also had a lancinating pain in epigastric region, with nausea and vomiting after eating. No flatulence or pyrosis; anorexia; bowels regular; sleeps well. Physical examination: Body fairly well nourished. Chest expansion good. Tongue heavily coated—of a brown color. No râles heard on auscultation, and no dullness on percussion over lungs. Heart sounds normal. Liver and spleen appear normal in size. The patient from his admission had no elevation of temperature higher than 37.8°; suffered no pain; was troubled with no dyspnœa, and pulse remained full and strong until the 12th, when it became very weak and with labored respiration, which continued until 4:45 p. m., when he suddenly expired.

Necropsy.—Body well nourished. *Rigor mortis* well marked. Pericardium normal. Heart: Aortic valves somewhat thick and vegetations over cusps. Mitral valves were also affected. Ante mortem clot in right side of heart. Lungs: The left thoroughly adherent to chest wall and the lower lobe in a state of red hepatization. The right slightly adherent to chest wall and congested. Liver congested. Spleen somewhat enlarged. Kidneys: Capsules not adherent; the right enlarged, and on section quite fatty, the fat in some places obscuring the Malpighian pyramids; the left about half size of right, and presents same appearance on section.

CASE 10.

A. J. H.; aged 48 years; nativity, Holland; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., December 23, 1891; died December 29, 1891.

History.—On admission patient stated that he had been sick ten days; his sickness commencing with a cold, a severe cough, with a white expectoration, chill, fever, sweating, nausea, vomiting, and constipation. He also had a chancre, and has never had gonorrhœa. Physical examination: Body not well nourished; chest expansion good; tongue thickly coated. On auscultation the respiratory murmur is roughened; on inspiration and on expiration both lungs are filled with sibilant râles; no dullness on percussion over either lung. Heart sounds normal. Liver and spleen appear normal in size.

December 24.—Temperature 39°. Cough severe, and sibilant râles still present over both lungs; no evidence of consolidation of lung tissue, there being no dullness, and the respiratory murmur clear; bowels constipated.

December 25.—Temperature normal; cephalalgia; bowels open.

December 26.—Mucous râles heard all over chest; some œdema of lungs; respiration labored; pulse full and strong. 1 o'clock p. m.: Pain over left lung, especially on percussion; slight dullness over right lung; vocal fremitus increased on left side. 6 o'clock p. m.: Pulse, 120, soft and compressible; the œdema somewhat reduced; mucous râles lessened, and more sibilant râles are heard; respirations are easier and patient resting better, although he was in a state of collapse at one time this afternoon. Temperature, 37.8°.

December 27.—Temperature, 38.8°. Pulse, 120, full, strong, and compressible; respiratory movement labored; cephalalgia; œdema of lungs returned; dullness on percussion over left lung, and mucous râles are present; sibilant and mucous râles are heard over right lung, but the lung is clearer. 6 o'clock p. m.: Temperature, 40°. Pulse, 125, full and compressible; patient is expectorating more mucus, and no, or very little, blood present. The râles continue, especially in left lung.

December 28.—Temperature, 39.4°. Pulse, 136, full, strong, and compressible; respirations more natural; mucous and sibilant râles still present in lungs, especially at bases; very little œdema. The patient passed a very restless night; at 3 a. m. pulse was rapid and weak; there were mucous râles and œdema over both lungs, and the respiratory movement very much labored. 5 a. m.: Slightly better, breathing improved, and the right lung had cleared up considerably. 9 a. m.: Pulse very rapid and weak; the mucous râles have again appeared over both lungs, and some œdema is present; rattling in patient's throat, due to accumulation of mucus; body covered with a cold sweat; temperature, 39°; bowels open. Patient continued to grow weaker, and died as above given.

Necropsy.—Body not well nourished; posterior congestion. *Rigor mortis* wellmarked. Pericardium inflamed and lined with organized lymph; contained 100 cubic centimeters yellowish fluid. Heart: Covered with organized lymph; valves, normal. Lungs: Left, the entire lower lobe deeply congested, almost in a state of hepatization, the tissue being hard, heavy, and noncrepitant; the upper lobe congested and œdematous, adherent by organized lymph to chest wall. Right, adherent at the base, congested and œdematous. Liver enlarged and fatty. Spleen pale. Kidneys normal.

Case 11.

Bilateral.

H. M.; aged 33 years; nativity, Germany; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., February 10, 1892; died February 24, 1892.

History.—Upon his admission patient stated that he had been sick for four days, his sickness having commenced with headache, chill, fever, cough, with a yellow expectoration, dyspnœa. Pain in his chest, increasing on inspiration; nausea, vomiting, and diarrhœa. No difficulty in passing his urine. Anorexia. Insomnia. Physical examination: Body well nourished; chest expansion good; vocal fremitus normal; on percussion no dullness is heard over either lung; on auscultation sibilant râles are heard in both lungs on forced respiration; heart sounds normal; tongue clean; liver not enlarged; spleen appears normal in size.

February 11.—Temperature, 38.2°; pulse good; mucous and sibilant râles heard in both lungs.

February 16.—Patient has continued about the same. Mucous and sibilant râles are still present in both lungs; respirations a little hurried; pulse good and strong; temperature, 38.4° C.

February 17.—No dullness or flatness found upon percussion. Vocal fremitus normal; mucous râles heard at the base of both lungs; a few pleuritic sounds also heard; respiration hurried, but not labored; pulse good and strong; temperature, 38.4°; tongue coated; coughs considerably; no bloody expectoration.

February 18.—Slight dullness over the base of the left lung; pleuritic sounds heard at the base of both lungs; coughs considerably; sputa small in quantity and a little bloody; respirations rapid, but full; pulse good and strong; temperature, 38.6°; bronchial breathing and dullness on percussion over the left lung; abdomen very much swollen; temperature, 39.4°; pulse good.

February 20.—Patient asleep. Temperature, 38.2°. Pulse strong.

February 21.—Temperature, 38.8°. Abdomen still swollen. Sibilant râles heard over the right lung. Dullness and flatness over the left lung with bronchial breathing. Pulse strong.

February 22.—Temperature, 38.6°. Cough loose; expectoration free. Abdomen tympanitic; bowels open. Pulse continues the same.

February 23.—Temperature, 39.4°. Respirations hurried, but deep. Abdomen still tympanitic. Pulse full. P. m.: Patient appears almost in *articulo mortis*. Respirations, 64, and labored. Abdomen greatly distended and tympanitic. Pulse very weak, 146. Tongue very dry and coated. Face bathed in a cold sweat. Extremities warm. Patient continued in this condition until he died as given above.

Necropsy (thirteen hours after death).—Body well nourished. Hypostatic congestion posteriorly. Abdomen very much distended with gas. *Rigor mortis* well marked. Heart normal. Lungs: Lower lobes of both lungs in a state of red hepatization; the upper lobes were congested and œdematous. Liver pale in color. The gall bladder distended with a bronze-colored fluid. Stomach: The mucous membrane around the pyloric orifice deeply congested; intestines distended with gas. Spleen pale in color and enlarged. Kidneys pale, apparently larger than normal. Capsules not adherent.

Case 12.

A. G.; aged 28 years; nativity, Norway; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., February 3, 1892; died February 8, 1892.

History.—Upon his admission patient stated that he had been sick for a week; his sickness having commenced with chill, headache, pain in chest, cough with a white expectoration, no dyspnœa, nausea, nor vomiting; anorexia, diarrhœa, and insomnia. He also gave an alcoholic history. Physical examination: Body well nourished; chest expansion good; tongue clean; vocal fremitus normal. On auscultation mucous râles are heard over both lungs; no dullness on percussion over either lung; heart sounds normal. Liver and spleen appear normal in size.

February 4.—A. m.: Temperature, 38.6° C.; pulse, good and strong; complains of dyspnœa; mucous and sibilant râles heard over both lungs; some pain in chest.

February 5.—Patient about the same.

February 6.—Temperature, 39.2°; pulse, good.

February 7.—Temperature, 39.4°; repirations a little labored; breathing over apex of right lung roughened; mucous râles heard over both lungs; heart impulse well marked.

February 8.—Coughs considerable, with free expectoration; some dullness and bronchial breathing heard over the base of right lung and a little flatness over base of left lung; temperature, 40.5°; pulse, 144, full; respirations, 56, and labored. 1 p. m.: Œdema of lungs; patient gradually grew weaker and died as given above.

Necropsy (eighteen hours after death).—Body fairly well nourished. Hypostatic congestion posteriorly. *Rigor mortis* well marked. Pericardium contained normal quantity of fluid. Heart normal. The right side contains a large fibrinous clot. Lungs: Left, adherent to chest wall, partially hepatized in upper lobe, and the lower lobe congested and œdmatous; right congested throughout. Liver slightly fatty and enlarged. Spleen normal. Kidneys normal; capsules not adherent.

Case 13.

A. P.; aged 32 years; nativity, Germany; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., January 4, 1892; died January 6, 1892.

History.—Patient stated on his admission that he had been sick for ten days. His sickness having commenced with a chill followed by fever and sweating, cough with a white expectoration, labored breathing, and pain in right side. He had not been an alcoholic subject for three years. He had no difficuly in passing his urine. Physical examination: Body well nourished; chest expansion good; respiratory movement accelerated; vocal fremitus not increased; and no dullness on percussion. On auscultation sibilant râles heard over both lungs. When patient was being examined he was cyanotic and very weak.

January 5.—A. m.: Temperature, 39° C.; pulse full and strong; respiratory movements rapid; cough, with rusty colored sputa, and pain in lower lobe of right lung with duliness over the same on percussion; vocal fremitus and resonance increased and crepitant râles heard on auscultation.

January 6.—A. m.: Temperature, 38.6° C.; pulse strong; breathing labored; very little œdema present. P. m.: Mucous râles continue; œdema of lungs has increased; breathing still labored; pulse feeble; hands cold; temperature, 39.8°; patient gradually grew weaker and died as given above.

Necropsy (nineteen hours after death).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Heart normal; some little dilatation of aorta. Lungs: Left congested and œdematous, right in a state of red hepatization, sinking when placed in water. Liver fatty. Spleen normal. Kidneys, capsules not adherent and normal in appearance.

Case 14.

Œdema—Pericarditis.

R. N.; aged 43 years; nativity, New York; was admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., March 25, 1892; died March 26, 1892.

History.—Patient was almost moribund when brought to the hospital. He stated that he had been ill for two weeks without medical aid. His illness began with chill and headache. The headache has continued ever since. Has pain in back, and severe pain in side; this pain is stitch-like in character. He has had a cough for the last week expectorating a quantity of yellowish mucus, admixed with blood (rusty color). Severe pains in chest, increased by coughing and inspiration; great dyspnœa; anorexia and insomnia; bowels regular; alcoholic history. Physical examination: Body fairly well nourished; chest development fair; chest expansion nil; respiratory movement almost nil; dullness marked over left lung; dullness over base of right lung; moist râles heard over both lungs; heart sounds feeble and masked by râles in chest; liver and spleen not enlarged; tongue dry and coated. Patient has an anxious look. Temperature, 40° C. Pulse, 124, and feeble. Respiration, 34. There is marked œdema of the lungs. Treatment was mainly stimulative, with sufficient opium to relieve pain. The œdema increased and patient died at 2 a. m., seven hours after admission.

Necropsy (twelve hours after death).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Pericardial sac filled with a straw-colored fluid. Ante mortem clot in left side of heart. Heart normal. No pleuritic adhesions. The entire left lung, except a small portion at apex, in a state of red hepatization. The lower lobe of right lung in a state of partial red hepatization. The upper lobe of right lung deeply congested and œdematous. Liver slightly fatty. Spleen pulpy. Left kidney, capsule nonadherent; normal. Right kidney, capsule nonadherent; normal. Other organs not examined.

Case 15.

Empyema.

A. H.; aged 26 years; nativity, Norway; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., April 9, 1892; died April 14, 1892.

History.—The patient stated upon his admission to the hospital that his sickness began on the day before. During that time he had had several chills, and he was now suffering from a severe pain in his chest, which was increased by coughing and on taking a deep inspiration. He coughed a great deal, and expectorated a yellowish mucus He did not have any appetite and he felt very weak. He stated that he very seldom drank any alcoholic liquors. Physical examination: Body well nourished; chest well developed; respiratory movements suppressed on account of pain; dullness on percussion over lower lobe of right lung; vocal fremitus increased on right side; bronchial breathing heard over the base of right lung; respiratory murmur roughened over left lung; no abnormal murmurs heard over the heart; liver and spleen not enlarged; tongue coated; bowels open; temperature, 39° C; pulse, 112; respirations, 36. The patient was breathing easily, and he slept, most of the time. He coughed occasionally, and expectorated a small quantity of bloody sputa. The patient did well until the afternoon of the 13th instant, when he became delirious. He expectorated a large quantity of bloody sputa, and his abdomen was distended with gas. On the morning of the 14th instant his temperature was 40°; pulse, 148; and respirations, 64. He was still delirious, and so restless that it was difficult to keep him in bed. He suffered greatly from dyspnœa, and there was considerable œdema of the lungs. Everything possible was done to relieve the patient but without success. He continued to grow worse, and died at 2 o'clock, on the afternoon of the 14th of April, as stated above.

Necropsy (*twenty hours after death*).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Right pleural cavity contained 500 cubic centimeters of seropurulent fluid. Deposit of lymph on surface of right lung; lower and middle lobes of right lung in the stage of gray hepatization; upper lobe deeply congested; left lung congested throughout; heart not enlarged; ante mortem clot found in the left ventricle; valves normal; liver congested; spleen pale; kidneys normal.

Case 16.

Abscess of suprarenal capsule.

P. A.; aged 35 years; nativity, Sweden; admitted to Marine Hospital, Stapleton, Staten Island, N. Y., April 5, 1892; died April 14, 1892.

History.—Upon admission patient stated that two days before he was taken with a cough accompanied by an expectoration of a brownish mucus, soft in consistency but not mixed with blood. He had pains in chest, which were materially increased by coughing and inspiration; great dyspnœa and anorexia. Bowels regular, and sleeps well. Denies alcoholic history. Physical examination: Body fairly well nourished; chest development fair; vocal fremitus increased; dullness on percussion over lower lobe of left lung; a few sibilant râles and bronchial breathing heard over both lungs; heart sounds normal; liver and spleen not enlarged; temperature, 40° C.; pulse, 110; tongue moist. Patient's condition became gradually worse, death taking place at 7 p. m. April 14, 1892.

Necropsy (*sixteen hours after death*).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Pericardium distended with a seropurulent fluid. External surface of heart covered with lymph; one cusp of aortic valve was found bound down and the seat of vegetations; mitral valve normal. Left pleura thoroughly adherent to parietes of thorax so firmly that it required considerable force to break down the adhesions. Lower lobe of left lung hepatized. Right pleura adherent to chest walls. Right lung deeply congested. Liver very much enlarged and presented a nutmeg appearance. Right suprarenal capsule distended with a purulent fluid and contained on the inner side a deposit of bone. Right kidney normal, capsule nonadherent. Left kidney normal, capsule nonadherent. Spleen presented a nutmeg appearance. Other organs not examined.

CASE 17.

Cirrhosis of the liver.

J. F.; aged 35 years; nativity, Ireland; admitted to Marine Hospital, Stapleton, Staten Island, N. Y., February 26, 1892; died March 1, 1892.

History.—Patient stated upon admission that he had been ill for five days. His illness began with a chill, severe cold, cough, accompanied by an expectoration of a quantity of yellowish mucus, with an occasional admixture of blood (rusty sputum). Pains in left side of chest increased by inspiration. No dyspnœa; no nausea; no vomiting; a slight diarrhœa; anorexia and insomnia. Specific history: Phthisical family history. Physical examination: Body poorly nourished; chest expansion good; vocal fremitus increased on left side; dullness on percussion over left lung just over nipple; bronchial breathing over left lung; breathing roughened over right lung, and a few mucous râles at the base; heart sounds normal; liver and spleen normal in size; tongue clean. Temperature, 38° C. Pulse, 100. Patient's condition gradually grew worse, treatment producing no amelioration of symptoms, and death took place at 8 a. m., March 1, 1892.

Necropsy (twenty-seven hours after death).—Body moderately well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. The pericardial sac contained about 25 cubic centimeters of straw-colored fluid. Heart normal in size and contained post mortem clots. Valves of heart normal. Left pleura thickened and completely adherent to parieties of thorax; also adherent to pericardium. Left lung completely hepatized. Right pleura partly adherent to parieties of thorax. Right lung adherent to diaphragm, and intensely congested. The gall bladder was distended with a fluid of pale greenish color and of the consistency of thin olive oil, floating in which was found inspissated bile. The liver was normal in size, slightly nodular, and somewhat congested. A creaking or grating sound was produced by cutting, similar to that produced in a cirrhotic liver. Many of the bile ducts were enormously enlarged and filled with inspissated bile. There was a bile cyst situated at about juncture of right and left lobes containing a solid mass of inspissated bile about 4 by 8 centimeters in size, of elliptical shape, and bronze in color. Spleen normal in size; slightly nodular. Left kidney enlarged and congested; capsule nonadherent. Right kidney enlarged, slightly congested; capsule nonadherent. Other organs not examined.

CASE 18.

C. G.; aged 29 years; nativity, South Carolina; admitted to the Marine Hospital, Stapleton, N. Y., February 29, 1892; died March 9, 1892.

History.—Patient stated that four days prior to admission he was taken with a cough, expectorating a quantity of yellowish mucus, firm in consistency, with a slight admixture of blood. Also severe pains in chest, which were increased on coughing and inspiration; headache, pains in shoulder and back, nausea, and vomiting. Did not have any chill. Anorexia, constipation, and insomnia. No alcoholic history. Physical examination: Body well nourished; vocal fremitus not increased; breathing short, quick, and very shallow; slight dullness over base of left lung; breathing roughened; expiratory murmur prolonged; a few mucous râles heard over base of left lung; respiratory murmur of right lung shallow, no râles heard; heart sounds normal; liver and spleen not enlarged; tongue clean and bowels open. Temperature, 39.6°. Pulse, 110. Respiration, 40. Patient was given an expectorant and was stimulated. On the third day temperature was 40.2°. On the fourth day, 38.6°. On the fifth day, 39.4°. There was a gradual defervescence until eighth day, when temperature was 37.8°. Then an exacerbation, temperature reaching 39.6°. The symtoms increasing in severity, death taking place at 5 a. m., March 9, 1892.

Necropsy (*nine hours after death*).—Body well nourished. *Rigor mortis* well marked. Pericardial sac contained usual amount of fluid. Heart normal in size and contained both ante and post mortem clots. Valves normal. Left pleura thoroughly adherent to parietes of thorax. Left lung intensely congested. Right pleura nonadherent. Upper lobe of right lung was in a state of complete red hepatization. Lower lobe was intensely congested. Liver enlarged, pale, and fatty. Right kidney enlarged, capsule nonadherent, kidney fatty. Left kidney enlarged, capsule nonadherent, kidney fatty. Spleen enormously enlarged, nodular, mottled, and congested. Other organs not examined.

CASE 19.

H. H.; aged 35 years; nativity, Maine; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., December 28, 1891; died January 6, 1892.

History.—Upon admission patient stated that he had been sick for one week; his sickness having commenced with cephalalgia, pain in back and left side, cough, with a whitish expectoration, nausea, no vomiting, diarrhœa, chill, fever, and sweating. No specific history. Physical examination: Body fairly well nourished; chest expansion poor on account of pain it occasions over cardiac region; vocal fremitus normal; sibilant râles heard over both lungs on auscultation; no dullness on percussion. A mitral murmur heard at base of heart, and the area dullness is increased on percussion—the impulse beat being about one inch to left of mammary line. Liver and spleen appear normal in size.

December 29, 1891.—Temperature, 40.4° C. Pulse good and strong. Tongue coated and bowels constipated. 6 p. m.: Temperature, 39.6°; pulse continues good and strong; very delirious, violent, and restless. Slight dullness over apex of left lung and a considerable number of mucous râles are present; the breathing in right lung is much better; a few sibilant râles are heard anteriorly and some mucous râles heard posteriorly over the base.

December 30.—Sibilant and mucous râles heard over both lungs, but they do not interfere with the respiratory movements. Temperature, 39°. Pulse, 120; not very full; cheeks flushed; coughs a little, with some expectoration. P. m.: Temperature, 41°; pulse, 120, strong and full; delirious; respiratory movement hurried, but not labored.

January 1, 1892.—Temperature, 39.2°; pulse continues good and strong, being better than last night, respiratory movements being more frequent, but breathing not labored; very restless and delirious. 6 p. m: Temperature, 40.3; condition about the same.

January 2.—Temperature, 39.4°; pulse not so rapid; restlessness continues; cough is more loose.

January 5.—Remained in about the same condition for the past two days. This morning temperature 40.8°, pulse weaker, very delirious and restless, and he continued in this condition until he died, as given above.

Necropsy (*ten hours after death*).—Body fairly well nourished. *Rigor mortis* well marked. Slight hypostatic congestion posteriorly. Heart: Ante mortem clot in both cavities; the mitral valve thickened. Lungs: Left slightly adherent to chest wall, congested, the lower lobe in a state of red hepatization, sinking when placed in water; right deeply congested, pus exuding from bronchioles in both lungs upon pressure. Liver normal. Spleen normal. Kidneys: Capsules not adherent; the right apparently normal; the left somewhat nodular and cortical portion thin.

CASE 20.

M. M.; aged 35; nativity, Finland; admitted to Marine Hospital, Stapleton, Staten Island, N. Y., May 16, 1892; died May 19, 1892.

History.—Upon admission patient stated that he had been sick five days. His sickness commenced with headache, chill, fever, sweating, and cough, with purulent ex-

pectoration tinged with blood; pain in chest, particularly in right side; dyspnœa, anorexia, vomiting, and insomnia; bowels regular. Gives a history of alcoholism. Family history could not be obtained. Physical examination: Body well nourished; chest fairly well developed; chest expansion decreased on right side; respiration labored and difficult; vocal fremitus exaggerated on right side; marked dullness on percussion over apex of right lung. On auscultation mucous and crepitant râles heard at base of right lung; vocal resonance very much increased; left lung normal; heart sounds normal; liver and spleen not enlarged. Temperature, 38⅘°; pulse, 108; respirations, 32.

May 17.—P. m.: Temperature, 38⅘°; pulse, 120, and very weak; respirations, 44, and labored.

May 18.—A. m.: Temperature, 38°; pulse, 128, and strong; respirations, 40, and still labored; œdema of lungs and loud mucous râles heard over both lungs; patient complained of headache and slept very little during the night. P. m.: Temperature, 38°; pulse, 140, and very weak; respirations, 48; still labored.

May 19.—A. m.: Temperature, 37.5°; pulse, 136, and very weak; respirations, 48, rapid and labored; some œdema of lungs; patient very weak and in a cold perspiration; condition became gradually worse, death taking place at 10 a. m., May 19, 1892.

Necropsy (twenty-four hours after death).—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly. Heart normal. Left lung slightly adherent to chest wall. Right lung firmly adherent to chest wall, and in a state of red hepatization, and some parts having gone on to gray hepatization. Liver congested. Spleen pale. Kidneys apparently normal.

CASE 21.

Bilateral.

J. F. C.; aged 54 years; nativity, Maine; admitted to the marine ward, St. Vincent's Hospital, Norfolk, Va., December 10, 1891; died December 12, 1891.

History.—When admitted he had been ill with the grippe for about ten days, the vessel having put in to land him. His temperature was 39.5° C., his pulse 100 per minute, and full. Tongue badly furred. He was extremely weak, with very slight cough, and a slight rusty expectoration, and had some pain in the chest. He developed pneumonia very rapidly, involving the entire left lung, and before resolution began the right lung became involved, and he died of suffocation on the 12th.

Necropsy (twenty-eight hours after death).—Body well nourished and slight *rigor mortis*. Pleuræ empty and not adherent. Left lung solidified, the bronchioles and air cells filled with bloody serum; no pus present. The lower lobe of the right lung in the same condition. Heart enlarged; filled with blood; valves healthy. Abdominal organs presented no evidences of disease worthy of record. The interesting facts connected with this case were the rapidity of the spread of the inflammation in the lungs, and the large quantities of serum effused into the air cells, the man being virtually drowned.

CASE 22.

R. I.; aged 31 years; nativity, New York; admitted to the marine ward of the German Hospital, Philadelphia, Pa., December 23, 1891; died December 24, 1891.

History.—Upon admission had temperature of 40.8° C.; flushed face; rapid respiration; strong, rapid, full pulse. Had been sick for three days. Physical examination showed on percussion dullness over base of left lung posteriorly; auscultation, râles; cough, but no expectoration.

Necropsy.—Left heart in strong systole; right heart dilated; chicken-fat clots; left lung solidified, excepting at very apex; red and gray hepatization, principally the latter; right lung congested, but otherwise normal; liver very large, extending far over to the left side; all other organs normal.

CASE 23.

Valvular disease of the heart.

C. C. C.; age, 53 years; nativity, Pennsylvania; admitted to the U. S. Marine Hospital, San Francisco, Cal., November 24, 1891; died November 25, 1891.

History.—When admitted was greatly prostrated, face cyanosed, respiration hurried, pulse rapid and weak, temperature high, expectoration frothy and scanty, the patient being unable to raise much in his weakened condition; large mucous râles present over both lungs; had been sick four days, but beyond this no history was obtainable; during the night he became completely unconscious, and died early the next morning.

Necropsy.—*Rigor mortis* well marked. General nourishment good. The left pleural cavity contained about one pint of bloody fluid; the whole lower lobe of the left lung was consolidated—hepatized; the upper portion of both lungs contained a large amount of serous fluid in the bronchial tubes; weight of the left lung was 1,030 grams; of the right, 600 grams; the heart weighed 390 grams; the left ventricle was slightly enlarged; the segments of the aortic valve were thickened and resembled cartilage, causing an insufficiency of the valve; kidneys were normal.

CASE 24.

Bilateral.

J. B.; age, 53 years; nativity, Spain; admitted to the U. S. Marine Hospital, San Francisco, Cal., December 2, 1891; died December 10, 1891.

History.—When admitted had been sick a week, commencing with a chill. Was very weak, respiration rapid, face cyanosed, pulse rapid and weak. Temperature 40° C. Expectoration was at first frothy, but later became abundant, viscid, and blood stained. On physical examination crepitant râles present over base of left lung, with dullness on percussion posteriorly. The temperature remained high until death, not being much affected by quinine or cold sponging. The area of dullness increased and involved nearly the whole of the left lung, and the day before his death crepitant râles appeared on the right side. The pulse became weaker and more rapid, the dyspnœa extreme, and death occurred on the evening of the 10th, two weeks after the initial chill.

Necropsy.—*Rigor mortis* marked. General nourishment poor. The left lung was completely consolidated with the exception of a small portion of the apex; the lower lobe was of an ashy gray color, very friable; the upper part of the lung was of a darker red color, showing it to be recently involved. The right lung was consolidated near its base. Weight of left lung, 1,550 grams. Weight of right lung, 750 grams. Heart and kidneys normal.

CASE 25.

Bilateral.

J. A.; nativity, Norway; aged 25 years; admitted to the U. S. Marine Hospital, San Francisco, Cal., December 31, 1891; died January 14, 1892.

History.—When admitted complained of cough, weakness, and anorexia. Temperature, 38.8°. On physical examination mucous râles were heard over both lungs. On January 2, 1892, dyspnœa became marked and weakness increased. Auscultation elicited crepitant and subcrepitant râles over bases of both lungs. On percussion, spots of dullness were found over base of right lung. January 7: Respiration 40 per minute; pulse, 112, with low tension. The temperature remaining 38.8° to 40° in spite of the profuse perspiration which continued from this time until death. The sputum was scanty in character, purulent, and although not viscid, was expectorated with difficulty. On the 8th of January the face became cyanosed, and the respirations were more rapid and shallow. There was complete absence of respiratory sounds over the base of the

right lung, and no crepitations except on forced inspiration. On percussion there was a general lack of resonance over the right lung, with dullness in some isolated spots. On the left side the vesicular murmur was weak, and on percussion the lung was lacking in resonance. The temperature curve was very irregular, ranging from 37.7° to 40°, never becoming normal.

Necropsy (January 15, 1892).—Rigor well marked. General nourishment good. On opening the chest the lungs did not collapse. Right pleural cavity presented some recent adhesions. Left pleural cavity contained about 4 ounces of fluid. Right lung, weight, 1,090 grams, was of a dark red color, consolidated in spots, while other portions were collapsed. The left lung weighed 1,080 grams, and was similar in appearance to the right. Circulatory system: Vena cava was distended with blood; heart weighed 430 grams, the wall being normal in thickness; valves competent; the right ventricle and auricle were distended with blood. The right ventricle contained an ante mortem clot, which extended into the pulmonary artery.

CASE 26.

Bilateral.

D. S. (colored); aged 27 years; a native of Missouri; was admitted to the U. S. Marine Hospital, St. Louis, Mo., May 4, 1892; died May 5, 1892.

History.—The family history was bad. He had been sick eight days when he was admitted. He had a chill one week ago, followed by pain in the chest on the left side. He had a severe cough and dyspnœa on the slightest exertion. There was dullness over the upper lobes of both lungs. There were subcrepitant râles in the upper lobes of both lungs. Respirations were 60 per minute. Pulse was very weak and 100 per minute. He was moribund on admission.

Necropsy (eighteen hours after death).—The upper lobes of both lungs were passing from red to gray hepatization. Other viscera normal. The heart stopped in diastole, and was full of blood.

CASE 27.

Pneumonic phthisis.

J. A.; aged 27 years; a native of United States; admitted to the marine ward, Grace Hospital, Seattle, Wash., August 29; died November 4, 1891.

History.—When admitted he had pneumonia of the entire left lung, complicated with acute pleurisy. The lung did not resolve and quickly changed into a condition of pneumonic phthisis, and he died from exhaustion.

Necropsy.—Body very much emaciated, and *rigor mortis* well marked. There were several small cavities throughout the left lung. The pleural cavity contained 500 cubic centimeters of dark serum. The pleura was very much thickened and there were a number of adhesions. Heart soft and flabby. Other organs normal.

CASE 28.

Acute cerebral meningitis.

P. B.; aged 32 years; a native of Ireland; admitted to marine ward, Grace Hospital, Seattle, Wash., March 12, died April 4, 1892.

History.—When admitted he was suffering from lobar pneumonia of left lung. The temperature was at no time above 39.5° C. Resolution occurred after he had been in hospital a few days, after which all symptoms of lung trouble ceased, but he developed acute meningitis. He soon became comatose and never recovered consciousness.

Necropsy.—Rigor mortis well marked. Body fairly well nourished. The left lung was found in healthy condition, the pneumonic consolidation having undergone complete resolution before death. The dura was congested, and the pia mater was congested and thickened in places along the longitudinal fissure. There were also some slight congested spots in the brain substance. Other organs normal.

FIBROID PHTHISIS, EMPHYSEMA, AND CYSTIC DEGENERATION OF THE KIDNEYS.

J. M. W.; aged 59 years; born in Maryland; admitted to the U. S. Marine Hospital, New Orleans, La., December 3, 1891; died at 3:30 a. m., December 26, 1891.

History.—Patient has long suffered with asthmatic spells at night, cough, and shortness of breath, and has been treated numerous times for this condition in the U. S. Marine Hospitals at Chicago during the summers and at New Orleans during the winters. When admitted to hospital, December 3, 1891, he had, beside the regular train of symptoms, diarrhœa, bowels moving every hour. Examination discovered all the signs of a long-standing fibroid phthisis and emphysema, as the upward movements of the chest, the abnormal obliquity of the ribs, the bent-over, round-shouldered appearance, dilated nostrils, and prominent sternocleido muscles. The percussion note was of deep tympanitic character. Expiration prolonged, and many dry sibilant and sonorous râles. Treatment was mainly symptomatic, with stimulants and abundant nourishment.

Necropsy (eight hours after death).—Body that of an emaciated white man. No *rigor mortis* nor post mortem lividity. The lungs did not collapse upon removing the breastbone, and several air vesicles or blebs were observed on their surface. They were large, meeting in front, overlapping the heart and encroaching upon the anterior mediastinum. At the apex of each lung was an old hard fibroid or cirrhotic, irregular patch, with a few soft foci. The remaining portion of both lungs showed marked emphysema. The heart was of the variety known as "cartwheel," the right side being dilated, walls thin; no organic changes of valves. The right auricle was filled with an ante mortem "chicken-fat" clot. The liver showed fatty infiltration; weight, 1,520 grams. The spleen was small; weight, 95 grams. The kidneys contained a few small retention cysts on the surface inclosing a clear fluid. The capsule was adherent, the surface granular, and the cortex contracted in places, otherwise normal. Weight of each kidney 196 grams. The small intestines showed a general catarrhal inflammation. The blood vessels were injected, and there were various spots of ecchymosis, but no points of ulceration were noted, the mucous membrane remaining intact. The other organs were not examined.

ACUTE PLEURISY.

Case 1.

Pericarditis.

H. L.; aged 23 years; nativity, Denmark; admitted to the U. S. Marine Hospital, port of Boston, April 11, 1892; died April 24, 1892.

History.—When admitted patient had been suffering with pain several days, the knees being chiefly affected. Later he had pain in right ankle and left arm.

April 15.—Rheumatism seemed greatly relieved, but there was slight dyspnœa and pain in chest. On auscultation a mitral regurgitant murmur was heard at apex. The second pulmonic sound was accentuated.

April 16.—Considerable dyspnœa and pain in cardiac region. Temperature, a. m., 39.2° C.; p. m., 38°.

April 17.—Temperature, a. m., 40.2° C.; p. m., 40° C. Distinct pericardial friction sound: dyspnœa increased and pulse tense. Dry cupping twice a day.

April 18.—Temperature, a. m., 40.2° C.; p. m., 40.2° C. Patient about the same. Dyspnœa and pain continue. An ice pack over heart was applied twice during day. This gave considerable relief.

April 19.—Temperature, a. m., 39.4° C.; p. m., 40.2° C. Pleurisy was discovered on the left side, and about 500 cubic centimeters of wine-colored serum aspirated.

April 20.—Temperature, a. m., 39.2° C.; p. m., 39.8° C. Was more comfortable during the night, but dyspnœa has returned. Respiratory murmur harsh over lower part of sternum. Slight dullness in right base at back, probably due to congestion. Pleura again aspirated, and about the same quantity of serum withdrawn.

April 21.—Temperature, a. m., 39.2° C.; p. m., 39.4° C.

April 22.—Temperature, a. m., 40° C.: p. m., 40.8° C. No other change.

April 23.—Temperature, a. m., 40° C.; p. m., 41° C. Patient moribund.

Necropsy (*six hours after death*).—*Rigor mortis* present. Slight emaciation. The pericardium was so firmly adherent to the heart muscle that it could only be removed by dissection. There was also a firm band of adhesion at apex with the chest well. The aortic and mitral valves were slightly incompetent; others normal. A line of vegetations, each a little smaller than the head of a pin, was found close to the margin of the aortic valve, and another similar one was found on the mitral valve. Left ventricle was normal, but heart wall was very greatly hypertrophied. Right ventricle slightly dilated, but wall of normal appearance. Large and firm ante mortem clot in left ventricle, extending into aorta. The left lung was greatly compressed and congested; weight, 430 grams. Pleural cavity contained about a pint of fluid serum. Right lung deeply congested, except the anterior portion, which was emphysematous; weight, 610 grams. A few slight pleuritic adhesions on right side. Liver dark in color and congested; weight, 2,090 grams. Kidneys congested; weight, right 260 grams; left 230 grams. Spleen congested; weight, 270 grams.

Case 2.

Bilateral—Effusion—Pericarditis.

H. E.; aged 27 years; nativity, Sweden; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., December 31, 1891; died January 2, 1892.

History.—Upon his admission patient stated that he had been sick for two weeks, his sickness having commenced with pain in his side; cough, with a white expectoration; no dyspnœa, anorexia, severe pain in his stomach, but no nausea nor vomiting, bowels regular, fever, and sweating; no chills. Physical examination: Right lung, no dullness on percussion; vocal fremitus normal; vesicular murmur soft and breezy. Left lung, flatness over the side and base; vocal fremitus and resonance imperfectly conducted; respiratory murmur suppressed; pleuritic friction murmur heard in front and behind. A systolic murmur heard at apex of heart, and the area dullness is increased. Liver slightly enlarged. Spleen appears normal in size.

December 31.—P. m.: Temperature, 40.2°. Pulse, 120; full and strong. Very little cough and expectoration; respiratory movement rather frequent.

January 1.—Temperature, 39.2°. Patient's condition somewhat improved. The breathing over left lung is more regular and the respiratory murmur at base is heard more clearly. 6 p. m.: Pulse weak, rapid, and intermittent.

January 2.—A. m.: Temperature, 39.6°; pulse, full, strong, rapid, and intermittent. Flatness is heard over side and base of left lung. Some œdema is present and also adventitious sounds due to the fibrin exuded from the pleura. The apex of heart is slightly displaced toward the left, and the impulse is strong, heaving, and irregular. P. m: There are grating and churning sounds heard over heart. The patient suddenly died from heart failure on date as above given.

Necropsy.—Body well nourished. *Rigor mortis* well marked. Hypostatic congestion posteriorly and ecchymotic spots over body. Pericardium inflamed and contained about 120 cubic centimeters straw-colored fluid. Heart: A few vegetations seen on leaflet of mitral valve. Both pleural cavities contained about 500 cubic centimeters fluid, and there were considerable adhesions binding lungs to chest wall. Lungs: Left, deeply

congested and œdematous, and pus exuded on pressure from bronchioles. Right, congested and œdematous. Liver fatty and slightly enlarged. Spleen congested. Kidneys: Capsules not adherent; the right pale and the left apparently normal.

GASTRO-ENTERITIS.

CASE 1.

M. S.; aged 38 years; nativity, England; admitted to U. S. Marine Hospital, Detroit, Mich., February 19, 1892; died February 22, 1892.

History.—Illness began three weeks before. Patient was "keeping ship," and was visited several times by a private physician, who said she had the "grippe," which was probably correct, but with it she also had a severe diarrhœa. She was brought to the hospital in the ambulance in a most helpless condition. Bowels very loose. Passages were of a grayish brown color, and as a rule quite thin. Pulse rapid and weak. Tongue dry and cracked. Temperature subnormal. Conscious, but hardly able to raise her head. Soon passed into a condition of stupor, which gradually deepened into coma. Pulse more rapid and weaker; respiration frequent and superficial. Temperature the second day after admission went up to 38° C., and just before death it was 40° C.

Necropsy (*fifteen hours after death*).—*Rigor mortis* well marked. Body somewhat emaciated. Firm pleuritic adhesions were found in left side of chest, and the left lung was deeply congested, pneumonic in appearance, but floated when placed in water. The adhesions were probably due to an old pleurisy, and the condition of lung was probably caused by influenza, of which there was an indistinct history. The left lung was not affected, but they were both of the same weight, 350 grams, only. The heart weighed 240 grams, and contained blood clots in the right cavities. Valves and walls of all the cavities apparently normal. The kidneys were somewhat congested, but not apparently otherwise diseased. The left kidney weighed 150 grams; the right 140 grams. The spleen was small (80 grams) but of firm consistence. The liver was large, weight 1,810 grams, of a grayish brown color, and quite soft. The stomach and intestinal tract showed evidences of severe inflammation, most marked in duodenum and upper part of small intestines. Peyer's patches and solitary glands were apparently not affected, and the peritoneum was in normal condition. The cause of death was enteritis complicated with influenza. The enteritis was probably due to excessive use of alcoholics, to which the patient was addicted.

CASE 2.

G. S.; aged 29 years; nativity, Holland; admitted to the marine ward of the German Hospital, Philadelphia, Pa., December 5, 1891; died December 5, 1891.

History.—When admitted had been sick for three days. Temperature, 39.4° C. Profuse perspiration. Percussion over abdomen gave a flat note in every part. Some pain on pressure. About 5 o'clock profuse hemorrhage from bowels occurred, the temperature dropped to 36.° C., his extremities became cold, and at 6:30 he died.

Necropsy.—Entire gastrointestinal tract was intensely congested. No ulcers. All other organs normal.

TYPHLITIS—PERFORATION.

CASE 1.

Absence of left kidney.

P. S.; age, 30 years; nativity, Germany; admitted to U. S. Marine Hospital, Boston, Mass., November 3, 1890, with diagnosis of typhlitis.

History.—There was a marked swelling in the right iliac region, with great tenderness. Gave a history of three previous attacks of a similar character. His condition gradually grew worse, and on December 14, 1890, Passed Assistant Surgeon W. J.

Pettus opened the abdomen, but the intestines were so matted together that it was impossible to separate all of them. No pus was found, though the pelvis and tissues in the iliac and lumbar regions were carefully explored. He steadily grew worse; abscesses formed all over the thigh and right side of abdomen, and symptoms of chronic septicæmia, such as diarrhœa, profuse sweats, and an irregular temperature were constantly present. He died on July 22, 1891.

Necropsy (six hours and a half after death).—Body much emaciated; openings of numerous abscesses on thigh at right side of lower portion of abdomen; scar of operation in right iliac region; lungs normal; slight pleural adhesions on both sides. Heart and pericardium normal. Right kidney of unusual size, weighing 260 grams. It had two distinct pelves opening into a common ureter. The left kidney was absent. Its position was occupied by connective tissue. Close to the aorta, on left side, was a small growth resembling glandular tissue, weighing 5 grams. No sign of cortical or medullary substance could be found in it. The aorta gave off only one renal artery and that was connected with the large right kidney. The appendix vermiformis was, together with the cæcum, closely adherent to the abdominal walls in their neighborhood. The appendix showed only a stump left, ulcerated, and in several places the ulcers had destroyed all the layers, leaving only a few shreds. The intestines were closely adherent in the neighborhood. The abdominal walls, thigh, and lumbar region of right side, enormously thickened and infiltrated with a cheesy substance. There were several intestinal adhesions at the side of the abdominal incision made at time of operation.

Case 2.

Perforation of the vermiform appendix.

J. H. F.; age, 32 years; nativity, England; admitted to marine ward, St. Mary's Infirmary, Galveston, Tex., May 7, 1892; died May 8, 1892.

History.—The patient was brought to the hospital in a condition bordering upon collapse. He was put to bed and stimulants were given him, after which he revived somewhat. The history given was that he had received a blow in the right loin from a windlass eight days before. He left the vessel and remained at his home for a few days, but grew worse, and consented to be brought to Galveston to the hospital. When seen the morning following his admission, he was in a half delirious condition and extremely restless. The pulse was thready; the abdomen distended and tense. No evidence of the blow mentioned above could be found. His temperature was 39.5° C. A hypodermatic injection of sulphate of morphine was given him; also whisky by the mouth. Treatment was of no avail, and he soon sank into complete unconsciousness, and died shortly afterwards.

Necropsy (two hours after death).—*Rigor mortis* not developed. General nourishment good. The pericardial sac contained considerable serous fluid. The valves of the heart were all competent and normal. The walls of the left ventricle were thicker than usual, and the entire heart appeared slightly hypertrophied, but healthy. The left lung was adherent to the chest wall over quite an extent of its posterior surface. The right pleural cavity was normal. Both lungs were normal in appearance, with the exception of a small spot in the apex of the right lung, where was found a nodule, partly cheesy and partly calcareous, of about 3 millimeters diameter, which was surrounded by a small amount of contracted fibrous tissue. This was apparently a small tuberculous spot, which had resulted in recovery. The abdominal cavity was considerably distended, and all the abdominal viscera and the coils of intestine were matted and bound together by recent plastic exudation. The peritoneal cavity contained a large amount of seropurulent fluid having a foul odor. A small, soft fecal lump was found in this fluid near the cæcum. When the vermiform appendix was separated from the adhesions binding it and the cæcum to the parietal peritoneum, it was found to be quite extensively ulcerated and perforated in two places. It was small and had no mesentery. The other viscera

were not examined. A little urine, which had been drawn before death, was examined, and was found to contain albumen, but no sugar. It is probable that the blow mentioned above in the history of the case, which the patient and his friends thought was the cause of his trouble, had absolutely nothing to do with his sickness, and was merely coincidental.

COLITIS—PERFORATION OF INTESTINE.

CASE 1.

D. C.; aged 24 years; a native of Ireland; was admitted to U. S. Marine Hospital, St. Louis, Mo., September 25, 1891; died October 2, 1891.

History.—Frequent stools, sometimes every half hour; much pain and abdominal tenderness. Had been sick three or four weeks before admission. Had lost both flesh and strength. Much tenesmus. There was tenderness to pressure along the whole course of the colon. The stools became much less frequent and the tenderness diminished. His failure was constant and gradual.

Necropsy.—Showed many ulcers on the mucous membrane of the colon. The ulcers varied in size and depth. In two places in the sigmoid flexure of the colon there were perforations of the colon, and the colon was adherent to the anterior abdominal wall.

CASE 2.

G. B.; aged 42 years; a native of Missouri; was admitted to the U. S. Marine Hospital, St. Louis, Mo., November 28, 1891; died December 4, 1891.

History.—Frequent stools containing large pieces of mucus and a small amount of fæcal matter. Had frequent stools for last six weeks, accompanied with much pain and tenesmus. Tenderness marked and confined to region of colon. Stools became less frequent, but more offensive.

Necropsy.—Ulcers of mucous membrane of colon throughout its whole extent. The colon was perforated in several places in the sigmoid flexure. There was some pus and fæcal matter in abdominal cavity.

ULCER OF THE DUODENUM—PERFORATION—PERITONITIS.

M. H.; aged 45 years; nativity, Illinois; admitted to U. S. Marine Hospital, Detroit, Mich., September 10, 1891; died October 16, 1891.

History.—On admission he gave a history of chills, fever, constipation, and considerable gastric irritation, and was addicted to liquor. A diagnosis was made of intermittent malarial fever. He was treated principally with quinine and apparently made a good recovery, being discharged as well on September 24. Fever practically ceased after first day. On September 29, 1891, he was readmitted. Said he had had a chill the day before and had diarrhœa. He was treated at first with quinine but with no effect on the fever, which during the first week was moderately high, ranging between 39° and 40° C. During the second week it ranged quite evenly, about 38° C.; on one evening being 38.8° C. During most of this second illness, diarrhœa was present—the stools having a greenish color and were watery. There was also present a low muttering delirium. The patient had all the appearance of one suffering from typhoid fever. He gradually grew weaker, his stupor more pronounced, tympanites marked. On October 3 his temperature sank almost to normal, his pupils were dilated, and he was extremely weak. On the evening of October 14 he had a chill; next morning his pulse was almost gone at the wrist and the surface of the body was cold and clammy, the temperature down to 35° C. Whisky and hot strong coffee were used freely. On the evening of the 15th the temperature was 37° C., the pulse hardly perceptible and the respiration very rapid, 48 a minute. The stomach would retain nothing and tympanites was marked. Next morning there was a change; he asked for and ate a little toast with apparent relish, and said he would get well. He gradually sank, however, and died at 12:20 p. m., October 16, 1891.

Necropsy (seven hours after death).—*Rigor mortis* well marked. Post mortem lividity over back and arms. General nourishment fair. Pupils dilated. Heart and blood vessels apparently normal. Weight of heart, 300 grams. Lungs were intensely congested and adhered to the chest walls, the adhesions evidently due to old pleurisy. Weight of both lungs together, 1,380 grams. The abdominal cavity contained a considerable quantity of purulent fluid, visceral peritonitis quite marked, and there was a marked condition of enteritis throughout the entire intestinal tract. The mucous membrane of the ileum was thickened, and the cæcum showed small spots of ulceration. Peyer's patches and the solitary glands were not raised or thickened, but on the contrary showed evidence of shrinkage or atrophy, the result apparently of former disease. In the duodenum, about 15 centimeters from the pylorus, there was a perforation 3 centimeters in diameter, which caused the peritonitis, and probably occurred a day or two before the fatal termination. The liver was enlarged somewhat, but apparently not diseased; weight, 2,770 grams. The kidneys were congested, right kidney more than the left; weight, right kidney, 195 grams; left, 200 grams.

CIRRHOSIS OF LIVER.

Case 1.

Valvular disease of heart.

H. S.; aged 46 years; nativity, Ireland; admitted to Marine Hospital, Chicago, Ill., June 5, 1891; died July 18, 1891.

History.—Some days before seeking admission to hospital patient observed some swelling about the ankles at night. Recently this became excessive, his occupation of cook requiring him to stand for hours before a stove. A day or two before coming to hospital his abdomen suddenly and rapidly swelled, and respiration became difficult. Upon admission to hospital there was little swelling of the legs and none elsewhere, except in the abdomen; breath short; face somewhat livid. Urine examined but nothing abnormal found. Heart: Valve sounds distinct, but the whole organ apparently dilated and weak. Considerable gaseous as well as fluid distention of the belly. The dropsy meanwhile invading the legs. Subsequently, with ext. digitalis, calomel, Basham's mixture, and from time to time hot-air baths, punctures of the lower limbs, and attention to diet, the dropsy was kept at a standstill.

June 29.—Lower limbs and lower abdominal folds very dropsical. Symptoms indicate cirrhosis of liver, and when opportunity offered to percuss during comparative relaxation of tension the organ seemed much contracted. Possibly cirrhosis of kidney. No uræmic symptoms. No flagging nor irregularity of the heart. Considerable inflammation and induration of skin on inner side of right leg where punctured for anasarca. Lead and opium wash applied.

June 30.—Area of redness less extensive but more marked. Poultices applied.

July 6.—Twice punctured apparently fluctuating spots of the deeply red area of inflamed and painful skin, only blood and serum found. Yesterday stopped poultices and ordered lead and opium wash. Better to-day. Breathes more freely, abdomen less distended, some wind colic last night. On the whole is failing.

July 8.—Ordered digitalis hereafter regularly t. i. d. Increasing dropsy and puffiness for the last few days.

July 13.—Œdema of legs begins to relieve itself through old incisions.

July 16.—In spite of all treatment the anasarca is more marked than ever and the bowels more tympanitic. Urine again examined, no albumen, no casts. Patient clearly sinking and no other expedient offering he was ordered diuretin 0.3 gram every two hours. Extremely exhausted and wandering from time to time.

July 17.—Rallied somewhat this afternoon.

July 18.—Died at 3 a. m., rather unexpectedly.

Necropsy (thirteen hours after death).—Great post mortem lividity, especially of the head and neck. Lungs normal, but bound down on each side by one or two adhesions. About 600 cubic centimeters of serum in the right pleural cavity; left empty. Heart dilated and hypertrophied, especially the right heart. Heart tissues firm. Mitral and tricuspid valves, by post mortem tests, were found insufficient, yet during life gave no murmur. Whole organ in diastole; weight (after opening), 620 grams. Abdomen: Contents congested, and the peritoneum contained 2,500 cubic centimeters of cloudy serum. Liver subnormal in size; slightly rough; firm; color mottled; weight, 1,730 grams; greatly congested. Kidneys appeared normal, except for deep venous congestion. Cause of death, cirrhosis of liver; immediate cause, exhaustion and heart failure.

CASE 2.

Gumma of spleen.

P. K.; age, 41 years; nativity, Iowa; admitted to the U. S. Marine Hospital, Chicago, Ill., January 15, 1892; died May 30, 1892.

History.—Admitted with history of malarial infection; ascites, without œdema elsewhere; enlarged abdominal veins, and general appearance of cirrhosis of liver. He was repeatedly tapped, given saline cathartics and various diuretics. Upon each recurrence of the ascites the patient became weaker and thinner; digestion gave way, colic and tympanites became troublesome symptoms, and patient finally failed rapidly.

Necropsy.—Height, 178 centimeters; circumference of shoulder, 93 centimeters; post mortem lividity marked. *Rigor mortis* slight. Heart weighed, after opening, 265 grams; was filled with dark fluid blood and post mortem clots; pericardial sac contained about 30 cubic centimeters of fluid; heart valves competent; walls thin and flabby. There were a few old adhesions in pleural cavity on each side. Lungs were normal, with exception of some congestion in posterior portion of right lung. Peritoneum showed a general serofibrinous inflammation, with effusion of about 3,000 cubic centimeters of fluid. Small and large intestines were pale and matted together with a soft fibrinous deposit. Liver was adherent to neighboring organs by soft recent deposit; surface hobnailed; parenchyma fatty, congested, and cirrhosed; weighed 2,380 grams. Gall bladder distended. Kidneys congested, left weighed 260 grams; right, 195 grams. Bladder held 30 cubic centimeters of urine. Spleen weighed 1,140 grams; dense, friable, congested, with two-thirds of its surface covered with dense yellow tallow-looking gumma, which also extended deeply inwards in lower and extreme upper part; tissue firmer about the yellow deposit. The patient had stated that he had suffered from chancres and other venereal troubles, but beyond the doubtful evidence of a nodular enlargement about the middle of each tibia he bore no signs of constitutional disease and presented no symptoms of it. The appearance of the liver, except for a whitish thickening of the capsule in patches, was that of ordinary hypertrophic cirrhosis with fatty change. This and the ascites due to it were evidently cause sufficient to bring about death in the way it occurred without attributing much influence to the very remarkable condition of the spleen which appeared to be the degenerative product of syphilitic neoplasm.

CASE 3.

F. A.; age, 61 years; nativity, New York; admitted to Marine Hospital, Stapleton, Staten Island, N. Y., December 7, 1891; died December 9, 1891.

History.—Upon admission patient stated that he had had ill for four months, the first symptom being œdema of feet. For the last ten days he has had ascites, occasional chills, but no fever, no sweating, no dyspnœa. Appetite fair. Bowels regular. Sleeps fairly well. Patient's general health had always been good prior to present illness. Alcoholic history. Physical examination revealed the following conditions: Body well nourished. Chest expansion good. Abdomen greatly distended. Skin of legs (espe-

cially that of right) broken down and covered at ankles with large bullæ containing serum. Tongue coated, of a brownish color, and very dry. No dullness on percussion over lungs. No râles heard on auscultation. A regurgitant aortic sound heard at base of heart. Liver abnormally small. Spleen normal in size. During the physical examination it was noticed that patient was delirious. Treatment symptomatic. On the morning of December 9 patient's symptoms had not yielded to treatment but had rapidly progressed in gravity. His abdomen was more distended, the veins being very distinct. Respiration was quickened and labored; pulse almost nil; mind clear. From this time on patient's condition grew rapidly worse, death taking place at 10:15 p. m.

Necropsy (fifteen hours after death).—Body well nourished. *Rigor mortis* well marked. Abdomen greatly distended. Legs and feet œdematous. The abdominal walls were one mass of adipose tissue (as much as 6 centimeters in thickness in some places), no muscular tissue being visible. The omentum was a mass of fat. The intestines distended with gas. The pericardium fatty. Calcareous vegetations on aortic, mitral, and tricuspid valves. Large ante mortem clot in right side of heart. Heart muscle soft. Left lung slightly congested at base, otherwise normal. Right lung congested at base, otherwise normal. Liver small, nodular, and fibrous in character. Spleen apparently normal. No dilatation of stomach. Both kidneys pale, cortical portions thin, and capsules not adherent.

ABSCESS OF LIVER—ACUTE PLEURISY, WITH EFFUSION.

J. L.; aged 54 years; born in Kentucky; admitted to the U. S. Marine Hospital, New Orleans, La., July 1, 1891; died at 2:40 a. m., July 22, 1891.

History.—Patient suffered with severe pain in the abdomen two months prior to admission to hospital. He complained also of shortness of breath. No cough. Appetite poor and bowels sometimes constipated, alternating with diarrhœa. Temperature on admission was 38° C., and patient continued to have slight and irregular febrile action during his stay in hospital. Patient was placed on an expectant plan of treatment, sedatives being frequently required for the abdominal pain. Examination of abdomen revealed nothing abnormal. The liver dullness was normal. The heart sounds were likewise normal, though rapid and weak. On the 16th of July a low pleural friction râle was discovered at the inferior portion of the left lung. Within twenty-four hours the presence of fluid was detected up to the level of the fifth rib, and next day the left chest was bulging and flat on percussion up to the clavicle. The heart was displaced, beating very rapidly, and there was urgent dyspnœa. Abut 1,(.00 cubic centimeters of dark, opaque, reddish-brown fluid were taken away by aspiration, but the pleural sac rapidly filled up again. A second paracentesis again gave temporary relief, but the patient gradually grew worse, and died at 2:40 a. m., July 22, 1891.

Necropsy (nine hours after death).—Body that of a slender-built mulatto, much emaciated. *Rigor mortis* well marked. No post mortem lividity; pupils partially dilated. The pericardial sac contained a slight excess of normal fluid, otherwise normal. The heart muscle and valves were apparently normal in all respects. The left pleural sac was filled with dark brown fluid and the visceral pleura was covered with fresh lymph. There was a large mass of lymph on the convex surface of the diaphragm. The left lung was collapsed and compressed into the posterior portion of the pleural cavity; the right lung and pleura were normal. The liver appeared normal in size and position, but on incision a large abscess the size of an orange was discovered in the right lobe, anteriorly. It was contained in a single sac filled with thick greenish pus, and the abscess had distinct fibromembranous walls, which were thick and tough, separating it from the normal healthy liver tissue beyond. There was no other focus of inflammation. The peritoneum was normal. The other organs were not examined. No communication could be discovered between the abscess and the left pleural cavity. The pleuritic complication, arising evidently from the point of contact of the left lobe of the liver and diaphragm, due in some measure probably to the dorsal decubitus.

OBLITERATION OF BILE DUCTS, HEPATIC AND CYSTIC—JAUNDICE—PERITONITIS.

O. B.; aged 24 years; nativity, Maryland; admitted to U. S. Marine Hospital, Detroit, Mich., January 23, 1892; died February 6, 1892.

History.—Illness began three weeks before admission, with diarrhœa, pain in stomach, and loss of appetite. Yellowness of conjunctiva and skin first noticed a week later, gradually extended and deepened until the entire surface of body was deeply tinged, almost bronzed. Patient complained of some diarrhœa on admission, and examination revealed apparent enlargement of liver, but he was comparatively comfortable under treatment until January 30, when he had a chill followed by fever, and also by what seemed to be severe attacks of hepatic colic from gall stones; but no stones or concretions were found in the fæces. These attacks of paroxysmal pain were followed in a day or two by peritonitis, and the pain which the patient previously referred to the region of the pylorus now extended over the region of the liver and abdomen; tenderness and distension were quite marked. Death occurred at 3:15 a. m., February 6, 1892.

Necropsy (twelve hours after death).—Post mortem lividity and *rigor mortis* well marked. General nourishment poor. The thoracic cavity contained a small quantity of watery effusion. Lungs were congested posteriorly. Cavities of heart contained straw-colored clots most marked on right side. Stomach was congested and the duodenum showed evidences of severe inflammation. Gall bladder not greatly distended. The bile was entirely fluid, but black as ink. The marked feature in the case, however, was the complete obliteration of the hepatic and cystic ducts. The liver was deeply tinged, and bile exuded from cut surfaces. The abdominal cavity contained a quantity of seropurulent fluid, and the peritoneum showed evidences of active inflammation. Other organs were apparently not diseased. The heart was also bile stained about the valves. Immediate cause of death was peritonitis. Heart (weight after opening) 270 grams; pericardial sac apparently not diseased; valves apparently normal. Lungs: Left, weight, 470 grams; right, weight, 700 grams. Liver, weight, 1,840 grams. Kidneys: Left, weight, 170 grams; right, weight, 170 grams. Spleen, weight, 240 grams.

ACUTE PERITONITIS.

Case 1.

From blow on abdomen, causing extravasation of fæcal matter through an old wound.

H. S. K.; aged 51 years; native of Ohio; mate of steamer *John K. Speed;* was admitted to marine ward of Evansville City Hospital, December 5, 1891; died the same day, six hours after admission.

History.—Patient was in a condition of collapse when admitted, with surface blue; pulse 150 and scarcely perceptible; extremities cold; and failed to react to stimulants.

Necropsy (shortly after death).—Body thin; no cadaveric rigidity. A scar was noticed on right side of back, in the angle between the spine and the crest of the ilium, as if made by a bullet. On opening the abdomen, about 1,000 cubic centimeters of yellow fluid, containing flocculi of lymph, escaped. There was general peritonitis; plastic lymph being found abundant on the parietal and visceral layers of the peritoneum, slightly gluing together the coils of the intestines. About 1½ meters from the pylorus an opening 12 millimeters in diameter was found in the jejunum, situated in the wall of the gut opposite (most distant from) the mesentery. This opening was circular, and had the appearance of being old, the mucous membrane and peritoneum being firmly united around the edges. The entire length of the intestinal canal was examined, but no other opening was detected. The spleen, pancreas, liver, and gall bladder were normal in appearance. The kidneys were intensely congested. A small scybala was found in the peritoneal exudation, and several more were detected within the jejunum near the opening, the reversed peristalsis attending the efforts at vomiting no doubt accounting for the presence of fæcal matter in this locality.

CASE 2.

P. H.; aged 26 years; nativity, Louisiana; was admitted to the U. S. Marine Hospital, New Orleans, La., July 10, 1891, and died at 6 a. m., July 11, 1891.

History.—Had been ill for three weeks—one week on the boat and the last two weeks at his home. Ambulance was requested by the police and he was promptly removed to hospital. On admission, at 6:30 p. m., he was slightly delirious; respiration shallow, 35; pulse thready, 110; temperature, 36° C. He complained bitterly of abdominal pain. Morphine was administered hypodermatically, and milk and whisky given freely. He slept quietly all night, being roused every two hours for nourishment, which he took readily. About 6 a. m. he requested the nurse to turn him in bed, which being done he immediately expired.

Necropsy (eight hours after death).—Body that of a small young negro man, greatly emaciated. *Rigor mortis* well marked. Heart small; anæmie; weight, 225 grams. Wall of left ventricle 1.50 centimeters, and of right, 0.50 centimeter thick. Lungs: Weight of left, 235 grams; right, 270 grams. Thoracic organs apparently normal. Peritoneum showing recent high grade inflammatory action, though not reaching suppuration. Mesenteric glands enlarged and cheesy. Small and large intestines intensely congested throughout, and both showing patches of inflammation. Large intestine filled with semisolid, canary yellow fæces. Liver black; weight, 1,275 grams; capsule wrinkled and easily detached. Gall bladder moderately full of tarry bile. Kidneys: Capsules easily detachable; weight, each 120 grams; somewhat contracted, otherwise normal. Spleen, weight, 95 grams; friable; small; capsule dropping off; currant-jelly-like.

ACUTE NEPHRITIS.

N. H.; aged 20 years; born in Norway; admitted to the marine ward, in Portland Hospital, Portland, Oregon, September 15, 1891; died October 9, 1891.

History.—When admitted stated that he thought he had been perfectly well until ten days previous to that time; then the only symptom noticed was the gradual swelling of his face and limbs, especially at night. This condition increased so rapidly as to cause him a sense of great discomfort, which at times amounted to distress. He presented a condition of anasarca and general œdema; urinary secretion scant and high colored, 300 cubic centimeters in twenty-four hours; albumen in large amount, approximately two-thirds of its volume. Treatment consisted in general depletory measures combined with cardiac tonics, which increased the amount of urinary secretion and apparently the amount of albumen at the same time. His condition continued without much change until, October 8, symptoms of acute uræmia supervened with the development of coma in a few hours, and death.

Necropsy (Fifteen hours post mortem).—*Rigor mortis* well marked. Body of a well nourished man of 20 years of age. There was a condition of anasarca, so that when incison was made the serum exuded very freely, amounting apparently to 5,000 cubic centimeters. Lungs œdematous, contained no lesion. Heart floating in 500 cubic centimeters of pericardial fluid, contained large ante mortem clots extending into the vessels; diastole. Liver slightly hypertrophied and congested. Kidneys: Capsules adherent throughout; fibrous structure enormously hypertrophied in all directions; Malpighian tufts engorged; no gross degeneration. Other organs not examined.

CONGESTION OF THE KIDNEYS.—SUPPRESSION OF URINE.

J. H.; aged 34 years; nativity, New York; admitted to the marine ward, St. Mary's Infirmary, Galveston, Tex., August 6, 1891; died August 14, 1891.

History.—The patient was an oiler on board a steamship plying between New York and Galveston, an employment which requires exposure to high temperatures. While ashore in New York before the trip he had been drinking, but denied that he drank to excess. He was taken sick when a few days out from New York. He lost appetite,

was excessively thirsty, and drank a great deal of ice water, then had vomiting spells. The bowels were constipated and the urine scanty and high colored. He took cathartics and produced some action of the bowels. When admitted to the hospital he had on the scalp several contusions and abrasions which he stated were got by falling in fits of temporary unconsciousness, while aboard the vessel. His temperature was normal; circulation weak; facial expression and mental condition dull but rational. While standing preparing for the bed he fell to the floor unconscious. There was slight rigidity of the muscles and grating of the teeth. The spell was momentary but left him mentally confused. During his sickness he complained frequently of a choking sensation in swallowing, evidently due to slight paralysis of the throat. The urine was examined with the following result: Sp. g. 1.008; clear and normal in color; acid in reaction; a slight trace of albumen present; no tube casts found by repeated microscopical examination. During the last day of life the secretion of urine was practically suspended. Perspiration was quite profuse throughout his sickness. Thirty-six hours before death the temperature began to rise above normal, reaching at the highest point 39.4° C. Weakness and hebetude increased until death. No œdema nor dropsy appeared.

Necropsy (three hours after death).—Slight livores were present about the shoulders and upper portion of the body. *Rigor mortis* absent. General nourishment good. The pericardial sac was more or less adherent over the entire surface of the heart. The valves of the heart were competent; its muscular substance was extremely flabby, friable, and pale. The lungs were perfectly healthy in appearance, and were not removed. The left lung was bound to the chest wall by extensive adhesions. The liver was apparently healthy. The gall bladder was distended with bile. The kidneys, left and right alike, were found of normal size, but intensely congested, dark blood oozing from apparently every vessel of the cut surfaces. The capsules peeled more readily than normal. All the natural markings of the tissue were distinct, and the tissue did not present the characteristic appearances of any organic disease. Two retention cysts, each about a centimeter in diameter, were found in the cortex of the right kidney. The bladder contained no urine. The spleen was healthy. The scalp presented the abrasions mentioned in the history of the case. The skull was uninjured. The membranes of the brain and the brain itself presenting nothing abnormal. Death evidently took place from the suppression of the urine, but the cause of suppression was not sufficiently elucidated either before death or in the post mortem examination. The venal blood vessels should have been examined, but were quite thoroughly torn away in removing the kidneys.

CHRONIC NEPHRITIS.

Case 1.

S. M.; age, 42; nativity, Ohio; admitted to the U. S. Marine Hospital, Cairo, Ill., October 21, 1891; died December 27, 1891.

History.—Had been ill three years. Albuminuria marked and persistent. Œdema of legs intense. Diuretics, diaphoretics, cathartics, and tonics were used.

Necropsy.—Post mortem lividity marked. *Rigor mortis* well marked. General nourishment poor. Pupils dilated. Heart weighed 257 grams; valves and walls normal. Pericardial sac contained 150 cubic centimeters of serum; vessels normal. Nares, larynx, and trachea normal. Left lung weighed 371 grams; normal; plural cavity contained 600 cubic centimeters straw-colored serum. Right lung weighed 428 grams; normal; pleural cavity contained 100 cubic centimeters serum. Peritoneum normal, but cavity contained 1,000 cubic centimeters serum. Tongue, pharynx, œsophagus, stomach, small and large intestines, and rectum, normal. Liver of normal color; weight, 1,739 grams; gall bladder and ducts normal Pancreas weighed 143 grams. Left kidney weighed 371 grams, and was of the large white variety. Right kidney weighed 365 grams, and was of the same character. Pelvis and ureters normal. Bladder empty. Urethra and prostate normal. Spleen weighed 456 grams; congested. Scalp, skull, and meninges normal. Brain weighed 1,482 grams; normal. Spinal cord not examined.

CASE 2.

Uræmia.

J. S. (colored); age, 22 years; nativity, Tennessee; permit No. 182; admitted to the U. S. Marine Hospital, Cairo, Ill., January 20, 1892; died January 22, 1892.

History.—Patient had had headache and swollen ankles three or four weeks. Was brought in unconscious by ambulance; had convulsions every twenty or thirty minutes till 11:30 p. m. At 9:30 the morning of the 22d had another convulsion, in which he died. Marked albuminuria. Milk and whisky by the rectum, pilocorpine and morphine hypodermatically, croton oil on the tongue, and tincture digitalis by the mouth constituted the treatment.

Necropsy (six hours after death).—Rigor mortis well marked. General nourishment good. Pupils normal. Heart weighed 456 grams. Pericardial sac contained 25 cubic centimeters clear fluid. Valves normal; walls of left ventricle hypertrophied. Other vessels, nares, larynx, and trachea normal. Both pleural cavities contained serum, about 40 cubic centimeters each. Right lung weighed 969 grams; left lung 684 grams; both œdematous. Tongue showed marks of biting during convulsions. Digestive tract normal. Liver weighed 2,223 grams; color normal. Gall bladder filled with bile. Pancreas normal, weighing 57 grams. Left kidney weighed 323 grams; large white variety. Right kidney weighed 285 grams; similar to left. Pelvis and ureters normal. Bladder empty, but contained a little mucus. Urethra and prostate normal. Suprarenal bodies weighed 4 grams each. Spleen weighed 323 grams; normal. Scalp and skull normal. Slight adhesions of meninges. Brain weighed 1,339 grams. Cord not examined.

CASE 3.

S. M.; age, 42 years; nativity, Ohio; permit No. 95; admitted to the U. S. Marine Hospital, Cairo, Ill., October 21, 1891; died December 27, 1891.

History.—Had been ill three years. Albuminuria marked and persistent. Œdema of legs intense. Diuretics, diaphoretics, cathartics, and tonics were used.

Necropsy (fourteen hours after death).—Post mortem lividity moderate. *Rigor mortis* well marked. General nourishment poor. Pupils dilated. Heart weighed 257 grams; valves and walls normal. Pericardial sac contained 150 cubic centimeters serum; vessels normal. Nares, larynx, and trachea normal. Left lung weighed 371 grams; normal; pleural cavity contained 600 cubic centimeters straw-colored serum. Right lung weighed 428 grams; normal; pleural cavity contained 100 cubic centimeters serum. Peritoneum normal, but cavity contained 1,000 cubic centimeters serum. Tongue, pharynx, œsophagus, stomach, small and large intestines, and rectum normal. Liver weighed 1,739 grams; normal. Gall bladder and ducts normal. Pancreas weighed 143 grams. Left kidney weighed 371 grams, and was of the large white variety. Right kidney weighed 365 grams, same character. Pelvis and ureters normal. Bladder empty. Urethra and prostate normal. Spleen weighed 456 grams; congested. Scalp, skull, and meninges normal. Brain weighed 1,482 grams; normal. Spinal cord not examined.

CASE 4.

Chronic nephritis with cystic degeneration.—Thrombosis of the femoral vein.

W. B.; aged 43 years; nativity, South Carolina; was admitted to the marine division of the St. Francis Xavier Infirmary, Charleston, S. C., on the 5th of November, 1891; died January 24, 1892.

History.—Much exposure and rheumatism for the past five years. Pain in left lumbar region, radiating into thigh, and at times into glans penis. No increase of renal dullness; about 10 per cent of albumen in urine, also casts; subacute bronchitis; weak heart action; anæmia. Treatment directed to the renal condition, and at times there

seemed improvement. On January 23 he complained of a suffocating feeling, and the resident physician found tumultuous heart action, with systolic blowing sound. This was soon followed by intense pain and rapid swelling of the left leg and thigh. Death occurred from heart failure.

Necropsy (seven hours post mortem).—Body of white male; 175 centimeters high; very slight *rigor mortis;* some hypostasis about the loins. The left thigh and leg were swollen and tense. Abdominal section: Intestinal tract normal; mesenteric glands enlarged; liver fatty; weight, 2,250 grams; spleen tubercular; kidneys inflamed: numerous retention cysts and adherent capsules. Pleura on right side thickened and adherent; lung compressed and tubercular. Left pleura tubercular and lung infiltrated at apex; bronchi generally inflamed, and mucosa much thickened. Heart muscle inflamed; right ventricle dilated, wall soft, pale, and granular, with a large, white ante mortem clot interwoven among the trabeculæ, from which it was with difficulty removed. Left heart wall was soft and granular, and in places had undergone fibroid changes with thinning of the muscle. In its ventricle there were much soft-clotted blood and several white clots. The œdema of the left thigh and leg was found to be due to a large thrombus in the femoral vein. Brain and membranes not examined. Microscopical examination had given casts in urine. Sputum not examined at any time. Sections from the tubercular nodules showed the tubercle bacillus in considerable numbers, differentiated with carbol-fuchsin. Lung not examined.

Case 5.

Granular contracted.

M. C.; aged 53 years; nativity, New York; admitted to Marine Hospital, Chicago, Ill., July 14, 1891; died July 26, 1891.

History.—Patient weak and emaciated. His symptoms were those of chronic gastritis. His vitality rapidly decreased, being hastened by obstinate vomiting, which could not be controlled. At no time during his illness did he complain of pain. For the last three days before death occurred, respiration was labored, but nothing was revealed upon auscultation.

Necropsy (eight hours after death).—Post mortem lividity slight. *Rigor mortis* marked. General nourishment poor. Heart (weight after opening), 380 grams; whole organ dilated, with slight hypertrophy. Pericardial sac contained 90 cubic centimeters of bloody fluid. Lungs: Left, a few adhesions, old cicatrix of the apex. Right, two sections of the middle lobe show red hepatization. Stomach: Inner coat thin and granular, tissue atrophied, congestion of veins of the submucosa. Liver: Color yellowish red; weight, 1,250 grams. Kidneys: Left, weight, 70 grams; small, contracted, and granular; capsule easily detached. Right, same condition as the left. Spleen very firm; capsule thickened and adherent.

Case 6.

B. B.; aged 60 years; nativity, New York; admitted to Marine Hospital, Chicago, Ill., July 6, 1891; died July 29, 1891.

History.—Upon admission patient had the general appearance of good health. Slight œdema of the legs. Urine very red, alkaline, full of triple phosphates and urate of ammonium; albumen, five-sixths by bulk measurement; no casts seen.

July 18.—Urine again examined; about one-half to two-thirds albumen; reaction, acid; no casts were seen, nor a single renal epithelial cell, but aggregations of pus closely simulated granular casts.

July 21.—Temperature, 40.4° C. Pulse slow and weak. Diarrhœa for the last three days. Breath offensive. Appetite poor.

July 24.—Patient very weak. Bowels move involuntarily. No uræmic symptoms. Quinine has had no effect on the temperature.

July 28.—For the past two days patient has been in a drowsy stupor, from which he could be easily aroused, but immediately relapsing. Symtoms of uræmia.

July 29.—Temperature, 40.5° C. Died at 12 m.

Necropsy.—Post mortem lividity slight. *Rigor mortis* slight. General nourishment poor. Heart normal. Lungs normal. Liver small, globular, and bloodless; color on section, pale, dirty yellow; weight, 1,265 grams. Kidneys: Left, weight, 120 grams; cortex wasted; color on section yellow; capsule easily detached. Right, same conditions as in left; weight, 125 grams. Spleen pulpy; weight, 155 grams. Microscopic examination of the liver, heart, and kidneys showed fatty degeneration.

Case 7.

Ulcerative endocarditis.

P. B.; age, 50 years; nativity, Norway; admitted to Cleveland City Hospital November 15, 1891; died December 19, 1891.

History.—Frequent attacks of dyspnœa during previous six months, and the attacks increased in severity. He was under treatment a week in October and improved greatly. In November he returned with increased feeling of suffocation; slight anasarca; lungs full of coarse mucous and silibant râles; heart sounds feeble, but regular; aortic systolic murmur; liver enlarged; urine small in quantity and containing a large amount of albumen, hyaline, and finely granular casts.

Necropsy (nine hours after death).—Lividity and *rigor mortis* marked. Body fairly nourished. Pericardial sac normal, but contained an excess of fluid. Heart twice normal size. Walls of heart of good thickness; valves all competent except aortic. At aortic opening all three leaflets ulcerated, two only at margin, these two rigid with atheromatous plates, the third nearly a half eroded from ulceration, a tassel-like portion in the center being left. In the descending thoracic aorta was found an atheromatous plate, raised uneven surface, 6 centimeters long, 3.5 centimeters wide, running lengthwise in artery and partly calcified. Atheromatous deposits in coronary arteries. Large amount of clear fluid in pleural and peritoneal cavities. No adhesions in pleural sacs. Lungs congested. Liver large, pale, fatty. Kidneys slightly enlarged, capsules not adherent. Spleen increased twofold in all dimensions; pulp normal.

Case 8.

Erysipelas.

O. T.; age, 34 years; nativity, Norway; was admitted to the U. S. Marine Hospital, New Orleans, La., February 27, 1892; died March 11, 1892, at 4:45 p. m.

History.—The patient was taken sick February 23, 1892, on the steamer *Knickerbocker* while two days out at sea. A red swelling appeared at the angle of the left eye and gradually spread over the whole face and head. He had no chill; felt feverish at night; appetite poor; bowels open regularly every day. He states that he continued work during the remaining five days of the trip. On admission there was a uniform, raised, sharply outlined swelling extending over almost the whole face. It had the characteristic dusky red color of erysipelas and showed the usual tendency to spread. There were no blebs nor pustules. The swelling spread up over forehead and over the scalp to occiput and then returned to temporal region of the right side where it stopped and finally faded away. The epidermis desquamated in the usual manner, and in a few days all swelling had disappeared and nothing but a faint redness and slight puffiness of the tissues indicated the former presence of erysipelas. The temperature on admission was 38.2° C.; pulse, 92; respirations, 22.

The fever rapidly subsided, and the pulse and respirations became normal. Patient took his nourishment well, which consisted of light, easily-digested liquid and semi-liquid food. The treatment consisted in tinctura ferri chloridi, 15 drops every two

hours, and a mask of lint saturated with carbolized oil—10 per cent—applied to the face. On March 6 a purulent discharge was for the first time noticed, exuding from the external auditory meatus, left side. There was no pain nor any other sign indicating the oncoming of this suppurating otitis media. The ear was thoroughly syringed out with a warm saturated solution of boracic acid, then 5 drops of hydrogen peroxide instilled, and dusted with boracic-acid powder. This was repeated frequently enough to keep the parts clean. The discharge continued until death. On March 9 it was noticed that the patient was abnormally somnolent and took his food only after much coaxing; also that he passed but a moderate amount of urine, which was loaded with albumen. On boiling the urine coagulated solidly. Citrate of caffeine was given as a diuretic, but it availed nothing, for the next day complete suppression of urine setin, which was not relieved by any of the measures adopted. Attempts to cause sweating both with steam and, a second time, with hot bricks and damp towels according to Jeimsen's method utterly failed in their purpose. The patient gradually sank, became delirious, and died comatose. The first indication of the oncoming uræmic condition of the patient was the abnormal slowness of the pulse, from 30 to 45 per minute, and at one time it dropped to 20 per minute. Respiration but slightly accelerated, 19 to 26 per minute. The heart stopped beating fully three minutes before respirations finally ceased.

Necropsy (*nineteen hours after death*).—Body that of a young, muscular white man. Post mortem lividity present at dependent portions of body. *Rigor mortis* well marked. General nourishment fair. Pupils dilated. Heart weighs 350 grams, and is normal in all respects. The left lung and pleural cavity are normal. Weight of lung 620 grams. There are a few scattered adhesions binding the right lung, easily torn through. No excess of fluid. The lung itself is congested and œdematous; a section swims in water. The kidneys prove to be typical specimens of the large white kidney of chronic parenchymatous nephritis in its second stage. Weight of right organ 287 grams; left, 370 grams. Nothing abnormal noted about the remaining viscera.

Case 9.

J. R.; aged 42 years; nativity, Louisiana; admitted to the U. S. Marine Hospital at New Orleans, La., July 20, 1891; died September 24, 1891, at 4:30 p. m.

History.—Patient states that he had an attack of rheumatic fever in 1865 which kept him in bed for three or four months. He had gonorrhœa twice, and gives a plain syphilitic history. He has been a steady drinker of whisky for a long time, going on occasional sprees. He thinks that his present illness began three months ago, when he "caught cold;" his feet began to swell and he noticed shortness of breath on exertion about the same time. Prior to that he declares that he had good health, working as a deckhand on various river boats. Examination of the heart discovered signs of hypertrophy and dilatation. The apex beat was displaced downward and to the left, and there was a visible pulsation in the large veins of the neck. On percussion the præcordial dullness was found to be increased to the left and downward. The first sound at the apex was murmuring in character; the second sound ringing and accentuated. The urine contained a small amount of albumen, and narrow granular tube casts were noted on several occasions. Patient was given cardiac stimulants and diuretics, and an occasional saline cathartic. Under this treatment he improved very much, the œdema and dyspnœa entirely disappearing; but the symptoms all returned in a few weeks, and despite all treatment the patient grew worse. On September 23, 1891, examination of the lungs discovered all the signs of a hypostatic pneumonia at the right base and effusion into the pleural sac. Patient became uræmic, and died comatose at 4:30 p. m. September 24, 1891.

Necropsy (*sixteen hours after death*).—Body that of a middle-aged negro. Well nourished. Both lower extremities, scrotum, and penis are œdematous. Post mortem lividity not evident. *Rigor mortis* well developed. Pupils are dilated. The heart is hyper-

trophied and dilated. Weight after opening 530 grams. The aortic valves are thickened and sclerotic, though competent. The mitral valves are normal, but the auriculoventricular orifice is enlarged, being stretched in the general dilatation, carrying the valve flaps apart, thus probably accounting for the soft systolic mitral murmur heard during life. The orifices to both coronary arteries are patulous, although diminished to less than one-third their normal caliber by atheromatous change. The right side of the heart, with its valves, was normal, except the dilatation of both ventricle and auricle. The left side was more hypertrophied than dilated. The heart muscle was firm and red and appeared normal. The right pleural sac contained not quite 750 cubic centimeters of clear serous fluid. The lower lobe of the right lung was compressed by the effusion, and was the seat of hypostatic congestion. Weight of right lung 530 grams. The left lung appeared to be normal. Weight, 517 grams. Both kidneys were enlarged and in a state of chronic parenchymatous nephritis (large white kidney). Weight of each organ 260 grams. The spleen appeared normal; weight, 240 grams. The other organs were not examined.

CASE 10.

Pneumonia and hypertrophy of the heart.

W. K.; aged 42 years; born in Louisiana; admitted to the U. S. Marine Hospital, New Orleans, La., November 3, 1891; and died at 12:10 p m. November 7, 1891.

History.—Patient gives a poor and unreliable story of his sickness, which he states began two years ago with a "throwing up." He says that for two years he has vomited almost every day. Can not state, though, whether the vomiting occurred mostly before or after eating. His bowels during these two years have been sometimes constipated, sometimes diarrhœic, by turns. He does not complain of any pain—no chills nor fever—no cough. Says that the only thing that he noticed was the fact that he has been growing progressively weaker for the past three or four months, though he has not lost over 10 pounds in weight. Has had gonorrhœa. A syphilitic history can not be elicited. He has been a "hard drinker" of whisky. Examination of heart discloses all the physical signs of hypertrophy and dilatation. The apex beat was in the sixth interspace, 2½ inches below and one-half an inch to the left of the nipple line. The area of præcordial dullness was greatly enlarged both downward and to the left. On auscultation, the heart sounds at the apex were booming. At the pulmonary cartilage was heard a systolic murmur, not transmitted, and a loud, accentuated second sound. At the aortic cartilage was heard a rough systolic murmur, propagated upward, and a distinct valvular second sound. The heart's action was regular, 80 per minute. Pulse full and good. Examination of the lungs could not be made satisfactorily on account of the twitchings of the muscles of the thorax. Examination of liver and spleen and general abdominal contents through the abdominal wall discloses nothing abnormal. Urine is cloudy, almost opaque, with sediment. Reaction acid; specific gravity, 1.015; color, light lemon; considerable albumen and many pus cells, with disintegrated metamorphosed epithelial cells, seen on microscopical examination. One small doubtful fragment of a granular cast observed. Patient bled profusely at the nose on the night of November 5, which required plugging of posterior nares to control. He gradually grew weaker, and respirations became labored. There was no fever at any time from day of admission until death.

Necropsy.—Body that of a well-nourished negro, about 5 feet 10 inches in height. *Rigor mortis* well marked. Pupils dilated. The pericardial sac is normal. The heart greatly hypertrophied and dilated, particularly the left ventricle. Weight after opening, 650 grams. The valves are all normal and efficient. The left lung normal, except some hypostatic congestion at the base, posteriorly; weight, 1,320 grams; and the entire lower lobe is in a state of red hepatization. The remaining lobes are congested and

heavy. The liver is normal in appearance; weight, 940 grams. The kidneys prove to be typical examples of the last stage of chronic interstitial nephritis, the red granular kidney. They are small, contracted, cirrhotic, capsule adherent, and surface of organ granular; coated very thin and the medullary substance is distorted by the contracting fibrous tissue. Weight of each kidney 70 grams. The patient's death was doubtless the result of the asthenic pneumonia so common in chronic disease of the kidneys. The hypertrophy of the heart being one of the concomitants of cirrhotic kidneys and a general artero-capillary fibrosis.

CASE 11.

C. I. R.; aged 81 years; nativity, Sweden; admitted to the marine ward of the German Hospital, Philadelphia, Pa., September 9, 1891; died November 22, 1891.

Necropsy.—General œdema. Heart hypertrophied; deposit on semilunar valves. Liver cirrhotic—hobnailed. Kidneys cirrhotic. Senile atrophy of the spleen. Right lung was hard, almost solid, and shrunken to a mass about one-fourth normal size. Left lung œdematous.

CASE 12.

Hydro-pericardium.

W. H.; age, 35 years; native of New York; admitted to U. S. Marine Hospital, San Francisco, Cal., January 16, 1892; died March 2, 1892.

History.—When admitted to hospital he complained of frequent headache, swelling of feet, and ascites; also of dyspnœa. On examination he was found to be passing an excessive amount of urine, which was found to contain albumen in large amounts. The cardiac area was increased to the left. A mitral regurgitant murmur was found to be present. The œdema and ascites increased rapidly in spite of cathartics and diuretics. On the morning of the 2d of March he arose feeling as well as usual, but soon complained of feeling unwell, and shortly thereafter became unconscious. When seen breathing was slow and irregular, the pulse rapid and weak, the pupils equal, but somewhat dilated. He remained in this condition until 9:30 a. m., when death occurred.

Necropsy (March 3, 1892).—Post mortem lividity on back and sides. *Rigor mortis* present. General nourishment was fair. Pericardial sac was distended by fluid. The heart weighed 720 grams, both ventricles being hypertrophied. A few small atheromatous patches were found in the aorta. The lungs were normal in appearance, the weight of right being 540 grams and of left 460 grams; slight adhesions of pleura at base of right. Peritoneal cavity fully distended by fluid. The liver weighed 1,980 grams. The right kidney weighed 170 grams and contained a cyst 2 centimeters in diameter. The left kidney weighed 190 grams and contained several small cysts. Death was evidently due to transudation of serum into pericardial sac.

CASE 13.

Abscess of the kidney.

W. G.; age, 54 years; nativity, Ireland; admitted to Marine Hospital, San Francisco, Cal., June 9, 1892; died June 15, 1892.

History.—Had been under treatment in this hospital for quite awhile (April 16, 1892, to June 6, 1892) for Bright's disease, and at his own request was discharged three days before his last admission. When he was readmitted on the 9th he said that he had had several chills, followed by fever and sweating. After admission he had two or three chills, followed by an irregular fever, but very little sweating. There were no abnormal heart sounds at any time, and the heart was only slightly enlarged. There was some ascites. His feet were swollen and urine was loaded with albumen. This condition lasted four or five days, and then a severe pain developed in his right elbow and knee, the parts being swollen and tender. On the second day following the last symptoms he gradually became comatose, and died on the 15th of June from uræmic coma.

Necropsy.—Heart slightly enlarged; valves normal. Lungs congested posteriorly; right one drawn down by old pleuritic adhesion. Both kidneys enormously enlarged and infiltrated with fat. The right kidney presented an abscess about the size of an English walnut. This no doubt accounts for the irregular fever and chill. Nothing of especial interest appeared in spleen and liver. About a quart of fluid found in the abdominal cavity. Lateral ventricle of brain distended with fluid and portion of pia mater covered with an exudation.

CASE 14.

C. M. (colored); aged 43 years; a native of Missouri; was admitted to the U. S. Marine Hospital, St. Louis, Mo., March 28, 1892; died May 19, 1892.

Family history.—His father is living; his mother died of measles; one sister died of dropsy; a brother died of quick consumption.

Personal history.—He had been treated in the hospital for malarial fever and for chronic nephritis. He had lost the two distal phalanges of his right hand by a neglected whitlow.

Present history.—He has a dull constant pain in his back. He has to urinate four or five times at night. He has slight dyspnœa. He also has some cough. His appetite is poor. There is œdema of feet and legs. The urine contained 1½ per cent of albumen by weight, it also contained granular and epithelial casts, some red blood corpuscles and renal epithelial cells.

Necropsy (fifteen hours after death).—Both kidneys were enlarged. The cortex of both kidneys decidedly yellow. Pyramids much smaller than normal. Tubules of the kidneys broader than normal. The renal vein and artery larger than normal. The amount of serous fluid in the serous cavities was small. The subcutaneous tissue was full of serum. Other viscera were normal.

RENAL CALCULI—PYONEPHROSIS.

C. J.; aged 40 years; nativity, Norway; admitted to the U. S. Marine Hospital, port of Boston, Mass., November 11, 1891; died May 11, 1892.

Previous history.—Treated in hospital several times extending over a period from 1888 to 1891, for pyonephrosis. Discharged improved, July 7, 1891. His leg began to swell a fortnight after discharge, but the swelling disappeared with rest. At first both legs were involved, but for five weeks before admission swelling was confined to left leg. Had stricture of urethra seven years ago. Symptoms: Pain in back in region of kidneys; worse on left side. Has to pass water several times at night.

May 8, 1892.—Patient had very severe cramps in abdomen last night.

May 11, 1892.—4:30 a. m.: Extremities cold, breathing difficult, heart weak. Patient semiconscious, and voiding his urine and feces involuntarily.

Necropsy (fourteen hours after death).—Post mortem lividity present. *Rigor mortis* present. General nourishment fair. Pericardial sac normal. Ventricles of the heart normal, with fatty degeneration of walls; weight, 277 grams. All valves competent; both ventricles contained large firmly organized ante mortem blood clots. Lungs were both congested at posterior portion (hypostatic). Left lung small and not well expanded; bound by slight pleuritic adhesion at base; weight, 377 grams. Right lung bound by many old pleuritic adhesions, especially in front; weight, 624 grams. Gastro-intestinal tract was pervious throughout its whole extent. Liver normal in color; weight, 1,267 grams. Pancreas hard and fibrous; cut almost like cartilage. Spleen, small and hard; weight, 135 grams. Kidneys: Right, white, lardaceous degeneration; weight, 237 grams. In place of the left kidney a fibrous mass was found, containing no trace of kidney substance. From the center of this mass several calculi, amounting in weight to 20 grams, were removed. The peritoneal coverings of the descending colon, pancreas, and left kidney, were firmly bound together by inflammatory adhesions.

ORGANIC STRICTURE OF THE URETHRA.

CASE 1.

Extravasation of urine—Gangrene of scrotum.

J. R.; aged 46 years; nativity, Canada; admitted to the U. S. Marine Hospital, Detroit, Mich., January 21, 1892; died February 20, 1892.

History.—Patient was in hospital here several years ago and had an operation (dilatation) for stricture of urethra. Gave history of repeated attacks of gonorrhœa. Stream of water had grown gradually smaller until he came to the hospital (January 21, 1892), when it was about the size of a knitting needle. Examination, January 23, revealed several false passages, or possibly enlarged lacunæ, and the smallest filiform bougie failed to pass, until all false pockets were filled by filiforms, when finally one passed into the bladder. This was followed by the dilator and also by steel sounds up to No. 16. Morphia sulphate was given during the operation and quinia sulphate immediately after the operation; an alkaline mixture every three hours was also prescribed. The operation was painful, but patient rested well during the night, up only once; urine slightly bloody, but passed clear in the morning. No chill or other bad symptom followed. On January 29 sounds were again introduced (patient under chloroform anæsthesia) and dilatation performed up to No. 22. Some hemorrhage followed, apparently from deep urethra and also from margin of meatus, which was slightly torn in the operation, but this was controlled by ice water to penis and adjacent parts, and absorbent cotton at meatus. Urine continued somewhat bloody, but patient rested well until early the third morning, when he became restless, and complained of headache. This was relieved to some extent by a dose of Rochelle salts. Next day he complained of shooting pains in penis and a slight urethral discharge was also observed; also complained of sore throat, which he had had the week before. An alkaline mixture was prescribed for internal use and a gargle of alum and borax. On February 3, 1892, a No. 15 sound was passed, and in the evening of that day patient said he felt better than at any time for a number of days past, but in the morning of the following day he had a chill and his temperature at 8 a. m. was up to 39° C., and there was some tenderness felt in the groins. A mercurial cathartic was given and a Seidlitz powder six hours later.

February 5.—Had difficulty in passing urine and complained of headache. Penis slightly œdematous. Antipyrine gave some relief.

February 6.—Slept some during the night and thought he felt better, but had no appetite for any kind of food. Milk punches were given twice a day and milk every three hours.

February 7.—A. m.: Severe headache during night. Pills of morphia gave some relief.

February 8.—Œdema of penis and scrotum. Tongue dry and cracked. Pulse rapid and weak. Whisky and tincture of digitalis prescribed. P. m.: Slight delirium and hiccough. Bowels loose. Increased œdema of penis and scrotum. Could not pass his water. A small catheter was introduced and about 150 cubic centimeters drawn off, and deep incisions were made into scrotum giving vent to some fluid. Punctures were made in penis and the wounds and all surrounding parts thoroughly cleansed and the perineum and scrotum covered with a hot poultice held in place by a T bandage. Morphia and atropia sulphates were given hypodermically, and whisky and milk ordered every three hours, also tincture of digitalis.

February 9.—Passed only a small quantity of urine. Several small doses of quinine seemed to correct the apparent suppression. Pills of quinia sulphate were also prescribed at this time and a deep incision was made in the perineum. P. m.: Redness and tenderness extending up the groin of right side. Urine withdrawn by catheter and morphia given hypodermically.

February 10.—Slept some towards morning and said he felt better. P. m.: Flaxseed poultice with charcoal applied. Dressings changed and wounds cleansed three times

daily. 11 p. m.: Incision made in groin, also another deep incision into scrotum on right side and wounds cleansed with mild solution of bichloride of mercury. Morphia hypodermically continued. Pulse stronger; digitalis discontinued.

February 11.—A. m.: Temperature only 37.4°C. Pulse 85, and patient said he felt a great deal better. Size of scrotum is considerably reduced, and he can pass his water.

February 12.—A fresh egg was added to milk and whisky and patient continued taking his nourishment. Bowels loose Scrotal tissue gangrenous.

February 13.—Milk and whisky ordered every two hours.

February 15.—Gangrenous tissue of scrotum began to separate. A portion of it was cut away and a large connective tissue slough removed.

February 16.—After removal of all gangrenous tissue, the testicles hung loose, entirely exposed and without any covering whatever. Incision in groin enlarged and a rubber drainage tube was passed through and down to opening at scrotum, both ends projecting and the parts thoroughly cleansed with solution of bichloride. Whisky, egg, and milk continued as before.

February 17.—Rested fairly well during night. Drainage tube removed and a solution of peroxide of hydrogen (1–4) injected into wound. Another incision made in groin to relieve tension and facilitate drainage. Pulse weak; tincture of digitatis again prescribed.

February 18.—Restless during night and had some delirium. Morphia did not produce usual effect. Parts again thoroughly cleansed and covered with lint and carbolized oil. P. m.: Seemed weaker.

February 19.—Had a bad night, restless and delirious. Bowels very loose. Large connective tissue slough removed from wound in groin. Patient very weak. Brandy prescribed in place of whisky. P. m.: Pulse very rapid and weak; respiration frequent and superficial; evident signs of failure. System unable to withstand the disease until septic poison can be eliminated.

February 20.—Died at 6:15 a. m.

Necropsy (eight hours after death).—Post mortem lividity and *rigor mortis* well marked. Body of a large, well-nourished man. Nothing abnormal was found in the abdominal cavity. The kidneys were somewhat congested, but contained some urine and a small quantity of pus. The urethra showed points of rupture, notably a small spot of necrosis in the membranous portion, at which point doubtless the extravasation commenced; and being in front of the triangular ligament it followed the path of least resistance, making its first appearance, and producing its first effect, upon the penis and scrotum. Thence it extended into the groin instead of going into the perineum, as would have been the case had the rent in the urethra been farther back. The necropsy was made hurriedly, and the thoracic cavity was not opened. It is not probable, however, that any disease existed in that region.

Case 2.

Acute pleurisy.

J. Z. P.; aged 30 years; nativity, Missouri; admitted to the marine ward, St. Mary's Infirmary, Galveston, Tex., October 27, 1891; died November 11, 1891.

History.—The patient was admitted to the hospital on account of a very bad stricture of the urethra in the membranous portion. Although of somewhat slender physique, his general health appeared to be good at this time. No indication was present of any disease of heart, lungs, or kidneys. On October 29 external urethrotomy was performed. He endured the operation well, the most unfavorable occurrence being a considerable hemorrhage from the bulb, which was repeated on following days when the wound was disturbed. Moderate fever followed the operation, but the case progressed favorably. November 4 the patient complained of severe pains in the back and the left side of the chest. He stated that he had had what he called "rheumatism" in the back and left

shoulder some time previously. He was at this time passing his urine freely through either the artificial opening or the natural channel. His temperature was nearly at normal. The pain was supposed to be neuralgic, and was treated accordingly. November 7 there had been some fever again. On the 8th it was increased. A thorough examination of the chest was made, and it was discovered that the left side was extensively affected with pleurisy, and that the disease was making its appearance slightly on the right. For a day the patient appeared to improve under treatment. Afterwards all measures of relief were of no avail. The lungs became congested, and the symptoms grew progressively worse until death.

Necropsy (twenty-two hours after death).—Rigor mortis well marked. General nourishment fair. The heart and the pericardial sac were healthy in appearance. The lungs were congested, but floated when placed in water. There was no hepatization of any portion of them. A few small collections of purulent material were found on cutting the lung tissue, being apparently retained sputum, as they were quite small and were irregularly scattered deep in the lungs. Both pleural cavities contained serous fluid in moderate amount. The left lung was adherent to the parietal pleura over its entire surface by recent adhesions of lymph. In the chest wall on this side of the thorax was found a series of small abscesses or a purulent infiltration situated between the pleura and the bony and muscular plane, and in a somewhat narrow area extending from near the spinal column at about the level of the fourth rib downward and forward to the axillary line one or two ribs lower. The inner surfaces of the ribs within this area were in places rough and corroded, showing that the formation of the abscesses was not recent. The right lung collapsed when the chest was opened, and proved to be adherent only in a small area over the lower lobe by recently deposited lymph. There were no abscesses on this side of the thorax. The liver was somewhat enlarged and fatty. The kidneys were normal in appearance. The spleen was of full twice the normal size and unusually firm in feel. Its tissue was light colored and dotted with deeply pigmented spots.

CASE 3.

Pyelonephritis.

A. S.; aged 57 years; nativity, Maine; admitted to Marine Hospital, Stapleton, N. Y., May 20, 1891; died July 20, 1891.

History.—Patient was admitted to the hospital with a diagnosis of stricture of the urethra, but subsequently he was found to be suffering from a complicating pyelonephritis. The stricture was readily dilated by sounds until it admitted as large a size as No. 20 of the English scale. The stricture of four years' standing had been preceded by gonorrhœa, which had continued for a long time as a thin watery discharge from the penis, leaving behind it the permanent tissue changes in the urethra. Since the existence of the stricture he has experienced considerable difficulty in voiding his urine, passing it in drops, requiring considerable effort on his part, and accompanied by no slight degree of pain. Within a few days before he came to the hospital he had had two severe chills, followed by high fever and general malaise. On questioning he stated that he had had two attacks of malaria within the past two years, and from the fact that he had recently been in the tropics, and the history he gave, it was thought that these symptoms might be due to a complicating malarial fever. He gave a rheumatic and alcoholic history, but no history of syphilis or tuberculosis. His temperature chart shows about the following range of temperature throughout his illness: When admitted his temperature was 38.4° C.; on the following morning his temperature had dropped nearly to normal, but that same evening it suddenly rose to 40.4° C., following a severe chill. The next morning it was 37.6° C., but it again rose in the evening to 40.1° C.; following a severe chill. For the rest of the first week it followed about the same course, being high in the evening and proportionately low in the morning. However, at the beginning of the second week the evening temperature began to fall; the mornin

temperature remaining about normal. On June 4 the morning temperature again rose, but on June 18 it again fell to normal, remaining so up to the time of his death; the evening being slightly over a degree higher. Quinine was used in appropriate doses, but did not seem to have the desired effect.

Examination.—His tongue was quite flabby and coated; he had little appetite, and bowels were very much constipated. Examination of his chest elicited nothing abnormal except that his heart's action was exceedingly weak, the apex beat being almost imperceptible and diffused over a considerable area. The area of liver dullness was dimished, that of the spleen about normal. He had considerable pain in his back over the region of the kidneys. These physical signs were readily made out owing to the thin abdominal walls. The urine was secreted in large amounts, pale in color, of alkaline reaction, low specific gravity, and contained albumen. At a later period of his illness his urine was again examined, revealing a marked change in its character. It was still of alkaline reaction, pale, in larger amounts, and contained a large quantity of mucus. The albumen present in marked proportion had greatly increased since the previous examination. Trommer's test failed to reveal any sugar present. Microscopical examination showed the presence of large quantities of triple phosphate crystals, partly separated by themselves and partly mixed with pus and epithelial casts. Considerable amorphous granular matter also present. The epithelial casts in large amounts showed a condition of degeneration, some solitary leucocytes and red blood cells were also seen. Throughout the whole course of his illness he was greatly troubled with headache and insomnia. At times his pulse was full and bounding, but later in his illness it became rapid and weak. On June 5 a large abscess on the inner side of left knee was incised and a drainage tube inserted; after this several smaller abscesses on extremities were opened, from all of which there was considerable discharge of pus. His extremities at times were œdematous and notwithstanding the care used his vitality was so low that a troublesome bedsore developed. He continued to lose flesh and strength, developing incontinence of urine and fæces, and finally sank into a typhoid state with a muttering delirium, and died at 1:05 o'clock a. m., July 20, 1891.

Necropsy (nine hours post mortem).—*Rigor mortis* well marked. Patient very much emaciated, almost to a skeleton. On opening the thoracic cavity the lungs appeared collapsed but normal. Normal amount of fluid in the pericardial sac. Heart small, pale, muscle somewhat flabby, but otherwise normal. Liver slightly smaller than normal; nutmeg appearance on section. Spleen normal. Left kidney: Larger than normal; somewhat mottled in appearance externally; capsule adherent; on section the cortex appeared very thin; the Malpighian pyramids very indistinct; large foci of pus scattered throughout the kidney substance. The pelvis contained pus, and with the above a large cyst was opened, which contained a greenish fluid resembling bile in color. The ureter was not dilated. Right kidney: Large; capsule very adherent; and on section the cortex appeared quite thin; pyramids indistinct; foci of pus throughout whole kidney; ureter not dilated. Bladder wall thickened. Prostate gland not enlarged. The left knee was examined. Suppuration had extended into knee joint; epiphyseal cartilage of femur eroded, and knee joint partly disorganized.

Case 4.

D. M.; aged 60 years; nativity, New Jersey; admitted to the marine ward of the German Hospital, Philadelphia, Pa., July 1, 1891; died July 18, 1891.

History.—Has had a stricture for twelve years, which often caused retention of urine. Has had frequent micturition for a long time and all the symptoms of cystitis, together with partial incontinence. Within the last two months has suffered from great pain and tenderness in the perineum. Urine was ammoniacal and contained large quantities of pus.

Necropsy.—Body greatly emaciated from extreme exhaustion. Genito-urinary tract was the part principally involved. The right kidney had in it commencing abscesses, and

on section exhibited a small amount of pus. Left kidney was the seat of multiple abscesses, especially on the periphery of the cortex, and contained a great quantity of pus. There was also a prostatic abscess and a chronic cystitis. All other organs were normal.

ULCER OF THE PENIS—ACUTE CEREBRAL MENINGITIS.

J. D.; age, 20 years; nativity, West Indies; admitted to the U. S. Marine Hospital, San Francisco, Cal., December 17, 1891; died December 31, 1891.

History.—When admitted he had phimosis with marked induration beneath the prepuce. He also had a bubo in the left groin. On December 27 he complained of headache which continued until the evening of the same day, when he became unconscious. The glands in the neck and groin were swollen and tender, photophobia, strabismus, and slight opisthotonus were present. The temperature was high throughout the course of the disease.

Necropsy.—Meninges slightly congested. The whole surface of the brain was covered with a layer of pus lying between arachnoid and pia mater. On section the brain seemed to be softened and greatly congested. At the base of the brain and around the medulla oblongata and upper part of the spinal cord there was a large collection of pus. The brain was the only organ examined.

ABSCESS OF THE OVARY—(PELVIC PERITONITIS).

E. H.; aged 39; nativity, Georgia; admitted to U. S. Marine Hospital, Memphis, Tenn., June 30, 1891; died August 19, 1891.

Clinical history.—When admitted patient had severe abdominal pain, with tenderness in both iliac regions. There was profuse uterine discharge; by vaginal examination, tenderness on each side of os uteri. Soon after admission she lapsed into a typhoid condition, with constant diarrhœa and uncontrollable vomiting. Abdominal pain was persistent. Patient was delirious the greater portion of the time. Circulation weak; pulse at times imperceptible. The question of operation was considered but abandoned, as a fatal result seemed certain owing to patient's extremely unfavorable condition. Just before death there was œdema of the left thigh and leg.

Necropsy.—Rigor mortis. Body greatly wasted. The organs of the thorax were normal. Abdomen: The pelvis and right iliac fossa contained pus; the uterus and its appendages, the bladder, cæcum, and several loops of small intestine, were agglutinated into a mass, in which it was difficult to distinguish the several organs. The right ovary was a mere sac, containing a gangrenous abscess cavity. A portion of the cæcum adherent to this organ was gangrenous. The right tube contained no pus. The left ovary and tube were not found after diligent search. There was no general peritonitis. Other abdominal organs normal.

CARIES OF THE RIBS AND FEMUR.

L. W.; aged 23 years; nativity, Mississippi; admitted to U. S. Marine Hospital, Memphis, Tenn., May 23, 1891; died August 15, 1891.

Clinical history.—Three months before admission an abscess formed on right side over lower part of chest wall and another in the neighborhood of the left trochanter. These abscesses, at first painless and of slow development, had at the date of admission to hospital become so painful that immediate operation was required.

May 24.—Ether was administered and abscesses laid open. The abscess of chest wall was connected with caries of the eleventh rib. Carious bone was removed with gouge forceps and abscess wall curetted. A sinus extended along inner border of rib toward the spinal column. Abscess on hip was caused by caries of the base of the trochanter major. Carious bone was removed with the gouge. Numerous sinuses extended downward among the muscles of the thigh and upward among the muscles about the hip joint. The cavity was curetted as far as practicable. After treatment consisted of anti-

septic irrigation and packing with iodoform gauze. The operation was followed by temporary improvement, which was succeeded later by hectic and a steady decline to a fatal issue.

Necropsy.—Rigor mortis. Body wasted; large fistulous opening near left trochanter and another over eleventh rib on right side. Upon enlarging these openings the trochanter and posterior surface of upper part of femur, a large portion of the eleventh rib and a small portion of the twelfth rib were found in a carious condition. Thorax: A few tubercles were found in apices of lungs; on the surface of the heart there were several patches of organized lymph, the remains of an old pericarditis. Abdomen: This cavity contained a moderate quantity of turbid serum. The omentum and several loops of small intestine were adherent to the abdominal wall in the vicinity of the diseased ribs. The mesenteric glands were slightly enlarged.

BURN OF CHEST AND UPPER EXTREMITY—DELIRIUM TREMENS.

G. R.; aged 41 years; nativity, Massachusetts; admitted to the Marine Hospital, Stapleton, Staten Island, N. Y., April 4, 1892; died April 18, 1892.

History.—Patient stated on his admission that while drawing the fire he lost consciousness and fell into the hot coals and burned his right side and arm. His health is good but he has been drinking considerably for the past two weeks; appetite good; bowels regular. Physical examination: On inspection the right side of body and arm is found to be burned superficially, and over the left scapula the tissue is burned deep.

April 5.—6 p. m.: Patient very nervous.

April 6.—9 a. m.: Passed a bad night and was difficult to restrain; evidently due to delirium tremens. ℞. Cannabis indica, 3.33: strych. sulph., 0.03; capsicum, 0.03. Div. capsules, No. X. One every four hours.

April 7.—A. m.: Was wildly delirious yesterday, requiring restraint to keep him in bed. Slept two and a half hours during the night after Magendie's solution, 0.66 c. c., and tr. digitalis 1.33 had been given in addition to a small injection of morphia two hours later. Discontinue capsules of cannabis indica, etc., and give ℞. Tinc. digitalis, tinc. nux vom. āā 2 c. c. t. i. d. Sulphonal 1.33 every four hours.

April 8.—A. m.: Slept several hours last night and is asleep now; was rational while awake this morning. 6 p. m.: Has slept nearly all day and has just awakened quite rational.

April 9.—A. m.: Slept well all night. This morning remains rational, but states he feels quite weak; bowels regular. Add whisky, 15 c. c. to digitalis and nux vomica. Give sulphonal at 4 and 7 p. m. only. Doing well; burn had to be redressed. 6 p. m.: Feeling much better; has been quiet all day; bowels moved.

April 10.—A. m.: Passed a good night; feels weak; perfectly rational. Tongue a little dry. Takes his nourishment.

April 11.—A. m.: Was delirious again last night and is still somewhat so this morning.

April 12.—A. m.: Has been asleep most of the time; appears very weak, and while asleep breathes stertorously. Sordes on lips and teeth.

April 13.—A. m.: Sleeps most of the time and awakes rational; feels weak. Two involuntary movement of bowels in bed since yesterday. Discontinue all medicine. ℞ Spt. frumenti, 20 c. c., spt. ammon. arom., 2 c. c., every four hours. 6 p. m.: When awake appears quite rational. Respiration shallow and quick; asleep all day; had an involuntary movement of bowels in bed. Takes considerable nourishment. The lower portion of cornea of left eye is ulcerated. Pulse good and strong.

April 14.—A. m.: Continues to sleep most of the time; breathing heavy. Pulse full. Bowels continue to move involuntarily.

April 15.—Continues to sleep; stertor remains; condition indicates cerebral hemorrhage, though patient can be aroused and answers rationally for a short time, but im-

mediately lapses into sleep again. Pupils a little dilated, left eye still inflamed, and now discharging a little thick pus; no paralysis. The slightest touch on right thigh or left wrist causes movement as though very painful.

April 16.—A. m.: Sleeping; appears about the same. Passes urine and fæces involuntarily most of the time. Hyperæsthetic condition of skin. Has just awakened and appears quite rational; both pupils contracted evenly and conjunctiva inflamed, with a purulent matter exuding. States that he can move both legs but the pain prevents him moving the right. The left arm is in the same condition. Takes his nourishment. 6 p. m.: Respiration very shallow and rapid; appears to have bitten his tongue, as mouth is bloody; rational when spoken to. One involuntary movement of bowels.

April 17.—A. m.: Awake and rational; very weak; eyes about the same; tongue very dry. Leg and arm continue in same condition. Pupils about the condition of yesterday. Continued to grow weaker, and died the following morning.

Necropsy (six hours after death).—Body that of a very muscular man. *Rigor mortis* fairly well marked. The burned flesh had sloughed in part, leaving granulating an ulcerated surface; the other portion was black and had not sloughed. Meninges of brain deeply congested. In making section of brain the right hemisphere was noticed to be much softer than left, while the left hemisphere was much the darker in color. Nothing further could be found that was abnormal. Heart normal and was enveloped in fat. Lower lobe of lungs congested. Liver fatty. Spleen and kidneys normal. Mucous membrane of duodenum inflamed.

FRACTURE OF SKULL.

Case 1.

Base and vault.

W. B.; age, 40 years (about); nativity, Canada; admitted to Cleveland City Hospital November 26, 1891; died on same day.

History.—Patient was sent to hospital in an unconscious condition. His master's certificate bore the statement that he fell into the hold of the vessel. Contusion of scalp was found posteriorly. Blood and brain tissue were issuing from left ear freely. Died in three hours.

Necropsy (twelve hours after death).—Lividity and *rigor mortis* marked. Swelling from contusion over left half of occipital bone. Ecchymosis beneath scalp. Skull fractured along an irregular line running from right to left, and from before backward from right orbit across base of skull and up over petrous and into squamous portion of temporal bone. Brain tissue was exuding through cleft of petrous part of left temporal into meatus of left ear. No other examination made.

Case 2.

Vault—Abscess of the brain—Death under the anæsthetic, ether.

C. T.; aged 26 years; nativity, Mississippi; was admitted to the U. S. Marine Hospital, New Orleans, La., June 30, 1891; died July 2, 1891.

History.—About January 15, 1891, during a fracas, patient was struck on left side of vertex, anteriorly, with a heavy club, and knocked insensible. In this condition he was carried to a city hospital where he remained some (ten) days, when he returned to his work as a roustabout on the Mississippi River. February 12, 1891, he applied for admission to this hospital. He had lost the power of articulate speech, being able to make only a grunting noise. His right hand and wrist were paretic. He complained only of a slight pain in head. Memory and perception good, and appetite and all functions normal. An incision 12 centimeters in length had evidently been made in scalp, and a drainage tube inserted. The incision having healed perfectly and the discharge

from tube ceasing, it was withdrawn and antiseptic dressings applied. He improved rapidly, his speech becoming intelligible and the paresis disappearing. He became unruly and insubordinate, and was discharged February 20, 1891, for misbehavior. On June 30, 1891, he applied for readmission, complaining of almost constant headache, which became unbearable if he worked in the sun (which was intensely hot at that time), and increasing disability of right arm and hand. He said he had "luny" spells at times, and could not recall things said to him as readily as usual. Intelligence otherwise and articulation nearly perfect. The former wound was now discharging pus, and the site of the injury swollen and boggy to the touch. Temperature, 37° C. Pulse and respiration normal; somewhat constipated. He was immediately prepared for operation. July 2, 1891, the site of the proposed operation having been shaved, 0.02 grams morphine sulphate was administered hypodermically, with 45 cubic centimeters whisky by the mouth, and thirty minutes thereafter the patient walked to the table and the etherization began. The patient struggled energetically, but was quieted by suspending the ether and exhibiting about 3 cubic centimeters of chloroform, after which the ether was resumed. A crucial incision was made through the scalp, discovering an opening of 3 centimeters square, near the anterior superior angle of the parietal bone, from which dropped a thin osseous plate, giving vent to thick grumous pus and some blackened pieces of brain substance. The smaller trephine was applied at the margin of this aperture, and readily passed through the tissue. At this point respiration began to fail, the ether was discontinued, and prompt and continued efforts at resuscitation made by artificial respiration, position, ammonia inhalations, strychnia and whisky injections, and the battery, without avail.

Necropsy (five hours after death).—Body that of a very muscular and well-nourished young negro man; height, 172 centimeters; circumference of shoulders, 105 centimeters. *Rigor mortis* absent. All his organs except the brain were apparently normal. Lungs: Weight, left 280, right 305, grams. Liver, 1,530 grams. Kidneys, 120 grams each. Spleen, 240 grams. Brain, 1,202 grams. Scalp thickness, 1 centimeter; skull, 0.50 centimeter. An irregular opening 4 by 3 centimeters, filled in except as previously noted with dense membranous tissue, occupied the central portion of that part of the bone above the temporal ridge. An abscess of 10 cubic centimeters capacity occupied a portion of the left superior frontal convolution of the brain.

Case 3.

Base—Rupture of the ophthalmic artery.

W. B.; aged 26 years; nativity, Michigan; admitted to surgical ward, Marine Hospital, Chicago, Ill., August 22, 1891; died August 27, 1891.

History.—The day previous to admission, at about 4 o'clock p. m., the patient fell through a hatchway to the hold below, a distance of 10 feet, striking upon his head, and when picked up was unconscious. He was taken to the Mercy Hospital where a wound in his head about 1 inch long was sewed up and bichloride gauze dressing applied. He was then brought to this hospital and was so delirious that it was found necessary to use restraint apparatus to keep him in bed.

Examination.—No fracture was determined; symptoms of concussion; right eye blackened and swollen; temperature, 38° C.; pulse, 112.

August 23.—Patient still delirious, though not so wild as yesterday. Ordered R Fl. ext. ergot, spts. ammon. aromat. āā 50. M. S. 5 c. c. every hour. The urine was voided involuntarily; bowels inactive.

August 24.—Somewhat quieter and has taken some nourishment.

August 25.—Bowels moved to-day after a cathartic was given. For a few moments this morning patient seemed more rational.

August 26.—Same as yesterday.

August 27.—This morning patient showed more intelligence than at any time since he was admitted and answered several questions. Died at 3:50 p. m., and was without unfavorable symptoms until an hour before death.

Necropsy (eighteen hours after death).—Ecchymotic areas on right elbow, ilium, and eye. *Rigor mortis* marked. General nourishment good. Head, scalp-wound did not extend to skull. Skull, fracture at the base through the orbital plate of the sphenoid and extending into the squamous portion of the temporal bones. Membranes of the brain congested and large clot in middle cerebral fossa. Rupture of the ophthalmic artery and vein in the sphenoidal fissure. Weight of brain, 1,660 grams. Cause of death: Fracture of base of skull, rupture of ophthalmic artery, and hemorrhage.

FRACTURE (MULTIPLE) OF RIBS—RUPTURE OF LUNG—EMPHYSEMA.

D. C. McN.; aged 42 years; nativity, New York; admitted to Marine Hospital, Chicago, Ill., August 16, 1891; died August 18, 1891.

History (August 16).—This morning while intoxicated patient fell through a hatchway of the steamer *Pueblo* striking across the brim of a large iron coal bucket. He was brought to this hospital by the police patrol, where examination showed an incised wound of the upper lip and a lacerated wound of the ring finger which reaches to the bone; fracture of the fifth, sixth, seventh, and eighth ribs of right side. There was evidently penetration of the lung, as the entire side of the chest was emphysematous.

Treatment.—The wounds of the lip and hand were sewed up and dressed with iodoform gauze. The chest was strapped with broad bands of adhesive plaster, which extended from the spinal column behind to the line of the nipple of the left side in front, and the patient was put to bed, and given a hypodermatic injection of morphia sulphate.

August 17.—10 a. m.: The emphysema extends to the right wrist and up the neck on both sides. The adhesive-plaster straps were reinforced by two broad bandages of the same material which completely encircled the chest, and over all a 4-inch muslin bandage. A frame was next placed over the bed and the patient partly supported by Sayer's suspension apparatus. 3 p. m.: The emphysema has now invaded the left side and the entire face, especially to the right of the median line. Spts. frumenti, 15 cubic-centimeter doses, every hour. Many minute punctures were made in the skin over the neck, upper part of the right side, and over the fractures, but they had no particular effect in reducing the emphysema.

August 18.—This morning finds the patient much weaker, and the emphysema has extended farther on the left side. Death occurred at 1:15 p. m.

Necropsy (twenty hours after death).—*Rigor mortis* slight: General nourishment good. Post mortem lividity marked. Great hypostatic congestion over the whole of the back. The tissues anterior to the sternum, the arms, lateral walls of the chest, and the face emphysematous. Lungs: Left, nothing abnormal; right, collapsed and torn between middle and lower lobes through the septum. Thorax: Fracture of the cartilages of the fifth, sixth, and seventh ribs. Air escapes from a small opening between the fourth and fifth ribs. The fifth, sixth, and seventh costal cartilages separated from the sternum, and the sixth, seventh, and eighth ribs fractured just external to the angle. The emphysema had practically separated the skin from the underlying tissues over a large extent of surface. Head: Scalp congested, fluid blood underneath. Skull no injury. Membranes of the brain: Dura mater congested; pia mater congested; general phlebitis. Freshly coagulated lymph on the surface of the convolutions of the brain. Cause of death: Primary, rupture of the lung; secondary, emphysema and cerebral meningitis.

GUNSHOT WOUND OF THORAX AND ABDOMEN.

W. S.; age, 22 years; nativity, Louisiana; admitted to the U. S. Marine Hospital at New Orleans, La., January 31, 1892; died February 4, 1892.

History.—Received a pistolshot wound in the left side six and a half days prior to admission to hospital. The wound of entrance was immediately over the seventh rib,

nipple line. When shot he was standing with his side directed obliquely towards the pistol, at an angle of about 35°. He coughed some after receiving the wound but did not spit blood. He has had three stools since the accident, but does not know whether they contained any blood or not. He was taken on arrival in this city to the Charity Hospital, and on January 31 transferred by ambulance to this institution. On admission he had some pain in left hypochondrial region; no tenderness in region of wound; no tympanites; temperature, 37.7° C.; respirations, 30 per minute; pulse, 102. He rapidly became deeply jaundiced. Examination of the urine showed the presence of the coloring matter of the bile in normal quantity; a large amount of free blood, and pure blood tube casts. He refused all food and could be induced to take only a small amount of milk, lemonade, and iced water, which frequently caused vomiting. Pulse became rapid and feeble. Temperature rose on February 2 to 39.3° C, and on February 3 to 38.3° C., going down to normal each succeeding morning. The following notes of the case were taken:

February 1.—Slight cough; hiccough noted.

February 3.—Tympanites manifest; very restless.

February 4.—Urine totally suppressed since previous night.

Necropsy (*fourteen hours after death*).—It was made by the deputy coroner of the parish, who found that the ball had passed directly through the seventh rib, through the edge of the pleural sac and diaphragm, not injuring the lung; through the head of the pancreas; and directly through the body of the left kidney, lodging in the body of the twelfth dorsal vertebra. None of the hollow viscera were wounded so far as could be determined. There was a large hæmatocele in the mesocolon. The stomach was greatly distended with freshly clotted and some fluid blood.

FRACTURE OF VERTEBRÆ.

Case 1.

Pelvis and ribs—Rupture of kidney.

J. J.; aged 34 years; nativity, Mississippi; admitted to U. S. Marine Hospital, Memphis, Tenn., June 24, 1892; died June 24, 1892.

Clinical history.—Admitted at 10 a. m. June 24. Five days previously, while asleep in the bow of his boat, was struck by a snag. When admitted was suffering much pain; pulse 92; respiration 48; slight bruise on left side of lumbar region and adjacent portion of chest wall. Considerable tumefaction and tenderness of entire lumbar region; crepitus on pressure over lumbar vertebræ; no paralysis; movement of right leg difficult on account of pain; dullness on right side of abdomen. Death ten hours after admission.

Necropsy.—Body of a well-developed, muscular man. *Rigor mortis.* Considerable abdominal distension. Organs of thorax normal. The abdominal cavity contained a considerable quantity of blood. The exact source of this could not be determined, but it probably proceeded from a laceration of one of the smaller pelvic vessels, as there was laceration of the peritoneum lining the right side of the pelvis owing to a fracture of the right innominate bone. This fracture began at the upper part of the sacroiliac joint and extended forward and downward. The right kidney was lacerated at its lower part and several small coagula were found in its interior. There was a large retroperitoneal collection of blood in the right loin, surrounding the lower part of the kidney and partially dissecting it from its capsule. The lumbar muscles were extensively contused; the tenth, eleventh, and twelfth ribs on the left side were fractured at their angles. The right transverse processes of the first, second, and third lumbar vertebræ were fractured; also the left transverse process and spinous process of the third lumbar vertebræ.

CASE 2.

Fracture of fifth and sixth cervical vertebræ, laceration of cord, and fracture of patella.

G. G.; age, 19 years; nativity, Newfoundland; admitted to marine ward St. Joseph's Infirmary, Savannah, Ga., July 29, 1891; died July 30, 1891.

History.—About noon July 29 fell backward through the hatch on the steamship *Gate City*, a distance of about 15 feet. When picked up was found to be paralyzed from the chest down; complained of severe pain in hands and arms, and the surgeon who was called administered morphine. Was admitted to hospital at 2:30 p. m. the same day, when there was complete paralysis of motion and sensation from the nipples down. Had perfect use of the arms, but complained of severe pain on moving them. There was priapism and retention of urine. Temperature, 37.2° C. at 3 p. m.; 38.8° at 7 p. m.; 39.5° at 9 p. m. Phenacetin was administered without effect on the temperature, which continued to rise, and at 6 a. m. July 30, was 40.2° C. Antifebrin was now used but without effect, and at noon the temperature was 42° C., when cold sponging and the wet pack were resorted to, reducing temperature to 41° C., but it quickly rose again, reaching 42.2° C. at 3 p. m., and death occurred at 4 p. m. Respiration was almost entirely diaphragmatic. The treatment, other than above mentioned, was anodyne and sedative, and leeches were applied over the seat of injury.

Necropsy (*seventeen hours after death*).—Post mortem lividity of dependent portions of body, and *rigor mortis* well marked. General emphysema, due doubtless to post mortem decomposition. Body well formed, and nourishment good. Ecchymosis and extravasation of blood in muscles of post cervical, dorsal, and lumbar regions. Several abrasions of lower extremities, and a transverse fracture of the right patella. Fracture of both laminæ of fifth and sixth cervical vertebræ; comminuted in fifth; meninges intensely congested; laceration of cord and extravasation of blood at level of fifth and sixth cervical vertebræ, involving almost the entire diameter.

COMPRESSION OF THE SPINAL CORD WITHOUT APPRECIABLE FRACTURE OR DISLOCATION.

T. C.; aged 45 years; nativity, Massachusetts; admitted to U. S. Marine Hospital, Mobile, Ala., April 17, 1892; died April 18, 1892.

History.—Patient received a fall on board a ship two days before admission. He suffered with a severe neuralgic pain in his arms, which commenced soon after the injury was received and lasted until his death. Complete paralysis existed from the nipples downward, both of motion and sensation. Had retention of urine and fæces. Pulse was regular, and respiration also at first, but in a few hours he was suddenly attacked with dyspnœa, and died in a short time from apnœa.

Necropsy (*fourteen hours after death*).—External appearances: Post mortem lividity slight. *Rigor mortis* marked, and general nourishment good. Thoracic cavity: Heart normal; weight, 350 grams. The pleural cavities were covered by numerous adhesions, resulting from an old attack of pleurisy. Left lung was congested and œdematous; weight, 600 grams. Right lung weighed 950 grams. Abdominal cavity: Stomach and intestines normal. Liver normal, weighing 2,150 grams. Pancreas weighed 95 grams. Spleen weighed 290 grams. Kidneys normal. Left weighed 170 grams; right, 175 grams. Cranial cavity: The membranes of the brain apparently normal. Brain slightly congested about medulla oblongata; weight, 1,450 grams. No fracture or dislocation of a vertebra could be found.

GUNSHOT WOUND OF BLADDER.

Peritonitis.

G. O.; age, 26 years; nativity, England; admitted to Cleveland City Hospital June 4, 1892; died June 6, 1892.

History.—On June 4, about 4 a. m., he was shot with a revolver. The ball penetrated the back just to the left of coccyx and passed to the left of the rectum. The urine was bloody at first, later clear. The ball was discovered in the bladder by searching with a metal sound, and was removed through perineal section. Peritoneum thought to be uninjured. Pain just above pubes continued severe. Temperature June 5, p. m., 38.6°. Pulse rapid and feeble. Respirations had increased to 44 at this time.

Necropsy (four hours after death).—Livores and *rigor mortis* present. General nourishment of body good. Heart normal. No ante mortem clots. Pericardial sac held no fluid, surface simply moist; adhesions easily detached over more than half its surface. Thoracic aorta contained atheromatous plates, one calcified mass close to aortic valves. Left pleural cavity contained numerous adhesions, and the right was almost obliterated, adhesions especially firm at apex. Just below apex of right lung anteriorly was a hard cicatricial mass, 1.5 centimeters in diameter, containing a small cavity; radiating lines on pleural surface pointed to previous contraction. Both lungs congested, but otherwise normal. Abdominal cavity filled with a thin, blood-tinged fluid, no pus. Low down on the left the small intestines were covered with a fibrinous exudation, not firm enough to appreciably agglutinate them; intestines dark colored in this region. No rent (that might be caused by bullet) found on peritoneum. Liver, kidneys, ureters, and spleen, normal. The bladder, beside the incision due to the operation of removing the bullet, was found to have an opening of size corresponding to the bullet on the left side towards the posterior surface and the base, and just in the line of the wound in the back.

FRACTURE OF BOTH LEGS—COMPOUND COMMINUTED.

M. W.; age, 29 years; nativity, Connecticut; admitted to Cleveland City Hospital June 19, 1892; died June 20, 1892.

History.—This man went to sleep intoxicated under a railroad car and had both legs crushed. It was necessary to amputate the left leg at the upper third and the right thigh at lower third. He did not recover from the shock of the accident.

Necropsy (fourteen hours after death).—Many contusions over body; none on scalp. Heart normal; left pleura, many adhesions, especially in axillary region, easily broken. Lungs in general normal; almost dead black from color of blood with which they were gorged. Stomach, filled with a greenish fluid; many ecchymoses on mucous surface especially at cardiac end. Intestines filled with gas of greenish color; not opened. Other viscera normal.

STATISTICS

U. S. MARINE-HOSPITAL SERVICE.

STATISTICS U. S. MARINE-HOSPITAL SERVICE.

TABLE I.—COMPARATIVE TABLE OF NUMBER TREATED—1868 TO 1892.

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, 1892.

Fiscal years.	Number of places at which relief 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

TABLE II.—EXHIBIT OF OPERATIONS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1892.

Ports.	Total number of seamen treated.	Patients in hospital July 1, 1891.	Admitted during the year.	Total treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1892.	Number of days relief in hospital.	Number of seamen furnished office relief.	Number of times relief was furnished.	Number of persons examined physically, including pilots.	Amount expended.	Tonnage tax collected.
Total	**53,610**	**917**	**15,105**	**16,022**	**14,636**	**479**	**907**	**421,813**	**37,588**	**45,288**	**2,838**	**$512,657.18**	**$636,012.44**
Albany, N. Y.	2	1	1	2	1		1	166			31	266.00	
Alexandria, Va.	121		2	2	1		1	20	119	402		314.55	163.62
Apalachicola, Fla.	74	2	30	32	32			700	42	63		1,314.00	1,020.00
Ashland, Wis.	15	2	13	15	10		5	168				168.00	
Ashtabula, Ohio	268	1	39	40	35	2	3	597	228	479		880.36	
Astoria, Oregon	42	3	34	37	34		3	1,286	5	15		1,338.05	6,435.30
Baltimore, Md	2,062	39	627	666	610	14	42	21,638	1,396	1,685	98	17,716.19	42,305.95
Bangor, Me.	118	5	30	35	31	1	3	762	83	129	20	1,372.92	54.51
Barnstable, Mass., and subports	85								85	301		340.85	167.85
Bath, Me.	72	1	34	35	32		3	684	37	75		1,006.50	21.09
Beaufort, N. C.	20		3	3	3			36	17	31		130.15	3.87
Beaufort, S. C.	18		2	2	2			12	16	34		92.55	1,599.33
Belfast, Me.	12		6	6	6			132	6	23		338.20	135.63
Bismarck, N. Dak.	34	2	6	8	8			255	26	103		448.23	
Boston, Mass.	2,692	70	942	1,012	929	23	60	25,256	1,680	2,189	240	22,805.22	51,945.27
Brashear, La.													14.97
Bridgeport, Conn.	18	3	10	13	10	2	1	325	5	6		360.00	34.17
Bridgeton, N. J.													109.35
Brownsville, Tex.											7	100.00	50.46
Brunswick, Ga.	179	2	59	61	59	1	1	1,459	118	183		2,151.95	4,966.02
Buffalo, N. Y.	1,886	21	351	372	339	4	29	9,949	1,514	2,119	113	11,532.37	
Burlington, Iowa.	9	1	8	9				194				174.60	
Burlington, Vt.													273.06
Cairo, Ill.	769	7	295	302	283	10	9	4,463	467	553		8,492.49	
Cape Vincent, N. Y.													1.74
Castine, Me.	11								11	16		13.00	42.12
Cedar Keys, Fla.	103	1	4	5	5			70	98	133		393.00	
Charleston, S. C.	1,399	9	233	242	226	5	11	4,125	1,157	1,428	61	6,685.22	4,389.84
Chicago, Ill.	3,507	48	730	778	704	22	52	24,139	2,729	3,520	90	23,020.20	37.47
Chattanooga, Tenn.	38		8	8	8			161	30	111		405.57	
Cincinnati, Ohio.	1,948	30	467	497	477	8	12	15,257	1,451	2,058	11	15,254.55	
Cleveland, Ohio	1,465	30	335	365	320	13	32	12,173	1,100	1,795	49	10,918.85	243.87
Corpus Christi, Tex.	10		6	6	6			125	4	4	13	478.90	
Crisfield, Md.	15		1	1	1			12	14	67		287.60	

Darien, Ga	54		3	3	2	1		41	51	78		343.05		
Detroit, Mich	1,607	14	343	357	330	7	20	10,792	1,250	1,806	97	13,218.50		75.99
Dubuque, Iowa	77	2	55	57	54		3	988	20	22	15	1,488.00		
Duluth, Minn	247	2	47	49	43	3	3	780	198	239	35	1,103.72		76.77
Eastport, Me	17								17	54		58.00		1,000.00
Edenton, N. C	105		7	7	7			72	98	186		375.75		
Edgartown, Mass	(*)											43.25		239.10
Elizabeth City, N. C	59								59	82	143	250.00		
Ellsworth, Me	40	1	4	5	3	1	1	76	35	151	5	544.35		90.98
Erie, Pa	122		45	45	41		4	923	77	94		910.11		
Escanaba, Mich	212	3	39	42	37	2	3	1,258	170	201		1,717.01		
Eureka, Cal	70		38	38	34	2	2	826	32	48	3	1,450.35		207.24
Evansville, Ind	892	13	245	258	239	6	13	5,973	634	967	16	10,223.48		
Fairport Harbor, Ohio	68								68	82	2	156.02		
Fall River, Mass														34.77
Fernandina, Fla	104		27	27	27			969	77	159		1,383.08		1,770.00
Fort Benton, Mont														58.08
Fredericksburg, Va	63		17	17	16		1	598	46	94		860.50		
Gallipolis, Ohio	331	11	221	232	225	2	5	4,815	99	144	16	8,082.94		
Galveston, Tex	527	11	159	170	161	6	3	3,667	357	529	54	6,295.19		12,770.64
Georgetown, D. C	168	4	52	56	52	3	1	1,521	112	141		1,182.06		14.07
Georgetown, S. C	118	1	13	14	14			105	104	235		437.49		17.64
Gloucester, Mass	399								399	471		650.92		1,545.72
Gov. Hosp'l for the Insane, Washington, D. C	28	22	6	28	2	2	24	7,814				5,023.29		
Grand Haven, Mich	58		14	14	12	1	1	342	44	105	72	829.61		
Green Bay, Wis	55		10	10	8		2	230	45	59		560.50		
Hartford, Conn	7		7	7	7			101				101.00		
Jacksonville, Fla	115	3	64	67	65		2	1,443	48	83	38	1,567.38		183.37
Keokuk, Iowa	4		4	4	4			211				189.90		
Key West, Fla	950	3	129	132	116	10	6	3,294	818	973	33	6,944.34		1,674.73
La Crosse, Wis	131	9	82	91	86	1	4	1,831	40	176		2,404.79		
Lewes, Del	45		42	42	42			725	3	5	49	947.50		
Little Rock, Ark	35		6	6	6			109	29	62	5	349.00		
Louisville, Ky	921	9	330	339	322	2	15	6,927	582	879	15	10,466.47		
Ludington, Mich	94		7	7	7			50	87	134		304.00		
Machias, Me	91	4	36	40	37		3	886	51	72		1,076.30		153.84
Manistee, Mich	53		19	19	16	2	1	539	34	43	23	705.45		
Marblehead, Mass														80.37
Marquette, Mich	31								31	31		390.16		
Marshfield, Oregon	119		28	28	28			888	91	133		1,866.53		
Memphis, Tenn	1,298	28	388	416	387	18	11	9,702	882	1,103	14	10,221.14		
Michigan City, Ind	62								62	154		152.07		
Milwaukee, Wis	827	23	320	343	315	12	16	8,231	484	708	176	8,108.46		
Mobile, Ala	946	11	230	241	219	11	11	6,134	705	845	36	12,280.26		6,467.22
Nashville, Tenn	119		17	17	13	3	1	285	102	241		744.50		
Newark, N. J														329.31
New Bedford, Mass	53		1	1		1		12	52	107		280.97		237.23
Newbern, N. C	229	6	74	80	73	3	4	1,783	149	209		2,108.98		14.16
Newburyport, Mass														11.61
New Haven, Conn	87	5	56	61	50	4	7	1,584	26	34	16	1,942.00		322.29
New London, Conn	186	2	107	109	105	2	2	2,048	77	82		2,200.65		58.50

*Included in Vineyard Haven.

TABLE II.—EXHIBIT OF OPERATIONS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1892—Continued.

Ports.	Total number of seamen treated.	Patients in hospital July 1, 1891.	Admitted during the year.	Total treated in hospital.	Discharged.	Died.	Remaining in hospital June 30, 1892.	Number of days relief in hospital.	Number of seamen furnished office relief.	Number of times relief was furnished.	Number of persons examined physically, including pilots.	Amount expended.	Tonnage tax collected.
Newport, Ark	50	.....	21	21	21	.....	.....	308	29	81	.....	$708.93	.....
Newport, R. I	67	.....	16	16	15	1	.....	465	51	53	42	825.00	$200.13
Newport News, Va	50	.....	.....	.....	.....	.....	.....	.....	50	52	.....	225.40	10,948.86
New Orleans, La	2,425	25	615	640	583	20	37	12,932	1,785	2,693	87	21,603.70	60,102.15
New York, N. Y	4,410	92	1,425	1,517	1,356	56	105	43,661	2,893	4,867	130	48,188.92	223,146.59
Nogales, Ariz	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.84
Norfolk, Va	1,461	27	451	478	422	23	33	10,361	983	1,148	137	12,931.30	6,004.53
Ogdensburg, N. Y	91	.....	2	2	2	.....	.....	60	89	772	.....	858.44	65.58
Oswego, N. Y	98	2	11	13	12	.....	1	461	85	178	14	964.04	1,717.95
Pensacola, Fla	178	5	146	151	142	3	6	3,561	27	34	16	4,316.00	17,014.93
Perth Amboy, N. J	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	885.96
Petersburg, Va	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16.20
Philadelphia, Pa	1,901	40	560	600	556	17	27	14,242	1,301	1,591	176	18,363.79	71,347.16
Pittsburg, Pa	1,089	11	204	215	206	3	6	3,921	874	1,111	30	6,405.66	.....
Plattsburg, N. Y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,875.33
Plymouth, Mass	2	.....	.....	.....	.....	.....	.....	.....	2	2	.....	100.00	5.70
Port Huron, Mich	216	5	26	31	27	1	3	1,011	185	545	.....	1,252.03	.....
Portland, Me	815	16	158	174	159	5	10	6,645	641	849	57	9,688.79	6,068.40
Portland, Oregon	404	13	133	146	140	4	2	3,729	258	346	41	5,039.69	535.89
Portsmouth, N. H	24	1	11	12	12	.....	.....	400	12	18	.....	720.00	37.02
Port Townsend, Wash	471	24	230	254	230	3	21	9,634	217	343	2	8,856.73	10,866.54
Providence, R. I	190	6	90	96	88	5	3	1,621	94	102	.....	1,865.65	340.20
Richmond, Va	94	1	33	34	31	1	2	952	60	65	.....	1,542.45	438.51
Rochester, N. Y	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	235.23
Rockland, Me	162	4	130	134	128	2	4	2,095	28	28	4	2,610.52	.....
Rome, Ga	30	.....	5	5	5	.....	.....	58	25	45	.....	226.85	.....
Sag Harbor, N. Y	21	.....	.....	.....	.....	.....	.....	.....	21	360	.....	360.00	4.44
Saginaw, Mich	46	1	20	21	19	.....	2	457	25	30	.....	605.06	.....
Salem, Mass	24	1	4	5	5	.....	.....	86	19	20	.....	236.96	234.42
St. Augustine, Fla	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.18
St. Louis, Mo	1,851	25	709	734	674	28	32	16,135	1,117	1,496	34	14,448.20	.....
St. Marys, Ga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	54.99
St. Paul, Minn	25	2	21	23	21	.....	2	611	2	3	.....	930.00	36.48
St. Vincent, Minn	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	33.66
San Diego, Cal	186	5	111	116	110	4	2	4,489	70	614	.....	7,595.95	3,933.92
Sandusky, Ohio	147	3	65	68	66	1	1	1,375	79	117	.....	1,677.10	.....

San Francisco, Cal.	3,524	83	964	1,047	881	55	111	41,673	2,477	5,311	207	31,631.29	49,546.40
Sault St. Marie, Mich.	242	5	101	106	89	5	12	2,025	136	168	.....	2,404.95	.....
Savannah, Ga.	1,064	15	346	361	348	6	7	5,545	703	917	21	8,754.69	14,224.26
Seattle, Wash.	471	7	95	102	93	2	7	3,315	369	648	53	3,764.11	.....
Shieldsboro, Miss.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7,753.34
Shreveport, La.	112	1	21	22	21	1	.....	317	90	426	.....	1,075.72	.....
Sitka, Alaska.	10	.....	4	4	3	1	.....	71	6	6	.....	1,260.00	416.67
Solomons, Md.	538	.....	32	32	30	2	.....	182	506	610	.....	559.50	.....
Somers Point, N. J.	2	.....	.....	.....	.....	.....	.....	.....	2	43	.....	43.00	.....
Stonington, Conn.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16.47
Tacoma, Wash.	19	.....	19	19	18	.....	1	596	.....	.....	.....	633.50	.....
Tampa, Fla.	10	.....	.....	.....	.....	.....	.....	.....	10	10	7	31.00	652.98
Tappannock, Va.	171	1	62	63	62	.....	1	695	108	192	.....	1,337.70	.....
Toledo, Ohio.	234	2	120	122	113	3	6	2,884	112	142	.....	2,656.10	.....
Tuckerton, N. J.	16	1	.....	1	.....	.....	1	366	15	48	135	735.27	.....
Vicksburg, Miss.	97	1	72	73	68	2	3	1,116	24	40	.....	1,716.00	.....
Vineyard Haven, Mass.	269	6	102	108	98	5	5	1,811	*161	167	7	6,143.12	.....
Waldoboro, Me.	1	.....	.....	.....	.....	.....	.....	.....	1	1	.....	.....	1,010.49
Washington, D. C.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12,568.63	.....
Wheeling, W. Va.	76	2	50	52	51	1	.....	1,192	24	47	.....	1,556.00	.....
Wilmington, Cal.	207	6	102	108	97	1	10	3,699	99	177	.....	4,294.65	2,195.24
Wilmington, Del.	1	.....	1	1	1	.....	.....	9	.....	.....	.....	9.00	250.86
Wilmington, N. C.	983	11	138	149	138	4	7	3,469	834	1,048	42	6,862.00	2,066.85
Wiscasset, Me.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.10	243.54
Yaquina, Oregon.	3	.....	3	3	2	1	.....	22	.....	.....	.....	130.60	2.43
Cape Charles Quarantine.	30	.....	.....	.....	.....	.....	.....	.....	30	34	.....	(†)	.....
Gulf Quarantine.	126	2	80	82	82	.....	.....	752	44	75	.....	.....	.....
Key West Quarantine.	26	.....	.....	.....	.....	.....	.....	.....	26	34	.....	.....	.....
San Francisco Quarantine.	32	.....	27	27	25	2	.....	834	5	35	.....	.....	.....
South Atlantic Quarantine.	2	.....	1	1	.....	1	.....	33	1	3	.....	.....	.....

*Including Edgartown, Mass.

†Expenditures at quarantine station given elsewhere.

TABLE III.—SUMMARY OF PHYSICAL EXAMINATIONS OF SEAMEN MADE BY MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, YEAR ENDED JUNE 30, 1892.

Summary of examinations and causes of rejection.	Total.	Pilots.	Revenue marine.	Merchant marine.	Life-Saving Service.	Light-House Service.
Summary of examinations:						
Total number examined	2,838	1,344	357	231	906	.....
Number passed	2,638	1,274	302	220	842	.....
Number rejected	200	70	55	11	64	.....
Causes of rejection:						
Influenza	.....	2	.....	1	2	.....
Syphilis:						
Primary	.....	.....	.....	.....	3	.....
Secondary	.....	.....	5	.....	2	.....
Gonorrhœa	.....	.....	9	.....	3	.....
Tumor spermatic cord	.....	.....	.....	1	.....	.....
Weakness of lungs	.....	.....	.....	.....	1	.....
Weakness of back	.....	.....	.....	.....	1	.....
Myopia	.....	.....	.....	5	4	.....
Color blindness	.....	60	.....	.....	3	.....
Deafness	.....	.....	2	.....	.....	.....
Disease of heart:						
Valvular	.....	.....	.....	.....	5	.....
Hypertrophy	.....	.....	.....	.....	2	.....
Varicose veins of leg	.....	2	10	.....	8	.....
Tonsilitis, chronic	.....	3	6	.....	2	.....
Hernia:						
Inguinal	.....	2	.....	.....	2	.....
Oblique	.....	.....	.....	.....	3	.....
Hemorrhoids	.....	.....	.....	.....	5	.....
Fistula in ano	.....	.....	.....	.....	1	.....
Ulcer of penis	.....	.....	3	1	2	.....
Varicocele, left side	.....	.....	11	.....	3	.....
Atrophy of testicles	.....	.....	.....	.....	1	.....
Synovitis of knee	.....	.....	.....	.....	1	.....
Pigmentation of skin	.....	.....	2	.....	.....	.....
Disease of skin	.....	.....	.....	.....	2	.....
Onychia	.....	.....	.....	.....	2	.....
Incised wound of head	.....	.....	.....	1	.....	.....
Fracture of nose	.....	.....	.....	.....	1	.....
Scar on cornea	.....	.....	.....	.....	1	.....
Sprain of back	.....	.....	.....	1	1	.....
Incised wound, forearm	.....	.....	.....	1	.....	.....
Dislocation, thumb	.....	1	.....	.....	.....	.....
Amputation, finger	.....	.....	.....	.....	1	.....
Bronchitis, acute	.....	.....	7	.....	2	.....

TABLE IV.—STATEMENTS BY DISTRICTS OF THE NUMBER OF PATIENTS TREATED DURING THE YEAR ENDED JUNE 30, 1892.

Districts.	Total.	Patients in hospital, July 1, 1891.	Admitted during the year.	Total number treated in hospital.	Discharged.	Died.	Patients in hospital, June 30, 1892.	Number of days hospital relief was furnished.	Number of seamen furnished office relief.
Grand total	**53,610**	**917**	**15,105**	**16,022**	**14,636**	**479**	**907**	**421,813**	**37,588**
North Atlantic	5,144	115	1,564	1,679	1,543	44	92	40,931	3,465
Middle Atlantic	6,696	144	2,209	2,353	2,128	81	144	63,227	4,343
South Atlantic	9,218	141	2,252	2,393	2,191	65	137	62,852	6,825
The Gulf	5,365	59	1,345	1,404	1,290	51	63	30,858	3,961
The Ohio	5,414	76	1,542	1,618	1,541	25	52	38,531	3,796
The Mississippi	4,380	77	1,667	1,744	1,621	59	64	35,923	2,636
The Great Lakes	11,651	162	2,657	2,819	2,545	78	196	78,444	8,832
The Pacific	5,526	141	1,761	1,902	1,670	73	159	70,228	3,624
The quarantine stations	216	2	108	110	107	3	.....	819	106

TABLE V.—RATIO OF PATENTS TREATED IN HOSPITAL IN EACH DISTRICT.

Districts.	Per cent of total number of patients.	Districts.	Per cent of total number of patients.
North Atlantic	32.64	The Mississippi	39.81
Middle Atlantic	35.14	The Great Lakes	24.19
South Atlantic	25.96	The Pacific	34.42
The Gulf	26.17	The quarantine stations	50.92
The Ohio	29.88		

TABLE VI —AVERAGE DURATION OF TREATMENT IN HOSPITAL IN EACH DISTRICT.

Districts.	Average number of days relief furnished to each patient.	Districts.	Average number of days relief furnished to each patient.
North Atlantic	24.38	The Mississippi	20.59
Middle Atlantic	26.87	The Great Lakes	42.01
South Atlantic	26.26	The Pacific	36.39
The Gulf	22.03	The quarantine stations	7.65
The Ohio	23.81		

TABLE VII.—TABULAR STATEMENT BY DISTRICTS OF DISEASES AND INJURIES TREATED DURING THE YEAR ENDED JUNE 30, 1892.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Grand Total of all Cases	**917**	**15,105**	**9,764**	**4,515**	**357**	**479**	**907**	**37,588**	**53,610**
GENERAL DISEASES	385	6,873	4,300	2,236	137	208	377	16,928	24,186
LOCAL DISEASES	403	5,988	3,733	1,839	189	234	396	17,725	24,116
POISONS AND POISONED WOUNDS	1	13	11	3	.....	.....	.....	29	43
INJURIES AND AMPUTATIONS	128	2,231	1,720	437	31	37	134	2,906	5,265

NORTH ATLANTIC.

TOTAL CASES	115	1,564	995	518	30	44	92	3,465	5,144
General Diseases	**55**	**672**	**398**	**253**	**12**	**23**	**41**	**1,441**	**2,168**
Cowpox	.....	.....	.....	.....	.....	.....	.....	1	1
Measles	.....	4	4	.....	.....	.....	.....	1	5
Dengue	.....	.....	.....	.....	.....	.....	.....	1	1
Influenza	2	67	57	11	.....	1	.....	146	215
Mumps	.....	3	3	.....	.....	.....	.....	.....	3
Simple continued fever	.....	5	3	1	.....	.....	1	.....	5
Enteric fever	5	51	44	.....	.....	7	5	15	71
Typho-malarial fever	.....	5	5	.....	.....	.....	.....	.....	5
Sporadic cholera	.....	4	4	.....	.....	.....	.....	3	7
Dysentery	1	8	8	1	.....	.....	.....	5	14
Malarial intermittent fever	3	76	70	4	.....	3	2	109	188
Malarial remittent fever	2	23	23	2	.....	.....	.....	8	33
Malarial cachexia	.....	4	4	.....	.....	.....	.....	10	14
Beriberi	.....	.....	.....	.....	.....	.....	.....	4	4
Phagedæna	.....	.....	.....	.....	.....	.....	.....	1	1
Erysipelas:									
Simple	.....	5	3	1	1	.....	.....	7	12
Phlegmonous	.....	1	.....	.....	.....	1	.....	2	3
Septicæmia	.....	.....	.....	.....	.....	.....	.....	1	1
Syphilis:									
Primary	.....	17	3	14	.....	.....	.....	36	53
Secondary	3	79	3	71	2	.....	6	219	301
Gonorrhœa	5	68	47	21	1	.....	4	420	493
Animal parasites	.....	2	2	.....	.....	.....	.....	3	5
Effects of excessive venery	1	.....	.....	.....	1	.....	.....	.....	1
Scurvy	.....	2	2	.....	.....	.....	.....	2	4
Alcoholism	.....	17	13	4	.....	.....	.....	6	23
Delirium tremens	.....	1	.....	.....	.....	.....	1	.....	1
Hypospadias	.....	.....	.....	.....	.....	.....	.....	1	1
Debility	.....	6	4	2	.....	.....	.....	57	63
Rheumatic fever	2	16	11	6	.....	.....	1	4	22
Rheumatism	16	127	75	57	1	.....	10	287	430
Osteoarthritis	1	1	.....	1	.....	.....	1	.....	2
Cysts	.....	1	1	.....	.....	.....	.....	4	5
Nonmalignant new growth	.....	5	5	.....	.....	.....	.....	13	18
Malignant new growth	1	4	2	3	.....	.....	.....	3	8
Tubercle	13	64	.....	51	6	11	9	65	142
Scrofula	.....	3	1	2	.....	.....	.....	3	6
Anæmia	.....	2	1	1	.....	.....	.....	3	5
Leucocythæmia	.....	.....	.....	.....	.....	.....	.....	1	1
Diabetes mellitus	.....	1	.....	.....	.....	.....	1	.....	1
Local Diseases	**47**	**655**	**408**	**223**	**15**	**20**	**36**	**1,687**	**2,389**
DISEASES OF THE NERVOUS SYSTEM	9	33	19	16	1	3	3	95	137
Congestion of brain	.....	1	1	.....	.....	.....	.....	1	2
Inflammation of cerebral membranes	.....	1	1	.....	.....	.....	.....	.....	1
Neuritis	.....	2	1	1	.....	.....	.....	8	10
Sclerosis	1	.....	.....	.....	.....	1	.....	.....	1
Progressive muscular atrophy	1	.....	.....	.....	.....	.....	1	.....	1
Locomotor ataxy	1	1	.....	1	.....	.....	1	2	4
Apoplexy	1	.....	.....	.....	.....	1	.....	.....	1
Hemiplegia	3	1	.....	3	.....	1	.....	3	7

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

NORTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE NERVOUS SYSTEM—Continued.									
Local paralysis	.....	1	.....	1	.....	.....	.....	2	3
Spasm of muscle	.....	.....	.....	.....	.....	.....	.....	1	1
Neuralgia	.....	11	9	1	1	.....	.....	37	48
Facial	.....	.....	.....	.....	.....	.....	.....	16	16
Sciatica	1	11	5	7	.....	.....	.....	18	30
Vertigo	.....	.....	.....	.....	.....	.....	.....	2	2
Megrim	.....	2	2	.....	.....	.....	.....	1	3
Epilepsy	1	2	.....	2	.....	.....	1	4	7
MENTAL DISEASES	2	4	2	.....	1	1	2	6	12
Hypochondriasis	.....	1	1	.....	.....	.....	.....	5	6
Insanity	.....	1	.....	.....	.....	.....	1	1	2
Mania	.....	1	1	.....	.....	.....	.....	.....	1
Melancholia	1	1	.....	.....	1	.....	1	.....	2
Dementia	1	.....	.....	.....	.....	1	.....	.....	1
DISEASES OF THE EYE	3	14	9	8	.....	.....	.....	61	78
Conjunctivitis	2	4	4	2	.....	.....	.....	40	46
Pterygium	.....	.....	.....	.....	.....	.....	.....	2	2
Keratitis	.....	2	.....	2	.....	.....	.....	1	3
Ulcer of cornea	1	1	1	1	.....	.....	.....	1	3
Inflammation of the sclerotic	.....	.....	.....	.....	.....	.....	.....	1	1
Iritis	.....	4	3	1	.....	.....	.....	3	7
Neuro-retinitis	.....	.....	.....	.....	.....	.....	.....	1	1
Cataract	.....	1	.....	1	.....	.....	.....	1	2
Ametropia	.....	.....	.....	.....	.....	.....	.....	1	1
Night-blindness	.....	1	1	.....	.....	.....	.....	2	3
Amblyopia	.....	1	.....	1	.....	.....	.....	.....	1
Blepharitis	.....	.....	.....	.....	.....	.....	.....	6	6
Abscess of eyelid	.....	.....	.....	.....	.....	.....	.....	1	1
Chalazion	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE EAR	.....	9	3	6	.....	.....	.....	30	39
Inflammation of the external meatus, acute	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of the external meatus	.....	.....	.....	.....	.....	.....	.....	1	1
Accumulation of wax	.....	1	1	.....	.....	.....	.....	9	10
Inflammation of the middle ear	.....	7	2	5	.....	.....	.....	13	20
Necrosis of ossicles	.....	1	.....	1	.....	.....	.....	.....	1
Perforation of membrana tympani	.....	.....	.....	.....	.....	.....	.....	4	4
Tinnitus	.....	.....	.....	.....	.....	.....	.....	1	1
Deafness	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE NOSE	.....	2	1	1	.....	.....	.....	11	13
Inflammation	.....	1	.....	1	.....	.....	.....	.....	1
Nasal catarrh	.....	1	1	.....	.....	.....	.....	10	11
Ulceration	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE CIRCULATORY SYSTEM	2	30	3	23	1	4	1	31	63
Valvular disease:									
Aortic	.....	6	.....	3	.....	2	1	5	11
Mitral	2	17	.....	17	1	1	.....	19	38
Tricuspid	.....	.....	.....	.....	.....	.....	.....	1	1
Dilatation of heart	.....	1	.....	1	.....	.....	.....	.....	1
Angina pectoris	.....	.....	.....	.....	.....	.....	.....	1	1
Syncope	.....	.....	.....	.....	.....	.....	.....	1	1
Palpitation and irregular action of heart	.....	.....	.....	.....	.....	.....	.....	1	1
Aneurism of arteries	.....	3	1	1	.....	1	.....	2	5
Phlebitis	.....	1	1	.....	.....	.....	.....	.....	1
Varix	.....	2	1	1	.....	.....	.....	1	3
DISEASES OF THE RESPIRATORY SYSTEM	7	87	52	28	3	7	4	281	375
Larvngitis:									
Acute	.....	4	3	1	.....	.....	.....	1	5
Catarrhal	.....	.....	.....	.....	.....	.....	.....	1	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

NORTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE RESPIRATORY SYSTEM—Continued.									
Bronchitis:									
Acute	2	33	27	6	.....	.....	2	192	227
Chronic	2	4	.....	6	.....	.....	.....	33	39
Catarrhal	.....	3	1	2	.....	.....	.....	7	10
Spasmodic asthma	.....	10	2	5	2	.....	1	18	28
Hemorrhage of lung	.....	1	.....	1	.....	.....	.....	1	2
Pneumonia	2	18	12	3	.....	4	1	4	24
Cirrhosis of lung	.....	.....	.....	.....	.....	.....	.....	1	1
Pneumonic phthisis, chronic	.....	2	.....	2	.....	.....	.....	3	5
Emphysema	.....	1	.....	.....	1	.....	.....	2	3
Pleurisy:									
Acute	.....	6	5	.....	.....	1	.....	15	21
Chronic	.....	4	1	2	.....	1	.....	3	7
Empyema	1	1	1	.....	.....	1	.....	.....	2
DISEASES OF THE DIGESTIVE SYSTEM	3	135	90	41	1	1	5	458	596
Ulcer of the lips	.....	.....	.....	.....	.....	.....	.....	1	1
Fissure of the lips	.....	.....	.....	.....	.....	.....	.....	1	1
Stomatitis	.....	.....	.....	.....	.....	.....	.....	5	5
Ulcerative stomatitis	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of the dental pulp	.....	1	1	.....	.....	.....	.....	.....	1
Ulceration of the dental pulp	.....	1	1	.....	.....	.....	.....	2	3
Caries of dentine and cementum	1	.....	1	.....	.....	.....	.....	6	7
Abscess of dental periosteum	.....	.....	.....	.....	.....	.....	.....	6	6
Inflammation of gums and alveoli	.....	.....	.....	.....	.....	.....	.....	1	1
Toothache	.....	.....	.....	.....	.....	.....	.....	5	5
Ulcer of the tongue	.....	.....	.....	.....	.....	.....	.....	1	1
Sore throat	.....	1	1	.....	.....	.....	.....	25	26
Quinsy	.....	6	6	.....	.....	.....	.....	5	11
Follicular tonsilitis	.....	16	15	1	.....	.....	.....	21	37
Ulceration of fauces	.....	.....	.....	.....	.....	.....	.....	2	2
Salivation	.....	1	.....	1	.....	.....	.....	.....	1
Follicular inflammation of the pharynx	.....	3	2	1	.....	.....	.....	10	13
Inflammation of the stomach	1	13	5	8	.....	.....	1	19	33
Ulceration of the stomach	.....	2	.....	1	.....	.....	1	1	3
Dyspepsia	.....	19	7	12	.....	.....	.....	126	145
Pyrosis	.....	.....	.....	.....	.....	.....	.....	1	1
Vomiting	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of the intestines:									
Catarrhal	.....	2	2	.....	.....	.....	.....	4	6
Ulcerative	1	1	1	.....	.....	1	.....	1	3
Obstruction of the intestines	.....	1	.....	1	.....	.....	.....	.....	1
Hernia	.....	5	2	3	.....	.....	.....	52	57
Diarrhœa	.....	31	24	5	1	.....	1	66	97
Constipation	.....	7	7	.....	.....	.....	.....	53	60
Colic	.....	1	.....	1	.....	.....	.....	3	4
Hemorrhage of the rectum	.....	1	1	.....	.....	.....	.....	.....	1
Abscess of the rectum	.....	1	1	.....	.....	.....	.....	.....	1
Piles:									
Internal	.....	7	2	4	.....	.....	1	15	22
External	.....	2	.....	2	.....	.....	.....	12	14
Fistula in ano	.....	6	5	.....	.....	.....	1	3	9
Pruritis ani	.....	.....	.....	.....	.....	.....	.....	1	1
Congestion of the liver	.....	1	1	.....	.....	.....	.....	.....	1
Hepatitis	.....	.....	.....	.....	.....	.....	.....	3	3
Jaundice	.....	4	4	.....	.....	.....	.....	3	7
Inflammation of hepatic ducts and gall bladder	.....	1	.....	1	.....	.....	.....	1	2
Peritonitis	.....	1	1	.....	.....	.....	.....	.....	1
DISEASES OF THE LYMPHATIC SYSTEM	5	51	40	10	.....	.....	6	45	101
Hypertrophy of lymph glands	.....	5	2	1	.....	.....	2	1	6
Inflammation of lymph vessels	.....	1	1	.....	.....	.....	.....	2	3

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

NORTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE LYMPHATIC SYSTEM—Continued.									
Inflammation of lymph glands	1	14	12	2	.....	.....	1	32	47
Suppuration of lymph glands	4	31	25	7	.....	.....	3	10	45
DISEASES OF THE URINARY SYSTEM	2	17	6	7	2	2	2	39	58
Acute nephritis	.....	2	1	1	.....	.....	.....	.....	2
Bright's disease	1	7	.....	3	2	2	1	6	14
Calculus in kidney	.....	1	1	.....	.....	.....	.....	.....	1
Calculus in ureter	.....	.....	.....	.....	.....	.....	.....	1	1
Diabetes insipidus	.....	2	.....	1	.....	.....	1	1	3
Oxaluria	.....	.....	.....	.....	.....	.....	.....	2	2
Hemorrhage of bladder	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of bladder:									
Acute	1	4	4	1	.....	.....	.....	10	15
Subacute	.....	.....	.....	.....	.....	.....	.....	8	8
Chronic	.....	1	.....	1	.....	.....	.....	6	7
Irritability of bladder	.....	.....	.....	.....	.....	.....	.....	1	1
Retention of urine	.....	.....	.....	.....	.....	.....	.....	1	1
Incontinence of urine	.....	.....	.....	.....	.....	.....	.....	2	2
DISEASES OF THE GENERATIVE SYSTEM	7	138	86	48	2	1	8	253	398
Urethritis	.....	.....	.....	.....	.....	.....	.....	6	6
Gleet	1	1	1	.....	1	.....	.....	13	15
Stricture of urethra:									
Organic	1	34	8	23	1	1	2	53	88
Spasmodic	.....	.....	.....	.....	.....	.....	.....	1	1
Urinary fistula	.....	.....	.....	.....	.....	.....	.....	1	1
Impacted calculus of urethra	.....	1	1	.....	.....	.....	.....	.....	1
Chronic inflammation of prostate gland	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of glans penis	.....	.....	.....	.....	.....	.....	.....	6	6
Ulcer of penis	4	56	45	12	.....	.....	3	111	171
Phimosis	.....	9	7	2	.....	.....	.....	1	10
Paraphimosis	.....	.....	.....	.....	.....	.....	.....	1	1
Œdema of the scrotum	.....	1	1	.....	.....	.....	.....	.....	1
Varicocele	.....	.....	.....	.....	.....	.....	.....	2	2
Hæmatocele of tunica vaginalis	.....	.....	.....	.....	.....	.....	.....	2	2
Hydrocele of tunica vaginalis	1	4	3	2	.....	.....	.....	11	16
Orchitis:									
Acute	.....	8	4	2	.....	.....	2	11	19
Chronic	.....	2	1	1	.....	.....	.....	5	7
Epididymitis	.....	21	15	6	.....	.....	.....	12	33
Spermatorrhœa	.....	1	.....	.....	.....	.....	1	15	16
Impotence	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE ORGANS OF LOCOMOTION	.....	33	17	12	4	.....	.....	41	74
Periostitis	.....	4	2	2	.....	.....	.....	7	11
Chronic abscess of bones	.....	1	1	.....	.....	.....	.....	.....	1
Caries	.....	1	1	.....	.....	.....	.....	4	5
Necrosis	.....	9	6	3	.....	.....	.....	5	14
Dropsy of joints	.....	4	2	2	.....	.....	.....	3	7
Synovitis:									
Acute	.....	2	1	1	.....	.....	.....	4	6
Chronic	.....	2	.....	2	.....	.....	.....	4	6
Ankylosis	.....	1	.....	.....	1	.....	.....	3	4
Loose body in joint	.....	1	1	.....	.....	.....	.....	.....	1
Caries and necrosis of spine	.....	1	.....	1	.....	.....	.....	.....	1
Angular curvature of spine	.....	1	.....	.....	1	.....	.....	.....	1
Posterior curvature of spine	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of muscles	.....	1	1	.....	.....	.....	.....	.....	1
Adhesion of tendons	.....	1	.....	.....	1	.....	.....	.....	1
Contraction of tendons and fasciæ	.....	.....	.....	.....	.....	.....	.....	1	1
Inflamed bursa	.....	2	1	.....	1	.....	.....	4	6
Bursal abscess	.....	1	1	.....	.....	.....	.....	1	2
Thecal abscess	.....	.....	.....	.....	.....	.....	.....	1	1
Bunion	.....	1	.....	1	.....	.....	.....	2	3
Ganglion	.....	.....	.....	.....	.....	.....	.....	1	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

NORTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE CONNECTIVE TISSUE	1	30	23	5	.....	1	2	75	106
Œdema	.....	1	1	.....	.....	.....	.....	2	3
Inflammation	.....	8	6	2	.....	.....	.....	25	33
Abscess	1	21	16	3	.....	1	2	48	70
DISEASES OF THE SKIN	6	67	54	17	.....	.....	2	225	298
Erythema	.....	1	1	.....	.....	.....	.....	1	2
Urticaria	.....	.....	.....	.....	.....	.....	.....	3	3
Eczema	.....	12	8	4	.....	.....	.....	47	59
Impetigo	.....	.....	.....	.....	.....	.....	.....	1	1
Rupia	.....	.....	.....	.....	.....	.....	.....	1	1
Pityriasis	.....	1	.....	1	.....	.....	.....	3	4
Lichen	.....	.....	.....	.....	.....	.....	.....	1	1
Psoriasis	.....	.....	.....	.....	.....	.....	.....	2	2
Miliaria	.....	.....	.....	.....	.....	.....	.....	1	1
Herpes	.....	2	1	1	.....	.....	.....	7	9
Acne	.....	.....	.....	.....	.....	.....	.....	7	7
Sycosis	.....	.....	.....	.....	.....	.....	.....	1	1
Frostbite	.....	6	6	.....	.....	.....	.....	5	11
Ulcer	4	21	15	8	.....	.....	2	64	89
Boil	1	13	13	1	.....	.....	.....	45	59
Carbuncle	.....	1	1	.....	.....	.....	.....	3	4
Gangrene	1	.....	1	.....	.....	.....	.....	.....	1
Whitlow	.....	8	7	1	.....	.....	.....	23	31
Onychia	.....	1	.....	1	.....	.....	.....	1	2
Corn	.....	.....	.....	.....	.....	.....	.....	2	2
Wen	.....	1	1	.....	.....	.....	.....	5	6
Pruritus	.....	.....	.....	.....	.....	.....	.....	2	2
PARASITIC DISEASES OF THE SKIN	.....	5	3	1	.....	.....	1	36	41
Ringworm	.....	.....	.....	.....	.....	.....	.....	4	4
Itch	.....	5	3	1	.....	.....	1	31	36
Phthiriasis	.....	.....	.....	.....	.....	.....	.....	1	1
Poisons	.....	**1**	**1**	.....	.....	.....	.....	**1**	**2**
Vegetable poisons	.....	1	1	.....	.....	.....	.....	1	2
Injuries	**13**	**235**	**187**	**42**	**3**	**1**	**15**	**336**	**584**
GENERAL INJURIES	.....	23	22	.....	.....	.....	1	23	46
Burns and scalds	.....	6	6	.....	.....	.....	.....	8	14
Effects of cold	.....	11	11	.....	.....	.....	.....	12	23
Heat stroke	.....	.....	.....	.....	.....	.....	.....	1	1
Multiple injury	.....	6	5	.....	.....	.....	1	2	8
LOCAL INJURIES	13	212	165	42	3	1	14	313	538
Strain of muscles	.....	1	1	.....	.....	.....	.....	9	10
Abrasion of skin	.....	.....	.....	.....	.....	.....	.....	1	1
Foreign body in subcutaneous tissue	.....	.....	.....	.....	.....	.....	.....	1	1
Abrasion of mucous membrane	.....	1	.....	1	.....	.....	.....	.....	1
Contusion of scalp	.....	.....	.....	.....	.....	.....	.....	3	3
Scalp wound:									
Bone not exposed	.....	7	4	3	.....	.....	.....	10	17
Bone exposed	1	.....	1	.....	.....	.....	.....	2	3
Contusion of skull	.....	1	1	.....	.....	.....	.....	1	2
Fracture of the vault of the skull	.....	1	.....	.....	.....	1	.....	.....	1
Concussion of brain	.....	1	.....	.....	.....	.....	1	.....	1
Contusion of face	.....	.....	.....	.....	.....	.....	.....	6	6
Wound of face and mouth	.....	7	6	1	.....	.....	.....	16	23
Fracture of facial bones	.....	3	.....	1	1	.....	1	.....	3
Dislocation of nasal cartilages	.....	.....	.....	.....	.....	.....	.....	1	1
Contusion of the eye	.....	.....	.....	.....	.....	.....	.....	3	3
Foreign body in cornea or conjunctiva	.....	1	1	.....	.....	.....	.....	4	5

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

NORTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Contusion of pinna		1	1					1	2
Contusion of soft parts of neck								1	1
Wound of neck		1		1				1	2
Contusion of the chest		7	6	1				17	24
Fracture of the ribs	1	8	7	1			1	7	16
Wound of parietes of chest		2		1			1		2
Contusion of back		13	9	4				7	20
Sprain of back		6	4	2				4	10
Wound of back		1	1					1	2
Contusion of abdomen		1		1				2	3
Wound of parietes of abdomen		1		1					1
Contusion of pelvis								1	1
Wound of the urethra, perineum, scrotum, and penis		1	1					1	2
Rupture of urethra		1		1					1
Contusion of upper extremities	2	15	12	3			2	49	66
Sprain of the shoulder								6	6
Sprain of the elbow								2	2
Sprain of the wrist		6	6					14	20
Sprain of the fingers								6	6
Wound of the upper extremities	1	39	33	5			2	63	103
Fracture of the clavicle		2	1	1				1	3
Fracture of the humerus	1	2	2	1					3
Fracture of the radius		3	1	2				3	6
Fracture of the ulna	1		1						1
Fracture of both bones of forearm		3	2				1	1	4
Fracture of carpus, metacarpus, and phalanges	1	1	2					2	4
Dislocation of the humerus	1	4	5					2	7
Dislocation of the metacarpus		2	1		1				2
Dislocation of the phalanges of thumb		1	1						1
Dislocation of the phalanges of fingers		1	1					1	2
Contusion of the lower extremities		17	13	3			1	25	42
Sprain of the hip		1		1					1
Sprain of the knee		3	3					9	12
Sprain of the ankle	1	18	13	4			2	15	34
Wound of the lower extremities		18	14	3			1	10	28
Fracture of femur	2		2						2
Fracture of cervix femoris		1	1					1	2
Fracture of patella		1	1						1
Fracture of leg, both bones	1	4	4				1	1	6
Fracture of tibia alone		3	3					1	4
Fracture of phalanges of toes		1			1				1
Dislocation of the metatarsus and phalanges								1	1
AMPUTATIONS		1	1						1
Amputation of fingers		1	1						1

MIDDLE ATLANTIC.

TOTAL CASES	144	2,209	1,529	567	32	81	144	4,343	6,696
General Diseases	59	952	638	270	7	37	59	2,097	3,108
Measles	1	9	9				1	1	11
Scarlet fever		1	1					1	2
Influenza	1	94	82	8		5		122	217
Diphtheria		6	6						6
Enteric fever	3	40	34			6	3	2	45
Sporadic cholera		1	1						1
Dysentery	2	14	12	2	2			15	31

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
General Diseases.									
Malarial intermittent fever	6	238	218	18	.....	1	7	342	586
Malarial remittent fever	.....	4	4	.....	.....	.....	.....	3	7
Malarial cachexia	.....	7	2	4	.....	.....	1	5	12
Beriberi	1	.....	.....	.....	.....	1	.....	.....	1
Phagedæna	.....	1	.....	.....	.....	.....	1	.....	1
Erysipelas, simple	.....	5	5	.....	.....	.....	.....	2	7
Septicæmia	.....	1	1	.....	.....	.....	.....	1	2
Syphilis:									
Primary	2	42	23	16	.....	.....	5	39	83
Secondary	6	99	5	91	1	1	7	447	552
Gonorrhœa	3	59	48	13	.....	.....	1	537	599
Animal parasites	.....	2	2	.....	.....	.....	.....	3	5
Alcoholism	1	34	32	1	.....	2	.....	18	53
Delirium tremens	.....	1	1	.....	.....	.....	.....	.....	1
Debility	.....	2	2	.....	.....	.....	.....	25	27
Rheumatic fever	6	23	18	8	.....	.....	3	.....	29
Rheumatism	14	186	127	53	3	.....	17	403	603
Osteoarthritis	2	.....	.....	.....	.....	1	1	.....	2
Nonmalignant new growth	.....	4	2	1	.....	.....	1	7	11
Malignant new growth	.....	1	.....	1	.....	.....	.....	1	2
Tubercle	11	78	3	54	1	20	11	91	180
Scrofula	.....	.....	.....	.....	.....	.....	.....	1	1
Anæmia	.....	.....	.....	.....	.....	.....	.....	31	31
Local Diseases	**73**	**1,005**	**687**	**255**	**24**	**43**	**69**	**1,951**	**3,029**
DISEASES OF THE NERVOUS SYSTEM	11	34	19	12	1	7	6	76	121
Hemorrhage, cerebral	1	.....	.....	.....	.....	.....	1	.....	1
Inflammation of cerebral membranes	.....	1	.....	.....	.....	1	.....	.....	1
Myelitis	1	1	.....	1	.....	1	.....	.....	2
Neuritis	.....	1	1	.....	.....	.....	.....	.....	1
Sclerosis	.....	1	.....	.....	.....	.....	1	.....	1
Progressive muscular atrophy	1	.....	.....	.....	.....	.....	1	.....	1
Spastic spinal paralysis	.....	1	.....	.....	.....	.....	1	.....	1
Locomotor ataxy	4	2	.....	3	.....	1	2	.....	6
Apoplexy	.....	1	.....	.....	.....	1	.....	.....	1
Paralysis	.....	1	.....	1	.....	.....	.....	.....	1
Hemiplegia	3	3	1	2	.....	3	.....	.....	6
Paraplegia	.....	1	.....	1	.....	.....	.....	.....	1
Local paralysis	.....	.....	.....	.....	.....	.....	.....	5	5
Anæsthesia	.....	.....	.....	.....	.....	.....	.....	1	1
Wry-neck	.....	1	1	.....	.....	.....	.....	.....	1
Aphasia	.....	1	.....	.....	1	.....	.....	1	2
Neuralgia	.....	4	4	.....	.....	.....	.....	47	51
Facial	.....	3	2	1	.....	.....	.....	11	14
Sciatica	1	6	5	2	.....	.....	.....	1	8
Vertigo	.....	4	3	1	.....	.....	.....	3	7
Megrim	.....	2	2	.....	.....	.....	.....	6	8
Epilepsy	.....	.....	.....	.....	.....	.....	.....	1	1
MENTAL DISEASES	1	2	.....	1	1	.....	1	1	4
Insanity	1	.....	.....	.....	.....	.....	1	.....	1
Melancholia	.....	2	.....	1	1	.....	.....	1	3
DISEASES OF THE EYE	1	16	7	7	2	.....	1	33	50
Conjunctivitis	.....	5	4	1	.....	.....	.....	26	31
Pterygium	.....	1	1	.....	.....	.....	.....	.....	1
Keratitis	.....	.....	.....	.....	.....	.....	.....	2	2
Opacity of cornea	.....	.....	.....	.....	.....	.....	.....	1	1
Iritis	1	4	1	3	.....	.....	1	2	7
Atrophy of optic disc or papilla	.....	1	1	.....	.....	.....	.....	.....	1
Hemorrhage of retina	.....	1	.....	.....	1	.....	.....	.....	1
Retinitis	.....	2	.....	1	1	.....	.....	.....	2
Cataract	.....	1	.....	1	.....	.....	.....	.....	1
Ametropia	.....	.....	.....	.....	.....	.....	.....	1	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE EYE—Continued.									
Asthenopia								1	1
Night-blindness		1		1					1
DISEASES OF THE EAR		9	8	1				21	30
Accumulation of wax								3	3
Inflammation of the middle ear		9	8	1				18	27
DISEASES OF THE NOSE		2	2					33	35
Epistaxis		1	1					2	3
Inflammation		1	1					1	2
Nasal catarrh								29	29
Abscess								1	1
DISEASES OF THE CIRCULATORY SYSTEM	3	39	1	29	3	7	2	35	77
Pericarditis		1	1						1
Valvular disease:									
Aortic	1	14		10	1	3	1	1	16
Mitral	2	24		19	2	4	1	25	51
Palpitation and irregular action of heart								2	2
Varix								6	6
Obstruction of veins								1	1
DISEASES OF THE RESPIRATORY SYSTEM	7	211	129	55	8	16	10	423	641
Laryngitis, acute	1	7	3	5				5	13
Bronchitis:									
Acute	1	109	89	17		2	2	312	422
Chronic	2	28	4	23	1	1	1	73	103
Catarrhal		1	1						1
Spasmodic asthma		1	1					9	10
Hemorrhage of lung		1	1						1
Pneumonia		19	13			6			19
Pneumonic phthisis, chronic	3	18		5	7	5	4	21	42
Emphysema								1	1
Pleurisy:									
Acute		24	17	3		2	2	2	26
Chronic		1		1					1
Empyema		2		1			1		2
DISEASES OF THE DIGESTIVE SYSTEM	8	189	139	43	2	6	7	567	764
Fissure of the lips								1	1
Stomatitis		1		1				1	2
Ulcerative stomatitis		1	1					1	2
Caries of dentine and cementum								1	1
Inflammation of dental periosteum								2	2
Abscess of dental periosteum		9	9					5	14
Ulceration of gums and alveoli								5	5
Toothache								6	6
Ulcer of the tongue								4	4
Elongated uvula								2	2
Relaxed throat								1	1
Sore throat		2	2					51	53
Quinsy		17	17					8	25
Follicular tonsilitis		12	11				1	33	45
Salivary fistula		1	1						1
Salivation								2	2
Follicular inflammation of the pharynx		4	3	1				15	19
Hemorrhage of the stomach								1	1
Inflammation of the stomach	1	16	14	2			1	6	23
Ulceration of the stomach		1		1				6	7
Dyspepsia	2	19	12	8			1	140	161
Gastrodynia		2	1	1					2
Hemorrhage of the intestines		1				1			1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Inflammation of the intestines:									
Catarrhal	.....	14	8	5	1	.....	.....	33	47
Ulcerative	.....	2	2	.....	.....	.....	.....	1	3
Hernia	1	12	5	6	1	1	.....	105	129
Diarrhœa	.....	25	22	2	.....	.....	1	48	73
Constipation	.....	5	2	2	.....	.....	1	33	38
Abscess of the rectum	.....	.....	.....	.....	.....	.....	.....	1	1
Ulceration of the rectum	.....	1	.....	1	.....	.....	.....	.....	1
Piles:									
Internal	.....	3	3	.....	.....	.....	.....	6	9
External	1	9	7	2	.....	.....	1	28	38
Prolapsus of the rectum	1	.....	.....	.....	.....	.....	1	.....	1
Prolapsus of the anus	.....	.....	.....	.....	.....	.....	.....	1	1
Fistula in ano	.....	3	2	1	.....	.....	.....	2	5
Congestion of the liver	.....	1	.....	.....	.....	1	.....	4	5
Hepatitis	.....	10	8	2	.....	.....	.....	1	11
Perihepatitis	.....	1	.....	1	.....	.....	.....	.....	1
Cirrhosis of liver	1	6	.....	5	.....	2	.....	.....	7
Jaundice	.....	6	4	2	.....	.....	.....	2	8
Peritonitis	1	5	5	.....	.....	1	.....	.....	6
DISEASES OF THE LYMPHATIC SYSTEM	8	107	96	12	.....	.....	7	54	169
Inflammation of lymph glands	4	71	61	8	.....	.....	6	33	108
Suppuration of lymph glands	4	36	35	4	.....	.....	1	21	61
DISEASES OF THE THYROID BODY	.....	.....	.....	.....	.....	.....	.....	1	1
Goitre	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE URINARY SYSTEM	5	30	10	18	.....	4	3	50	85
Congestion of kidney	.....	.....	.....	.....	.....	.....	.....	1	1
Acute nephritis	.....	10	5	4	.....	.....	1	3	13
Bright's disease	3	9	.....	8	.....	2	2	2	14
Uræmia	.....	1	.....	.....	.....	1	.....	.....	1
Diabetes insipidus	1	.....	.....	1	.....	.....	.....	.....	1
Hematuria	.....	.....	.....	.....	.....	.....	.....	3	3
Inflammation of bladder:									
Acute	.....	5	4	1	.....	.....	.....	15	20
Subacute	.....	.....	.....	.....	.....	.....	.....	5	5
Chronic	1	2	.....	2	.....	1	.....	9	12
Retention of urine	.....	.....	.....	.....	.....	.....	.....	2	2
Incontinence of urine	.....	3	1	2	.....	.....	.....	10	13
DISEASES OF THE GENERATIVE SYSTEM	8	157	116	33	4	2	10	337	502
Urethritis	.....	3	2	1	.....	.....	.....	1	4
Gleet	.....	2	1	1	.....	.....	.....	2	4
Stricture of urethra, organic	4	29	19	9	2	2	1	59	92
Hypertrophy of prostate gland	.....	.....	.....	.....	.....	.....	.....	7	7
Acute inflammation of prostate gland	.....	1	1	.....	.....	.....	.....	.....	1
Chronic inflammation of prostate gland	.....	1	.....	1	.....	.....	.....	.....	1
Inflammation of glans penis	.....	1	.....	.....	.....	.....	1	2	3
Ulcer of penis	2	66	51	13	.....	.....	4	195	263
Phimosis	.....	7	6	1	.....	.....	.....	3	10
Paraphimosis	.....	4	2	.....	1	.....	1	.....	4
Hæmatoma of scrotum	.....	1	1	.....	.....	.....	.....	.....	1
Hydrocele of spermatic cord	.....	.....	.....	.....	.....	.....	.....	1	1
Varicocele	.....	2	.....	1	1	.....	.....	13	15
Hydrocele of tunica vaginalis	.....	3	1	1	.....	.....	1	5	8
Orchitis:									
Acute	1	15	11	4	.....	.....	1	21	37
Chronic	.....	.....	.....	.....	.....	.....	.....	2	2
Epididymitis	1	22	21	1	.....	.....	1	17	40
Spermatorrhœa	.....	.....	.....	.....	.....	.....	.....	3	3
Impotence	.....	.....	.....	.....	.....	.....	.....	6	6

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE ORGANS OF LOCOMOTION	4	26	15	9	1	.....	5	11	41
Periostitis	.....	3	1	1	.....	.....	1	2	5
Caries	.....	2	2	.....	.....	.....	.....	.....	2
Necrosis	1	6	3	4	.....	.....	.....	2	9
Synovitis, acute	2	6	5	1	.....	.....	2	7	15
Ankylosis	.....	2	1	.....	.....	.....	1	.....	2
Psoas, lumbar, and other abscesses	.....	1	1	.....	.....	.....	.....	.....	1
Lateral curvature of spine	.....	1	.....	1	.....	.....	.....	.....	1
Posterior curvature of spine	1	.....	.....	.....	.....	.....	1	.....	1
Contraction of tendons and fasciæ	.....	1	1	.....	.....	.....	.....	.....	1
Talipes varus	.....	1	.....	.....	1	.....	.....	.....	1
Inflamed bursa	.....	2	.....	2	.....	.....	.....	.....	2
Bunion	.....	1	1	.....	.....	.....	.....	.....	1
DISEASES OF THE CONNECTIVE TISSUE	5	66	59	8	.....	.....	4	65	136
Œdema	.....	1	1	.....	.....	.....	.....	.....	1
Inflammation	.....	6	5	1	.....	.....	.....	25	31
Abscess	5	59	53	7	.....	.....	4	40	104
DISEASES OF THE SKIN	12	112	83	26	2	1	12	203	327
Erythema	.....	.....	.....	.....	.....	.....	.....	1	1
Urticaria	.....	1	1	.....	.....	.....	.....	4	5
Eczema	.....	5	3	2	.....	.....	.....	39	44
Pityriasis	.....	1	1	.....	.....	.....	.....	.....	1
Prurigo	.....	.....	.....	.....	.....	.....	.....	1	1
Psoriasis	.....	1	.....	.....	.....	.....	1	13	14
Herpes	.....	.....	.....	.....	.....	.....	.....	3	3
Zona	.....	2	1	1	.....	.....	.....	.....	2
Acne	.....	.....	.....	.....	.....	.....	.....	2	2
Sycosis	1	2	.....	2	.....	.....	1	2	5
Frostbite	.....	8	6	.....	.....	.....	2	8	16
Ulcer	9	59	42	17	1	1	7	81	149
Boil	.....	7	7	.....	.....	.....	.....	37	44
Carbuncle	1	7	8	.....	.....	.....	.....	3	11
Whitlow	1	14	11	2	1	.....	1	7	22
Onychia	.....	1	.....	1	.....	.....	.....	1	2
Wen	.....	3	2	1	.....	.....	.....	.....	3
Pruritus	.....	1	1	.....	.....	.....	.....	1	2
PARASITIC DISEASES OF THE SKIN	.....	5	3	1	.....	.....	1	41	46
Ringworm	.....	2	1	.....	.....	.....	1	4	6
Itch	.....	3	2	1	.....	.....	.....	37	40
Poisons	**1**	**1**	**1**	**1**	.....	.....	.....	**2**	**4**
Metals and their salts	1	1	1	1	.....	.....	.....	.....	2
Vegetable poisons	.....	.....	.....	.....	.....	.....	.....	2	2
Injuries	**11**	**251**	**203**	**41**	**1**	**1**	**16**	**293**	**555**
GENERAL INJURIES	1	10	7	3	.....	1	.....	8	19
Burns and scalds	1	7	4	3	.....	1	.....	7	15
Effects of cold	.....	1	1	.....	.....	.....	.....	.....	1
Heat-stroke	.....	1	1	.....	.....	.....	.....	1	2
Multiple injury	.....	1	1	.....	.....	.....	.....	.....	1
LOCAL INJURIES	10	241	196	38	1	.....	16	285	536
Bruise of muscles	.....	.....	.....	.....	.....	.....	.....	1	1
Strain of muscles	.....	4	3	.....	.....	.....	1	1	5
Strain of tendons	.....	1	1	.....	.....	.....	.....	.....	1
Rupture of tendons	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of scalp	.....	.....	.....	.....	.....	.....	.....	2	2
Scalp wound:									
Bone not exposed	.....	6	6	.....	.....	.....	.....	16	22
Bone exposed	.....	3	3	.....	.....	.....	.....	.....	3
Contusion of face	.....	2	2	.....	.....	.....	.....	2	4

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

MIDDLE ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Wound of face and mouth	.....	7	6	.....	.....	.....	1	2	9
Fracture of facial bones	.....	5	4	1	.....	.....	.....	1	6
Contusion of the eye	.....	.....	.....	.....	.....	.....	.....	2	2
Foreign body in cornea or conjunctiva	.....	.....	.....	.....	.....	.....	.....	5	5
Wound of the sclerotic	.....	.....	.....	.....	.....	.....	.....	1	1
Wound of pinna	.....	2	2	.....	.....	.....	.....	2	4
Wound of membrana tympani	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of the chest	.....	7	7	.....	.....	.....	.....	13	20
Fracture of the ribs	1	6	5	2	.....	.....	.....	3	10
Wound of parietes of chest	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of back	.....	6	4	2	.....	.....	.....	3	9
Sprain of back	.....	6	6	.....	.....	.....	.....	4	10
Fracture of spine	1	1	1	1	.....	.....	.....	.....	2
Concussion of cord	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of abdomen	.....	.....	.....	.....	.....	.....	.....	2	2
Wound of parietes of abdomen	.....	.....	.....	.....	.....	.....	.....	1	1
Contusion of the urethra, perineum, scrotum, and penis	.....	.....	.....	.....	.....	.....	.....	2	2
Contusion of upper extremities	2	18	13	6	.....	.....	1	32	52
Sprain of the shoulder	.....	10	8	1	.....	.....	1	4	14
Sprain of the elbow	.....	2	2	.....	.....	.....	.....	1	3
Sprain of the wrist	.....	3	1	2	.....	.....	.....	7	10
Sprain of the fingers	.....	.....	.....	.....	.....	.....	.....	3	3
Wound of the upper extremities	2	43	30	13	.....	.....	2	86	131
Fracture of the clavicle	.....	2	.....	1	.....	.....	1	.....	2
Fracture of the humerus	.....	1	1	.....	.....	.....	.....	.....	1
Fracture of the radius	.....	3	3	.....	.....	.....	.....	2	5
Fracture of the ulna	1	2	2	1	.....	.....	.....	1	4
Fracture of both bones of forearm	.....	3	2	1	.....	.....	.....	1	4
Fracture of carpus, metacarpus, and phalanges	.....	4	2	2	.....	.....	.....	1	5
Dislocation of the clavicle	.....	4	4	.....	.....	.....	.....	.....	4
Dislocaton of the humerus	.....	2	2	.....	.....	.....	.....	.....	2
Dislocation of the phalanges of fingers	.....	.....	.....	.....	.....	.....	.....	1	1
Contusion of the lower extremities	.....	15	10	2	1	.....	2	20	35
Sprain of the knee	.....	2	2	.....	.....	.....	.....	2	4
Sprain of the ankle	1	24	23	.....	.....	.....	2	11	36
Sprain of the foot	.....	.....	.....	.....	.....	.....	.....	1	1
Wound of the lower extremities	1	23	19	2	.....	.....	3	48	72
Fracture of femur	.....	6	6	.....	.....	.....	.....	.....	6
Fracture of patella	.....	2	2	.....	.....	.....	.....	.....	2
Fracture of leg, both bones	1	6	5	1	.....	.....	1	1	8
Fracture of tibia alone	.....	4	3	.....	.....	.....	1	.....	4
Dislocation of the femur at the hip	.....	1	1	.....	.....	.....	.....	.....	1
Dislocation of the head of the fibula	.....	1	1	.....	.....	.....	.....	.....	1

SOUTH ATLANTIC.

TOTAL CASES	141	2,252	1,626	513	52	65	137	6,825	9,218
General Diseases	67	1,236	898	289	26	29	61	3,190	4,493
Smallpox	.....	.....	.....	.....	.....	.....	.....	1	1
Cowpox	.....	.....	.....	.....	.....	.....	.....	33	33
Chickenpox	.....	.....	.....	.....	.....	.....	.....	1	1
Measles	.....	16	15	1	.....	.....	.....	7	23
Influenza	1	113	96	13	5	.....	.....	288	402
Whooping cough	.....	1	.....	.....	.....	.....	1	.....	1
Mumps	.....	4	2	1	.....	.....	1	7	11
Diphtheria	.....	2	1	.....	.....	1	.....	.....	2
Enteric fever	.....	25	17	3	1	3	1	2	27
Typho-malarial fever	.....	1	.....	.....	.....	1	.....	.....	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

SOUTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
General Diseases.									
Sporadic cholera		2	2					1	3
Epidemic diarrhœa								20	20
Dysentery	1	37	26	8		1	3	68	106
Malarial intermittent fever	15	384	367	18	2	2	10	732	1,131
Malarial remittent fever	6	117	112	4	1	2	4	30	153
Malarial cachexia		9	6	2			1	46	55
Erysipelas:									
Simple		8	7	1				6	14
Phlegmonous		3	2				1	1	4
Septicæmia								1	1
Syphilis:									
Primary	5	81	42	38	2		4	88	174
Secondary	7	106	9	91	4	1	8	378	491
Gonorrhœa	1	21	19	1	1		1	655	677
Effects of excessive exertion		2		2					2
Animal parasites		2	2					1	3
Scurvy	1	4	2	3				2	7
Alcoholism	1	18	18	1				17	36
Delirium tremens		2	1			1			2
Testicle retained in inguinal canal								1	1
Debility		4	3		1			83	87
Rheumatic fever	2	23	15	9	1			22	47
Rheumatism	16	184	129	54	3		14	599	799
Osteoarthritis	1	1	2					2	4
Nonmalignant new growth		7	2	3	1		1	25	32
Malignant new growth								2	2
Tubercle	9	55		32	4	17	11	55	119
Scrofula	1	3	1	3				14	18
Anæmia								2	2
Diabetes mellitus		1		1					1
Local diseases	**64**	**756**	**512**	**186**	**22**	**31**	**69**	**3,221**	**4,041**
DISEASES OF THE NERVOUS SYSTEM	6	29	10	11	2	6	8	171	206
Congestion of cerebrum								3	3
Hemorrhage, cerebral		1				1			1
Anæmia, cerebral								1	1
Spinal meningitis		1		1					1
Myelitis	1	3		1		1	2		4
Neuritis								4	4
Softening of brain or cord								2	2
Locomotor ataxy	1	1			1		1	3	5
Apoplexy		1				1			1
Paralysis		1		1					1
Hemiplegia	1	5		2		1	3	7	13
Paraplegia	2	2	1		1		2		4
Local paralysis		1		1				1	2
Eclampsia								1	1
Spasm of muscle								2	2
Wry neck								2	2
Neuralgia		2	2					76	78
Facial		4	4					32	36
Sciatica		2	1	1				5	7
Vertigo	1			1				4	5
Megrim								14	14
Epilepsy		5	2	3				13	18
Hysteria								1	1
MENTAL DISEASES	22	11	6			2	25	1	34
Insanity		1	1						1
Mania	12	3	3			1	11		15
Melancholia	8	6	2			1	11		14
Dementia	2						2	1	3
General paralysis of the insane		1					1		1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

SOUTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE EYE	.....	22	14	5	1	.....	2	71	93
Ecchymosis of the conjunctiva	.....	1	1	.....	.....	.....	.....	.....	1
Conjunctivitis	.....	7	6	1	.....	.....	.....	41	48
Pterygium	.....	1	.....	1	.....	.....	.....	5	6
Keratitis	.....	1	1	.....	.....	.....	.....	6	7
Ulcer of cornea	.....	2	2	.....	.....	.....	.....	2	4
Hydrophthalmos anterior	.....	.....	.....	.....	.....	.....	.....	1	1
Iritis	.....	4	3	1	.....	.....	.....	6	10
Choroiditis	.....	1	.....	.....	.....	.....	1	1	2
Atrophy of optic disc or papilla	.....	.....	.....	.....	.....	.....	.....	1	1
Cataract	.....	2	.....	.....	1	.....	1	.....	2
Night-blindness	.....	1	.....	1	.....	.....	.....	1	2
Day-blindness	.....	1	1	.....	.....	.....	.....	.....	1
Amblyopia	.....	1	.....	1	.....	.....	.....	.....	1
Dacryocistitis	.....	.....	.....	.....	.....	.....	.....	2	2
Blepharitis	.....	.....	.....	.....	.....	.....	.....	1	1
Stye	.....	.....	.....	.....	.....	.....	.....	3	3
Chalazion	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE EAR	.....	4	3	1	.....	.....	.....	27	31
Inflammation of the external meatus, acute	.....	2	2	.....	.....	.....	.....	4	6
Abscess of the external meatus	.....	.....	.....	.....	.....	.....	.....	1	1
Accumulation of wax	.....	.....	.....	.....	.....	.....	.....	8	8
Inflammation of the middle ear	.....	1	.....	1	.....	.....	.....	8	9
Ulceration of membrana tympani	.....	1	1	.....	.....	.....	.....	1	2
Obstruction of Eustachian tube	.....	.....	.....	.....	.....	.....	.....	1	1
Perforation of membrana tympani	.....	.....	.....	.....	.....	.....	.....	3	3
Tinnitus	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE NOSE	.....	.....	.....	.....	.....	.....	.....	34	34
Inflammation	.....	.....	.....	.....	.....	.....	.....	1	1
Nasal catarrh	.....	.....	.....	.....	.....	.....	.....	31	31
Ulceration	.....	.....	.....	.....	.....	.....	.....	1	1
Ozæna	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE CIRCULATORY SYSTEM	1	27	5	14	2	7	1	80	108
Endocarditis	.....	3	1	2	.....	.....	.....	.....	3
Valvular disease:									
Aortic	.....	2	.....	1	1	.....	.....	2	4
Mitral	1	14	.....	8	1	5	1	45	60
Hypertrophy of heart	.....	.....	.....	.....	.....	.....	.....	2	2
Degeneration of heart, fatty	.....	.....	.....	.....	.....	.....	.....	2	2
Angina pectoris	.....	1	1	.....	.....	.....	.....	1	2
Palpitation and irregular action of heart	.....	.....	.....	.....	.....	.....	.....	15	15
Aneurism of arteries	.....	4	1	2	.....	2	.....	6	10
Varix	.....	3	2	1	.....	.....	.....	6	9
Varicose aneurism	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE RESPIRATORY SYSTEM	2	134	87	31	7	8	2	616	752
Hay asthma	.....	.....	.....	.....	.....	.....	.....	1	1
Laryngitis:									
Acute	.....	2	1	1	.....	.....	.....	8	10
Chronic	.....	1	.....	1	.....	.....	.....	.....	1
Catarrhal	.....	1	.....	1	.....	.....	.....	4	5
Bronchitis:									
Acute	.....	42	30	9	3	.....	.....	453	495
Chronic	1	10	4	5	2	.....	.....	55	66
Catarrhal	.....	16	15	1	.....	.....	.....	61	77
Spasmodic asthma	1	8	2	6	.....	1	.....	15	24
Passive congestion of lung	.....	3	1	.....	1	1	.....	1	4
Hemorrhage of lung	.....	.....	.....	.....	.....	.....	.....	1	1
Pneumonia	.....	26	18	2	.....	6	.....	1	27
Pneumonic phthisis, chronic	.....	5	1	2	1	.....	1	2	7
Hydrothorax	.....	1	.....	1	.....	.....	.....	.....	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

SOUTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE RESPIRATORY SYSTEM—Continued.									
Pleurisy:									
Acute	.....	16	14	2	.....	.....	.....	8	24
Chronic	.....	2	.....	1	.....	.....	1	6	8
Empyema	.....	1	1	.....	.....	.....	.....	.....	1
DISEASES OF THE DIGESTIVE SYSTEM	4	144	106	32	1	4	5	1,119	1,267
Stomatitis	.....	1	1	.....	.....	.....	.....	5	6
Caries of dentine and cementum	.....	.....	.....	.....	.....	.....	.....	57	57
Inflammation of dental periosteum	1	.....	1	.....	.....	.....	.....	.....	1
Abscess of dental periosteum	.....	1	.....	.....	.....	.....	1	8	9
Ulceration of gums and alveoli	.....	.....	.....	.....	.....	.....	.....	1	1
Caries of the alveoli	.....	.....	.....	.....	.....	.....	.....	1	1
Toothache	.....	.....	.....	.....	.....	.....	.....	10	10
Inflammation of the tongue	.....	1	.....	.....	.....	.....	1	1	2
Ulcer of the tongue	.....	.....	.....	.....	.....	.....	.....	2	2
Hypertrophy of tonsils	.....	.....	.....	.....	.....	.....	.....	2	2
Elongated uvula	.....	.....	.....	.....	.....	.....	.....	1	1
Sore throat	.....	.....	.....	.....	.....	.....	.....	51	51
Quinsy	.....	10	8	2	.....	.....	.....	13	23
Follicular tonsilitis	.....	20	14	5	1	.....	.....	37	57
Abscess of salivary glands	.....	1	1	.....	.....	.....	.....	.....	1
Salivation	.....	.....	.....	.....	.....	.....	.....	1	1
Follicular inflammation of the pharynx	.....	1	1	.....	.....	.....	.....	36	37
Hemorrhage of the stomach	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of the stomach	.....	6	2	3	.....	1	.....	34	40
Dyspepsia	.....	8	6	2	.....	.....	.....	288	296
Gastrodynia	.....	.....	.....	.....	.....	.....	.....	13	13
Inflammation of the intestines:									
Catarrhal	.....	4	4	.....	.....	.....	.....	11	15
Ulcerative	.....	4	3	.....	.....	1	.....	3	7
Abscess in the subperitoneal tissue	.....	1	1	.....	.....	.....	.....	.....	1
Hernia	.....	5	2	3	.....	.....	.....	88	93
Diarrhœa	1	39	31	5	.....	2	2	234	274
Constipation	.....	4	4	.....	.....	.....	.....	123	127
Colic	.....	6	6	.....	.....	.....	.....	9	15
Hemorrhage of the rectum	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of the rectum	.....	2	1	1	.....	.....	.....	.....	2
Abscess of the anus	.....	1	1	.....	.....	.....	.....	.....	1
Piles:									
Internal	.....	5	5	.....	.....	.....	.....	21	26
External	.....	4	3	1	.....	.....	.....	23	27
Fistula in ano	.....	1	1	.....	.....	.....	.....	3	4
Fissure of the anus	.....	.....	.....	.....	.....	.....	.....	1	1
Pruritus ani	.....	.....	.....	.....	.....	.....	.....	3	3
Hypertrophy of the liver	.....	.....	.....	.....	.....	.....	.....	1	1
Congestion of the liver	.....	2	1	1	.....	.....	.....	20	22
Hepatitis	1	3	2	1	.....	.....	1	8	12
Cirrhosis of liver	.....	7	.....	7	.....	.....	.....	2	9
Abscess of liver	.....	1	1	.....	.....	.....	.....	.....	1
Jaundice	.....	3	3	.....	.....	.....	.....	4	7
Inflammation of hepatic ducts and gall bladder	.....	.....	.....	.....	.....	.....	.....	1	1
Obstruction of hepatic ducts and gall bladder	.....	1	1	.....	.....	.....	.....	.....	1
Biliary colic	.....	2	2	.....	.....	.....	.....	1	3
Ascites	1	.....	.....	1	.....	.....	.....	.....	1
DISEASES OF THE LYMPHATIC SYSTEM	7	85	63	24	1	.....	4	117	209
Induration and enlargement of spleen from ague	.....	.....	.....	.....	.....	.....	.....	1	1
Hypertrophy of lymph glands	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of lymph vessels	.....	1	.....	1	.....	.....	.....	2	3
Inflammation of lymph glands	4	57	40	16	1	.....	4	86	147
Suppuration of lymph glands	3	27	23	7	.....	.....	.....	26	56

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

SOUTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE URINARY SYSTEM	7	29	18	9	1	3	5	90	126
Acute nephritis	.....	5	1	2	1	1	.....	5	10
Bright's disease	2	5	.....	3	.....	2	2	6	13
Pyelitis	.....	.....	.....	.....	.....	.....	.....	1	1
Calculus in kidney	.....	.....	.....	.....	.....	.....	.....	1	1
Calculus in ureter	.....	1	1	.....	.....	.....	.....	.....	1
Nephralgia	.....	.....	.....	.....	.....	.....	.....	1	1
Hæmaturia	1	.....	1	.....	.....	.....	.....	5	6
Lithuria	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of bladder:									
Acute	1	12	10	3	.....	.....	.....	44	57
Subacute	.....	2	2	.....	.....	.....	.....	7	9
Chronic	3	1	.....	1	.....	.....	3	6	10
Irritability of bladder	.....	.....	.....	.....	.....	.....	.....	6	6
Retention of urine	.....	2	2	.....	.....	.....	.....	2	4
Incontinence of urine	.....	1	1	.....	.....	.....	.....	4	5
DISEASES OF THE GENERATIVE SYSTEM	2	124	92	25	5	.....	4	388	514
Urethritis	.....	2	2	.....	.....	.....	.....	7	9
Gleet	.....	.....	.....	.....	.....	.....	.....	13	13
Stricture of urethra, organic	.....	23	10	9	2	.....	2	43	66
Urinary fistula	.....	2	1	.....	.....	.....	1	.....	2
Hypertrophy of prostate gland	.....	.....	.....	.....	.....	.....	.....	1	1
Acute inflammation of prostate gland	.....	1	.....	.....	1	.....	.....	1	2
Œdema of the penis	.....	2	1	1	.....	.....	.....	.....	2
Inflammation of glans penis	.....	2	2	.....	.....	.....	.....	9	11
Ulcer of penis	1	41	35	5	2	.....	.....	219	261
Phimosis	.....	2	1	1	.....	.....	.....	2	4
Paraphimosis	.....	.....	.....	.....	.....	.....	.....	3	3
Inflammation of spermatic cord	.....	1	1	.....	.....	.....	.....	.....	1
Varicocele	.....	.....	.....	.....	.....	.....	.....	12	12
Hydrocele of tunica vaginalis	.....	6	5	.....	.....	.....	1	16	22
Orchitis:									
Acute	1	27	22	6	.....	.....	.....	27	55
Chronic	.....	1	1	.....	.....	.....	.....	5	6
Epididymitis	.....	12	10	2	.....	.....	.....	16	28
Abscess of testicle	.....	1	1	.....	.....	.....	.....	.....	1
Spermatorrhœa	.....	.....	.....	.....	.....	.....	.....	3	3
Impotence	.....	.....	.....	.....	.....	.....	.....	3	3
Dysmenorrhœa	.....	.....	.....	.....	.....	.....	.....	6	6
Menorrhagia	.....	1	.....	1	.....	.....	.....	1	2
Inflammation of the male breast	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE ORGANS OF LOCOMOTION	5	20	11	9	.....	2	3	50	75
Ostitis	2	3	1	2	.....	1	1	4	9
Periostitis	.....	3	2	.....	.....	.....	1	1	4
Caries	.....	.....	.....	.....	.....	.....	.....	1	1
Necrosis	1	4	3	2	.....	.....	.....	5	10
Dropsy of joints	.....	1	1	.....	.....	.....	.....	.....	1
Synovitis, acute	1	4	2	2	.....	.....	1	4	9
Abscess of joints	1	.....	.....	.....	.....	1	.....	.....	1
Ankylosis	.....	3	.....	3	.....	.....	.....	1	4
Inflammation of muscles	.....	.....	.....	.....	.....	.....	.....	22	22
Inflammation of tendons	.....	1	1	.....	.....	.....	.....	1	2
Inflamed bursa	.....	.....	.....	.....	.....	.....	.....	5	5
Bursal abscess	.....	1	1	.....	.....	.....	.....	.....	1
Thecal abscess	.....	.....	.....	.....	.....	.....	.....	1	1
Bunion	.....	.....	.....	.....	.....	.....	.....	3	3
Ganglion	.....	.....	.....	.....	.....	.....	.....	2	2
DISEASES OF THE CONNECTIVE TISSUE	4	36	30	6	.....	.....	4	52	92
Œdema	.....	.....	.....	.....	.....	.....	.....	4	4
Inflammation	2	13	12	2	.....	.....	1	16	31
Abscess	2	23	18	4	.....	.....	3	32	57

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

SOUTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE SKIN:	4	84	61	19	1	1	6	337	425
Erythema								8	8
Roseola		1	1					2	3
Urticaria								12	12
Eczema		4	1	3				83	87
Impetigo								3	3
Ecthyma								1	1
Pityriasis								1	1
Prurigo		1		1				1	2
Lichen								6	6
Psoriasis								1	1
Herpes								10	10
Zona								1	1
Pemphigus								2	2
Acne								7	7
Sycosis								4	4
Ichthyosis								1	1
Frostbite		8	6	1			1	6	14
Ulcer	3	23	10	12			4	75	101
Fissures								4	4
Boil	1	26	27					74	101
Carbuncle		7	6			1		5	12
Whitlow		13	9	2	1		1	22	35
Onychia		1	1					1	2
Corn								1	1
Lupus								1	1
Wen								5	5
PARASITIC DISEASES OF THE SKIN		7	6		1			68	75
Ringworm		1	1					6	7
Itch								54	54
Phthiriasis								6	6
Irritation by stinging insects		1	1					1	2
Unclassified		5	4		1			1	6
Poisons		**2**	**2**					**2**	**4**
Metals and their salts		1	1					1	2
Vegetable poisons		1	1					1	2
POISONED WOUNDS								1	1
Venomous animals								1	1
Injuries	**10**	**257**	**213**	**38**	**4**	**5**	**7**	**410**	**677**
GENERAL INJURIES	1	24	21	3		1		34	59
Burns and scalds		14	10	3		1		25	39
Effects of cold								8	8
Heat stroke	1	2	3					1	4
Multiple injury		3	3						3
Exhaustion		5	5						5
LOCAL INJURIES	9	233	192	35	4	4	7	376	618
Strain of muscles		3	2				1	29	32
Abrasion of skin								4	4
Foreign body in subcutaneous tissue								5	5
Contusion of scalp								1	1
Scalp wound:									
Bone not exposed		15	14	1				12	27
Bone exposed								2	2
Fracture of the vault of the skull		2	1			1			2
Concussion of brain		1	1					1	2
Contusion of face		3	2				1	6	9
Wound of face and mouth		7	6	1				18	25
Fracture of facial bones								2	2
Contusion of the eye		2	1				1	1	3

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

SOUTH ATLANTIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Foreign body in cornea or conjunctiva								6	6
Wound of eyelid								3	3
Wound of the sclerotic								1	1
Wound of the cornea		1	1					2	3
Rupture of membrana tympani								1	1
Foreign body in external meatus								1	1
Wound of neck		4	1	2		1			4
Foreign body in the œsophagus		1	1					2	3
Contusion of the chest		9	8				1	17	26
Dislocation of costal cartilages		1		1					1
Fracture of the ribs	1	5	2	3		1		3	9
Wound of parietes of chest								1	1
Contusion of back		5	5					13	18
Sprain of back		2	2					5	7
Wound of back		2	1			1			2
Contusion of abdomen		1	1					1	2
Wound of the urethra, perineum, scrotum, and penis		2	1	1				1	3
Rupture of urethra		1		1					1
Contusion of testicle								1	1
Contusion of upper extremities	1	6	5	2				30	37
Sprain of the shoulder		1	1					4	5
Sprain of the elbow		1	1					6	7
Sprain of the wrist		2	2					11	13
Sprain of the fingers		2	2					3	5
Wound of the upper extremities		74	62	11	1			102	176
Wound of joint, upper extremities		1	1						1
Fracture of the clavicle								1	1
Fracture of the scapula		2	1	1					2
Fracture of the humerus	1	3	3		1				4
Fracture of the radius		1		1				1	2
Fracture of the ulna	1	3	3				1	1	5
Fracture of both bones of forearm	1	2	2	1					3
Fracture of carpus, metacarpus, and phalanges	1	2	2	1				2	5
Dislocation of the clavicle								1	1
Dislocation of the humerus		1	1					2	3
Dislocation of the radius		1	1						1
Dislocation of the ulna		1		1					1
Dislocation of the carpus		1	1						1
Contusion of the lower extremities		13	13					28	41
Sprain of the knee		2	1		1			5	7
Sprain of the ankle		14	11	3				10	24
Sprain of the foot		1	1						1
Wound of the lower extremities		21	18	2			1	29	50
Fracture of femur	1	3	2	2					4
Fracture of patella		1	1						1
Fracture of leg, both bones	2	6	6		1		1	1	9
Fracture of fibula alone		1	1						1
AMPUTATIONS		1	1					1	2
Amputation of leg		1	1					1	2

THE GULF.

TOTAL CASES	59	1,345	785	474	31	51	63	3,961	5,365
General Diseases	21	720	438	249	8	20	26	1,769	2,510
Measles								1	1
Influenza		52	41	9		2		197	249

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
General Diseases.									
Mumps	.....	2	1	1	.....	.....	.....	5	7
Diphtheria	.....	1	1	.....	.....	.....	.....	.....	1
Simple continued fever	.....	2	2	.....	.....	.....	.....	1	3
Enteric fever	.....	3	1	.....	.....	.....	2	.....	3
Typhomalarial fever	.....	2	1	1	.....	1	.....	.....	2
Sporadic cholera	.....	2	1	.....	.....	.....	.....	2	4
Dysentery	1	27	15	10	.....	3	.....	39	67
Malarial intermittent fever	3	199	179	13	1	3	6	407	609
Malarial remittent fever	1	44	40	3	1	1	.....	63	108
Malarial cachexia	1	16	11	6	.....	.....	.....	52	69
Phagedæna	.....	1	.....	.....	.....	.....	1	.....	1
Erysipelas:									
Simple	.....	5	3	1	.....	1	.....	5	10
Phlegmonous	.....	1	.....	1	.....	.....	.....	.....	1
Septicæmia	.....	.....	.....	.....	.....	.....	.....	1	1
Syphilis:									
Primary	3	53	27	27	1	.....	1	52	108
Secondary	4	133	14	112	2	2	7	226	363
Gonorrhœa	1	43	28	12	.....	.....	4	340	384
Animal parasites	.....	1	1	.....	.....	.....	.....	9	10
Scurvy	.....	1	1	.....	.....	.....	.....	.....	1
Alcoholism	.....	6	2	3	1	.....	.....	10	16
Delirium tremens	.....	1	1	.....	.....	.....	.....	.....	1
Debility	1	6	2	4	.....	1	.....	25	32
Rheumatic fever	.....	19	15	3	.....	1	.....	12	31
Rheumatism	2	70	47	22	.....	.....	3	262	334
Gout	.....	.....	.....	.....	.....	.....	.....	1	1
Osteoarthritis	.....	1	.....	1	.....	.....	.....	.....	1
Nonmalignant new growth	1	4	2	3	.....	.....	.....	17	22
Malignant new growth	.....	1	.....	1	.....	.....	.....	1	2
Tubercle	3	18	.....	12	2	5	2	24	45
Scrofula	.....	.....	.....	.....	.....	.....	.....	1	1
Anæmia	.....	4	2	2	.....	.....	.....	13	17
Diabetes mellitus	.....	2	.....	2	.....	.....	.....	3	5
Local Diseases	**29**	**451**	**229**	**181**	**21**	**22**	**27**	**1,848**	**2,328**
DISEASES OF THE NERVOUS SYSTEM	5	28	12	10	1	5	5	127	160
Hemorrhage, cerebral	.....	2	.....	1	.....	1	.....	.....	2
Inflammation of brain and its membranes	.....	1	.....	.....	.....	1	.....	.....	1
Abscess of the brain	.....	2	.....	.....	.....	2	.....	.....	2
Sclerosis	.....	.....	.....	.....	.....	.....	.....	2	2
Locomotor ataxy	2	.....	.....	.....	.....	.....	2	1	3
Apoplexy	.....	1	.....	.....	.....	1	.....	.....	1
Hemiplegia	.....	2	.....	1	.....	.....	1	.....	2
Local paralysis	.....	2	1	1	.....	.....	.....	4	6
Glosso-labio-pharyngeal paralysis	1	.....	.....	.....	1	.....	.....	.....	1
Toxic paralysis	1	.....	.....	.....	.....	.....	1	2	3
Spasm of muscle	.....	.....	.....	.....	.....	.....	.....	2	2
Wry neck	.....	.....	.....	.....	.....	.....	.....	1	1
Paralysis agitans	.....	1	1	.....	.....	.....	.....	.....	1
Aphasia	.....	1	.....	1	.....	.....	.....	.....	1
Hyperæsthesia	.....	.....	.....	.....	.....	.....	.....	2	2
Neuralgia	1	9	7	3	.....	.....	.....	84	94
Facial	.....	1	.....	1	.....	.....	.....	15	16
Sciatica	.....	4	1	2	.....	.....	1	10	14
Vertigo	.....	.....	.....	.....	.....	.....	.....	3	3
Megrim	.....	1	1	.....	.....	.....	.....	1	2
Epilepsy	.....	1	1	.....	.....	.....	.....	.....	1
MENTAL DISEASES	3	4	.....	3	.....	.....	4	2	9
Hypochondriasis	.....	1	.....	1	.....	.....	.....	2	3
Insanity	1	.....	.....	.....	.....	.....	1	.....	1
Mania	.....	1	.....	.....	.....	.....	1	.....	1
Melancholia	1	.....	.....	1	.....	.....	.....	.....	1
Dementia	1	2	.....	1	.....	.....	2	.....	3

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE EYE	2	10	5	4	3	.....	.....	38	50
Conjunctivitis	2	2	2	1	1	.....	.....	30	34
Pterygium	.....	.....	.....	.....	.....	.....	.....	1	1
Keratitis	.....	4	1	2	1	.....	.....	.....	4
Iritis	.....	.....	.....	.....	.....	.....	.....	2	2
Atrophy of optic disc or papilla	.....	1	.....	.....	1	.....	.....	.....	1
Cataract	.....	1	.....	1	.....	.....	.....	1	2
Ametropia	.....	.....	.....	.....	.....	.....	.....	1	1
Night-blindness	.....	1	1	.....	.....	.....	.....	.....	1
Day-blindness	.....	1	1	.....	.....	.....	.....	.....	1
Blepharitis	.....	.....	.....	.....	.....	.....	.....	3	3
DISEASES OF THE EAR	.....	4	3	1	.....	.....	.....	17	21
Inflammation of the external meatus, acute	.....	.....	.....	.....	.....	.....	.....	4	4
Abscess of the external meatus	.....	1	1	.....	.....	.....	.....	1	2
Accumulation of wax	.....	.....	.....	.....	.....	.....	.....	4	4
Inflammation of the middle ear	.....	3	2	1	.....	.....	.....	7	10
Tinnitus	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE NOSE	.....	1	.....	1	.....	.....	.....	29	30
Hypertrophy	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation	.....	.....	.....	.....	.....	.....	.....	1	1
Nasal catarrh	.....	.....	.....	.....	.....	.....	.....	27	27
Ozæna	.....	1	.....	1	.....	.....	.....	.....	1
DISEASES OF THE CIRCULATORY SYSTEM	2	14	.....	13	1	1	1	56	72
Pericarditis	.....	.....	.....	.....	.....	.....	.....	3	3
Valvular disease:									
Aortic	1	5	.....	5	.....	.....	1	9	15
Mitral	.....	6	.....	5	.....	1	.....	24	30
Dilatation of heart	.....	.....	.....	.....	.....	.....	.....	1	1
Palpitation and irregular action of heart	.....	1	.....	1	.....	.....	.....	15	16
Aneurism of arteries	1	2	.....	2	1	.....	.....	1	4
Varix	.....	.....	.....	.....	.....	.....	.....	3	3
DISEASES OF THE RESPIRATORY SYSTEM	2	96	60	25	4	9	.....	276	374
Laryngitis, acute	.....	2	1	1	.....	.....	.....	.....	2
Bronchitis:									
Acute	.....	43	29	11	2	1	.....	214	257
Chronic	.....	8	4	3	.....	1	.....	19	27
Catarrhal	.....	4	1	2	1	.....	.....	13	17
Spasmodic asthma	1	3	1	3	.....	.....	.....	9	13
Pneumonia	.....	24	18	2	.....	4	.....	3	27
Cirrhosis of lung	.....	1	.....	1	.....	.....	.....	2	3
Pneumonic phthisis, chronic	1	2	.....	1	.....	2	.....	1	4
Emphysema	.....	.....	.....	.....	.....	.....	.....	1	1
Hydrothorax	.....	1	.....	.....	.....	1	.....	.....	1
Pleurisy:									
Acute	.....	6	5	.....	1	.....	.....	7	13
Chronic	.....	2	1	1	.....	.....	.....	6	8
Adhesions of pleura	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE DIGESTIVE SYSTEM	5	99	58	33	3	3	7	631	735
Ulcer of the lips	.....	.....	.....	.....	.....	.....	.....	1	1
Stomatitis	.....	.....	.....	.....	.....	.....	.....	6	6
Ulcerative stomatitis	.....	.....	.....	.....	.....	.....	.....	1	1
Caries of dentine and cementum	.....	.....	.....	.....	.....	.....	.....	10	10
Abscess of dental periosteum	.....	1	1	.....	.....	.....	.....	5	6
Inflammation of gums and alveoli	.....	.....	.....	.....	.....	.....	.....	1	1
Ulceration of gums and alveoli	.....	.....	.....	.....	.....	.....	.....	1	1
Caries of the alveoli	.....	.....	.....	.....	.....	.....	.....	9	9
Toothache	.....	.....	.....	.....	.....	.....	.....	10	10
Inflammation of the tongue	.....	.....	.....	.....	.....	.....	.....	1	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Ulcer of the tongue								2	2
Sore throat		1	1					19	20
Quinsy		3	2	1				9	12
Follicular tonsilitis		3	3					10	13
Ulceration of fauces								1	1
Salivation		2	1					2	4
Follicular inflammation of the pharynx		1	1					10	11
Inflammation of the stomach		3	2	1				7	10
Ulceration of the stomach		1	1						1
Dilatation of the stomach		1		1					1
Dyspepsia		7	3	4				134	141
Vomiting		1	1					1	2
Inflammation of the intestines:									
Catarrhal		3	2					8	11
Ulcerative		1							1
Perforation of intestines		1				1			1
Fistula of intestines								1	1
Hernia		3		3				73	76
Diarrhœa	4	37	27	9		1		114	155
Constipation		1		1				131	132
Colic		2	2					22	24
Ulceration of the rectum		2		1	1			1	3
Ulceration of the anus								1	1
Piles:									
Internal		5	2	2	1			6	11
External		2		2				8	10
Fistula in ano		3	1	2				1	4
Hypertrophy of the liver		1		1				2	3
Atrophy of the liver								1	1
Congestion of the liver	1	3	3			1		1	5
Hepatitis		2	1		1				2
Cirrhosis of liver		5		5				4	9
Jaundice		3	3					12	15
Inflammation of hepatic ducts and gall bladder								1	1
Gallstones		1	1					1	2
Ascites								3	3
DISEASES OF THE LYMPHATIC SYSTEM	4	27	19	9	1		2	74	105
Hypertrophy of lymph glands								1	1
Inflammation of lymph vessels	1		1						1
Inflammation of lymph glands	2	19	14	5			2	48	69
Suppuration of lymph glands	1	8	4	4	1			25	34
DISEASES OF THE URINARY SYSTEM		12	4	5		2	1	28	40
Acute nephritis		2	2						2
Bright's disease		5		2		2	1	6	11
Inflammation of bladder:									
Acute		2		2				5	7
Chronic		1	1					9	10
Irritability of bladder		2	1	1				8	10
DISEASES OF THE GENERATIVE SYSTEM	2	86	29	48	3	2	6	275	363
Urethritis		1		1				6	7
Gleet								4	4
Stricture of urethra, organic	1	19	6	13		1		13	33
Urinary fistula		1			1				1
Hypertrophy of prostate gland		1		1					1
Chronic inflammation of prostate gland								1	1
Abscess of prostate gland		1				1			1
Inflammation of glans penis								10	10

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE GENERATIVE SYSTEM—Continued.									
Ulcer of penis	1	52	17	29	1		6	191	244
Phimosis								2	2
Paraphimosis		2	1	1					2
Abscess of the scrotum								1	1
Pruritis of the scrotum								2	2
Hydrocele of spermatic cord								2	2
Varicocele		1		1				3	4
Hydrocele of tunica vaginalis								2	2
Orchitis:									
Acute		2	2					19	21
Chronic								6	6
Epididymitis		5	3	2				7	12
Abscess of testicle								1	1
Spermatorrhœa								4	4
Inflammation of the uterus		1			1			1	2
DISEASES OF THE ORGANS OF LOCOMOTION	1	5	3	3				11	17
Periostitis		1		1				1	2
Caries		1	1					1	2
Synovitis:									
Acute		2	1	1				4	6
Chronic		1	1					1	2
Abscess of joints								1	1
Ankylosis	1			1					1
Adhesion of tendons								1	1
Ganglion								1	1
Bursal tumor								1	1
DISEASES OF THE CONNECTIVE TISSUE	1	22	17	4	2			30	53
Œdema		5	5					5	10
Inflammation	1	17	12	4	2			25	43
DISEASES OF THE SKIN	2	40	18	21	2		1	220	262
Erythema								1	1
Roseola								1	1
Urticaria								5	5
Eczema		1		1				36	37
Pityriasis								1	1
Prurigo								5	5
Lichen								7	7
Psoriasis								2	2
Herpes								5	5
Zona		4	3	1				3	7
Pemphigus								2	2
Sycosis								1	1
Chilblain								3	3
Frostbite		3	2		1			38	41
Ulcer	1	22	8	14			1	41	64
Cicatrices		1		1					1
Fissures								1	1
Boil		2	2					35	37
Carbuncle		2	1	1				5	7
Whitlow	1	5	2	3	1			21	27
Onychia								2	2
Pruritus								3	3
Hyperidrosis								2	2
PARASITIC DISEASES OF THE SKIN		3	1	1	1			34	37
Ringworm								10	10
Tinea versicolor								2	2
Itch		1	1	1				22	23
Phthiriasis		1							1
Unclassified		1			1				1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Poisons		**2**	**2**					**8**	**10**
Metals and their salts								1	1
Organic substances								1	1
Vegetable poisons		2	2					6	8
POISONED WOUNDS								1	1
Venomous animals								1	1
Injuries	**9**	**172**	**116**	**44**	**2**	**9**	**10**	**335**	**516**
GENERAL INJURIES	2	13	10	3		2		13	28
Burns and scalds		6	5	1				13	19
Heat stroke	1	2	2			1			3
Multiple injury	1	5	3	2		1			6
LOCAL INJURIES	7	159	106	41	2	7	10	322	488
Rupture of veins		1		1					1
Strain of muscles								2	2
Abrasion of skin		1		1				7	8
Contusion of scalp		3	3					2	5
Scalp wound:									
Bone not exposed		3	1	1			1	13	16
Bone exposed		3	2			1		8	11
Contusion of skull								2	2
Fracture of the vault of the skull	1					1			1
Fracture of the base of the skull		1				1			1
Concussion of brain		3	1	1		1			3
Contusion of face								6	6
Wound of face and mouth		4	2		1		1	4	8
Contusion of the eye		2	2					2	4
Contusion of the eye with rupture of sclerotic								1	1
Foreign body in cornea or conjunctiva		1	1					3	4
Wound of pinna								1	1
Contusion of soft parts of neck								1	1
Wound of neck		1		1					1
Foreign body in the pharynx								1	1
Contusion of the chest		13	9	4				20	33
Fracture of the ribs		3	3					3	6
Wound of parietes of chest		2	1	1					2
Perforating wound of chest		1				1			1
Contusion of back		8	7	1				10	18
Sprain of back		1	1					21	22
Wound of spine		1		1					1
Concussion of cord		1	1						1
Compression of cord without fracture		1				1			1
Contusion of abdomen								1	1
Wound of parietes of abdomen		1					1	1	2
Contusion of the urethra, perineum, scrotum, and penis								4	4
Fracture and dislocation of pelvis		1	1						1
Contusion of upper extremities		7	4	2			1	28	35
Sprain of the shoulder		2	2					5	7
Sprain of the elbow								3	3
Sprain of the wrist		1		1				10	11
Sprain of the fingers								1	1
Wound of the upper extremities		19	10	8			1	71	90
Fracture of the clavicle		2	2					2	4
Fracture of the scapula		1	1						1
Fracture of the radius		2		2				3	5
Fracture of the ulna		1		1					1
Fracture of both bones of forearm		4	3				1	2	6
Fracture of carpus, metacarpus, and phalanges		3	1	1			1	8	11
Dislocation of the clavicle		1					1		1
Dislocation of the carpus		1		1					1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE GULF.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Dislocation of the metacarpus	.....	1	.....	.....	1	.....	.....	.....	1
Contusion of the lower extremities	.....	16	15	1	.....	.....	.....	31	47
Sprain of the hip	.....	1	1	.....	.....	.....	.....	.....	1
Sprain of the knee	.....	1	.....	1	.....	.....	.....	6	7
Sprain of the ankle	.....	9	6	3	.....	.....	.....	9	18
Sprain of the foot	.....	.....	.....	.....	.....	.....	.....	1	1
Wound of the lower extremities	3	16	14	5	.....	.....	.....	28	47
Wound of joint, lower extremities	1	.....	1	.....	.....	.....	.....	.....	1
Fracture of femur	.....	1	.....	.....	.....	.....	1	.....	1
Fracture of leg, both bones	.....	6	6	.....	.....	.....	.....	1	7
Fracture of tibia alone	.....	1	1	.....	.....	.....	.....	.....	1
Fracture of fibula alone	1	3	2	1	.....	.....	1	.....	4
Fracture of metatarsus	.....	1	.....	.....	.....	1	.....	.....	1
Fracture of phalanges of toes	1	.....	1	.....	.....	.....	.....	.....	1
Dislocation of the femur at the hip	.....	2	1	1	.....	.....	.....	.....	2
Dislocation of the metatarsus and phalanges	.....	1	.....	1	.....	.....	.....	.....	1

THE OHIO.

TOTAL CASES	76	1,542	1,085	422	34	25	52	3,796	5,414
General Diseases	34	718	430	268	19	13	22	1,825	2,577
Chickenpox	1	1	2	.....	.....	.....	.....	.....	2
Measles	1	.....	1	.....	.....	.....	.....	.....	1
Influenza	1	81	77	5	.....	.....	.....	125	207
Mumps	.....	19	18	1	.....	.....	.....	10	29
Simple continued fever	.....	1	1	.....	.....	.....	.....	.....	1
Enteric fever	1	11	8	.....	.....	4	.....	.....	12
Sporadic cholera	.....	.....	.....	.....	.....	.....	.....	3	3
Dysentery	1	22	20	1	.....	.....	2	21	44
Malarial intermittent fever	2	109	100	8	.....	.....	3	238	349
Malarial remittent fever	.....	14	14	.....	.....	.....	.....	8	22
Malarial cachexia	.....	2	2	.....	.....	.....	.....	62	64
Erysipelas, simple	1	2	3	.....	.....	.....	.....	1	4
Syphilis:									
Primary	1	23	14	7	1	.....	2	42	66
Secondary	11	157	3	157	4	.....	4	474	642
Gonorrhœa	3	31	23	10	.....	.....	1	340	374
Animal parasites	.....	1	1	.....	.....	.....	.....	.....	1
Effects of excessive venery	.....	.....	.....	.....	.....	.....	.....	1	1
Alcoholism	.....	22	19	3	.....	.....	.....	12	34
Delirium tremens	.....	3	3	.....	.....	.....	.....	.....	3
Debility	.....	2	2	.....	.....	.....	.....	58	60
Old age	.....	1	.....	.....	.....	.....	1	.....	1
Rheumatic fever	2	18	13	4	1	.....	2	71	91
Rheumatism	4	123	97	25	2	.....	3	255	382
Nonmalignant new growth	.....	6	4	1	1	.....	.....	13	19
Malignant new growth	.....	3	2	.....	1	.....	.....	3	6
Tubercle	5	62	2	43	9	9	4	64	131
Scrofula	.....	2	.....	2	.....	.....	.....	8	10
Anæmia	.....	1	1	.....	.....	.....	.....	16	17
Diabetes mellitus	.....	1	.....	1	.....	.....	.....	.....	1
Local Diseases	28	614	467	130	14	9	22	1,765	2,407
DISEASES OF THE NERVOUS SYSTEM	1	22	8	10	3	.....	2	65	88
Congestion of cerebrum	.....	.....	.....	.....	.....	.....	.....	1	1
Myelitis	.....	2	.....	.....	1	.....	1	5	7
Neuritis	.....	1	.....	1	.....	.....	.....	1	2
Locomotor ataxy	.....	1	.....	1	.....	.....	.....	1	2

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE OHIO.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE NERVOUS SYSTEM—Continued.									
Apoplexy	.....	1	.....	1	.....	.....	.....	.....	1
Hemiplegia	1	.....	.....	.....	.....	.....	1	.....	1
Local paralysis	.....	.....	.....	.....	.....	.....	.....	1	1
Paralysis agitans	.....	.....	.....	.....	.....	.....	.....	2	2
Neuralgia	.....	1	1	.....	.....	.....	.....	19	20
Neuralgia, facial	.....	6	5	1	.....	.....	.....	7	13
Neuralgia, sciatica	.....	2	2	.....	.....	.....	.....	.....	2
Vertigo	.....	2	.....	2	.....	.....	.....	9	11
Megrim	.....	.....	.....	.....	.....	.....	.....	16	16
Epilepsy	.....	6	.....	4	2	.....	.....	3	9
MENTAL DISEASES	.....	1	.....	.....	1	.....	.....	.....	1
Mania	.....	1	.....	.....	1	.....	.....	.....	1
DISEASES OF THE EYE	1	8	3	6	.....	.....	.....	44	53
Conjunctivitis	1	2	2	1	.....	.....	.....	29	32
Pterygium	.....	.....	.....	.....	.....	.....	.....	3	3
Keratitis	.....	.....	.....	.....	.....	.....	.....	3	3
Iritis	.....	6	1	5	.....	.....	.....	1	7
Glaucoma	.....	.....	.....	.....	.....	.....	.....	2	2
Blepharitis	.....	.....	.....	.....	.....	.....	.....	2	2
Trichiasis	.....	.....	.....	.....	.....	.....	.....	1	1
Chalazion	.....	.....	.....	.....	.....	.....	.....	2	2
Cellulitis of the orbit	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE EAR	.....	5	2	1	.....	1	1	15	20
Inflammation of the external meatus, acute	.....	.....	.....	.....	.....	.....	.....	2	2
Abscess of the external meatus	.....	1	.....	1	.....	.....	.....	.....	1
Accumulation of wax	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of the middle ear	.....	4	2	.....	.....	1	1	7	11
Obstruction of Eustachian tube	.....	.....	.....	.....	.....	.....	.....	2	2
Deafness	.....	.....	.....	.....	.....	.....	.....	2	2
DISEASES OF THE NOSE	.....	1	1	.....	.....	.....	.....	38	39
Nasal catarrh	.....	1	1	.....	.....	.....	.....	38	39
DISEASES OF THE CIRCULATORY SYSTEM	2	19	1	16	1	2	1	54	75
Endocarditis	.....	1	.....	1	.....	.....	.....	.....	1
Valvular disease:									
Aortic	.....	2	.....	1	.....	.....	1	11	13
Mitral	1	9	.....	8	1	1	.....	26	36
Angina pectoris	.....	.....	.....	.....	.....	.....	.....	4	4
Palpitation and irregular action of heart	.....	3	.....	3	.....	.....	.....	10	13
Aneurism of arteries	1	.....	.....	.....	.....	1	.....	1	2
Phlebitis	.....	1	.....	1	.....	.....	.....	.....	1
Varix	.....	3	1	2	.....	.....	.....	2	5
DISEASES OF THE RESPIRATORY SYSTEM	3	102	74	22	5	3	1	348	453
Hay-asthma	.....	.....	.....	.....	.....	.....	.....	1	1
Laryngitis:									
Acute	.....	.....	.....	.....	.....	.....	.....	3	3
Catarrhal	.....	2	.....	1	1	.....	.....	2	4
Ulceration of larynx	.....	1	.....	1	.....	.....	.....	.....	1
Aphonia	.....	.....	.....	.....	.....	.....	.....	1	1
Bronchitis:									
Acute	1	45	39	4	3	.....	.....	225	271
Chronic	.....	8	2	5	1	.....	.....	60	68
Catarrhal	.....	15	12	3	.....	.....	.....	21	36
Spasmodic asthma	.....	1	.....	1	.....	.....	.....	6	7
Hemorrhage of lung	.....	.....	.....	.....	.....	.....	.....	2	2
Pneumonia	.....	16	10	2	.....	3	1	.....	16

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE OHIO.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE RESPIRATORY SYSTEM—Continued.									
Pneumonic phthisis:									
Acute	1	1	.....	2	.....	.....	.....	1	3
Chronic	.....	2	.....	2	.....	.....	.....	11	13
Pleurisy:									
Acute	.....	9	9	.....	.....	.....	.....	7	16
Chronic	1	2	2	1	.....	.....	.....	8	11
DISEASES OF THE DIGESTIVE SYSTEM	10	171	151	23	2	2	3	605	786
Stomatitis	.....	.....	.....	.....	.....	.....	.....	3	3
Caries of dentine and cementum	.....	1	1	.....	.....	.....	.....	13	14
Abscess of dental periosteum	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of gums and alveoli	.....	.....	.....	.....	.....	.....	.....	1	1
Ulceration of gums and alveoli	.....	.....	.....	.....	.....	.....	.....	2	2
Toothache	.....	.....	.....	.....	.....	.....	.....	3	3
Inflammation of the tongue	.....	.....	.....	.....	.....	.....	.....	1	1
Hypertrophy of tonsils	.....	.....	.....	.....	.....	.....	.....	3	3
Sore throat	.....	9	9	.....	.....	.....	.....	58	67
Quinsy	.....	4	4	.....	.....	.....	.....	3	7
Follicular tonsilitis	.....	5	4	1	.....	.....	.....	13	18
Inflammation of salivary glands	.....	1	1	.....	.....	.....	.....	1	2
Follicular inflammation of the pharynx	.....	4	4	.....	.....	.....	.....	18	22
Inflammation of the stomach	.....	7	4	3	.....	.....	.....	16	23
Dyspepsia	.....	3	2	1	.....	.....	.....	99	102
Hemorrhage of the intestines	.....	1	1	.....	.....	.....	.....	1	2
Inflammation of the intestines:									
Catarrhal	2	8	8	.....	.....	1	1	8	18
Ulcerative	2	11	12	1	.....	.....	.....	12	25
Lardaceous disease of the intestines	.....	1	.....	.....	.....	1	.....	.....	1
Stricture of intestines	.....	1	1	.....	.....	.....	.....	.....	1
Hernia	.....	2	2	.....	.....	.....	.....	54	56
Diarrhœa	4	73	66	9	1	.....	1	100	177
Constipation	1	.....	1	.....	.....	.....	.....	96	97
Colic	.....	4	4	.....	.....	.....	.....	8	12
Abscess of the rectum	.....	1	.....	1	.....	.....	.....	1	2
Ulceration of the rectum	.....	.....	.....	.....	.....	.....	.....	1	1
Ulceration of the anus	.....	1	.....	1	.....	.....	.....	.....	1
Piles:									
Internal	.....	5	2	3	.....	.....	.....	31	36
External	.....	8	6	1	.....	.....	1	15	23
Prolapsus of the anus	.....	1	1	.....	.....	.....	.....	.....	1
Fistula in ano	.....	3	2	.....	1	.....	.....	4	7
Fissure of the anus	.....	1	1	.....	.....	.....	.....	.....	1
Hypertrophy of the liver	.....	1	1	.....	.....	.....	.....	1	2
Congestion of the liver	.....	2	2	.....	.....	.....	.....	10	12
Hepatitis	.....	2	2	.....	.....	.....	.....	17	19
Cirrhosis of liver	.....	1	.....	1	.....	.....	.....	.....	1
Abscess of liver	.....	1	1	.....	.....	.....	.....	.....	1
Jaundice	.....	5	4	1	.....	.....	.....	10	15
Inflammation of hepatic ducts and gall bladder	1	1	2	.....	.....	.....	.....	.....	2
Ascites	.....	1	1	.....	.....	.....	.....	1	2
Peritonitis	.....	2	2	.....	.....	.....	.....	.....	2
DISEASES OF THE LYMPHATIC SYSTEM	1	59	45	8	1	.....	6	45	105
Inflammation of lymph vessels	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of lymph glands	1	34	25	5	.....	.....	5	29	64
Suppuration of lymph glands	.....	25	20	3	1	.....	1	15	40
DISEASES OF THE URINARY SYSTEM	2	11	9	4	.....	.....	.....	68	81
Congestion of kidney	.....	.....	.....	.....	.....	.....	.....	16	16
Acute nephritis	.....	1	1	.....	.....	.....	.....	.....	1
Bright's disease	.....	.....	.....	.....	.....	.....	.....	2	2

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE OHIO.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE URINARY SYSTEM—Continued.									
Pyelitis	.....	.....	.....	.....	.....	.....	.....	1	1
Calculus in kidney	.....	.....	.....	.....	.....	.....	.....	1	1
Nephralgia	.....	.....	.....	.....	.....	.....	.....	1	1
Hematuria	1	1	2	.....	.....	.....	.....	1	3
Inflammation of bladder:									
Acute	.....	1	1	.....	.....	.....	.....	6	7
Subacute	1	1	.....	2	.....	.....	.....	4	6
Chronic	.....	5	3	2	.....	.....	.....	7	12
Calculus of bladder	.....	1	1	.....	.....	.....	.....	.....	1
Irritability of bladder	.....	1	1	.....	.....	.....	.....	25	26
Retention of urine	.....	.....	.....	.....	.....	.....	.....	1	1
Incontinence of urine	.....	.....	.....	.....	.....	.....	.....	3	3
DISEASES OF THE GENERATIVE SYSTEM	3	140	113	22	1	.....	7	286	429
Urethritis	.....	2	1	1	.....	.....	.....	6	8
Gleet	.....	.....	.....	.....	.....	.....	.....	21	21
Lacunar abscess	.....	1	.....	1	.....	.....	.....	.....	1
Stricture of urethra, organic	.....	16	11	4	1	.....	.....	26	42
Hypertrophy of prostate gland	.....	.....	.....	.....	.....	.....	.....	11	11
Acute inflammation of prostate gland	.....	1	1	.....	.....	.....	.....	5	6
Œdema of the penis	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of glans penis	.....	.....	.....	.....	.....	.....	.....	8	8
Ulcer of penis	1	96	78	13	.....	.....	6	137	234
Phimosis	.....	2	2	.....	.....	.....	.....	2	4
Paraphimosis	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of the scrotum	.....	.....	.....	.....	.....	.....	.....	1	1
Hydrocele of spermatic cord	.....	.....	.....	.....	.....	.....	.....	4	4
Inflammation of spermatic cord	.....	.....	.....	.....	.....	.....	.....	1	1
Varicocele	.....	.....	.....	.....	.....	.....	.....	11	11
Hydrocele of tunica vaginalis	.....	1	1	.....	.....	.....	.....	6	7
Orchitis:									
Acute	1	15	13	2	.....	.....	1	16	32
Chronic	.....	1	1	.....	.....	.....	.....	4	5
Epididymitis	1	4	4	1	.....	.....	.....	10	15
Spermatorrhœa	.....	.....	.....	.....	.....	.....	.....	1	1
Impotence	.....	.....	.....	.....	.....	.....	.....	12	12
Dysmenorrhœa	.....	.....	.....	.....	.....	.....	.....	1	1
Metrorrhagia	.....	1	1	.....	.....	.....	.....	1	2
DISEASES OF THE ORGANS OF LOCOMOTION	1	8	5	4	.....	.....	.....	10	19
Atrophy of muscles	.....	1	.....	1	.....	.....	.....	.....	1
Ostitis	.....	.....	.....	.....	.....	.....	.....	1	1
Periostitis	.....	3	2	1	.....	.....	.....	4	7
Caries	1	1	2	.....	.....	.....	.....	1	3
Synovitis:									
Acute	.....	.....	.....	.....	.....	.....	.....	1	1
Chronic	.....	1	1	.....	.....	.....	.....	.....	1
Ankylosis	.....	1	.....	1	.....	.....	.....	1	2
Dislocation of articular cartilage	.....	1	.....	1	.....	.....	.....	.....	1
Inflammation of tendons	.....	.....	.....	.....	.....	.....	.....	1	1
Talipes valgus	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE CONNECTIVE TISSUE	1	17	17	.....	.....	.....	1	35	53
Œdema	.....	3	2	.....	.....	.....	1	5	8
Inflammation	.....	3	3	.....	.....	.....	.....	3	6
Abscess	1	11	12	.....	.....	.....	.....	27	39
DISEASES OF THE SKIN	3	49	37	14	.....	1	.....	136	188
Roseola	.....	.....	.....	.....	.....	.....	.....	1	1
Urticaria	.....	3	3	.....	.....	.....	.....	10	13
Eczema	.....	.....	.....	.....	.....	.....	.....	29	29
Intertrigo	.....	.....	.....	.....	.....	.....	.....	1	1
Impetigo	.....	1	.....	1	.....	.....	.....	.....	1
Ecthyma	.....	.....	.....	.....	.....	.....	.....	3	3

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE OHIO.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE SKIN—Continued.									
Prurigo								1	1
Lichen								1	1
Psoriasis								2	2
Miliaria								1	1
Herpes		1		1				10	11
Acne								6	6
Steatorrhœa								1	1
Chilblain		1	1						1
Frostbite		7	7					7	14
Ulcer	3	24	16	11				29	56
Boil		5	5					23	28
Carbuncle		3	2			1		3	6
Gangrene		1	1						1
Whitlow		2	1	1				1	3
Onychia								1	1
Corn								1	1
Wen		1	1					4	5
Pruritus								1	1
PARASITIC DISEASES OF THE SKIN		1	1					16	17
Ringworm								2	2
Favus								1	1
Tinea versicolor								1	1
Itch		1	1					11	12
Phthiriasis								1	1
Poisons		**1**	**1**					**3**	**4**
Metals and their salts		1	1					1	2
Vegetable poisons								2	2
Injuries	**13**	**207**	**185**	**24**	**1**	**2**	**8**	**203**	**423**
GENERAL INJURIES		12	7	5				11	23
Burns and scalds		10	6	4				10	20
Heat-stroke								1	1
Multiple injury		2	1	1					2
LOCAL INJURIES	13	195	178	19	1	2	8	192	400
Strain of muscles		1	1					5	6
Abrasion of skin								2	2
Foreign body in subcutaneous tissue								1	1
Contusion of scalp								3	3
Scalp-wound:									
Bone not exposed		8	8					14	22
Bone exposed		5	3	2					5
Concussion of brain		1	1						1
Contusion of face								1	1
Wound of face and mouth	1	4	5					7	12
Fracture of facial bones	1	2	3						3
Contusion of the eye								1	1
Foreign body in cornea or conjunctiva								4	4
Wound of the sclerotic		1	1						1
Contusion of soft parts of neck		1	1						1
Contusion of the chest	1	4	5					6	11
Dislocation of costal cartilages								1	1
Fracture of the ribs		3	2				1	6	9
Fracture of the sternum								1	1
Wound of parietes of chest	1	2	2	1					3
Contusion of heart or lung without wound		1	1						1
Contusion of back		5	4				1		5
Sprain of back		19	18	1				11	30
Concussion of cord		1	1						1
Contusion of abdomen		3	2	1				1	4

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE OHIO.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Rupture of viscera	.....	1	.....	.....	.....	1	.....	.....	1
Contusion of upper extremities	.....	8	5	2	.....	.....	1	13	21
Sprain of the shoulder	.....	3	3	.....	.....	.....	.....	3	6
Sprain of the elbow	.....	1	1	.....	.....	.....	.....	7	8
Sprain of the wrist	.....	2	2	.....	.....	.....	.....	8	10
Sprain of the fingers	.....	.....	.....	.....	.....	.....	.....	2	2
Wound of the upper extremities	3	21	19	3	1	.....	1	36	60
Fracture of the clavicle	.....	2	2	.....	.....	.....	.....	1	3
Fracture of the scapula	.....	1	.....	.....	.....	1	.....	.....	1
Fracture of the radius	.....	1	1	.....	.....	.....	.....	2	3
Fracture of the ulna	.....	1	1	.....	.....	.....	.....	.....	1
Fracture of both bones of forearm	.....	1	1	.....	.....	.....	.....	.....	1
Fracture of carpus, metacarpus, and phalanges	.....	2	2	.....	.....	.....	.....	5	7
Dislocation of the humerus	.....	1	1	.....	.....	.....	.....	.....	1
Dislocation of the metacarpus	.....	.....	.....	.....	.....	.....	.....	2	2
Contusion of the lower extremities	3	26	28	.....	.....	.....	1	17	46
Sprain of the hip	.....	1	1	.....	.....	.....	.....	1	2
Sprain of the knee	.....	4	4	.....	.....	.....	.....	7	11
Sprain of the ankle	1	16	15	2	.....	.....	.....	9	26
Sprain of the foot	.....	.....	.....	.....	.....	.....	.....	1	1
Wound of the lower extremities	.....	28	26	2	.....	.....	.....	11	39
Fracture of femur	1	2	.....	3	.....	.....	.....	.....	3
Fracture of cervix femoris	.....	1	.....	.....	.....	.....	1	.....	1
Fracture of patella	.....	2	2	.....	.....	.....	.....	.....	2
Fracture of leg, both bones	1	2	.....	2	.....	.....	1	.....	3
Fracture of tibia alone	.....	3	2	.....	.....	.....	1	.....	3
Fracture of fibula alone	.....	2	2	.....	.....	.....	.....	.....	2
Fracture of metatarsus	.....	1	1	.....	.....	.....	.....	.....	1
Dislocation of the head of the fibula	.....	1	1	.....	.....	.....	.....	.....	1
Dislocation of the astragalus	.....	.....	.....	.....	.....	.....	.....	2	2
Dislocation of the metatarsus and phalanges	.....	.....	.....	.....	.....	.....	.....	1	1
AMPUTATIONS	1	2	2	.....	.....	1	.....	.....	3
Amputation of fingers	1	.....	1	.....	.....	.....	.....	.....	1
Amputation of thigh	.....	2	1	.....	.....	1	.....	.....	2

THE MISSISSIPPI.

TOTAL CASES	77	1,667	1,028	547	46	59	64	2,636	4,380
General Diseases	24	799	471	291	15	22	24	1,295	2,118
Measles	.....	1	.....	1	.....	.....	.....	.....	1
Influenza	1	44	36	6	2	1	.....	66	111
Mumps	.....	2	2	.....	.....	.....	.....	.....	2
Enteric fever	3	10	13	.....	.....	.....	.....	.....	13
Typho-malarial fever	.....	2	2	.....	.....	.....	.....	.....	2
Sporadic cholera	.....	.....	.....	.....	.....	.....	.....	1	1
Dysentery	.....	27	18	8	.....	1	.....	40	67
Malarial intermittent fever	1	223	193	23	4	1	3	271	495
Malarial remittent fever	1	64	55	7	.....	3	.....	17	82
Malarial cachexia	1	39	25	14	.....	.....	1	120	160
Phagedæna	.....	1	.....	.....	.....	.....	1	.....	1
Erysipelas:									
Simple	.....	4	3	1	.....	.....	.....	.....	4
Phlegmonous	.....	1	1	.....	.....	.....	.....	.....	1
Syphilis:									
Primary	2	23	3	21	1	.....	.....	31	56
Secondary	5	118	6	109	4	.....	4	225	348
Gonorrhœa	2	23	18	7	.....	.....	.....	217	242

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE MISSISSIPPI.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
General Diseases.									
Animal parasites	.....	3	2	1	.....	.....	.....	2	5
Alcoholism	.....	29	23	3	1	.....	2	16	45
Delirium tremens	.....	5	3	1	1	.....	.....	.....	5
Debility	.....	5	2	3	.....	.....	.....	26	31
Old age	.....	1	.....	.....	.....	1	.....	.....	1
Rheumatic fever	1	17	8	10	.....	.....	.....	6	24
Rheumatism	2	90	53	33	.....	1	5	192	284
Nonmalignant new growth	.....	3	3	.....	.....	.....	.....	7	10
Malignant new growth	.....	3	.....	.....	.....	3	.....	3	6
Tubercle	5	56	.....	42	1	11	7	50	111
Scrofula	.....	3	2	.....	.....	.....	1	.....	3
Anæmia	.....	1	.....	1	.....	.....	.....	5	6
Diabetes mellitus	.....	1	.....	.....	1	.....	.....	.....	1
Local Diseases	**39**	**669**	**402**	**217**	**27**	**35**	**27**	**1,127**	**1,835**
DISEASES OF THE NERVOUS SYSTEM	5	22	13	8	2	2	2	55	82
Congestion, cerebral	.....	.....	.....	.....	.....	.....	.....	1	1
Hemorrhage, cerebral	1	.....	.....	.....	.....	1	.....	.....	1
Inflammation of cerebral membranes	.....	1	.....	.....	.....	.....	1	.....	1
Myelitis	1	.....	.....	.....	.....	.....	1	.....	1
Neuritis	.....	3	2	1	.....	.....	.....	1	4
Progressive muscular atrophy	.....	.....	.....	.....	.....	.....	.....	1	1
Locomotor ataxy	1	1	.....	1	1	.....	.....	2	4
Apoplexy	1	.....	.....	1	.....	.....	.....	.....	1
Hemiplegia	.....	1	.....	1	.....	.....	.....	1	2
Paraplegia	1	.....	.....	.....	.....	1	.....	.....	1
Local paralysis	.....	2	.....	1	1	.....	.....	.....	2
Aphasia	.....	1	1	.....	.....	.....	.....	.....	1
Neuralgia	.....	9	8	1	.....	.....	.....	30	39
Facial	.....	2	2	.....	.....	.....	.....	10	12
Sciatica	.....	2	.....	2	.....	.....	.....	4	6
Vertigo	.....	.....	.....	.....	.....	.....	.....	1	1
Megrim	.....	.....	.....	.....	.....	.....	.....	4	4
MENTAL DISEASES	.....	1	.....	1	.....	.....	.....	1	2
Hypochondriasis	.....	.....	.....	.....	.....	.....	.....	1	1
Dementia	.....	1	.....	1	.....	.....	.....	.....	1
DISEASES OF THE EYE	3	12	9	6	.....	.....	.....	28	43
Conjunctivitis	1	4	4	1	.....	.....	.....	16	21
Pterygium	.....	.....	.....	.....	.....	.....	.....	1	1
Keratitis	.....	4	2	2	.....	.....	.....	1	5
Ulcer of cornea	.....	.....	.....	.....	.....	.....	.....	1	1
Opacity of cornea	.....	1	.....	1	.....	.....	.....	.....	1
Iritis	.....	3	2	1	.....	.....	.....	4	7
Retinitis	1	.....	.....	1	.....	.....	.....	.....	1
Cataract	.....	.....	.....	.....	.....	.....	.....	2	2
Asthenopia	.....	.....	.....	.....	.....	.....	.....	1	1
Dacryocystitis	1	.....	1	.....	.....	.....	.....	.....	1
Stye	.....	.....	.....	.....	.....	.....	.....	1	1
Ptosis	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE EAR	.....	5	2	2	.....	1	.....	9	14
Inflammation of the external meatus, acute	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of the external meatus	.....	.....	.....	.....	.....	.....	.....	2	2
Accumulation of wax	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of the middle ear	.....	5	2	2	.....	1	.....	3	8
Obstruction of Eustachian tube	.....	.....	.....	.....	.....	.....	.....	2	2
DISEASES OF THE NOSE	.....	2	1	1	.....	.....	.....	18	20
Inflammation	.....	.....	.....	.....	.....	.....	.....	1	1
Nasal catarrh	.....	1	1	.....	.....	.....	.....	15	16
Ulceration	.....	.....	.....	.....	.....	.....	.....	1	1
Necrosis	.....	1	.....	1	.....	.....	.....	1	2

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE MISSISSIPPI.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE CIRCULATORY SYSTEM...	3	19	1	9	2	9	1	35	57
Endocarditis								1	1
Valvular disease:									
Aortic		7		1		6		4	11
Mitral	1	7		5	1	2		20	28
Hypertrophy of heart		1				1		2	3
Dilatation of heart		1			1			1	2
Syncope								1	1
Palpitation and irregular action of heart	1			1				4	5
Aneurism of arteries		2		1			1		2
Obstruction of arteries								1	1
Phlebitis		1	1						1
Varix	1			1				1	2
DISEASES OF THE RESPIRATORY SYSTEM..	1	88	47	27	2	10	3	230	319
Hay asthma								1	1
Laryngitis, acute								2	2
Bronchitis:									
Acute		32	23	7	1		1	165	197
Chronic	1	9	1	7	1	1		34	44
Catarrhal		1		1				11	12
Spasmodic asthma		1					1	4	5
Passive congestion of lung		1	1						1
Hemorrhage of lung		1		1				2	3
Pneumonia		25	14	4		7		3	28
Abscess of lung		1				1			1
Pneumonic phthisis, acute		1		1					1
Emphysema		1		1				2	3
Pleurisy:									
Acute		9	8			1		5	14
Chronic		6		5			1	1	7
DISEASES OF THE DIGESTIVE SYSTEM.....	6	182	135	38	6	5	4	344	532
Stomatitis								1	1
Ulcerative stomatitis								1	1
Caries of dentine and cementum								13	13
Abscess of dental periosteum								4	4
Inflammation of gums and alveoli								1	1
Ulceration of gums and alveoli								1	1
Toothache								2	2
Elongated uvula								1	1
Sore throat								15	15
Quinsy	1	1	1	1				1	3
Follicular tonsilitis		7	7					9	16
Ulceration of fauces		1		1					1
Salivation								4	4
Follicular inflammation of the pharynx		1		1				15	16
Inflammation of the stomach	2	26	21	6	1			15	43
Dyspepsia	1	4	1	2	1	1		23	28
Vomiting		1					1		1
Inflammation of the intestines:									
Catarrhal		42	39	3				56	98
Ulcerative		18	13	2		3		5	23
Hernia		4	3	1				55	59
Diarrhœa	1	30	25	6				42	73
Constipation								36	36
Colic		4	4					3	7
Abscess of the anus		1	1						1
Ulceration of the rectum		3		3				7	10
Ulceration of the anus								1	1
Piles:									
Internal		9	3	4	2			9	18
External		9	7		1		1	9	18
Prolapsus of the rectum		1	1						1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE MISSISSIPPI.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Stricture of the rectum	1	1	.....	2	.....	.....	.....	.....	2
Fistula in ano	.....	8	7	.....	.....	.....	1	3	11
Congestion of the liver	.....	1	.....	.....	.....	1	.....	1	2
Hepatitis	.....	2	1	1	.....	.....	.....	1	3
Perihepatitis	.....	1	.....	1	.....	.....	.....	.....	1
Cirrhosis of liver	.....	2	.....	2	.....	.....	.....	1	3
Lardaceous liver	.....	1	.....	.....	.....	.....	1	.....	1
Inflammation of hepatic ducts and gall bladder	.....	3	.....	2	1	.....	.....	9	12
Peritonitis	.....	1	1	.....	.....	.....	.....	.....	1
DISEASES OF THE LYMPHATIC SYSTEM	3	54	32	16	6	1	2	59	116
Hypertrophy of lymph glands	1	.....	.....	.....	1	.....	.....	.....	1
Inflammation of lymph glands	.....	30	20	6	3	1	.....	23	53
Suppuration of lymph glands	2	24	12	10	2	.....	2	36	62
DISEASES OF THE URINARY SYSTEM	2	22	6	10	2	4	2	20	44
Acute nephritis	.....	6	3	1	.....	1	1	1	7
Bright's disease	2	8	.....	5	1	3	1	5	15
Pyelitis	.....	1	1	.....	.....	.....	.....	.....	1
Inflammation of bladder:									
Acute	.....	5	2	2	1	.....	.....	7	12
Subacute	.....	.....	.....	.....	.....	.....	.....	5	5
Chronic	.....	.....	.....	.....	.....	.....	.....	1	1
Incontinence of urine	.....	2	.....	2	.....	.....	.....	1	3
DISEASES OF THE GENERATIVE SYSTEM	7	153	87	62	3	1	7	184	344
Urethritis	.....	.....	.....	.....	.....	.....	.....	15	15
Gleet	.....	.....	.....	.....	.....	.....	.....	2	2
Stricture of urethra, organic	2	31	17	14	1	.....	1	14	47
Urinary fistula	.....	2	.....	2	.....	.....	.....	2	4
Hypertrophy of prostate gland	.....	.....	.....	.....	.....	.....	.....	1	1
Acute inflammation of prostate gland	.....	1	1	.....	.....	.....	.....	1	2
Chronic inflammation of prostate gland	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of glans penis	.....	3	2	1	.....	.....	.....	4	7
Ulcer of penis	2	91	50	36	2	.....	5	106	199
Phimosis	.....	3	3	.....	.....	.....	.....	5	8
Abscess of the scrotum	1	.....	1	.....	.....	.....	.....	.....	1
Varicocele	.....	1	1	.....	.....	.....	.....	9	10
Hydrocele of tunica vaginalis	.....	3	3	.....	.....	.....	.....	3	6
Orchitis:									
Acute	.....	6	2	4	.....	.....	.....	5	11
Chronic	1	1	2	.....	.....	.....	.....	1	3
Epididymitis	.....	10	7	2	.....	.....	1	5	15
Spermatorrhœa	.....	.....	.....	.....	.....	.....	.....	4	4
Inflammation of the uterus	1	.....	.....	1	.....	1	.....	2	3
Displacements and distortions of the uterus	.....	.....	.....	.....	.....	.....	.....	1	1
Laceration cervix uteri	.....	1	.....	.....	.....	.....	.....	1	2
Abortion	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE ORGANS OF LOCOMOTION	4	13	12	3	.....	1	1	14	31
Periostitis	.....	1	1	.....	.....	.....	.....	4	5
Caries	2	1	2	.....	.....	1	.....	.....	3
Necrosis	.....	3	2	.....	.....	.....	1	2	5
Synovitis:									
Acute	.....	5	5	.....	.....	.....	.....	2	7
Chronic	.....	.....	.....	.....	.....	.....	.....	1	1
Dislocation of articular cartilage	.....	1	.....	1	.....	.....	.....	.....	1
Angular curvature of spine	1	.....	.....	1	.....	.....	.....	.....	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE MISSISSIPPI.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF ORGANS OF LOCOMOTION—Continued.									
Inflammation of muscles								1	1
Flat-foot								2	2
Inflamed bursa		1	1					1	2
Bursal abscess	1			1					1
Thecal abscess								1	1
Ganglion		1	1						1
DISEASES OF THE CONNECTIVE TISSUE		30	19	9			2	19	49
Œdema		2	2						2
Inflammation		8	4	3			1	8	16
Abscess		20	13	6			1	11	31
DISEASES OF THE SKIN	5	65	38	25	3	1	3	94	164
Erythema								1	1
Urticaria								2	2
Eczema		5	2	3				4	9
Pityriasis	2		1	1					2
Lichen		1		1				1	2
Psoriasis								1	1
Herpes		1		1				10	11
Acne								1	1
Sycosis								1	1
Chilblain								1	1
Frostbite		7	4	1	2			2	9
Ulcer	2	39	23	15	1	1	1	42	83
Cicatrices		1					1		1
Boil		3	2	1				15	18
Carbuncle		3	2	1				4	7
Whitlow	1	2	3					3	6
Onychia								4	4
Lupus		2		1			1	2	4
Wen		1	1						1
PARASITIC DISEASES OF THE SKIN		1			1			17	18
Ringworm								5	5
Itch								10	10
Phthiriasis								2	2
Unclassified		1			1				1
Poisons		1	1					7	8
Metals and their salts								1	1
Vegetable poisons		1	1					6	7
POISONED WOUNDS								2	2
Venomous animals								2	2
Injuries	14	196	154	37	4	2	13	205	415
GENERAL INJURIES		10	6	2		1	1	14	24
Burns and scalds		7	6	1				14	21
Multiple injury		3		1		1	1		3
LOCAL INJURIES	14	186	148	35	4	1	12	191	391
Wound of nerve		1	1					1	2
Strain of muscles		2	1	1				1	3
Abrasion of skin								2	2
Foreign body in subcutaneous tissue								1	1
Contusion of scalp								1	1
Scalp wound:									
Bone not exposed	1	8	7	2				13	22
Bone exposed		2	2					2	4
Fracture of the vault of the skull	1	2	3						3
Contusion of face		4	3	1					4

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE MISSISSIPPI.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Wound of face and mouth	1	3	4	.....	.....	.....	.....	10	14
Fracture of facial bones	.....	7	4	3	.....	.....	.....	1	8
Foreign body in cornea or conjunctiva	.....	.....	.....	.....	.....	.....	.....	3	3
Wound of neck	.....	.....	.....	.....	.....	.....	.....	1	1
Foreign body in œsophagus	.....	.....	.....	.....	.....	.....	.....	1	1
Contusion of the chest	.....	8	6	1	.....	.....	1	3	11
Fracture of the ribs	.....	2	1	1	.....	.....	.....	6	8
Wound of parietes of chest	1	3	3	1	.....	.....	.....	2	6
Perforating wound of chest	.....	1	.....	.....	.....	1	.....	.....	1
Contusion of back	.....	7	6	.....	1	.....	.....	7	14
Sprain of back	1	4	4	1	.....	.....	.....	9	14
Wound of back	.....	4	3	1	.....	.....	.....	5	9
Contusion of abdomen	.....	5	4	1	.....	.....	.....	.....	5
Wound of parietes of abdomen	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of the pelvis	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of the urethra, perineum, scrotum, and penis	.....	.....	.....	.....	.....	.....	.....	1	1
Contusion of upper extremities	.....	9	7	1	.....	.....	1	16	25
Sprain of the shoulder	.....	.....	.....	.....	.....	.....	.....	1	1
Sprain of the wrist	.....	3	2	.....	1	.....	.....	3	6
Sprain of the fingers	.....	.....	.....	.....	.....	.....	.....	2	2
Wound of the upper extremities	2	26	21	4	.....	.....	3	53	81
Fracture of the humerus	.....	1	.....	1	.....	.....	.....	.....	1
Fracture of the radius	.....	3	1	2	.....	.....	.....	.....	3
Fracture of the ulna	.....	2	.....	1	.....	.....	1	4	6
Fracture of both bones of forearm	.....	2	1	1	.....	.....	.....	2	4
Fracture of carpus, metacarpus, and phalanges	.....	4	2	2	.....	.....	.....	4	8
Dislocation of the clavicle	1	1	2	.....	.....	.....	.....	.....	2
Dislocation of the humerus	.....	2	1	.....	.....	.....	1	.....	2
Dislocation of the radius	.....	1	1	.....	.....	.....	.....	.....	1
Dislocation of the metacarpus	.....	.....	.....	.....	.....	.....	.....	1	1
Contusion of the lower extremities	1	25	21	2	1	.....	2	14	40
Sprain of the hip	.....	1	1	.....	.....	.....	.....	1	2
Sprain of the knee	.....	3	2	1	.....	.....	.....	1	4
Sprain of the ankle	2	11	10	3	.....	.....	.....	8	21
Sprain of the foot	.....	1	.....	.....	.....	.....	1	1	2
Wound of the lower extremities	.....	11	7	3	1	.....	.....	6	17
Fracture of cervix femoris	1	.....	1	.....	.....	.....	.....	.....	1
Fracture of leg, both bones	2	4	5	.....	.....	.....	1	1	7
Fracture of tibia alone	.....	3	1	1	.....	.....	1	.....	3
Fracture of fibula alone	.....	5	5	.....	.....	.....	.....	1	6
Fracture of metatarsus	.....	.....	.....	.....	.....	.....	.....	1	1
Dislocation of the femur at the hip	.....	2	2	.....	.....	.....	.....	.....	2
Dislocation of the foot at the ankle	.....	1	1	.....	.....	.....	.....	1	2
AMPUTATIONS	.....	2	.....	2	.....	.....	.....	.....	2
Amputation of fingers	.....	1	.....	1	.....	.....	.....	.....	1
Amputation of toes	.....	1	.....	1	.....	.....	.....	.....	1

GREAT LAKES.

TOTAL CASES	162	2,657	1,755	711	79	78	196	8,832	11,651
General Diseases	73	1,108	711	319	28	31	92	3,893	5,074
Measles	.....	4	4	.....	.....	.....	.....	1	5
Scarlet fever	.....	1	1	.....	.....	.....	.....	.....	1
Influenza	3	76	76	2	.....	1	.....	173	252
Mumps	.....	2	2	.....	.....	.....	.....	6	8

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
General Diseases.									
Diphtheria	.....	2	2	.....	.....	.....	.....	.....	2
Simple continued fever	2	26	19	4	2	.....	3	11	39
Enteric fever	11	107	91	7	.....	9	11	29	147
Typho-malarial fever	.....	1	1	.....	.....	.....	.....	1	2
Sporadic cholera	.....	1	1	.....	.....	.....	.....	1	2
Epidemic diarrhœa	.....	.....	.....	.....	.....	.....	.....	2	2
Dysentery	1	13	11	2	.....	.....	1	28	42
Malarial intermittent fever	3	104	97	5	.....	1	4	367	474
Malarial remittent fever	.....	65	57	2	.....	2	4	17	82
Malarial cachexia	.....	4	3	1	.....	.....	.....	19	23
Phagedæna	.....	.....	.....	.....	.....	.....	.....	2	2
Erysipelas:									
Simple	.....	14	13	.....	.....	.....	1	9	23
Phlegmonous	.....	1	.....	1	.....	.....	.....	4	5
Septicæmia	.....	1	1	.....	.....	.....	.....	.....	1
Syphilis:									
Primary	.....	37	3	33	.....	.....	1	91	128
Secondary	7	131	12	112	5	2	7	900	1,038
Gonorrhœa	2	92	59	20	1	.....	14	1,044	1,138
Animal parasites	.....	3	2	.....	1	.....	.....	11	14
Vegetable parasites	.....	.....	.....	.....	.....	.....	.....	2	2
Effects of excessive venery	.....	.....	.....	.....	.....	.....	.....	3	3
Alcoholism	2	63	51	8	2	1	3	63	128
Delirium tremens	.....	3	.....	.....	2	1	.....	.....	3
Deformity of nasal septum	.....	1	.....	1	.....	.....	.....	2	3
Hypospadic fissure of urethra	.....	1	.....	.....	.....	1	.....	.....	1
Debility	.....	13	8	5	.....	.....	.....	170	183
Old age	1	.....	.....	.....	1	.....	.....	.....	1
Rheumatic fever	7	38	29	7	.....	.....	9	5	50
Rheumatism	17	208	159	54	2	.....	10	765	990
Gout	.....	.....	.....	.....	.....	.....	.....	1	1
Osteoarthritis	1	4	1	2	1	.....	1	.....	5
Cysts	.....	.....	.....	.....	.....	.....	.....	1	1
Nonmalignant new growth	1	8	7	.....	.....	1	1	23	32
Malignant new growth	.....	3	1	.....	.....	.....	2	.....	3
Tubercle	15	81	.....	53	10	13	20	130	226
Scrofula	.....	.....	.....	.....	.....	.....	.....	1	1
Purpura	.....	.....	.....	.....	.....	.....	.....	1	1
Anæmia	.....	.....	.....	.....	.....	.....	.....	9	9
Chlorosis	.....	.....	.....	.....	.....	.....	.....	1	1
Local Diseases	**59**	**1,042**	**646**	**311**	**39**	**35**	**70**	**4,262**	**5,363**
DISEASES OF THE NERVOUS SYSTEM	8	73	30	27	8	6	10	255	336
Congestion of brain	.....	2	2	.....	.....	.....	.....	.....	2
Hemorrhage, cerebral	.....	1	.....	.....	.....	1	.....	.....	1
Inflammation of cerebral membranes	.....	2	.....	.....	1	1	.....	1	3
Myelitis	.....	1	.....	1	.....	.....	.....	.....	1
Neuritis	1	3	2	2	.....	.....	.....	9	13
Softening of brain or cord	.....	1	.....	.....	.....	1	.....	.....	1
Sclerosis	1	.....	.....	.....	.....	.....	1	.....	1
Progressive muscular atrophy	.....	.....	.....	.....	.....	.....	.....	2	2
Spastic spinal paralysis	.....	.....	.....	.....	.....	.....	.....	1	1
Locomotor ataxy	4	2	.....	2	.....	.....	4	1	7
Apoplexy	.....	1	.....	1	.....	.....	.....	1	2
Paralysis	.....	2	.....	2	.....	.....	.....	2	4
Hemiplegia	1	4	.....	1	.....	1	3	2	7
Paraplegia	.....	2	.....	1	1	.....	.....	2	4
Local paralysis	.....	4	.....	2	1	.....	1	8	12
Spasm of muscle	.....	1	1	.....	.....	.....	.....	.....	1
Paralysis agitans	.....	.....	.....	.....	.....	.....	.....	1	1
Hyperæsthesia	.....	.....	.....	.....	.....	.....	.....	2	2
Neuralgia	.....	14	9	4	.....	1	.....	155	169
Facial	.....	3	3	.....	.....	.....	.....	18	21
Sciatica	.....	16	10	4	1	.....	1	16	32
Vertigo	.....	2	1	1	.....	.....	.....	.....	2

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF NERVOUS SYSTEM—Cont'd.									
Megrim	.....	.....	.....	.....	.....	.....	.....	20	20
Epilepsy	1	12	2	6	4	1	.....	11	24
Chorea	.....	.....	.....	.....	.....	.....	.....	2	2
Hysteria	.....	.....	.....	.....	.....	.....	.....	1	1
MENTAL DISEASES	.....	1	.....	1	.....	.....	.....	3	4
Hypochondriasis	.....	.....	.....	.....	.....	.....	.....	3	3
Insanity	.....	1	.....	1	.....	.....	.....	.....	1
DISEASES OF THE EYE	2	19	12	6	1	.....	2	86	107
Ecchymosis of the conjunctiva	.....	.....	.....	.....	.....	.....	.....	1	1
Conjunctivitis	1	11	7	3	.....	.....	2	62	74
Pterygium	.....	.....	.....	.....	.....	.....	.....	1	1
Ulcer of cornea	1	1	1	.....	1	.....	.....	4	6
Iritis	.....	5	4	1	.....	.....	.....	5	10
Ametropia	.....	.....	.....	.....	.....	.....	.....	2	2
Neuralgia of eyeball	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of lachrymal gland	.....	1	.....	1	.....	.....	.....	.....	1
Stricture of nasal duct	.....	.....	.....	.....	.....	.....	.....	1	1
Hæmatoma	.....	.....	.....	.....	.....	.....	.....	1	1
Stye	.....	.....	.....	.....	.....	.....	.....	6	6
Abscess of eyelid	.....	.....	.....	.....	.....	.....	.....	1	1
Chalazion	.....	.....	.....	.....	.....	.....	.....	1	1
Deformity of eyelid	.....	1	.....	1	.....	.....	.....	.....	1
DISEASES OF THE EAR	.....	12	6	3	1	.....	2	43	55
Inflammation of the external meatus:									
Acute	.....	1	.....	.....	1	.....	.....	10	11
Chronic	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of the external meatus	.....	1	1	.....	.....	.....	.....	5	6
Subaceous cyst	.....	.....	.....	.....	.....	.....	.....	1	1
Accumulation of wax	.....	.....	.....	.....	.....	.....	.....	11	11
Inflammation of the middle ear	.....	10	5	3	.....	.....	2	11	21
Perforation of membrana tympani	.....	.....	.....	.....	.....	.....	.....	2	2
Deafness	.....	.....	.....	.....	.....	.....	.....	2	2
DISEASES OF THE NOSE	.....	3	2	1	.....	.....	.....	130	133
Epistaxis	.....	1	1	.....	.....	.....	.....	2	3
Inflammation	.....	.....	.....	.....	.....	.....	.....	4	4
Nasal catarrh	.....	1	1	.....	.....	.....	.....	115	116
Abscess	.....	.....	.....	.....	.....	.....	.....	3	3
Ozæna	.....	1	.....	1	.....	.....	.....	.....	1
Perforation of the septum	.....	.....	.....	.....	.....	.....	.....	6	6
DISEASES OF THE CIRCULATORY SYSTEM	2	58	10	33	6	6	5	72	132
Hydropericardium	.....	1	.....	.....	.....	1	.....	.....	1
Pericarditis	.....	3	3	.....	.....	.....	.....	1	4
Endocarditis	.....	3	.....	3	.....	.....	.....	3	6
Valvular disease:									
Aortic	1	5	1	3	.....	1	1	1	7
Mitral	.....	20	.....	12	3	2	3	21	41
Hypertrophy of heart	.....	5	.....	2	2	1	.....	7	12
Degeneration of heart, fatty	.....	.....	.....	.....	.....	.....	.....	2	2
Dilatation of heart	.....	2	.....	2	.....	.....	.....	1	3
Angina pectoris	.....	2	1	1	.....	.....	.....	.....	2
Palpitation and irregular action of heart	.....	5	.....	5	.....	.....	.....	14	19
Degeneration of arteries	.....	3	.....	.....	1	1	1	.....	3
Aneurism of arteries	.....	.....	.....	.....	.....	.....	.....	1	1
Phlebitis	1	1	1	1	.....	.....	.....	4	6
Varix	.....	7	4	3	.....	.....	.....	17	24
Thrombosis of veins	.....	1	.....	1	.....	.....	.....	.....	1
DISEASES OF THE RESPIRATORY SYSTEM	9	169	99	55	4	8	12	1,035	1,213
Hay asthma	.....	.....	.....	.....	.....	.....	.....	1	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous years.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE RESPIRATORY SYSTEM—Continued.									
Laryngitis:									
Acute	1	2	3	.....	.....	.....	.....	13	16
Chronic	.....	.....	.....	.....	.....	.....	.....	3	3
Bronchitis:									
Acute	1	68	52	13	.....	.....	4	831	900
Chronic	2	25	4	18	1	2	2	98	125
Catarrhal	.....	.....	.....	.....	.....	.....	.....	12	12
Spasmodic asthma	.....	4	1	3	.....	.....	.....	12	16
Passive congestion of lung	.....	1	.....	.....	1	.....	.....	.....	1
Hemorrhage of lung	1	4	1	3	.....	1	.....	3	8
Pneumonia	.....	26	14	7	.....	4	1	2	28
Gangrene of lung	1	.....	.....	1	.....	.....	.....	12	13
Cirrhosis of lung	1	.....	.....	.....	.....	.....	1	.....	1
Pneumonic phthisis:									
Acute	.....	2	.....	.....	1	1	.....	1	3
Chronic	.....	5	.....	3	.....	.....	2	2	7
Pleurisy:									
Acute	1	25	18	6	.....	.....	2	24	50
Chronic	.....	7	5	1	1	.....	.....	20	27
Empyema	1	.....	1	.....	.....	.....	.....	1	2
DISEASES OF THE DIGESTIVE SYSTEM	7	222	165	40	5	11	8	1,156	1,385
Ulcer of the lips	.....	.....	.....	.....	.....	.....	.....	1	1
Fissure of the lips	.....	.....	.....	.....	.....	.....	.....	1	1
Stomatitis	.....	1	1	.....	.....	.....	.....	10	11
Ulcerative stomatitis	.....	.....	.....	.....	.....	.....	.....	3	3
Noma	.....	.....	.....	.....	.....	.....	.....	1	1
Cyst of the mouth	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of the antrum	.....	3	2	1	.....	.....	.....	.....	3
Ulceration of the dental pulp	.....	.....	.....	.....	.....	.....	.....	1	1
Caries of dentine and cementum	.....	.....	.....	.....	.....	.....	.....	16	16
Inflammation of dental periosteum	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of dental periosteum	.....	1	.....	1	.....	.....	.....	4	5
Inflammation of gums and alveoli	.....	.....	.....	.....	.....	.....	.....	1	1
Ulceration of gums and alveoli	.....	.....	.....	.....	.....	.....	.....	1	1
Caries of the alveoli	.....	1	.....	1	.....	.....	.....	.....	1
Toothache	.....	.....	.....	.....	.....	.....	.....	5	5
Inflammation of the tongue	.....	1	1	.....	.....	.....	.....	.....	1
Ulcer of the tongue	.....	.....	.....	.....	.....	.....	.....	6	6
Hypertrophy of tonsils	.....	.....	.....	.....	.....	.....	.....	1	1
Elongated uvula	.....	.....	.....	.....	.....	.....	.....	4	4
Relaxed throat	.....	.....	.....	.....	.....	.....	.....	1	1
Sore throat	.....	5	4	.....	.....	.....	1	71	76
Quinsy	.....	7	6	1	.....	.....	.....	20	27
Follicular tonsilitis	.....	19	19	.....	.....	.....	.....	58	77
Inflammation of salivary glands	.....	.....	.....	.....	.....	.....	.....	1	1
Salivation	.....	.....	.....	.....	.....	.....	.....	1	1
Follicular inflammation of the pharynx	.....	3	2	1	.....	.....	.....	28	31
Ulceration of pharynx	.....	1	1	.....	.....	.....	.....	.....	1
Stricture of œsophagus	.....	1	1	.....	.....	.....	.....	.....	1
Hemorrhage of the stomach	.....	2	1	1	.....	.....	.....	.....	2
Inflammation of the stomach	1	25	19	4	.....	2	1	34	60
Ulceration of the stomach	.....	3	.....	1	1	1	.....	2	5
Dyspepsia	.....	12	8	4	.....	.....	.....	270	282
Gastrodynia	1	.....	1	.....	.....	.....	.....	3	4
Pyrosis	.....	1	1	.....	.....	.....	.....	2	3
Vomiting	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of intestines:									
Catarrhal	.....	17	14	3	.....	.....	.....	36	53
Ulcerative	.....	6	1	.....	.....	2	3	.....	6
Abscess in the subperitoneal tissue	1	2	1	1	.....	.....	1	.....	3
Obstruction of the intestines	.....	1	1	.....	.....	.....	.....	.....	1
Hernia	.....	13	8	3	2	.....	.....	106	119

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE DIGESTIVE SYSTEM—Continued.									
Fistula of intestines	.....	2	1	1	.....	.....	.....	.....	2
Diarrhœa	1	33	31	2	.....	.....	1	180	214
Constipation	.....	8	7	1	.....	.....	.....	120	128
Colic	.....	.....	.....	.....	.....	.....	.....	17	17
Abscess of the rectum	.....	1	.....	1	.....	.....	.....	.....	1
Abscess of the anus	.....	2	2	.....	.....	.....	.....	.....	2
Piles:									
Internal	1	6	4	3	.....	.....	.....	42	49
External	.....	3	2	.....	1	.....	.....	28	31
Stricture of the rectum	.....	1	1	.....	.....	.....	.....	.....	1
Fistula in ano	.....	9	5	3	.....	.....	1	5	14
Fissure of the anus	.....	1	1	.....	.....	.....	.....	3	4
Pruritus ani	.....	.....	.....	.....	.....	.....	.....	1	1
Atrophy of the liver	.....	1	.....	.....	1	.....	.....	.....	1
Congestion of the liver	1	15	14	2	.....	.....	.....	57	73
Cirrhosis of liver	1	5	.....	4	.....	2	.....	1	7
Obstruction of the vena portæ	.....	.....	.....	.....	.....	.....	.....	1	1
Jaundice	.....	3	2	.....	.....	1	.....	6	9
Inflammation of hepatic ducts and gall bladder	.....	2	1	1	.....	.....	.....	2	4
Peritonitis	.....	5	2	.....	.....	3	.....	.....	5
Omental hernia	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE LYMPHATIC SYSTEM	5	106	72	22	7	.....	10	114	225
Hypertrophy of the spleen	.....	.....	.....	.....	.....	.....	.....	2	2
Hypertrophy of lymph glands	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of lymph vessels	.....	4	3	.....	.....	.....	1	3	7
Inflammation of lymph glands	3	51	34	12	4	.....	4	96	150
Suppuration of lymph glands	2	51	35	10	3	.....	5	11	64
DISEASES OF THE URINARY SYSTEM	6	33	14	21	1	2	1	103	142
Congestion of kidney	.....	.....	.....	.....	.....	.....	.....	1	1
Acute nephritis	3	6	6	3	.....	.....	.....	1	10
Bright's disease	1	13	1	11	1	1	.....	11	25
Pyelitis	.....	.....	.....	.....	.....	.....	.....	2	2
Diabetes insipidus	.....	2	.....	2	.....	.....	.....	1	3
Lithuria	.....	.....	.....	.....	.....	.....	.....	7	7
Inflammation of bladder:									
Acute	1	6	4	1	.....	1	1	21	28
Subacute	.....	.....	.....	.....	.....	.....	.....	2	2
Chronic	.....	3	.....	3	.....	.....	.....	20	23
Irritability of bladder	.....	.....	.....	.....	.....	.....	.....	30	30
Retention of urine	.....	1	1	.....	.....	.....	.....	2	3
Incontinence of urine	1	2	2	1	.....	.....	.....	5	8
DISEASES OF THE GENERATIVE SYSTEM	4	165	106	54	2	1	6	652	821
Urethritis	.....	.....	.....	.....	.....	.....	.....	20	20
Gleet	.....	.....	.....	.....	.....	.....	.....	21	21
Lacunar abscess	.....	.....	.....	.....	.....	.....	.....	1	1
Urinary abscess	.....	1	.....	1	.....	.....	.....	.....	1
Ulcer of the urethra	.....	.....	.....	.....	.....	.....	.....	6	6
Stricture of urethra:									
Organic	1	32	18	13	1	1	.....	119	152
Traumatic	.....	1	.....	1	.....	.....	.....	.....	1
Urinary fistula	.....	9	3	4	.....	.....	2	4	13
Extravasation of urine	1	.....	1	.....	.....	.....	.....	.....	1
Hypertrophy of prostate gland	.....	.....	.....	.....	.....	.....	.....	1	1
Acute inflammation of prostate gland	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of the penis	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of glans penis	.....	3	3	.....	.....	.....	.....	19	22
Abscess of penis	.....	.....	.....	.....	.....	.....	.....	1	1
Ulcer of penis	1	75	52	24	.....	.....	.....	347	423
Phimosis	.....	5	3	2	.....	.....	.....	4	9
Paraphimosis	.....	2	2	.....	.....	.....	.....	6	8

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE GENERATIVE SYSTEM—Continued.									
Abscess of the scrotum	.....	5	1	3	.....	.....	1	5	10
Hydrocele of spermatic cord	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of spermatic cord	.....	.....	.....	.....	.....	.....	.....	1	1
Varicocele	.....	4	3	.....	1	.....	.....	8	12
Hæmatocele of tunica vaginalis	.....	.....	.....	.....	.....	.....	.....	2	2
Hydrocele of tunica vaginalis	.....	3	3	.....	.....	.....	.....	6	9
Atrophy of testicles	.....	.....	.....	.....	.....	.....	.....	2	2
Orchitis:									
Acute	1	10	9	1	.....	.....	1	14	25
Chronic	.....	1	.....	1	.....	.....	.....	4	5
Epididymitis	.....	3	3	.....	.....	.....	.....	17	20
Spermatorrhœa	.....	.....	.....	.....	.....	.....	.....	16	16
Impotence	.....	.....	.....	.....	.....	.....	.....	5	5
Pelvic cellulitis	.....	2	2	.....	.....	.....	.....	.....	2
Inflammation of the uterus	.....	3	.....	1	.....	.....	2	2	5
Abscess of the uterine ligaments	.....	1	1	.....	.....	.....	.....	1	2
Hemorrhage of the uterus	.....	.....	.....	.....	.....	.....	.....	1	1
Abrasion, cervix uteri	.....	1	.....	1	.....	.....	.....	.....	1
Inflammation of the vagina	.....	.....	.....	.....	.....	.....	.....	1	1
Dysmenorrhœa	.....	.....	.....	.....	.....	.....	.....	3	3
Menorrhagia	.....	1	.....	1	.....	.....	.....	1	2
Metrorrhagia	.....	.....	.....	.....	.....	.....	.....	1	1
Leucorrhœa	.....	1	1	.....	.....	.....	.....	7	8
Abortion	.....	1	1	.....	.....	.....	.....	.....	1
Premature labor	.....	.....	.....	.....	.....	.....	.....	1	1
Rupture of the perineum	.....	1	.....	1	.....	.....	.....	.....	1
DISEASES OF THE ORGANS OF LOCOMOTION.	3	47	26	16	2	.....	6	54	104
Periostitis	.....	6	5	1	.....	.....	.....	5	11
Osteo-myelitis	.....	.....	.....	.....	.....	.....	.....	1	1
Caries	1	3	1	2	.....	.....	1	3	7
Necrosis	.....	5	3	1	.....	.....	1	4	9
Dropsy of joints	.....	.....	.....	.....	.....	.....	.....	1	1
Synovitis:									
Acute	2	10	8	2	.....	.....	2	15	27
Chronic	.....	8	4	4	.....	.....	.....	2	10
Abscess of joints	.....	1	.....	.....	.....	.....	1	.....	1
Ankylosis	.....	3	.....	1	2	.....	.....	7	10
Relaxation of ligaments	.....	1	.....	1	.....	.....	.....	.....	1
Atrophy of muscles	.....	1	.....	1	.....	.....	.....	3	4
Abscess of muscles	.....	2	2	.....	.....	.....	.....	2	4
Inflammation of tendons	.....	.....	.....	.....	.....	.....	.....	1	1
Contraction of tendons and fasciæ	.....	1	.....	.....	.....	.....	1	.....	1
Talipes equinus	.....	1	.....	1	.....	.....	.....	.....	1
Inflamed bursa	.....	3	1	2	.....	.....	.....	9	12
Thecal abscess	.....	.....	.....	.....	.....	.....	.....	1	1
Bunion	.....	1	1	.....	.....	.....	.....	.....	1
Ganglion	.....	1	1	.....	.....	.....	.....	.....	1
DISEASES OF THE CONNECTIVE TISSUE	4	36	33	4	.....	1	2	80	120
Œdema	.....	2	2	.....	.....	.....	.....	2	4
Inflammation	1	8	7	2	.....	.....	.....	13	22
Abscess	3	26	24	2	.....	1	2	65	94
DISEASES OF THE SKIN	9	95	68	28	2	.....	6	414	518
Erythema	.....	1	.....	.....	.....	.....	1	8	9
Urticaria	.....	3	2	.....	1	.....	.....	15	18
Eczema	2	10	7	4	.....	.....	1	97	109
Intertrigo	.....	.....	.....	.....	.....	.....	.....	1	1
Pityriasis	.....	.....	.....	.....	.....	.....	.....	1	1
Prurigo	.....	.....	.....	.....	.....	.....	.....	1	1
Lichen	.....	.....	.....	.....	.....	.....	.....	3	3
Psoriasis	.....	5	.....	4	1	.....	.....	30	35

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE SKIN—Continued.									
Miliaria								2	2
Herpes		4	3	1				8	12
Zona		1	1					6	7
Pemphigus								1	1
Acne								8	8
Sycosis		2		2				19	21
Alopecia								3	3
Chilblain								2	2
Frostbite		7	7					5	12
Ulcer	6	50	37	16			3	96	152
Cicatrices								1	1
Fissures								2	2
Boil		4	4					66	70
Carbuncle		3	2				1	6	9
Gangrene		1	1						1
Whitlow	1	2	3					12	15
Onychia								6	6
Corn								4	4
Lupus		1		1					1
Wen		1	1					6	7
Pruritus								3	3
Hyperidrosis								2	2
PARASITIC DISEASES OF THE SKIN		3	3					65	68
Ringworm		1	1					12	13
Tinea versicolor		1	1					10	11
Itch		1	1					38	39
Phthiriasis								4	4
Unclassified								1	1
Poisons		2	2						2
Acids and acid salts		1	1						1
Vegetable poisons		1	1						1
Injuries	30	501	393	80	12	12	34	673	1,204
GENERAL INJURIES	1	35	25	7		1	3	55	91
Burns and scalds		22	17	4			1	50	72
Effects of cold								2	2
Heat stroke		5	4			1		2	7
Multiple injury	1	7	4	2			2	1	9
Exhaustion		1		1					1
LOCAL INJURIES	29	466	368	73	12	11	31	618	1,113
Wounds of arteries		1	1						1
Bruise of muscles		1	1					2	3
Strain of muscles		2	1	1				10	12
Strain of tendons								1	1
Abrasion of skin								7	7
Foreign body in subcutaneous tissue		1		1				6	7
Contusion of scalp		6	4	1	1			5	11
Scalp wound:									
Bone not exposed	1	15	15			1		21	37
Bone exposed		3	3					2	5
Fracture of the vault of the skull		1	1						1
Fracture of the base of the skull		3	1			2			3
Concussion of brain		3	1			2			3
Compression of brain		1				1			1
Contusion of brain		1		1					1
Contusion of face		7	6				1	12	19
Wound of face and mouth		11	9	1			1	23	34

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Fracture of facial bones	.....	9	5	3	1	.....	.....	4	13
Injuries of the alveoli and teeth	.....	.....	.....	.....	.....	.....	.....	1	1
Dislocation of the lower jaw	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of the eye	.....	4	4	.....	.....	.....	.....	2	6
Foreign body in cornea or conjunctiva	.....	1	1	.....	.....	.....	.....	18	19
Wound of eyelid	.....	2	2	.....	.....	.....	.....	3	5
Wound of the cornea	.....	1	1	.....	.....	.....	.....	2	3
Contusion of pinna	.....	.....	.....	.....	.....	.....	.....	1	1
Wound of pinna	.....	1	1	.....	.....	.....	.....	2	3
Rupture of membrana tympani	.....	1	.....	1	.....	.....	.....	.....	1
Contusion of the chest	2	22	23	1	.....	.....	.....	30	54
Dislocation of costal cartilages	.....	1	1	.....	.....	.....	.....	.....	1
Fracture of the ribs	1	18	12	4	1	1	1	7	26
Wound of parietes of chest	.....	.....	.....	.....	.....	.....	.....	1	1
Perforating wound of chest	.....	1	1	.....	.....	.....	.....	.....	1
Penetrating wound of pleura or lung	.....	2	1	.....	.....	1	.....	.....	2
Contusion of back	.....	17	13	2	2	.....	.....	32	49
Sprain of back	1	15	14	1	.....	.....	1	25	41
Wound of back	.....	2	.....	1	.....	1	.....	.....	2
Compression of cord without fracture	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of abdomen	.....	3	3	.....	.....	.....	.....	5	8
Wound of parietes of abdomen	.....	1	.....	1	.....	.....	.....	.....	1
Contusion of the pelvis	.....	2	1	1	.....	.....	.....	.....	2
Rupture of urethra	.....	1	1	.....	.....	.....	.....	.....	1
Fracture and dislocation of pelvis	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of testicle	.....	2	2	.....	.....	.....	.....	2	4
Contusion of upper extremities	.....	31	27	1	.....	.....	3	72	103
Sprain of the shoulder	.....	4	4	.....	.....	.....	.....	6	10
Sprain of the elbow	.....	2	.....	1	.....	.....	1	5	7
Sprain of the wrist	.....	10	8	1	.....	.....	1	26	36
Sprain of the fingers	.....	.....	.....	.....	.....	.....	.....	5	5
Wound of the upper extremities	2	41	31	9	.....	.....	3	140	183
Fracture of the clavicle	.....	4	2	.....	1	.....	1	2	6
Fracture of the scapula	.....	1	1	.....	.....	.....	.....	1	2
Fracture of the humerus	.....	4	2	.....	.....	.....	1 1	1	5
Fracture of the radius	1	7	6	1	.....	.....	1	1	9
Fracture of the ulna	1	2	3	.....	.....	.....	.....	4	7
Fracture of both bones of forearm	2	3	4	1	.....	.....	.....	1	6
Fracture of carpus, metacarpus, and phalanges	.....	6	4	.....	1	.....	1	9	15
Dislocation of the clavicle	.....	3	1	2	.....	.....	.....	.....	3
Dislocation of the humerus	1	13	12	2	.....	.....	.....	9	23
Dislocation of the carpus	.....	.....	.....	.....	.....	.....	.....	1	1
Dislocation of the phalanges of fingers	.....	.....	.....	.....	.....	.....	.....	1	1
Contusion of the lower extremities	7	46	43	7	.....	.....	3	46	99
Sprain of the hip	1	2	2	1	.....	.....	.....	.....	3
Sprain of the knee	.....	4	4	.....	.....	.....	.....	3	7
Sprain of the ankle	1	43	33	8	1	.....	2	35	79
Sprain of the foot	.....	1	1	.....	.....	.....	.....	3	4
Wound of the lower extremities	3	32	27	5	.....	.....	3	18	53
Fracture of femur	1	6	3	1	2	.....	1	1	8
Fracture of cervix femoris	1	1	.....	.....	1	.....	1	.....	2
Fracture of patella	.....	4	2	1	.....	.....	1	.....	4
Fracture of leg, both bones	1	17	8	6	.....	1	3	.....	18
Fracture of tibia alone	.....	5	2	2	.....	.....	1	2	7
Fracture of fibula alone	1	3	2	2	.....	.....	.....	2	6
Fracture of metatarsus	.....	1	1	.....	.....	.....	.....	.....	1
Fracture of phalanges of toe	.....	1	.....	1	.....	.....	.....	.....	1
Dislocation of the foot at the ankle	.....	1	1	.....	.....	.....	.....	.....	
Dislocation of the astragalus	1	.....	.....	.....	1	.....	.....	.....	1
Dislocation of the metatarsus and phalanges	.....	3	2	1	.....	.....	.....	.....	3

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

GREAT LAKES.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
AMPUTATIONS	.....	4	3	1	.....	.....	.....	4	8
Amputation of arm	.....	1	1	.....	.....	.....	.....	.....	1
Amputation of fingers	.....	1	1	.....	.....	.....	.....	4	5
Amputation of leg	.....	2	1	1	.....	.....	.....	.....	2

THE PACIFIC.

TOTAL CASES	141	1,761	860	757	53	73	159	3,624	5,526
General Diseases	52	628	280	295	22	31	52	1,375	2,055
Cowpox	.....	1	1	.....	.....	.....	.....	.....	1
Measles	.....	2	2	.....	.....	.....	.....	.....	2
Influenza	.....	43	22	20	1	.....	.....	73	116
Mumps	.....	2	1	1	.....	.....	.....	1	3
Simple continued fever	.....	3	3	.....	.....	.....	.....	.....	3
Enteric fever	2	32	26	.....	1	5	2	.....	34
Typho-malarial fever	.....	1	1	.....	.....	.....	.....	.....	1
Dysentery	2	13	10	2	.....	1	2	7	22
Malarial intermittent fever	1	48	43	6	.....	.....	.....	60	109
Malarial remittent fever	2	9	7	2	.....	1	1	4	15
Malarial cachexia	.....	.....	.....	.....	.....	.....	.....	19	19
Phagedæna	.....	2	2	.....	.....	.....	.....	.....	2
Erysipelas, simple	.....	5	4	.....	.....	.....	1	5	10
Septicæmia	.....	2	1	1	.....	.....	.....	.....	2
Syphilis:									
Primary	.....	10	3	6	.....	.....	1	7	17
Secondary	8	107	5	95	3	1	11	300	415
Gonorrhœa	4	60	29	30	.....	.....	5	533	597
Animal parasites	.....	2	2	.....	.....	.....	.....	15	17
Vegetable parasites	.....	.....	.....	.....	.....	.....	.....	2	2
Scurvy	.....	18	12	5	.....	.....	1	.....	18
Alcoholism	.....	21	16	3	1	.....	1	22	43
Debility	3	9	5	6	.....	.....	1	51	63
Cleft palate	.....	1	.....	1	.....	.....	.....	.....	1
Rheumatic fever	2	38	27	7	.....	.....	6	2	42
Rheumatism	5	97	49	46	1	.....	6	204	306
Gout	.....	.....	.....	.....	.....	.....	.....	2	2
Osteoarthritis	2	3	.....	4	.....	.....	1	.....	5
Cysts	.....	2	2	.....	.....	.....	.....	1	3
Nonmalignant new growth	.....	5	4	.....	.....	.....	1	12	17
Malignant new growth	.....	.....	.....	.....	.....	.....	.....	2	2
Tubercle	17	86	1	53	15	22	12	47	150
Scrofula	3	2	.....	4	.....	1	.....	.....	5
Purpura	1	.....	1	.....	.....	.....	.....	.....	1
Anæmia	.....	4	1	3	.....	.....	.....	4	8
Diabetes mellitus	.....	.....	.....	.....	.....	.....	.....	2	2
Local Diseases	64	787	377	333	27	38	76	1,810	2,661
DISEASES OF THE NERVOUS SYSTEM	11	54	9	33	5	2	16	110	175
Congestion of brain	.....	1	.....	.....	.....	.....	1	.....	1
Hemorrhage:									
Of spinal cord	1	.....	.....	1	.....	.....	.....	.....	1
Cerebral	.....	1	.....	.....	.....	.....	1	.....	1
Inflammation:									
Of membranes of brain and spinal cord	.....	1	.....	.....	.....	1	.....	.....	1
Of spinal cord and its membranes	.....	1	.....	1	.....	.....	.....	.....	1
Neuritis	1	1	.....	2	.....	.....	.....	3	5
Spastic spinal paralysis	.....	1	.....	.....	.....	.....	1	1	2
Locomotor ataxy	2	2	.....	3	.....	.....	1	2	6

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE PACIFIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF NERVOUS SYSTEM—Cont'd.									
Paralysis	.....	1	.....	1	.....	.....	.....	1	2
Hemiplegia	4	6	.....	3	2	1	4	10	20
Paraplegia	.....	1	1	.....	.....	.....	.....	.....	1
Local paralysis	1	12	.....	8	3	.....	2	7	20
Spasm of muscle	.....	1	.....	1	.....	.....	.....	.....	1
Hyperæsthesia	.....	.....	.....	.....	.....	.....	.....	2	2
Neuralgia	.....	9	5	3	.....	.....	1	56	65
Facial	.....	1	1	.....	.....	.....	.....	9	10
Sciatica	2	7	2	5	.....	.....	2	9	18
Vertigo	.....	4	.....	2	.....	.....	2	1	5
Epilepsy	.....	3	.....	2	.....	.....	1	6	9
Chorea	.....	.....	.....	.....	.....	.....	.....	1	1
Hysteria	.....	1	.....	1	.....	.....	.....	.....	1
Insomnia	.....	.....	.....	.....	.....	.....	.....	2	2
MENTAL DISEASES	.....	3	1	.....	2	.....	.....	2	5
Hypochondriasis	.....	.....	.....	.....	.....	.....	.....	2	2
Insanity	.....	2	1	.....	1	.....	.....	.....	2
Mania	.....	1	.....	.....	1	.....	.....	.....	1
DISEASES OF THE EYE	4	17	10	7	1	.....	3	51	72
Ecchymosis of the conjunctiva	.....	.....	.....	.....	.....	.....	.....	1	1
Conjunctivitis	1	3	4	.....	.....	.....	.....	16	20
Ulcer of cornea	2	.....	.....	2	.....	.....	.....	4	6
Staphyloma	.....	.....	.....	.....	.....	.....	.....	2	2
Iritis	.....	5	2	2	1	.....	.....	1	6
Choroiditis	.....	.....	.....	.....	.....	.....	.....	8	8
Atrophy of optic disc or papilla	.....	.....	.....	.....	.....	.....	.....	6	6
Retinitis	.....	1	.....	1	.....	.....	.....	1	2
Night blindness	.....	.....	.....	.....	.....	.....	.....	1	1
Amblyopia	.....	1	.....	.....	.....	.....	1	.....	1
Amaurosis	1	.....	.....	.....	.....	.....	1	.....	1
Stricture of nasal duct	.....	.....	.....	.....	.....	.....	.....	1	1
Lachrymal fistula	.....	3	2	1	.....	.....	.....	6	9
Hæmatoma	.....	1	1	.....	.....	.....	.....	.....	1
Blepharitis	.....	1	.....	.....	.....	.....	1	2	3
Stye	.....	1	1	.....	.....	.....	.....	1	2
Ectropion	.....	1	.....	1	.....	.....	.....	.....	1
Chalazion	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE EAR	1	9	3	7	.....	.....	.....	46	56
Inflammation of the external meatus, acute	.....	.....	.....	.....	.....	.....	.....	1	1
Abscess of the external meatus	.....	2	1	1	.....	.....	.....	2	4
Accumulation of wax	.....	.....	.....	.....	.....	.....	.....	11	11
Inflammation of the middle ear	1	6	2	5	.....	.....	.....	31	38
Obstruction of the Eustachian tube	.....	.....	.....	.....	.....	.....	.....	1	1
Tinnitus	.....	1	.....	1	.....	.....	.....	.....	1
DISEASES OF THE NOSE	1	2	1	2	.....	.....	.....	57	60
Inflammation	1	1	1	1	.....	.....	.....	1	3
Nasal catarrh	.....	1	.....	1	.....	.....	.....	55	56
Ulceration	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE CIRCULATORY SYSTEM	6	34	2	21	2	10	4	52	92
Pericarditis	.....	1	.....	1	.....	.....	.....	.....	1
Endocarditis	.....	3	.....	3	.....	.....	.....	.....	3
Valvular disease:									
Aortic	2	14	.....	8	.....	6	2	7	23
Mitral	1	9	.....	5	1	4	.....	27	37
Hypertrophy of heart	.....	.....	.....	.....	.....	.....	.....	1	1
Degeneration of heart, fatty	.....	.....	.....	.....	.....	.....	.....	2	2
Dilatation of heart	1	.....	.....	1	.....	.....	.....	1	2
Angina pectoris	.....	1	.....	1	.....	.....	.....	.....	1
Palpitation and irregular action of heart	.....	2	.....	2	.....	.....	.....	7	9

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE PACIFIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE CIRCULATORY SYSTEM—Continued.									
Aneurism of arteries	.....	3	1	.....	1	.....	1	3	6
Obstruction of arteries	1	.....	.....	.....	.....	.....	1	.....	1
Phlebitis	.....	1	1	.....	.....	.....	.....	.....	1
Varix	1	.....	.....	1	.....	.....	.....	4	5
DISEASES OF THE RESPIRATORY SYSTEM	5	172	88	59	5	15	11	429	606
Laryngitis:									
Acute	.....	3	.....	3	.....	.....	.....	4	7
Chronic	.....	1	.....	1	.....	.....	.....	5	6
Catarrhal	.....	.....	.....	.....	.....	.....	.....	1	1
Bronchitis:									
Acute	2	86	49	32	2	2	3	358	446
Chronic	.....	5	.....	2	.....	1	2	41	46
Catarrhal	.....	2	.....	2	.....	.....	.....	1	3
Spasmodic asthma	.....	2	.....	.....	.....	1	1	1	3
Passive congestion of lung	.....	5	1	3	.....	1	.....	.....	5
Hemorrhage of lung	1	1	.....	2	.....	.....	.....	2	4
Pneumonia	.....	34	22	3	.....	7	2	2	36
Abscess of lung	.....	1	1	.....	.....	.....	.....	.....	1
Gangrene of lung	.....	1	.....	.....	.....	1	.....	.....	1
Pneumonic phthisis:									
Acute	1	3	.....	3	1	2	.....	.....	4
Chronic	1	5	.....	3	1	.....	.....	.....	6
Pleurisy:									
Acute	.....	20	14	4	1	.....	1	11	31
Chronic	.....	.....	.....	.....	.....	.....	.....	2	2
Empyema	.....	3	1	.....	.....	.....	2	1	4
DISEASES OF THE DIGESTIVE SYSTEM	9	133	75	55	3	2	7	353	495
Ulcer of the lips	.....	.....	.....	.....	.....	.....	.....	1	1
Stomatitis	.....	.....	.....	.....	.....	.....	.....	3	3
Ulcerative stomatitis	.....	1	.....	.....	.....	.....	1	.....	1
Abscess of the antrum	.....	.....	.....	.....	.....	.....	.....	2	2
Caries of dentine and cementum	.....	.....	.....	.....	.....	.....	.....	8	8
Abscess of dental periosteum	.....	1	1	.....	.....	.....	.....	.....	1
Toothache	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of the tongue	.....	2	2	.....	.....	.....	.....	.....	2
Ulcer of the tongue	.....	2	.....	2	.....	.....	.....	.....	2
Sore throat	.....	2	2	.....	.....	.....	.....	1	3
Quinsy	.....	7	5	2	.....	.....	.....	8	15
Follicular tonsilitis	1	10	9	2	.....	.....	.....	40	51
Sloughing sore throat	.....	2	.....	2	.....	.....	.....	.....	2
Inflammation of salivary glands	.....	.....	.....	.....	.....	.....	.....	2	2
Abscess of salivary glands	.....	1	1	.....	.....	.....	.....	.....	1
Follicular inflammation of the pharynx	.....	3	3	.....	.....	.....	.....	15	18
Ulceration of pharynx	1	.....	.....	1	.....	.....	.....	.....	1
Hemorrhage of the stomach	.....	1	1	.....	.....	.....	.....	.....	1
Inflammation of the stomach	.....	18	8	10	.....	.....	.....	33	51
Dilatation of the stomach	.....	1	.....	1	.....	.....	.....	.....	1
Dyspepsia	4	23	11	11	1	2	2	78	105
Gastrodynia	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of the intestines:									
Catarrhal	.....	5	4	.....	.....	.....	1	1	6
Ulcerative	.....	7	7	.....	.....	.....	.....	1	8
Abscess in the subperitoneal tissue	1	.....	1	.....	.....	.....	.....	.....	1
Tympanitis	.....	1	1	.....	.....	.....	.....	.....	1
Obstruction of the intestines	.....	1	.....	1	.....	.....	.....	.....	1
Hernia	.....	5	3	2	.....	.....	.....	47	52
Diarrhœa	.....	3	2	.....	.....	.....	1	27	30
Constipation	.....	1	.....	1	.....	.....	.....	19	20
Colic	.....	1	1	.....	.....	.....	.....	9	10
Abscess of the rectum	.....	1	1	.....	.....	.....	.....	.....	1
Abscess of the anus	.....	1	1	.....	.....	.....	.....	.....	1
Ulceration of the rectum	.....	2	1	1	.....	.....	.....	.....	2

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE PACIFIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF DIGESTIVE SYSTEM—Cont'd.									
Piles:									
Internal	.....	2	1	.....	.....	.....	.....	18	20
External	.....	5	2	3	1	.....	.....	11	16
Stricture of the rectum	.....	1	.....	1	.....	.....	.....	.....	1
Fistula in ano	1	8	2	5	1	.....	1	4	13
Congestion of the liver	1	3	1	2	.....	.....	1	15	19
Hepatitis	.....	10	3	7	.....	.....	.....	1	11
Jaundice	.....	.....	.....	.....	.....	.....	.....	3	3
Inflammation of hepatic ducts and gall bladder	.....	2	1	1	.....	.....	.....	3	5
DISEASES OF THE LYMPHATIC SYSTEM	1	34	20	12	.....	.....	3	40	75
Inflammation of lymph glands	.....	27	13	11	.....	.....	3	32	59
Suppuration of lymph glands	1	7	7	1	.....	.....	.....	8	16
DISEASES OF THE URINARY SYSTEM	4	38	7	25	.....	6	4	66	108
Congestion of kidney	.....	.....	.....	.....	.....	.....	.....	1	1
Acute nephritis	2	4	2	3	.....	1	.....	4	10
Bright's disease	2	18	1	11	.....	5	3	18	38
Diabetes insipidus	.....	.....	.....	.....	.....	.....	.....	1	1
Hæmaturia	.....	1	.....	1	.....	.....	.....	.....	1
Lithuria	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of bladder:									
Acute	.....	6	1	5	.....	.....	.....	23	29
Subacute	.....	2	.....	2	.....	.....	.....	3	5
Chronic	.....	1	1	.....	.....	.....	.....	4	5
Irritability of bladder	.....	5	1	3	.....	.....	1	9	14
Retention of urine	.....	1	1	.....	.....	.....	.....	.....	1
Incontinence of urine	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE GENERATIVE SYSTEM	5	121	53	56	4	1	12	269	395
Urethritis	.....	.....	.....	.....	.....	.....	.....	2	2
Gleet	.....	1	.....	1	.....	.....	.....	6	7
Urinary abscess	.....	1	.....	.....	.....	.....	1	.....	1
Stricture of urethra, organic	1	43	13	21	2	1	7	82	126
Œdema of the penis	1	1	.....	2	.....	.....	.....	.....	2
Inflammation of glans penis	.....	2	1	1	.....	.....	.....	3	5
Ulcer of penis	2	26	11	13	1	.....	3	130	158
Phimosis	.....	3	1	1	.....	.....	1	.....	3
Paraphimosis	.....	1	1	.....	.....	.....	.....	.....	1
Abscess of the scrotum	.....	1	1	.....	.....	.....	.....	1	2
Varicocele	1	4	2	3	.....	.....	.....	2	7
Hydrocele of tunica vaginalis	.....	6	3	2	1	.....	.....	2	8
Orchitis:									
Acute	.....	27	18	9	.....	.....	.....	26	53
Chronic	.....	2	.....	2	.....	.....	.....	1	3
Epididymitis	.....	3	2	1	.....	.....	.....	7	10
Spermatorrhœa	.....	.....	.....	.....	.....	.....	.....	6	6
Leucorrhœa	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE ORGANS OF LOCOMOTION	4	32	14	14	3	1	4	31	67
Hypertrophy of bones	1	.....	.....	1	.....	.....	.....	.....	1
Ostitis	.....	.....	.....	.....	.....	.....	.....	1	1
Periostitis	.....	.....	.....	.....	.....	.....	.....	4	4
Caries	.....	1	1	.....	.....	.....	.....	1	2
Necrosis	1	10	4	4	1	.....	2	5	16
Ununited fracture, or false joint	.....	1	.....	1	.....	.....	.....	.....	1
Dropsy of joints	1	3	.....	2	1	1	.....	2	6
Synovitis:									
Acute	.....	4	1	3	.....	.....	.....	4	8
Chronic	.....	1	.....	1	.....	.....	.....	3	4
Ankylosis	.....	2	.....	1	1	.....	.....	2	4
Degeneration of cartilage	1	.....	.....	.....	.....	.....	1	.....	1
Dislocation of articular cartilage	.....	1	1	.....	.....	.....	.....	.....	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE PACIFIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE ORGANS OF LOCOMOTION—Continued.									
Lateral curvature of spine	.....	1	.....	1	.....	.....	.....	.....	1
Hypertrophy of muscles	.....	1	.....	.....	.....	.....	1	.....	1
Contraction of tendons and fasciæ	.....	.....	.....	.....	.....	....	.....	2	2
Inflamed bursa	.....	4	4	.....	.....	.....	.....	6	10
Bursal tumor	.....	3	3	.....	.....	.....	.....	1	4
DISEASES OF THE CONNECTIVE TISSUE	4	42	30	13	.....	.....	3	53	99
Œdema	.....	1	1	.....	.....	.....	.....	.....	1
Inflammation	.....	4	3	.....	.....	.....	1	11	15
Abscess	4	37	26	13	.....	.....	2	42	83
DISEASES OF THE SKIN	9	90	62	27	.....	1	9	242	341
Erythema	.....	.....	.....	.....	.....	.....	.....	1	1
Urticaria	.....	.....	.....	.....	.....	.....	.....	2	2
Eczema	1	8	3	4	.....	.....	2	63	72
Ecthyma	.....	.....	.....	.....	.....	.....	.....	1	1
Pityriasis	.....	3	1	2	.....	.....	.....	.....	3
Psoriasis	.....	1	1	.....	.....	.....	.....	7	8
Miliaria	.....	.....	.....	.....	.....	.....	.....	1	1
Herpes	.....	2	1	.....	.....	.....	1	7	9
Zona	.....	.....	.....	.....	.....	.....	.....	1	1
Pemphigus	.....	.....	.....	.....	.....	.....	.....	1	1
Acne	.....	1	1	.....	.....	.....	.....	2	3
Sycosis	.....	.....	.....	.....	.....	.....	.....	4	4
Steatorrhœa	.....	.....	.....	.....	.....	.....	.....	1	1
Frostbite	.....	1	.....	1	.....	.....	.....	2	3
Ulcer	7	47	34	14	.....	.....	6	82	136
Cicatrices	.....	.....	.....	.....	.....	.....	.....	1	1
Boil	.....	6	4	2	.....	.....	.....	25	31
Carbuncle	1	4	4	1	.....	.....	.....	7	12
Gangrene	.....	1	.....	.....	.....	1	.....	.....	1
Whitlow	.....	12	10	2	.....	.....	.....	27	39
Onychia	.....	.....	.....	.....	.....	.....	.....	1	1
Corn	.....	.....	.....	.....	.....	.....	.....	1	1
Lupus	.....	1	.....	1	.....	.....	.....	3	4
Wen	.....	3	3	.....	.....	.....	.....	2	5
PARASITIC DISEASES OF THE SKIN	.....	6	2	2	2	.....	.....	9	15
Ringworm	.....	.....	.....	.....	.....	.....	.....	3	3
Tinea versicolor	.....	1	.....	1	.....	.....	.....	.....	1
Itch	.....	3	2	1	.....	.....	.....	3	6
Phthiriasis	.....	.....	.....	.....	.....	.....	.....	2	2
Unclassified	.....	2	.....	.....	2	.....	.....	1	3
Poisons	.....	**3**	**1**	**2**	.....	.....	.....	**2**	**5**
Organic substances	.....	1	1	.....	.....	.....	.....	2	3
Vegetable poisons	.....	2	.....	2	.....	.....	.....	.....	2
Injuries	**25**	**340**	**200**	**127**	**3**	**4**	**31**	**436**	**801**
GENERAL INJURIES	1	43	26	13	.....	3	2	58	102
Burns and scalds	.....	21	11	7	.....	1	2	15	36
Effects of cold	1	16	15	2	.....	.....	.....	42	59
Multiple injury	.....	5	.....	4	.....	1	.....	.....	5
Exhaustion	.....	.....	.....	.....	.....	.....	.....	1	1
Shock	.....	1	.....	.....	.....	1	.....	.....	1
LOCAL INJURIES	24	297	174	114	3	1	29	378	699
Strain of muscles	.....	2	2	.....	.....	.....	.....	8	10
Strain of tendons	.....	.....	.....	.....	.....	.....	.....	1	1
Rupture of tendons	.....	3	1	2	.....	.....	.....	.....	3
Abrasion of skin	.....	1	1	.....	.....	.....	.....	.....	1
Contusion of scalp	1	1	2	.....	.....	.....	.....	2	4
Scalp wound:									
Bone not exposed	.....	14	9	3	.....	1	1	22	36
Bone exposed	.....	7	4	3	.....	.....	.....	1	8

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

THE PACIFIC.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Injuries.									
LOCAL INJURIES—Continued.									
Contusion of face	.....	1	1	.....	.....	.....	.....	1	2
Wound of face and mouth	.....	6	4	2	.....	.....	.....	19	25
Fracture of facial bones	1	2	1	2	.....	.....	.....	3	6
Contusion of the eye	.....	.....	.....	.....	.....	.....	.....	1	1
Foreign body in cornea or conjunctiva	.....	.....	.....	.....	.....	.....	.....	6	6
Contusion of pinna	.....	.....	.....	.....	.....	.....	.....	1	1
Wound of neck	.....	2	1	.....	.....	.....	1	.....	2
Contusion of the chest	.....	7	6	1	.....	.....	.....	19	26
Fracture of the ribs	.....	18	10	7	.....	.....	1	5	23
Wound of parietes of chest	.....	1	.....	1	.....	.....	.....	.....	1
Contusion of back	.....	16	8	7	.....	.....	1	11	27
Sprain of back	.....	6	2	3	.....	.....	1	11	17
Wound of back	.....	1	.....	.....	.....	.....	1	.....	1
Fracture of spine	1	.....	.....	1	.....	.....	.....	.....	1
Concussion of cord	1	.....	.....	1	.....	.....	.....	.....	1
Compression of cord without fracture	.....	.....	.....	.....	.....	.....	.....	2	2
Contusion of abdomen	.....	1	.....	1	.....	.....	.....	1	2
Contusion of the urethra, perineum, scrotum, and penis	.....	2	1	.....	.....	.....	1	.....	2
Wound of the urethra, perineum, scrotum, and penis	.....	1	1	.....	.....	.....	.....	.....	1
Rupture of urethra	.....	1	.....	.....	.....	.....	1	.....	1
Fracture and dislocation of pelvis	1	.....	.....	1	.....	.....	.....	.....	1
Contusion of testicle	.....	.....	.....	.....	.....	.....	.....	2	2
Contusion of upper extremities	2	18	11	7	.....	.....	2	34	54
Sprain of the shoulder	.....	2	.....	2	.....	.....	.....	1	3
Sprain of the elbow	.....	.....	.....	.....	.....	.....	.....	3	3
Sprain of the wrist	1	2	1	1	1	.....	.....	20	23
Sprain of the fingers	.....	.....	.....	.....	.....	.....	.....	1	1
Wound of the upper extremities	1	18	10	5	.....	.....	4	86	105
Fracture of the clavicle	.....	4	2	2	.....	.....	.....	.....	4
Fracture of the scapula	.....	1	.....	.....	1	.....	.....	1	2
Fracture of the humerus	1	2	3	.....	.....	.....	.....	.....	3
Fracture of the radius	.....	4	2	2	.....	.....	.....	11	15
Fracture of the ulna	1	4	.....	5	.....	.....	.....	2	7
Fracture of carpus, metacarpus, and phalanges	.....	3	2	1	.....	.....	.....	6	9
Dislocation of the clavicle	.....	3	1	2	.....	.....	.....	1	4
Dislocation of the scapula	.....	1	1	.....	.....	.....	.....	.....	1
Dislocation of the humerus	.....	8	4	2	1	.....	1	3	11
Dislocation of the phalanges of thumb	.....	.....	.....	.....	.....	.....	.....	1	1
Contusion of the lower extremities	6	43	30	17	.....	.....	2	35	84
Sprain of the hip	.....	1	.....	1	.....	.....	.....	2	3
Sprain of the knee	.....	5	1	4	.....	.....	.....	7	12
Sprain of the ankle	1	28	18	9	.....	.....	2	21	50
Sprain of the foot	.....	.....	.....	.....	.....	.....	.....	3	3
Wound of the lower extremities	1	25	17	8	.....	.....	1	23	49
Fracture of femur	.....	3	.....	1	.....	.....	2	.....	3
Fracture of cervix femoris	1	.....	.....	1	.....	.....	.....	.....	1
Fracture of patella	.....	1	.....	1	.....	.....	.....	.....	1
Fracture of leg, both bones	3	11	3	6	.....	.....	5	.....	14
Fracture of tibia alone	.....	3	1	.....	.....	.....	2	1	4
Fracture of fibula alone	.....	5	5	.....	.....	.....	.....	.....	5
Fracture of tarsus	.....	1	.....	1	.....	.....	.....	.....	1
Fracture of phalanges of toes	.....	3	3	.....	.....	.....	.....	.....	3
Dislocation of the femur at the hip	1	1	1	1	.....	.....	.....	.....	2
Dislocation of the patella	.....	1	1	.....	.....	.....	.....	.....	1
Dislocation of the knee	.....	1	1	.....	.....	.....	.....	.....	1
Dislocation of the foot at the ankle	.....	1	1	.....	.....	.....	.....	.....	1
Dislocation of the astragalus	.....	1	1	.....	.....	.....	.....	.....	1
AMPUTATIONS	.....	3	2	.....	1	.....	.....	1	4
Amputation of fingers	.....	1	1	.....	.....	.....	.....	1	2
Amputation of leg	.....	2	1	.....	1	.....	.....	.....	2

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

QUARANTINE.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
TOTAL CASES	2	108	101	6	.....	3	.....	106	216
General Diseases	.....	40	36	2	.....	2	.....	43	83
Smallpox	.....	25	23	.....	.....	2	.....	.....	25
Chickenpox	.....	1	1	.....	.....	.....	.....	.....	1
Influenza	.....	.....	.....	.....	.....	.....	.....	9	9
Mumps	.....	.....	.....	.....	.....	.....	.....	1	1
Diphtheria	.....	.....	.....	.....	.....	.....	.....	2	2
Yellow fever	.....	10	10	.....	.....	.....	.....	1	11
Malarial intermittent fever	.....	1	1	.....	.....	.....	.....	9	10
Malarial remittent fever	.....	.....	.....	.....	.....	.....	.....	3	3
Malarial cachexia	.....	1	.....	1	.....	.....	.....	1	2
Erysipelas, simple	.....	1	1	.....	.....	.....	.....	.....	1
Syphilis, primary	.....	.....	.....	.....	.....	.....	.....	1	1
Gonorrhœa	.....	.....	.....	.....	.....	.....	.....	4	4
Scurvy	.....	1	.....	1	.....	.....	.....	.....	1
Debility	.....	.....	.....	.....	.....	.....	.....	3	3
Rheumatism	.....	.....	.....	.....	.....	.....	.....	6	6
Nonmalignant new growth	.....	.....	.....	.....	.....	.....	.....	1	1
Anæmia	.....	.....	.....	.....	.....	.....	.....	2	2
Local Diseases	.....	9	5	3	.....	1	.....	54	63
DISEASES OF THE NERVOUS SYSTEM	.....	.....	.....	.....	.....	.....	.....	5	5
Myelitis	.....	.....	.....	.....	.....	.....	.....	1	1
Spasm of muscle	.....	.....	.....	.....	.....	.....	.....	1	1
Neuralgia	.....	.....	.....	.....	.....	.....	.....	2	2
Facial	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE EYE	.....	.....	.....	.....	.....	.....	.....	1	1
Conjunctivitis	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE NOSE	.....	.....	.....	.....	.....	.....	.....	1	1
Nasal catarrh	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE CIRCULATORY SYSTEM	.....	1	.....	1	.....	.....	.....	1	2
Valvular disease, mitral	.....	1	.....	1	.....	.....	.....	.....	1
Palpitation and irregular action of heart	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE RESPIRATORY SYSTEM	.....	1	1	.....	.....	.....	.....	7	8
Bronchitis, acute	.....	1	1	.....	.....	.....	.....	5	6
Hemorrhage of lung	.....	.....	.....	.....	.....	.....	.....	1	1
Emphysema	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE DIGESTIVE SYSTEM	.....	6	4	1	.....	1	.....	20	26
Caries of dentine and cementum	.....	.....	.....	.....	.....	.....	.....	3	3
Abscess of dental periosteum	.....	.....	.....	.....	.....	.....	.....	1	1
Toothache	.....	.....	.....	.....	.....	.....	.....	1	1
Follicular inflammation of the pharynx	.....	.....	.....	.....	.....	.....	.....	1	1
Dyspepsia	.....	.....	.....	.....	.....	.....	.....	4	4
Gastrodynia	.....	.....	.....	.....	.....	.....	.....	1	1
Hernia	.....	.....	.....	.....	.....	.....	.....	1	1
Diarrhœa	.....	3	3	.....	.....	.....	.....	2	5
Constipation	.....	1	1	.....	.....	.....	.....	3	4
Colic	.....	.....	.....	.....	.....	.....	.....	2	2
Pruritus ani	.....	.....	.....	.....	.....	.....	.....	1	1
Cirrhosis of liver	.....	2	.....	1	.....	1	.....	.....	2
DISEASES OF THE LYMPHATIC SYSTEM	.....	.....	.....	.....	.....	.....	.....	1	1
Inflammation of lymph glands	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE URINARY SYSTEM	.....	.....	.....	.....	.....	.....	.....	2	2
Inflammation of bladder, chronic	.....	.....	.....	.....	.....	.....	.....	2	2
DISEASES OF THE GENERATIVE SYSTEM	.....	.....	.....	.....	.....	.....	.....	3	3
Ulcer of penis	.....	.....	.....	.....	.....	.....	.....	2	2
Dysmenorrhœa	.....	.....	.....	.....	.....	.....	.....	1	1

TABLE VII.—TABULAR STATEMENT BY DISTRICTS, ETC.—Continued.

QUARANTINE.

DISEASES.	NUMBER OF CASES.								
	Remaining under treatment from previous year.	Admitted during the year.	Discharged.			Died.	Remaining under treatment at the close of the year.	Number furnished office relief.	Number treated in hospital and dispensary.
			Recovered.	Improved.	Not improved.				
Local Diseases.									
DISEASES OF THE ORGANS OF LOCOMOTION	.....	.....	.....	.....	.....	.....	.....	1	1
Caries	.....	.....	.....	.....	.....	.....	.....	1	1
DISEASES OF THE CONNECTIVE TISSUE	.....	.....	.....	.....	.....	.....	.....	3	3
Abscess	.....	.....	.....	.....	.....	.....	.....	3	3
DISEASES OF THE SKIN	.....	1	.....	1	.....	.....	.....	9	10
Erythema	.....	.....	.....	.....	.....	.....	.....	1	1
Eczema	.....	.....	.....	.....	.....	.....	.....	1	1
Ecthyma	.....	.....	.....	.....	.....	.....	.....	1	1
Ulcer	.....	1	.....	1	.....	.....	.....	3	4
Whitlow	.....	.....	.....	.....	.....	.....	.....	3	3
Injuries	**2**	**59**	**60**	**1**	.....	.....	.....	**9**	**70**
GENERAL INJURIES	2	59	60	1	.....	.....	.....	.....	61
Multiple injury	1	.....	1	1	.....	.....	.....	.....	2
Exhaustion	.....	59	59	.....	.....	.....	.....	.....	59
LOCAL INJURIES	.....	.....	.....	.....	.....	.....	.....	9	9
Contusion of the chest	.....	.....	.....	.....	.....	.....	.....	1	1
Contusion of upper extremities	.....	.....	.....	.....	.....	.....	.....	2	2
Sprain of the elbow	.....	.....	.....	.....	.....	.....	.....	1	1
Wound of the upper extremities	.....	.....	.....	.....	.....	.....	.....	3	3
Contusion of the lower extremities	.....	.....	.....	.....	.....	.....	.....	1	1
Wound of the lower extremities	.....	.....	.....	.....	.....	.....	.....	1	1

TABLE VIII.—TABULAR STATEMENT, BY DISTRICTS, OF CAUSES OF MORTALITY AMONG PATIENTS OF THE SERVICE DURING THE YEAR ENDED JUNE 30, 1892.

CAUSES OF DEATH.	Total.	DISTRICTS.								
		North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
Total Deaths from all Causes	**479**	**44**	**81**	**65**	**51**	**25**	**59**	**78**	**73**	**3**
FROM DISEASE	442	43	80	60	42	22	57	66	69	3
FROM INJURY	37	1	1	5	9	3	2	12	4	.....
General Diseases	**208**	**23**	**37**	**29**	**20**	**13**	**22**	**31**	**31**	**2**
Smallpox	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Influenza	.....	1	5	.....	2	.....	1	1	.....	.....
Diphtheria	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Enteric fever	.....	7	6	3	.....	4	.....	9	5	.....
Typho-malarial fever	.....	.....	.....	1	1	.....	.....	.....	.....	.....
Dysentery	.....	.....	.....	1	3	.....	1	.....	1	.....

TABLE VIII.—STATEMENTS, BY DISTRICTS, OF CAUSES OF MORTALITY, ETC.—Cont'd.

CAUSES OF DEATH.	Total.	DISTRICTS. North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
General Diseases.										
Malarial intermittent fever	.....	3	1	2	3	.....	1	1	.....	.....
Malarial remittent fever	.....	.....	.....	2	1	.....	3	2	1	.....
Beriberi	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Erysipelas, simple	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Pyæmia	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Syphilis, secondary	.....	.....	1	1	2	.....	.....	2	1	.....
Alcoholism	.....	.....	2	.....	.....	.....	.....	1	.....	.....
Delirium tremens	.....	.....	.....	1	.....	.....	.....	1	.....	.....
Debility	.....	.....	.....	.....	1	.....	1	.....	.....	.....
Rheumatic fever	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Rheumatism	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Osteoarthritis	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Nonmalignant new growth	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Malignant new growth	.....	.....	.....	.....	.....	.....	3	.....	.....	.....
Tubercle	.....	11	20	17	5	9	11	13	22	.....
Scrofula	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Local Diseases	**234**	**20**	**43**	**31**	**22**	**9**	**35**	**35**	**38**	**1**
DISEASES OF THE NERVOUS SYSTEM	29	3	7	4	5	.....	2	6	2	.....
Hemorrhage, cerebral	.....	.....	.....	1	1	.....	1	1	.....	.....
Inflammation:										
Of brain and its membranes	.....	.....	.....	.....	1	.....	.....	.....	1	.....
Of cerebral membranes	.....	.....	1	.....	.....	.....	.....	1	.....	.....
Myelitis	.....	.....	1	1	.....	.....	.....	.....	.....	.....
Abscess of the brain	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Softening of the brain cord	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Sclerosis	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Locomotor ataxy	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Apoplexy	.....	1	1	1	1	.....	.....	.....	.....	.....
Hemiplegia	.....	1	3	.....	.....	.....	.....	1	1	.....
Paraplegia	.....	.....	.....	1	.....	.....	1	.....	.....	.....
Neuralgia	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Epilepsy	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
MENTAL DISEASES	3	1	.....	2	.....	.....	.....	.....	.....	.....
Mania	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Melancholia	.....	1	.....	1	.....	.....	.....	.....	.....	.....
DISEASES OF THE EAR	2	.....	.....	.....	.....	1	1	.....	.....	.....
Inflammation of the middle ear	.....	.....	.....	.....	.....	1	1	.....	.....	.....
DISEASES OF THE CIRCULATORY SYSTEM	46	4	7	7	1	2	9	6	10	.....
Pericarditis	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Valvular disease:										
Aortic	.....	2	3	.....	.....	.....	6	1	6	.....
Mitral	.....	1	4	5	1	1	2	2	4	.....
Hypertrophy of heart	.....	.....	.....	.....	.....	.....	1	1	.....	.....
Degeneration of the arteries	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Aneurism of the arteries	.....	1	.....	2	.....	1	.....	.....	.....	.....
DISEASES OF THE RESPIRATORY SYSTEM	76	7	16	8	9	3	10	8	15	.....
Bronchitis:										
Acute	.....	.....	2	.....	1	.....	.....	.....	2	.....
Chronic	.....	.....	1	.....	1	.....	1	2	1	.....
Spasmodic asthma	.....	.....	.....	1	.....	.....	.....	.....	1	.....
Gangrene of lung	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Passive congestion of lung	.....	.....	.....	1	.....	.....	.....	.....	1	.....
Hemorrhage of lung	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Pneumonia	.....	4	6	6	4	3	7	4	7	.....
Abscess of lung	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Pneumonic phthisis:										
Acute	.....	.....	.....	.....	.....	.....	.....	1	2	.....
Chronic	.....	.....	5	.....	2	.....	.....	.....	.....	.....
Hydrothorax	.....	.....	.....	.....	1	.....	.....	.....	.....	.....

TABLE VIII.—STATEMENTS, BY DISTRICTS, OF CAUSES OF MORTALITY, ETC.—Cont'd.

CAUSES OF DEATH.	Total.	DISTRICTS. North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
Local Diseases.										
DISEASES OF THE RESPIRATORY SYSTEM—Continued.										
Pleurisy:										
Acute	.....	1	2	.....	.....	.....	1	.....	.....	.....
Chronic	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Empyema	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
DISEASES OF THE DIGESTIVE SYSTEM	35	1	6	4	3	2	5	11	2	1
Inflammation of the stomach	.....	.....	.....	1	.....	.....	.....	2	.....	.....
Ulceration of the stomach	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Dyspepsia	.....	.....	.....	.....	.....	.....	1	.....	2	.....
Hemorrhage of the intestines	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Inflammation of the intestines:										
Catarrhal	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Ulcerative	.....	1	.....	1	.....	.....	3	2	.....	.....
Lardaceous disease of the intestines	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Perforation of the intestines	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Hernia	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Diarrhœa	.....	.....	.....	2	1	.....	.....	.....	.....	.....
Congestion of the liver	.....	.....	1	.....	1	.....	1	.....	.....	.....
Cirrhosis of the liver	.....	.....	2	.....	.....	.....	.....	2	.....	1
Jaundice	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Peritonitis	.....	.....	1	.....	.....	.....	.....	3	.....	.....
DISEASES OF THE LYMPHATIC SYSTEM	1	.....	.....	.....	.....	.....	1	.....	.....	.....
Inflammation of lymph glands	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
DISEASES OF THE URINARY SYSTEM	23	2	4	3	2	.....	4	2	6	.....
Acute nephritis	.....	.....	.....	1	.....	.....	1	.....	1	.....
Bright's disease	.....	2	2	2	2	.....	3	1	5	.....
Uræmia	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
Inflammation of bladder:										
Acute	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Chronic	.....	.....	1	.....	.....	.....	.....	.....	.....	.....
DISEASES OF THE GENERATIVE SYSTEM	8	1	2	.....	2	.....	1	1	1	.....
Stricture of the urethra, organic	.....	1	2	.....	1	.....	.....	1	1	.....
Abscess of prostate glands	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Inflammation of the uterus	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
DISEASES OF THE ORGANS OF LOCOMOTION	6	1	.....	2	.....	.....	1	1	1	.....
Ostitis	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
Caries	.....	.....	.....	.....	.....	.....	1	.....	.....	.....
Dropsy of joints	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Abscess of joints	.....	.....	.....	1	.....	.....	.....	.....	.....	.....
DISEASES OF THE CONNECTIVE TISSUE:										
Abscess	.....	1	.....	.....	.....	.....	.....	1	.....	.....
DISEASES OF THE SKIN	5	.....	1	1	.....	1	1	.....	1	.....
Ulcer	.....	.....	1	.....	.....	.....	1	.....	.....	.....
Carbuncle	.....	.....	.....	1	.....	1	.....	.....	.....	.....
Gangrene	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
Injuries	**37**	**1**	**1**	**5**	**9**	**3**	**2**	**12**	**4**	.....
GENERAL INJURIES	9	.....	1	1	2	.....	1	1	3	.....
Burns and scalds	.....	.....	1	1	.....	.....	.....	.....	1	.....
Heat stroke	.....	.....	.....	.....	1	.....	.....	1	.....	.....
Multiple injury	.....	.....	.....	.....	1	.....	1	.....	1	.....
Shock	.....	.....	.....	.....	.....	.....	.....	.....	1	.....
LOCAL INJURIES	28	1	.....	4	7	3	1	11	1	.....
Scalp wound:										
Bone not exposed	.....	.....	.....	.....	.....	.....	.....	1	1	.....
Bone exposed	.....	.....	.....	.....	1	.....	.....	.....	.....	.....

TABLE VIII.—STATEMENTS, BY DISTRICTS, OF CAUSES OF MORTALITY, ETC.—Cont'd.

CAUSES OF DEATH.	Total.	DISTRICTS. North Atlantic.	Middle Atlantic.	South Atlantic.	The Gulf.	The Ohio.	The Mississippi.	The Great Lakes.	The Pacific.	Quarantine stations.
Injuries.										
LOCAL INJURIES—Continued.										
Fracture of the vault of the skull		1		1	1					
Fracture of the base of the skull					1			2		
Concussion of brain					1			2		
Compression of brain								1		
Wound of neck				1						
Contusion of chest							1			
Fracture of ribs				1				1		
Perforating wound of che t					1					
Penetrating wound of pleura or lung								1		
Wound of back				1				1		
Compression of cord without fracture					1					
Rupture of the viscera						1				
Fracture of the scapula						1				
Fracture of the humerus								1		
Fracture of leg, both bones								1		
Fracture of the metatarsus					1					
AMPUTATIONS:										
Amputation of thigh						1				

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1892.

Operations.	No. of cases.	Remarks.
Total number of Operations	**1,061**	
REMOVAL OF TUMORS	37	
For hæmatoma	2	Removed.
For ganglion cyst, popliteal space	1	Excision.
For subaceous cyst	5	Incised, 2; excision, 3.
For subaceous cyst of scalp	2	Excision.
For subaceous cyst of forehead	2	Incision.
For subaceous cyst of temple	3	Removal.
For subaceous cyst of neck	3	Excision.
For subaceous cyst of arm	1	Do.
For fibroma of nose	3	Do.
For fibroma of neck	1	Dissected out.
For fibroma of shoulder	1	Excision.
For lipoma of forehead	1	Removal.
For lipoma of neck	1	Extirpation.
For lipoma of back	1	Removal by dissection.
For condylomata of anus	1	Excision.
For condylomata of penis	1	Removal by scissors.
For sarcoma of hip	1	Excision.
For sarcoma of testicles	3	Castration.
For carcinoma of tongue	1	Excision.
For carcinoma of lymph glands	1	Removal diseased glands.
For carcinoma of breast	2	Excision.
REMOVAL OF FOREIGN BODIES	6	
For foreign body in cornea	1	Removal.
For gunshot wound of arm	2	Ball removed, .32 caliber.
For gunshot wound of hand	1	Ball removed.
For gunshot wound of bladder	1	Do.
For gunshot wound of head and pelvis	1	Removal of eye and bullet; died.
OPENING OF ABSCESSES	33	
For abscess of connective tissue of face	2	Incised.
For abscess of connective tissue of neck	1	Do.

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1892—Continued.

Operations.	No. of cases.	Remarks.
Operations.		
OPENING OF ABSCESSES—Continued.		
For abscess of chest	1	Dissection and drainage.
For tubercle of sternum	3	Opened and drained.
For abscess of lung	3	Aspirated.
For psoas abscess	9	Incised.
For abscess of the anus	1	Do.
For tubercle of testicles	2	Do.
For abscess of shoulder	1	Do.
For abscess of axilla	1	Do.
For abscess of forearm	3	Do.
For abscess of finger	2	Do.
For thecal abscess of wrist	1	Do.
For abscess of buttock	1	Do.
For abscess of broad ligament of uterus	1	Do.
For abscess of thigh	1	Do.
OPERATIONS ON THE NERVES	2	
For inflammation of cerebral membrane	1	Trephining.
For sciatica	1	Exposing and stretching of nerve.
OPERATIONS ON THE EYE AND APPENDAGES	8	
For lacerated wound of eyelid	1	Lid stitched in place.
For stricture of lachrymal duct	1	Division of stricture and probes.
For inflammation of the eye	1	Incision.
For pterygium	2	Removal.
For hernia of iris	1	Excision.
For hard cataract	1	Removal of lens.
For wound of eyeball	1	Excision.
OPERATIONS ON THE FACE AND MOUTH	4	
For hypertrophy of tonsils	1	Tonsilotomy.
For lacerated wound of lip	2	Plastic operation.
For cleft palate	1	Closed.
OPERATIONS ON THE ARTERIES	2	
For aneurism popliteal artery	1	Ligation.
For aneurism facial artery	1	Do.
OPERATIONS ON VEINS	4	
For varix of leg	2	Excision.
For varicose veins of leg	2	Do.
OPERATIONS ON THE RESPIRATORY ORGANS	12	
For hydrothorax	2	Aspirated.
For pleurisy	6	Paracentesis of pleura.
For empyema	4	Linear incision into pleura.
OPERATIONS ON THE ORGANS OF DIGESTION	117	
For hernia, inguinal	16	Radical cure; excision of sac.
For hernia, irreducible	3	Taxis, 2; chloroform, 1.
For hernia, strangulated	6	Sac opened and ligated.
For hernia	7	McEwen's operation.
For stricture of the rectum	1	Posterior linear rectalomy.
For fistula in ano	39	Incised, 27; ligation, 12.
For fissure in ano	6	Dilatation.
For ulceration of rectum	2	Dilatation of sphincter.
For hæmorrhoids	35	Ligatation, enlarged veins, 23; excision, 12.
For hypertrophy of liver	1	Exploratory laparotomy.
For abscess of liver	1	Incision and pus evacuated.
OPERATIONS ON THE LYMPHATIC GLANDS	358	
For tubercle of lymph glands	2	Extirpated.
For hypertrophy of lymph glands of neck	2	Removed with curette.
For hypertrophy of lymph glands of groin	6	Excision.
For inflammation of lymph glands of neck	3	Do.
For inflammation of lymph glands of groin	239	Extirpation, 211; removal, 28.
For suppuration of lymph glands of neck	3	Removal of gland.
For suppuration of lymph glands of groin	87	Removal with curette.
For suppuration of inguinal glands	16	Incised and curetted.
OPERATIONS ON THE URINARY ORGANS	151	
For tubercle of bladder	1	Cystotomy.
For retention of urine	2	Aspirated.
For chronic cystitis	1	Suprapubic cystotomy.
For urethral calculus	2	Removal of calculus.
For stricture, urethra:		
Gradual dilatation	46	Died, 1.
Forcible dilatation	51	
For internal urethrotomy	20	
For external urethrotomy	12	

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1892—Continued.

Operations.	No. of cases.	Remarks.
Operations.		
OPERATIONS OF THE URINARY ORGANS—Cont'd.		
For fistula in urethra	1	Urethroplasty; died.
For urinary fistula	10	Curetted and sutured.
For urinary abscess	2	Perineal section.
For rupture, urethra	2	Medium lithrotomy.
For rupture, perineum	1	Removal of cicatrix and suturing.
OPERATIONS ON THE ORGANS OF GENERATION	152	
For phimosis	87	Prepuce slit and stitched, 13; circumcision, 74.
For ulcer of penis and phimosis	11	Circumcision.
For paraphimosis	7	Slitting, 3; reduced, 4.
For hypospadias	1	Plastic operation.
For varicocele	7	Incision, 6; scrotum shortened, 1.
For hydrocele	10	Fluid removed by trochar and canula, 3; aspirated, 7.
For hydrocele tunica vaginalis	20	Tapping, 5; radical cure, 15.
For hæmatocele	1	Evacuation of clot.
For tubercle of testicle	1	Castration.
For chronic epididymitis	1	Do.
For inflammation of testicle	6	Incision.
OPERATIONS ON THE ORGANS OF LOCOMOTION	87	
For fracture of vault of skull	3	Trephined.
For fracture of outer table of skull	2	Bone scraped, 1; trephined, 1; died.
For fracture of superior and inferior maxilla	2	Wired.
For fracture of humerus	2	Reduced.
For fracture of ribs	2	Resection of ribs.
For fracture of metacarpus	1	Reduced.
For fracture of patella	3	Wiring of fragments.
For fracture of leg	5	Myotomy.
For fracture of left metatarsal bone	1	Sutured.
For dropsy of knee joint	5	Aspirated.
For synovitis of knee joint	3	Do.
For ankylosis of knee joint	2	Forcible flexion.
For caries of skull	2	Dead bone removed by chisel and gouge.
For caries of spine	1	Opened and drained.
For caries of bone tarsus	1	Removal of diseased bone.
For necrosis of bones of skull	4	Do.
For necrosis of upper jaw	4	Tapping antrum.
For necrosis of clavicle from fracture	3	Removed sequestrum.
For necrosis of ulna	2	Resection of ulna.
For necrosis of radius	2	Resection of ulna and radius.
For necrosis of femur	4	Scraping, 1; removal of sequestra, 3.
For necrosis of humerus	7	Removal.
For necrosis of tibia and fibia	4	Chisled and sutured.
For necrosis of phalanges of toe	4	Excision.
For bursal inflammation of forearm	2	Injection with iodine.
For bursal inflammation of femur	2	Incision.
For bursal inflammation, patella	2	Tapped and injected tincture iodine.
For lacerated wound, upper extremity	1	Nail removed.
For loose cartilage of knee joint	1	Removal of loose body.
For suppuration of knee joint	3	Free incision.
For chronic ostitis of leg, right tibia	1	
For ulcer of leg	1	Plastic operation to cover ulcer.
For lacerated wound of toe	1	Removal of sequestra.
For tuberculosis of wrist	1	Scraped out.
For tuberculosis of knee joint	1	Partial excision.
For tuberculosis of ankle	3	Do.
AMPUTATIONS	76	
Of shoulder joint for fracture	1	Died.
Of humerus for fracture	1	Died.
Of right forearm for fracture	1	
Of hand, lacerated wound	2	
Of fingers for frostbite	4	
Of fingers for necrosis	7	
Of fingers for compound fracture	6	
Of fingers for whitlow	3	
Of fingers for lacerated wounds	9	
Of fingers for incised wounds	1	
Of fingers for gangrene	5	
Of fingers for ulcer, syphilitic	1	
Of fingers for poisoned wounds	2	
Of thigh for sarcoma of tibia	1	
Of leg for abscess of joint	1	
Of leg for gangrene	4	Died, 1.
Of epithelioma of penis	1	
For compound fracture of leg	4	

TABLE IX.—SURGICAL OPERATIONS, FISCAL YEAR 1892—Continued.

Operations.	No. of cases.	Remarks.
Operations.		
AMPUTATIONS—Continued.		
Ankle joint for fracture	2	
Foot for frostbite	1	
Foot for senile gangrene	1	
Feet for gangrene	1	Died.
Feet for necrosis of phalanx	1	
Toes for frostbite	9	
Toes for lacerated wounds	3	
Toes for gangrene	1	
Toes for dislocation	1	
Toes for fracture	1	
REAMPUTATION	1	
For irritable stump of finger	1	
OPERATIONS ON THE SKIN	7	
For bedsore of back	1	Removal of indurated tissue.
For burn of face, including eyelids	1	Plastic operation.
Cicatrix skin of penis	1	Excision.
For ulceration skin of groin	1	Cauterized and curetted.
For ulceration skin of leg	3	Skin grafting.
UNCLASSIFIED	5	
For incised wound of neck	1	Sutured.
For incised wound of forearm	1	Do.
For ulceration of flap	1	Plastic operation.
For carbuncle of neck	2	Incised

TABLE X.—RATIO OF DEATHS FROM SPECIFIC CAUSES.

Deaths from—	Per 100 from all causes.	Deaths from—	Per 100 from all causes.
General diseases	43.42	Diseases of the digestive system	7.30
Diseases of the nervous system	6.05	Diseases of the urinary system	4.80
Diseases of the circulatory system	9.60	Injuries	7.72
Diseases of the respiratory system	15.86	From all other causes	5.25

TABLE XI.—RATIO OF DEATHS IN EACH DISTRICT.

Districts.	Per 100 patients treated in hospitals.	Districts.	Per 100 patients treated in hospitals.
North Atlantic	2.62	The Mississippi	3.38
Middle Atlantic	3.44	The Great Lakes	2.76
South Atlantic	2.71	The Pacific	3.83
The Gulf	3.63	The quarantine stations	2.72
The Ohio	1.54		

TABLE XII.—COMPARATIVE EXHIBIT.—MORTALITY PER 100 PATIENTS TREATED IN HOSPITAL, BY DISTRICTS, 1881–1892.

Districts.	General average.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
North Atlantic	3.13	2.84	4.00	3.50	3.59	3.95	3.09	3.04	3.53	3.25	2.65	2.50	2.62
Middle Atlantic	3.99	3.63	3.92	3.54	3.87	3.34	3.27	4.85	4.80	3.92	4.66	3.77	3.44
South Atlantic	3.16	3.22	3.05	3.97	2.86	3.05	3.54	3.53	2.54	3.55	3.64	2.56	2.71
The Gulf	3.50	3.94	4.98	3.49	4.10	2.49	2.96	3.82	2.78	3.08	3.40	3.88	3.63
The Ohio	3.38	4.38	5.64	5.50	4.33	2.43	3.05	3.06	2.01	3.52	2.26	2.54	1.53
The Mississippi	3.57	3.29	3.51	4.35	4.08	2.93	2.79	4.19	4.78	3.52	3.04	3.67	3.37
The Great Lakes	2.78	3.16	2.49	2.51	3.07	2.79	2.37	2.72	2.83	2.93	2.63	2.44	4.11
The Pacific	4.44	6.09	3.35	3.96	4.88	3.30	5.72	4.59	4.45	4.22	4.42	4.43	3.83

TABLE XIII.—COMPARATIVE EXHIBIT.—RATIO OF DEATHS FROM SPECIFIC CAUSES, 1881–1892.

Deaths from—	General average.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
General diseases	47.91	46.15	51.75	50.00	48.67	46.61	48.40	45.63	46.58	45.47	50.20	52.66	43.42
Diseases of the—													
Nervous system	5.62	7.25	5.57	6.77	4.40	8.07	4.91	4.79	6.84	5.69	4.06	3.69	6.05
Circulatory system	7.90	7.03	5.15	6.38	6.14	10.42	9.09	7.29	10.04	7.58	5.81	9.84	9.60
Respiratory system	15.70	17.80	12.58	16.33	13.90	14.06	16.22	17.50	14.96	17.26	19.10	15.16	15.85
Digestive system	8.54	8.13	12.99	10.16	9.20	9.90	7.37	7.08	8.97	7.37	6.30	5.33	7.30
Urinary system	5.10	4.40	5.15	3.98	7.36	5.21	4.18	6.25	5.34	4.63	4.67	4.71	4.80
Injuries	5.77	6.60	4.54	3.99	5.94	3.39	5.41	7.92	4.50	8.00	5.81	5.33	7.72
From all other causes	3.46	2.64	2.27	2.39	4.30	2.34	4.42	3.54	2.77	4.00	3.65	3.28	5.26

TABLE XIV.—COMPARATIVE EXHIBIT.—AVERAGE DURATION OF TREATMENT IN HOSPITAL IN EACH DISTRICT, 1881–1892.

Districts.	General average.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.
North Atlantic	27.05	22.67	24.86	26.60	30.13	30.22	26.56	23.89	26.76	30.05	29.21	29.68	24.37
Middle Atlantic	26.59	27.68	26.18	24.50	26.84	25.32	25.84	29.21	26.99	26.92	26.32	26.81	26.87
South Atlantic	26.05	23.80	23.20	23.70	23.46	26.06	26.72	27.99	26.53	27.91	28.27	26.19	26.26
The Gulf	22.80	23.60	35.25	20.10	19.97	18.63	19.43	20.82	23.24	24.55	23.21	21.07	21.97
The Ohio	24.06	23.88	29.22	26.50	22.56	23.18	23.61	21.87	21.62	22.52	24.52	24.92	23.81
The Mississippi	26.72	19.66	17.55	22.50	18.16	20.28	20.79	21.72	21.23	22.60	20.88	22.61	20.59
The Great Lakes	28.01	29.42	26.03	27.70	29.75	28.10	28.61	26.31	26.72	29.69	30.82	27.09	27.82
The Pacific	31.22	32.03	27.55	26.10	31.04	31.09	29.74	29.72	29.96	31.12	33.68	32.68	36.92

TABLE XV.—STATEMENT OF MORTALITY OF PASSENGERS ON VOYAGES FROM FOREIGN PORTS TO THE UNITED STATES, JULY 1, 1891, TO JUNE 30, 1892.

Date.	Name of vessel.	Where from.	Sex.	Age.	Cause of death as reported to customs officer.
May 3	Alaska	Mediterranean ports	Female	65	Heart disease.
27	Alesia	do	Male	37	Nervous affection.
Jan. 26	Amsterdam	Rotterdam	do	27	Pneumonia.
Apr. 17	do	do	do	24	Do.
Oct. 28	do	do	do	15	Do.
Dec. 28	Belgenland	Antwerp	do	50	Heart failure.
Feb. 15	do	do	do	57	Do.
Apr. 15	Britannic	Liverpool	do	49	Delirium tremens.
July 28	do	do	do	28	Heart disease.
Oct. 6	Burgundia	Mediterranean ports	Female	57	Cancer.
26	California	do	Male	54	Heart disease.
July 17	Cephalonia	Liverpool	do	58	Pneumonia.
May 7	Circassia	Glasgow	do	27	Delirium tremens.
Feb. 27	City of Chicago	Liverpool	do	38	Syncope.
Oct. 19	do	do	Female	34	Asthenia.
Nov. 19	City of New York	do	do	55	Heart disease.
4	City of Rio de Janeiro.	Hongkong	Male	26	Syncope.
Oct. 5	City of Rome	Glasgow	do	40	Prostration.
July 31	City of Sidney	Panama	do	56	Heart disease.
Sept. 25	Colon	Colon	do	47	Pernicious fever.
July 16	Columbia	Hamburg	do	41	Paralysis.
Oct. 30	Dania	do	Female	53	Apoplexy.
Apr. 8	Darmstadt	Bremen	Male	34	Phthisis.
20	Dresden	do	Female	65	Weakness.
Sept. 8	Elba	do	Male	60	Aneurism.
Dec. 9	do	Hamburg	do	82	Debility.
Jan. 9	do	Bremen	Female	68	Do.
9	Eider	do	do	12	Heart disease.
Feb. 4	Ems	do	Male	30	Do.
May 23	Elysia	Mediterranean ports	do	42	Apoplexy.
Oct. 19	Furnesia	Glasgow	do	30	Delirium tremens.
19	do	do	Female	34	Bronchitis.
Sept. 1	Gallia	Liverpool	Male	24	Coma.

TABLE XV.—STATEMENT OF MORTALITY OF PASSENGERS, ETC.—Continued.

Date.	Name of vessel.	Where from.	Sex.	Age.	Cause of death as reported to customs officer.
Apr. 11	Gera	Bremen	do	66	Apoplexy.
Aug. 12	do	do	Female	9	Apoplexy of heart.
Sept. 14	Gothia	Hamburg	Male	25	Gastric fever.
17	Halesburg	Bremen	Female	19	Consumption.
Aug. 18	Hekla	Copenhagen	do	63	Paralysis.
Nov. 27	Hermann	Bremen	do	47	Apoplexy.
Apr. 26	Hindostan	Mediterranean ports	Male	49	Bronchitis.
Aug. 19	Indiana	Liverpool	Female	10	Heart disease.
Nov. 9	Italia	Palermo	Male	16	Phthisis.
June 8	Karlsruhe	Bremen	do	29	Heart disease.
July 21	do	do	Female	62	Do.
Apr. 16	Khio	Bilboa	do	10	Inflammation of stomach.
Mar. 14	Labrador	Liverpool	do	35	Heart failure.
Feb. 15	La Gascogne	Havre	do	34	Consumption.
July 5	do	do	do	44	Brain fever.
Nov. 20	Lahn	Bremen	do	55	Inflammation of kidneys.
Feb. 7	do	do	Male	36	Inflammation of lungs.
Apr. 19	Letimbo	Mediterranean ports	do	26	Congestion of brain.
Jan. 3	Lord Clive	Liverpool	do	25	Cerebral hemorrhage.
July 15	Maasdam	Rotterdam	Female	35	Uræmia.
Oct. 7	do	do	do	20	Meningitis.
Nov. 24	do	do	do	55	Exhaustion.
Jan. 30	Marsilia	Marseilles	Male	40	Phthisis.
30	do	do	do	9	Inflammation of kidneys.
Dec. 28	Moravia	Hamburg	do	28	Apoplexy.
Sept. 24	München	Bremen	Female	56	Vitium cordis.
Apr. 20	Nevada	Liverpool	do	34	Heart disease.
Nov. 6	Nurnberg	Bremen	do	65	Exhaustion.
Apr. 14	Oldenburg	do	Male	67	Senile debility.
July 21	Olympia	Mediterranean ports	Female	35	Premature labor.
Feb. 4	Oteri	Truxillo	Male	41	Apoplexy.
Oct. 9	Ottoman	Liverpool	Female	53	Heart disease.
Apr. 26	Pavonia	do	do	17	Meningitis.
Dec. 31	Roman	do	Male	27	Smallpox.
July. 8	do	do	Female	10	Cardiac failure.
Aug. 13	Rotterdam	Amsterdam	do	60	Pneumonia.
Nov. 5	do	do	Male	60	Cerebral apoplexy.
Sept. 23	Rugia	Hamburg	Female	39	Tuberculosis.
23	do	do	Male	11	Do.
23	do	do	do	30	Cholera.
Aug. 17	Saale	Bremen	do	26	Consumption.
Sept. 14	do	do	Female	52	Apoplexy.
July 17	San Blas	Panama	Male	40	Pernicious fever.
Aug. 24	Servia	Liverpool	do	31	Apoplexy.
May 19	Spaarndam	Rotterdam	do	45	Pneumonia.
19	do	do	Female	18	Heart disease.
June 30	do	do	do	25	Apoplexy.
Oct. 15	Spree	Bremen	do	53	Debility.
1	Stuttgart	do	do	8	Catarrh.
Mar. 25	do	do	Male	32	Hemorrhage of brain.
Oct. 24	Switzerland	Antwerp	do	50	Consumption.
Dec. 3	do	do	Female	32	Meningitis.
Jan. 15	do	do	Male	39	Heart disease.
Feb. 8	Umbria	Liverpool	do	20	Delirium tremens.
Sept. 17	Venezuela	Caracao	do	46	Disease of kidneys.
Apr. 8	Victoria	Mediterranean ports	do	29	Syncope.
June 23	Virginia	Hamburg	Female	9	Measles.
Oct. 1	do	do	Male	25	Delirium tremens.
Mar. 30	Weimer	Bremen	do	39	Heart failure.
May 11	do	do	Female	65	Do.
Feb. 3	Werkendam	Rotterdam	do	28	Apoplexy.
3	do	do	Male	40	Phthisis.
Nov. 20	Werra	Bremen	Female	25	Vitium cordis.
20	do	do	do	61	Do.
20	do	do	do	52	Bronchitis.
Jan. 6	Westernland	Antwerp	Male	35	Heart disease.
May 3	do	do	Female	55	Do.
Oct. 9	Wisconsin	Liverpool	Male	42	Syncope.

TABLE XVI.—NATIVITY OF PATIENTS TREATED IN U. S. MARINE HOSPITALS DURING THE PAST FISCAL YEAR.

Countries.	Number.	Countries.	Number.
Total	15,105	Italy	39
		Japan	15
Africa	12	Mexico	13
Austria	69	New Zealand	6
Australia	15	Norway	868
Azore Islands	8	Philippine Islands	5
Canada	448	Poland	8
China	22	Portugal	32
Denmark	172	Prince Edward Island	20
England	505	Russia	69
Fayal	7	Scotland	118
Finland	260	Spain	31
France	93	Sweden	583
Germany	637	Switzerland	20
Greece	31	United States	9,395
Holland	50	Wales	24
India	12	West Indies	190
Ireland	1,096	Unknown	232

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