San Diego was fortunate to be a latecomer among the great American cities. During the middle of the nineteenth century, major cities on the East Coast struggled with phenomenal growth. Immigration and urban poverty resulted in crowded and unsanitary living conditions, followed by the inevitable public health problems. In 1888, New York City housed over a million people in tenements. Spoiled food, human waste, horse manure and dead animals littered the streets of many cities. Horses, the major source of transportation, each produced gallons of urine and from fifteen to thirty pounds of manure daily, much of it deposited on unpaved city streets. Providing their growing populations with a clean water supply, sufficient sewers and solid waste disposal presented enormous challenges for big cities during the latter half of the nineteenth century. Epidemics attributed to cholera, typhoid, and dysentery resulted from the pollution of water supplies by sewage dumped into lakes and rivers. The decade of the 1880s also brought new scientific understanding of diseases caused by microorganisms. Within the span of only a few years, Louis Pasteur, Robert Koch, and other scientists identified the bacterial causes of tuberculosis, anthrax, typhoid, pneumonia, diphtheria and cholera.

As early as 1868, the San Diego Union promoted San Diego’s healthy climate, hoping the city could attract a portion of the health-seekers going to Florida. San Diego was promoted as a natural sanitarium, its mild climate being suited to "delicate females, and consumptive patients in the more advanced stages of disease." And many health-seekers suffering from tuberculosis did come to San Diego, seeking a cure in the moderate climate. In 1874, the Chamber of Commerce published the city’s first Business Directory, an illustrated pamphlet describing the many natural advantages, institutions and highlights of San Diego. It stated that "As a national sanitarium, San Diego is unsurpassed. Hundreds of invalids have been restored to health, or greatly benefited, by our health-giving climate." Harr Wagner moved his literary magazine The Golden Era to San Diego in 1887 and touted "Southern California as a Health Resort." Prominent local physicians wrote books and articles about the marvels of San Diego’s healthy climate. The Chamber of Commerce cheered that San Diego’s overall death rate was lower than other cities, but only after they had subtracted the deaths from consumption, since most of those had come to San Diego already infected with tuberculosis.
The City of San Diego entered the 1880s with a population of only 2,637. After the California Southern Railroad connected San Diego with the East in 1885, land speculators and health-seekers flocked to San Diego. Hundreds of newcomers arrived daily and property values soared. San Diego’s Great Boom, from 1886 to 1888, brought with it a tremendous need for clean water, food and milk. At the peak of the Great Boom, San Diego counted an estimated 30,000 to 40,000 residents, most of those having arrived within the span of just two years! Like many larger cities, San Diego soon became troubled with filthy streets and offensive odors along its bay. Foul smells from garbage heaps, open cesspools and sewers could not easily be ignored.

**Board of Health**

San Diego’s Board of Health was first established by the Common Council of the City of San Diego in 1850, under authority of the first City Charter. There is no record of regular meetings of that board. The Board of Trustees again established a Board of Health in 1869, in an attempt “to prevent the spread of Small Pox and other contagious diseases in the City of San Diego.” It does not appear that this Board remained active, and there is no record of its reappearance until the *San Diego Union* carried news of the "first regular meeting" of the Board of Health on June 12, 1876. The "unhealthy condition of the water that was being delivered to the citizens of this city by the San Diego Water Company" was the first public health issue to be discussed by this new Board of Health.

On January 13, 1888, Mayor William J. Hunsaker re-established the Board of Health with Ordinance #180. Dr. Thomas C. Stockton was elected President of the Board of Health when it met again on January 31,1888. The other members of the Board of Health at the time were Drs. W.N. Smart, R. Eichler, L.D. Lyford, and Thomas L. Magee. Dr. Daniel B. Northrup, who happened to be Stockton’s partner in medical practice, had become San Diego’s Health Officer in April, 1887. The *San Diego Union* published Dr. Northrup’s mortality report for the year 1887.

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**Report of the Health Officer for the Past Year**

**TWO HUNDRED, FORTY-EIGHT DEATHS…**

The Board of Health met in the Council Chamber last evening, all its members being present. After the reading and approval of the minutes of the previous meeting the report of Health Officer Northrup, for the year ending December 31, 1887, was read in substance as follows:

During the year there were 248 deaths, as follows: Cholera morbus, 1; cholera infantum, 5; diarrhea, 2; dysentery, 1; measles, 2; diphtheria, 3; croup, 2; erysipelas, 1; fever, typhoid, 10; fever remittent and intermittent, 9; fever, malaria, 4; hydrocephalus, 1; meningitis, 8; phthisis pulmonans, 48; marasmus, 4; cancer, 1; pneumonia, 17; pleurisy, 1; bronchitis, 2; enteritis, 5; gastritis, 4; peritonitis, 3; diseases of the liver, 1; diseases of the bowels, 9; Bright’s disease, 17; convulsions, 3; brain diseases, 8; old age, 6; still births, 10; inanition, 2; uremia, 3; tuberculosis, 5; congestion of the lungs, 3; paralysis, 6; asthma, 1; pyemia, 2; railroad accidents, 3; gunshot, 4; cerebral hemorrhage, 4; other causes, 26.

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By early 1888, there were rising expectations of the newly formed Health Department but little progress was evident. The *Union* criticized the Board of Health and the filthy condition of the city in an editorial entitled "Clean the City":

> It is time the Board of Health set about the work for which their body is supposed to be particularly created. The filthy condition of the city is not only disgraceful, but dangerous to health and even to life. It is time that the matter be taken in hand in a spirit of vigor and thoroughness. There is absolutely no excuse for the present neglect. The work to be done is so apparent, the foulness so offensive to eye and nostril that it is impossible to walk far in any direction without the shameful supine-ness of the Health Department being fully demonstrated. If new ordinances are needed, let them be made. The situation is too serious for trifling. Clean the city.  

By 1888 Northrup was under pressure to resign his position as Health Officer and had apparently advised the Board of Health of his wish to resign, but remained as Health Officer pending a recommendation for his replacement from the Board of Health to the City Council. The *San Diego Union* was critical of bills paid by the city to Northrup as Health Officer, totaling "the neat sum of $1,509.50, for services performed and expenses incurred therein." The *San Diego Daily Sun* reported that the resignation of Dr. Northrup had been "demanded by the people and urged by the newspapers" early in 1888. There was clearly a dispute between the City Council and the Board of Health over the appointment of a new Health Officer. By July these differences had been settled.

Dr. David Gochenauer was appointed Executive Officer of the Board of Health (Health Officer) for the City of San Diego at a meeting of the City Council on June 6, 1888. Gochenauer reported to the Common Council the following week. While the minutes of the Board of Health during the first half of 1888 reveal no evidence of Dr. Northrup's attendance, Dr. Gochenauer was present at most of the Board of Health meetings beginning with July 14, 1888. Within five months, the tone of newspaper editorials concerning the Health Department and the sanitary condition of the City had turned from embarrassment to praise:

> It is a matter of congratulation that San Diego is so well organized and efficiently equipped in its Health Department. The present Health Officer took office in June of this year. At that time the department was in a state of chronic inefficiency. It had no organization worthy of the name, no system, no discipline, no equipment. Dr. Gochenauer knew what he was appointed for, and set about the work of bringing order out of confusion.

Gochenauer had arrived in San Diego in 1886. He was born in 1840 in Shippensburg, Pennsylvania, served in the Union army during the Civil War as a captain in the 202nd Pennsylvania infantry, subsequently graduated from Yale and received his M.D. degree from the Medical College of Philadelphia. He joined the San Diego County Medical Society shortly after he was appointed Health Officer in June, 1888. He would later become president of the County Medical Society in 1897. After serving for 18 months as San Diego’s Health Officer, he resigned in December, 1890. According to historian William E. Smythe, Gochenauer founded the Agnew Hospital in 1898 and built the Agnew Sanitarium in 1906.
County Physician from 1893-1907. He practiced medicine until the day he died on February 20, 1917, at the age of 76.

Shortly after his arrival in San Diego, Gochenauer organized and became president of the short-lived San Diego Rapid Transit Street Car Company. At various times Gochenauer was general manager of the San Diego Sun newspaper, member of the Board of Supervisors, Police Commissioner, and president of the San Diego Chamber of Commerce.

First Annual Report of the Board of Health

The First Annual Report of the Board of Health of the City of San Diego for the Year Ending December 31st, 1888 (hereafter called the 1888 Health Department Report) is a 98-page synopsis of public health, life and death in early San Diego. Dr. Gochenauer was responsible for preparation of the 1888 Health Department Report, and the first 47 pages are clearly his own remarks. The 1888 Health Department Report may read like a Chamber of Commerce promotion of the City’s attractions—boosting San Diego’s natural harbor, pure water, climate, modern streetlights, electric trolleys, public library and fire department. But Gochenauer didn’t hesitate to point a critical finger at public nuisances, public health problems, and the inadequacy of City government in dealing with them. Indeed, it is his criticism that makes the 1888 Health Department Report such interesting reading.

Gochenauer recognized the importance of vaccination against smallpox. He used schools as a venue for immunizing children (upon instruction from city leaders) and offered free vaccinations at the Health Office. The 1888 Report stated that Dr. Henry S. Orme, State Health Officer, in a personal letter of Dec. 26, 1888, expressed his concern about the spread of smallpox, and recommended compulsory vaccination "if it not be in violation of the law." Gochenauer referred to Dr. Northrup’s "thorough vaccination of the city" a year earlier (for which Northrup believed he was not fairly compensated).

Gochenauer’s responsibilities included the "sanitary care of the city jail," which he found to be unsanitary and of poor construction. There was little light or ventilation, cells were filthy and floors were damp. Another responsibility of the Health Officer was San Diego’s smallpox hospital, then located at the eastern border of City Park (now Balboa Park). Known locally as the "pest-house," it had housed several occupants during the smallpox scare of 1887. This outbreak appears to have been over by mid-1888, as there are no deaths from smallpox listed in the 1888 Health Department Report, for which statistics begin in July, 1888.

Gochenauer emphasized the importance of a sanitary food supply. His early efforts at milk inspection and at educating dairymen were well founded, as was his admonition to centralize slaughterhouses in one location to allow for regular meat inspection. Contamination of food by microorganisms was just becoming understood at the time, but he was quite correct in stating that "a large proportion of typhoid fevers and diarrhoeal disease is due to impurities in our foods and beverages."

Tuberculosis was responsible for at least 14% of the deaths during the last six months of 1888 and for 21% of all the deaths in 1887. The microorganisms that cause tuberculosis are generally passed from one human to another by coughing and sneezing. During the nineteenth century (and even today in many developing countries) tuberculosis was also transmitted from cows to humans, either through drinking the milk of a diseased cow or, less often, by eating the meat.

The 1888 Health Department Report provides some interesting details not directly related to
public health: the Meteorological Synopsis, Fire Department equipment, Public Library holdings, and the reports of the Pound Keeper, the San Diego Gas Company, San Diego Electric Light Company and the Westinghouse Incandescent Electric Light System. The Humane Society report describes instances of neglect and mistreatment suffered by some of San Diego’s animals, particularly the horses.

Most of the concerns of San Diego’s 1888 Board of Health remain important to today’s San Diego County Health and Human Services Agency: vital records and statistics of births, stillbirths and causes of death; reporting of disease, vaccination, quarantine and isolation. In today’s more complex society, other agencies have taken over responsibility for the inspection of slaughterhouses and dairies, assurance of a safe water supply, construction of buildings, plumbing and sewers, and the treatment and disposal of waste. While deaths from various causes are detailed in the 1888 Health Department Report, we have no indication as to the prevalence of chronic diseases such as diabetes, heart disease, alcoholism and cirrhosis. Nor is there any indication of the frequency of traumatic injuries such as burns, gunshots, assaults, and domestic violence. Nor can we discover the incidence of pneumonia, measles, and "venereal diseases" such as syphilis and gonorrhea. Surely these were common health problems.

But readers of the 1888 Health Department Report will be rewarded with the sounds and the smells of a busy waterfront, images of downtown streets dominated by horses and wagons, the novelty of electric lighting, and the anguish of a family at the sickbed of a dying child.
San Diego, January 5, 1889.

To the Honorable the Mayor and City Council:

The Board of Health herewith respectfully submits to you its First Annual Report, being for the year ending December 31, 1888.

By order of the Board.

Thomas L. Magee, M.D.,
Secretary

REPORT OF HEALTH OFFICER.

Office of the Board of Health,
San Diego, January 1, 1889.

TO THE HONORABLE THE BOARD OF HEALTH:

Gentlemen: I have the honor of formally submitting the following report of the sanitary interests of the city of San Diego, as supervised by me during the time I have served as your executive officer. This period embraces an interval of nearly seven months, prior to which there were no records kept concerning this work. My annual report, therefore, will cover a period of but six months, in order that the report of the Health Department may be made to conform with the fiscal year of the city of San Diego.
It is gratifying to be able, at the close of the year, to report a marked and growing interest on the part of our people in the sanitary affairs of the city; and it is but just that I should make public acknowledgment of the fact that the increased interest in this work which has recently manifested itself in San Diego is, in a great measure, due to the action of the press of this city in disseminating information concerning the efforts of the Board of Health in this behalf, and editorially educating the masses to a higher appreciation of the importance of a more perfect sanitary condition of our city, as well as to encourage a more general and earnest co-operation on the part of our people in this good work.

VITAL STATISTICS.

Under our present system, no deaths or stillbirths can occur within the city limits without this office being immediately notified by a certificate, signed by the proper authorities, viz: the attending physician, as to the cause of death, and the undertaker, as to place and time of interment. The law in this respect has, by the strict rules of this office and the co-operation of the medical profession and the undertakers, been faithfully obeyed, and all certificates of death and still-birth have been properly recorded, and are thus preserved in a convenient form for future reference. Every death and every still-birth that has occurred in this city during the last six months, together with the cause of death, age, sex and nationality, has been correctly reported in our monthly mortuary statement, except in the report for the month of November, in which two deaths were omitted that should have appeared. This omission was due to the fact that the deaths occurred on the last day of the month, and were not reported to the office until after our report had gone to press. They appear, however, in these tables, and are included throughout in this report.

BIRTHS AND STILL-BIRTHS.

It is almost impossible to arrive at an absolutely correct report of the number of births and still-births, owing to failure on the part of some the medical practitioners to report all cases. I have endeavors to impress upon their minds the importance of full and complete records of the vital statistics of the city and state, and have prepared blank forms for reports, with stubs for office record, which I have distributed to them, and I trust we shall be able in future to have these records accurately kept.

CONTAGIOUS DISEASES.

Under this head I have only to say that our city has, during the past six months, been entirely free from all contagious and infectious diseases. The climatic influences and the sanitary conditions of our city do not admit of the origin or spread of such forms of sickness.

VACCINATION.

I found, upon investigation, that my predecessor, Dr. Northrup, had about a year ago made a thorough vaccination of the city, I discovered, however, that quite a number of people came into our city since that time who had not been vaccinated; and, in accordance with your instructions, I visited all the schools and vaccinated the pupils who had not recently been inoculated. I also advertised free vaccination for all other children who were not attending school, and a large number were vaccinated at the Health Office.

The last report of the California State Board of Health, a document which is not excelled by any report of a like character in the country, regards this subject as of such importance that it devotes nearly fifty pages to small-pox and vaccination alone; and Dr. Orme, President of the State Board of Heath, in a private letter to me, bearing date December 26, 1888, says: "If we are not
careful we shall have small-pox all over this State soon. They have the disease at ___, and our Los Angeles papers report the fact that one of our police officers last Saturday was removed to the pest house. Hope you will keep your city clear by timely vaccination," etc.

I think we cannot be too careful in the protection of our city against this loathsome disease; and I recommend that, if it be not in violation of the law, the Board of Health enforce compulsory vaccination at such times as may be deemed necessary for the prevention of the inception of small-pox in this city.50

FOOD.

I have given as much consideration to the investigation of our food as my time, opportunities and facilities would permit; and from my observation and study of this branch of our work I am led to regard it as of special importance to the people of this city.

In the report of the State Board of Health of Massachusetts will be found important and reliable information on this subject. Professor Wood, in his analyses of foods in this report, gives the following facts in regard to adulteration: From 212 samples of vinegar, sold as cider vinegar, 129 samples were found not genuine. Out of 58 samples of butter, 13 were adulterated. Out of 19 samples of lard, 12 were adulterated. Out of 17 samples of olive oil, 11 were spurious. 32 samples of French canned vegetables were examined with special reference to the presence of copper, and this impurity was detected in 22 cases. Alum was found in 21 cases of baking powder out of 29 examined. These are only a few specimens from the report, which says: "This percentage of adulterated samples is the lowest recorded yet for any one year."

If, then, in a state like Massachusetts, which stands at the head of states in these investigations, we find so large a percentage of adulterations, is it not essential that we adopt vigorous measures for the detection and suppression of adulterated foods and beverages in our city?

MILK.51

I have personally inspected 11 dairies, supplying milk to this city, and the sanitary conditions in the majority of cases were only fairly good; while in a few instances the question of cleanliness and sanitary surroundings was almost wholly ignored. I failed to find a single dairy that was properly equipped and managed. This I attribute more to a lack of knowledge than to any intentional wrong on the part of the owners, as in most cases my instructions for proper sanitary regulations were kindly and gratefully received. As a rule, the cows were in good flesh, and with a few exceptions healthy. I found no cases where the cows were fed on swill.52 The arrangement of the stalls, in most cases, was bad; but overcrowding of cows was found in but 3 dairies. The water supply in every case was ample and good; but in all the dairies I found that the milk was placed in covered cans, at too high a temperature; thus entirely ignoring every sanitary precaution in this respect. Cows are milked in time only to allow the product to be hurried into close-covered cans, and rushed off for delivery, without first giving it time to cool, and customers have complained to me that their milk had a bad odor. I have examined a number of samples, and am inclined to believe that this odor is entirely due to the milk being closed up while still warm. I have explained to the dairymen that milk thus treated was dangerous, and that children using it were liable to serious bowel troubles. I have also given positive orders requiring the milk to stand uncovered until the proper temperature is obtained, and have drawn plans for a cooling apparatus that will be inexpensive to construct, and simple and easy to manage.

I have sent written instructions to all dairymen concerning the following requirements by the Board of Health:
1. Cows must be healthy.
2. Cows must not be overcrowded.
3. Cows must not be fed on fermented food.
4. Cows must be kept upon properly constructed floors and stalls, and at all times kept clean.
5. As to the proper method of cooling milk.
6. As to the proper care of milk cans.

MILK INSPECTION.

Owing to the limited force employed by the Health Department, I have been obliged to devote considerable time to detail work which properly belonged to the inspectors; consequently I have not been able to give that attention to the examination of milk and foods generally which I should otherwise have given to so important a subject. I have, however, procured the necessary apparatus, for the inspection of milk, and shall in future give careful attention to and frequent examinations of the same.

MEAT INSPECTION.

I have strenuously endeavored to have all our slaughterhouses located at one place, in order that an inspector may be appointed to make a minute examination of each animal before and after it is slaughtered. No city can feel secure as long as there is no inspection of meat, by some person well advanced in veterinary science. It is estimated by competent medical authorities that one-fourth of the deaths caused by consumption are in a great degree directly traceable to the use of meat affected with tuberculosis. The City Council should be urged to establish an abbatoir, and compel all slaughtering of animals to be done there, under the inspection of a competent veterinary surgeon, and in accordance with scientific principles.

CITY ANALYST AND MARKET INSPECTOR.

Scientific investigation has proved that a large proportion of typhoid fevers and diarrhoeal diseases is due to impurities in our foods and beverages; and statistics also show that a great number of fires are directly traceable to lamp explosions; and that in those states where a standard test of oil has been adopted and maintained, proportionately fewer fires have occurred. Likewise, in those cities where it is known that a City Analyst has been employed for the purpose of exposing and advertising all adulterated and spurious articles of food, and where a thorough system of analysis of foods and beverages has been adopted, the proportion of adulterated articles offered for sale has been greatly reduced. I therefore recommend that the city employ a competent Analyst and Food Inspector, to work under the direction of the Board of Health.

VENTILATION AND LIGHT IN BUILDINGS.

Many of the older buildings in this city were, during the "boom," enlarged by the addition of more rooms and extra stories, without the least regard to either light or ventilation; and, in consequence, we have to-day many buildings that for habitation and architectural design are a disgrace to our city. Many cases of colds, coughs, lung diseases and even death were due to those dark, close, chilly and unhealthy rooms. Even some of the newer dwelling houses, I find, are lacking in window area and proper ventilating appliances and especially does this refer to the want of light and ventilation under the houses. It would seem that, in some cases, special efforts were made to close the house tightly underneath. It is important that the Health Department give careful consideration to this branch of sanitary work, and some of the buildings should be
condemned as unfit for occupancy.

**HOUSE DRAINAGE.**

The "go as you please" manner in which the house drainage has been constructed prior to the time that the Board of Health has had control, has resulted in much scamped work and cheap material in our present drainage system.

The Health Department has been called upon to investigate and remedy many cases of bad drainage, some of which were really villainous, and could only result, if allowed to exist, in sickness and death to the occupants of the houses to which they belong, as well as to others living in the immediate vicinity. That much of this defective drainage still exists I do not hesitate to admit; and the only way by which these possible health and life-destroying influences can be properly dealt with, is first to discover and then to remedy them. This we are doing as rapidly as possible with our limited force; and, as this is of vital importance to the future prosperity of our city, I will recommend that your Honorable Board petition the Mayor and City Council to appoint an Inspector for the special purpose of examining that portion of our drainage system that was put in prior to the time when our rules regulating their construction were in force.

I would further recommend that your Honorable Board adopt a rule prohibiting all soil pipes under buildings, except in cases where it is not practicable to place them otherwise.

**SOIL POLLUTION.**

The consequences and prevention of soil contamination have, in proportion to their importance, received less consideration perhaps by the masses than any other question with which sanitarians have to deal. In one of the tables of the Health Inspector's Report we find that a large amount of offal has been removed from this city during the last six months. The attention of the Health Office has been given, perhaps, more to the removal and suppression of filth deposits than to some other important matters which might seem to have been unduly neglected; but when we remember that communities have been depopulated on account of soil pollution, and when we consider that, while all other filthy, unsanitary conditions and disease-producing germs can be purified and destroyed; that the soil over which a city is built, when once contaminated with these life-destroying agencies, must remain unsafe and unfit for human occupancy, and that all those who dwell over such deposits will, sooner or later, fall victims of suffering and death to its slow and secret but certain destructive influences, the judiciousness of our course will be appreciated. 54

One of the most dangerous forms of soil pollution with which we have to contend is that of the unscientific and unsanitary construction and maintenance of cesspools and privy vaults that have existed throughout our city, and it is surprising to find that many of our intelligent people even to this day cling to these deceptive life-destroying pits and pools with a tenacity and zeal that I have labored hard to imitate in my endeavors for their removal.

Many old wells which were abandoned when the city was supplied with a general water works system have been converted into cesspools and garbage pits; these have been made the receptacle for every form of offal, such as privy soil, garbage, dead animals and decayed meat and vegetables; in some instances these wells have been made a community receptacle into which was dumped the refuse of all the families in the neighborhood. So convenient and inexpensive was this method for the disposal of offal, that when official notice for their immediate abatement was served, the owners, with tears in their eyes, pleaded for their continuance. You will, I know, be gratified to learn that a large majority of the worst of these cesspools, privy vaults and pits have been cleaned, disinfected, and properly filled with fresh
earth.

There has also been shown an almost universal indifference to surface uncleanliness. Generally, all family refuse has been permitted to lie around over premises for weeks and months decomposing, with the liquids soaking into the soil and producing the worst forms of unsanitary conditions.

To show the experience and observations of other sanitarians, I take occasion to publish, in this connection, an extract from Dr. Simon's article entitled "Filth Diseases and their Prevention":

"There are houses, there are groups of houses, there are whole villages, there are considerable sections of towns, there are even entire and not small towns, where general slovenliness in everything which relates to the removal of refuse matter—slovenliness which, in very many cases, amounts to utter bestiality of neglect—is the local habit; where, within or just outside of each house, or in spaces common to many houses, lies for an indefinite time, undergoing fetid decomposition, more or less of the putrefiable refuse which house-life, and some sorts of trade-life, produce; excrement of man and brute, and garbage of all sorts, and ponded slop-waters; sometimes lying bare on the common surface; sometimes unintentionally stored out of sight and recollection in drains or sewers which cannot carry them away; sometimes held in receptacles specially provided to favor accumulation, as privy pits and other cesspools for excrement and slop-water, and so-called dust-bins receiving kitchen refuse and other filth. And with this state of things, be it on large or small scale, two chief sorts of danger to life arise: one, that volatile effluvia from the refuse pollute the surrounding air and everything which it contains; the other, that the liquid parts of the refuse pass by soakage or leakage into the surrounding soil, to mingle there, of course, in whatever water the soil yields, and in certain cases thus to occasion the deadliest pollution of wells and springs. To a really immense extent, to an extent, indeed, which persons unpracticed in sanitary inspection could scarcely find themselves able to imagine, dangers of these two sorts are prevailing throughout the length and breadth of this country, not only in their slighter degrees, but in degrees which are gross and scandalous, and very often, I repeat, truly bestial. And I state all this in unequivocal language, because I feel that, if the new sanitary organization of the country is to fulfill its purpose, the administrators, local and central, must begin by fully recognizing the real state of the case, and with consciousness that in many instances they will have to introduce for the first time, as into savage life, the rudiments of sanitary civilization."

You will perhaps find fault with my giving so much space to the subject of soil pollution; but, gentlemen, if we wish to make this city the sanitarium that the Creator designed it to be, the soil upon which we build must be healthy. Nature's perfect sanitary conditions, as they are found here, cannot keep our city free from disease, if we permit deposits of filth and the propagation of disease germs to form the foundation of our habitations. We have endeavored to enlist the cooperation of our people in the maintenance of the sanitary rules of the city by showing the dangers arising from the putrefaction and decomposition of filth around their premises, and by impressing upon their minds the importance of individual cleanliness. We have thus added, within the past few months, quite a number to our corps of volunteers for this sort of sanitary work; and if we can succeed in getting each family and individual sufficiently interested in the protection of their own sanitary surroundings, the Health Department will find its labors greatly lightened.

As a further sanitary precaution, I would recommend that your honorable body adopt a rule prohibiting the construction of foundations for new buildings upon any site that has, by the deposit of privy soil or any other refuse matter, rendered the earth of such building site unhealthy, until such deposit, and as much of such soil as the Board of Health may deem necessary, shall have been removed.
The people of this city had been unmercifully imposed upon in the scavenger work performed, so I had the City Attorney prepare an ordinance governing this class of work, for the protection both of the people and the city. Since this ordinance has been in force, thousands of dollars have been saved to our citizens, as well as seventy-five per cent of the cost to the city. At the same time, a much better class of work has been given to both by all our scavengers, some of whom were in the habit of making exorbitant charges for vault cleaning and filling, which they would do in the night-time, leaving the privy soil in the vault simply covered up. The ordinance referred to requires this work to be done by the citizens, and to the Health Department they owe a debt of gratitude for the protection thus afforded them.  

I believe that all our scavengers are now doing a fair and honorable class of work, and that the people are receiving faithful services at their hands.

**REMOVAL OF GARBAGE.**

Soon after my appointment as Health Officer I was requested to investigate the matter of the removal of our city offal, and especially to report upon the crematory system for the disposal of all refuse. I immediately entered into correspondence with health officers and other sanitarians of various cities throughout the country for information on this subject, and I did not find in a single instance a sanitarian who advised the adoption of a crematory for any city having the bay and ocean advantages that we possess. Many inland towns are necessarily obliged to adopt this system, even in its experimental stage, as their only means for the disposal of offal.

As may be seen by the report of the Health Inspector, an average of 1016 tons of garbage are disposed of monthly, besides the carcases of dead animals. I recommend that we continue our present mode of disposing of offal, and by the first of February we shall have the use of the city wharf; after which the annoyance that the public has complained of while using the wharf of private parties, will cease, and the offal be disposed of at much less expense.

I am not satisfied with our present system of scavenger work. With the best efforts we have been able to use, the fact remains that our city is not a model of cleanliness. It is impossible to get, under our present method, that unanimity and concert of action so necessary to purify the city as it should be done. I would therefore recommend that all scavenger work be done by the city at its own expense; otherwise, we shall never be able to attain that degree of perfection in the cleanliness of our yards, streets and vacant lots that the health of our city requires.

**FILTHY STREETS.**

Until the streets running through the business portion of the city are properly paved and guttered, and the wooden sidewalks, with their filth-collecting area beneath, are superceded, we must not expect them to be in perfect sanitary condition. During ten consecutive months of the year our streets are not washed by rains, nor is there any other practicable means for flushing them. Tons of filth from horses standing along the sides of the streets are deposited in our gutters, the liquids to be absorbed by the porous soil, and the solid matter either to be carried into the earth with the liquids, or to be ground into a fine powder, which the wind carries through the air, and it is thus breathed into our lungs and becomes the direct source of disease. That portion of the deposit which is absorbed into the soil, when the rains soften the earth, yields an extremely bad odor, and places our streets in a very unhealthy condition. When these avenues are properly guttered and paved, this nuisance can be prevented but not till then.

**OFFENSIVE ODORS ALONG THE BAY.**

Complaints from all quarters came thick and fast concerning the offensive odors along the water
front, and as a rule these complaints were well founded. The odors, at times, were almost unbearable for a distance of from a quarter to half a mile from the bay, and were perceptible even to a much greater distance. They were attributable to two sources: 1st. To the vile practice of some of our teamsters daily dumping tons of filthy refuse along the water's edge, and the almost universal habit of the people living along the water front throwing all their refuse into the bay. 2d. To the filthy and unsanitary condition of our outlet sewer-tank.59

I have already made such recommendations to the Board of Health as I considered best to remedy this condition of the tank; and since then many other plans have been suggested by various parties. I am still of the opinion that the remedy then proposed is the best and most economical. We have, with the help of the police department, put a stop to dumping or throwing offal along the water front. Several arrests were made, and the parties punished; and I think, by keeping a close watch, we can practically prevent this disgusting and unsanitary condition of things along the bay.

CITY JAIL.

In the general plan for the construction of our city jail every sanitary condition was totally ignored. The cells are all dark and damp, and lack ventilation. There are openings made to admit light and air, but there is a dampness of the floors that cannot be avoided, owing to the sills being placed on the low, moist ground. I contemplate excavating beneath the building to admit the free access of air and light under the ground floor.

I also found, on assuming charge of the sanitary care of the city jail, that cleanliness and health were no part of the economy in general management. The bedding was not aired and the cells were filthy. Many inhabitants occupied these beds and cells whose names, if they had any, did not appear on the jail register, but who were familiarly known to the prisoners by the one name of "Creeper." I ordered the bedding to be aired and the floors dry-mopped each day. Also, the floors and walls scrubbed twice a week, and washed with a strong solution of mercurial chloride and sulphate of copper. The jail is maintained at present in as clean and healthy a condition as the general arrangement of things will admit of.

PUBLIC SCHOOLS.

No other public schools in the world can show as clean a bill of health on the part of their pupils as those of San Diego have done during the past six months. It is an extremely rare thing for a pupil in any of the departments to be reported sick; and not a single case was reported during all last term of any contagious diseases. The public school buildings in this city all have an abundant window area and are well ventilated. I am pleased to state that the school authorities fully realize that fresh air and sun-light are essential to the health and strength of their pupils, and that they are not afraid to give them all the benefits of a free and plenteous enjoyment of its physical influences. I desire here to thank both the authorities and the teachers for their courteous conduct and willingness to help me at all times in my sanitary work relating to the schools of our city.

QUARANTINE.

Soon after my appointment as Health Officer, I had a complete set of quarantine flags made, and have arranged with the pilots and light-house keeper a quarantine signal system by which I am informed of all vessels coming into this bay from infected ports. I am prepared, at any time, to go out and board any such vessels for inspection before permitting them to enter our port; and our citizens may rest assured that this city is as securely protected against the invasion of any contagious diseases by ships entering here as any city in the country.
PLUMBING.

Most prominent among the reforms your honorable body have inaugurated in this city is the thorough organization and management of the plumbing business; and I am proud to state that our plumbing system is as complete and thorough in all its appointments as that of any other city in the United States. While San Diego is not yet in the full enjoyment of perfection, or even that degree of perfection attained by some other cities, in several branches of sanitary work, still we are rapidly pushing forward; and if we maintain the same rate of progress that has been made during the past six months, we shall, before the appearance of our next annual report, have achieved such an improvement in all our sanitary systems as will entitle our city to a position as a model sanitarium second to none in the world.

OUR SEWER SYSTEM.

The system of sewerage adopted by this city is what is known as the Separate Water Carriage or Waring system. The total length of our mains is 40 miles, and the pipe ranges from 6 to 24 inches in diameter. A further summary of the statistics relating to this plant will be found in the report of the City Surveyor.

The principles of this system are peculiarly adapted to the requirements of our city. In separating the rain or surface water into a channel of its own, the size of the mains is so reduced that by a process of artificial flushing they are thoroughly cleaned twice a day—a process practically impossible in the combined system, in which the surface water and sewage proper are carried off through the same channel. This plant is well constructed, and in successful operation.

Some difficulty has been met with in the rupture of several hundred feet of the main pipe, which I think is attributable to a want of adequate ventilation. And as this subject of ventilation is of more than ordinary importance, I have given much study and thought to it, so far as it pertains to this system, so as to prevent further accidents by the compression of gases or air in our sewers, when the outlets are tide-locked. I would recommend that several of the inspection-holes in each street, above tide-mark, be so constructed as to admit of perforated covers. And as but a slight pressure is required to force a trap, even with a good seal, I would recommend, in addition, that a suitable structure be placed at the sewer outlet to prevent the admission of strong currents of air, which may produce such internal pressure as to endanger the safety of our traps.

I would also recommend that, as soon as the city's finances will permit, a salt-water plant be put in, consisting of a large receptacle, built on an elevated place in the City Park, to be owned and used by the city for the flushing of our sewers, for the fire department, and for cleaning and sprinkling our streets during the dry season.

By running a water main down every third street, every avenue can be easily reached for the purposes above mentioned. The value of such a plant for our sewer system, by giving an abundant supply of water for frequent flushing at a nominal cost, would alone more than justify the outlay necessary for its construction; and for fire and street-sprinkling purposes its value can hardly be over-estimated.

I have carefully investigated the matter of sprinkling our streets with salt water, and I find that some foreign cities who claim to have attained the highest degree of sanitary perfection, have been following this practice, because of its superior sanitary advantages, even where fresh water is abundant and allowed to run to waste.

SAN DIEGO AS A SANITARIUM.
When the Creator designed this beautiful world it would seem as though he had chosen San Diego as the spot in which to concentrate all earthly blessings. Like the Princess in the fairy-tale, on whom her godmothers lavished every gift, San Diego seems to have no want ungratified and no attraction denied to make her the most delightful of sanitariums—one combining every essential for the comfort, health and happiness of man. Other cities styling themselves sanitariums have some of the advantages of San Diego—mild climate, ocean breezes and pure atmosphere—but these usually last only for a season, and then the valetudinarian must pack up and travel to avoid the harsher weather which is to follow. In San Diego alone, of all the cities of the world, can the invalid remain, without fear of consequences, both in summer and winter, as the variations of temperature are so slight between them that one season can hardly be distinguished from the other.

The location of San Diego is generally conceded, by persons of culture and artistic taste who have an eye for the picturesque, to be unrivaled. Such a glorious panorama of mountains, valleys, plains, bay, islands and distant ocean, with the white surf dashing on the sandy shore, presents a picture of loveliness and color that can hardly be surpassed. Add to this, the sense of life and motion conveyed by the travel of steam, electric and horse cars on land, and the rushing of tugs and steamers amidst a forest of masts on the water; and the charming atmospheric phenomena shown in our sunrises and sunsets, with cloud effects, on both land and water, that are wonderful and sometimes even startling; and it cannot but be acknowledged that such a beautiful unity of scenery and climate can be found in no other city on the habitable globe.

Nor is this all. San Diego has facilities for aquatic sports that cannot be surpassed. She is well supplied with bath-houses, where swimmers of both sexes can launch themselves forth into the arms of old Neptune, or take their regular saltwater bath, either hot or cold. Should they prefer a dip in the surf, they have only the cross the ferry over to Coronado Beach, and their desire can be gratified, either in summer or winter—for even in January the water of the Pacific ocean is so warm that delicate ladies often enjoy this luxury without the least discomfort. If it is preferred to take a row or a sail on the bay, or to go out for a day's deep-sea fishing in the ocean beyond, nothing can be easier, as we have boathouses on every part of the water front, well supplied with row and sail boats, where vessels for short sea-voyages can be chartered.

In the city, less attention has been paid to horticulture and the decoration of our house-yards and gardens than is desirable; but many specimens of what can be done in this way may be found in all parts of the city. Here, in midwinter, when our northern and eastern cities are buried in crystal ice and fleecy snow, our gardens are ablaze with flowers and our ranches shipping fresh fruits and vegetables. Specimens of floral loveliness are daily visible here in winter which astonish the Eastern traveler. Geraniums growing as high as the roofs of cottages, and covered with blooms; roses flinging their blossoms among the branches of fir trees; palms, magnolias, pomegranates and other tropical shrubs, combined with the cactus and rare exotics, form bowers of loveliness that seem stolen from paradise; while the ground is carpeted with a green mantle of soft velvet fit only for the footsteps of angels.

CLIMATE.

San Diego is so situated that her climate is almost unchanging; and while she is spared the icy cold and chilly winds which in most localities keep the invalid within doors during the winter season, the warm and pleasant sunshine which almost invariably prevails, tempts them to outdoor exercise, and renders them perfectly comfortable in its enjoyment. During the summer months San Diego is entirely free—and we wish to emphasize the words entirely free—from those hot, close, oppressive seasons which so debilitate and enfeeble the delicate constitution of the health-seeker; while the cool, refreshing, health-bearing breezes from the ocean, which are of daily occurrence here, are grateful alike to the healthy and the weak.
Nature seems to have omitted nothing in making the sanitary conditions of San Diego absolutely perfect. While our winds are never too cold nor too strong for the comfort and pleasure of the most nervous or sensitive invalid, they are nevertheless continuous. Throughout the summer they are cool and invigorating; while in winter they are so tempered as to be at all times perfectly comfortable for the out-door pleasure and exercise of the invalid. Our almost perpetual sunshine also plays an important part in the economy of our sanitary condition, and the perfection of our climate for comfort and health.

It may be truly said that the residents of San Diego never experience those sultry, stagnant and enfeebling conditions, nor the murky, gloomy weather met with in less favored sections of our country.

The climatic conditions of this locality, fortunately, are decidedly unfavorable to the origin and spread of all of the so-called contagious and infectious diseases which the people so much dread. The best historic authorities, combined with the experience of the present generation, prove that certain varied climatic and sanitary conditions are absolutely essential to the existence of these diseases; also, that these conditions do not exist in San Diego. In hot, sultry places, where the decomposition of organic matter is active, malignant types of miasmatic fevers, yellow fever, tropical fevers, dysentery, cholera, and the diseases incident to childhood, are prevalent; while in colder climates we find small-pox, scarlet fever, erysipelas, diphtheria and kindred diseases. The conditions necessary to the existence of epidemics peculiar to either a hot or cold climate are totally wanting here; so that the people of this city need have no apprehension concerning these diseases; and by the cooperation of our people in the maintenance of cleanliness and other sanitary conditions in the affairs of our city, and a strict conformity to all proper rules of health, no sickness in any form should originate here.

TEMPERATURE.

In matters meteorological the showing is equally favorable. The changes in temperature, and the direction and velocity of the wind, from day to day and from month to month, are so trivial as hardly to be worth recording. The thermometer, on the hottest day during the past six months, which embraced both summer and winter, only reached 82 degrees; and on the coldest day during the same period was only 44 degrees. The highest temperature in July was 74 degrees, and the lowest in the same month, 62 degrees. In August the highest temperature was 82 degrees; the lowest, 57 degrees. In September the highest was 82, the lowest 58. In October the highest was 80, the lowest 53. In November the highest was 75, the lowest 46. In December the highest was 73, the lowest, 44. The greatest variation in temperature during the six months has been from 82 to 44, a difference of only 38 degrees. As these figures came direct from the United States Signal Officer, whose report is at the end of this volume, they will admit of no question.

WATER.

The supply of water which reaches this city through the Great Flume, comes from the living springs and melted snows of the Cuyamaca mountains, sixty miles distant. The flume is elevated above the ground at varying distances, and in all cases is raised beyond the possibility of contamination from the surface waters along its course, and its soft, living stream reaches the city in a state of absolute purity, free from all admixture of putrefying or decaying organic matter. This water, clean and sweet, with all the vitality of its mountain origin fully preserved, is conveyed to every building and every yard and garden in the city. The source from which the supply is drawn is absolutely inexhaustible and no better or more healthful water for drinking or washing purposes can be obtained anywhere.
DRAINAGE.

The natural drainage of the city is in every way favorable to perfect sanitary conditions. The Waring system of sewerage is completed and in full operation, and is a prominent factor in maintaining the health of the city. Besides which, the sanitary laws of the city are good, and are being rigidly enforced.

BUSINESS.

An energetic man, accustomed to an active business life, but seeking a sanitarium where he can live in health and comfort, can make no mistake in coming to San Diego. A salient feature, heretofore overlooked by sanitarians, is the necessity on the part of the invalid, who has spent his life in the accumulation of wealth, for the exercise of this habit of mind. In other cities, health, pleasure and luxury are sometimes combined; but here we have also a wide field for business talent. The merchant or professional man, to whom the exercise of this talent is a pleasure, will find in San Diego a city that needs just such accessions. The effect of congeniality of employment, united with perfect sanitary surroundings, is a matter that has received too little consideration on the part of both physicians and patients; and certainly opportunities for business and investment will never be lacking in a city whose geographical position, mercantile advantages, sanitary condition and climatic influences are so fortunately grouped together as they are in this "City by the Southern Sea."

HOTELS.

San Diego is abundantly supplied with hotels, both of the first and second class, combined with accommodations for rooming and housekeeping sufficient for all present demands. The Hotel del Coronado is world renowned, and unsurpassed in luxury and splendor; yet the prices are moderate in comparison with the surroundings. The hotels on this side of the bay are also maintained at a high standard of excellence; and the last fear the intending visitor should entertain is that of not finding accommodation luxurious enough, extensive enough or cheap enough for any number that may favor us with their company.

LITERARY AND SOCIAL.

If a city is to be judged by its literary resources and recreations, San Diego is well able to stand the test. Its libraries are amply supplied with all the standard works, ancient and modern, and with periodicals from all parts of the world. Its literary societies are numerous and prospering, and embrace nearly every shade of philosophy and religion; while its colleges, schools and institutes of learning are such as any city might be proud of. The newspapers and magazines are the best of their kind; and we have literary men and women living among us, or regular and frequent visitors here, whose names are known wherever the English language is spoken.

CONCLUDING REMARKS.

As has been already said, other cities recognized as sanitariums have some of the advantages of San Diego; but no city of which history gives us any record, or which is in existence to-day, combines all the advantages possessed by her. In location, scenery, climate, temperature, water supply, drainage, openings for business and investment of capital she is unsurpassed. And it is universally admitted by medical men that beautiful, pleasant and prosperous surroundings act soothingly and beneficially on the mind of the patient. Possessing, as San Diego does, the only land-locked harbor on the Pacific coast, from San Francisco down to the equator, and with two new railroads in actual course of construction, her commercial future is assured beyond all question. To her wharves come vessels from every clime, bearing at their mast-heads the flags
of all nations, and through these San Diego speaks to the world.

Many people have come to this city through the influence of our health reports, which are sent all over the country, showing the advantages of San Diego as a health resort. Among many instances which have come within the cognizance of the Health Office I may cite the following:

Mr. Charles Von Lunen, of Johnstown, Pa., called on the Health Officer of his city, Dr. W. B. Lowman, and told him the physical condition of himself and family required a change of climate. He asked the Doctor for advice as to what locality lie should choose. The Doctor replied that from all the health reports which came to his office, he regarded that of San Diego as the most favorable, and advised him to come here. When the party arrived, Mr. Von Lunen called on the Health Officer here to express his delight with our climate and surroundings; and as a result of the information conveyed by our health reports, that gentleman, his wife, three daughters and a lady relative, all people of wealth and culture, have taken up their permanent abode in San Diego.

Again, Mr. W. L. Pierce, a prominent attorney of this city, recently fell in with a group of Eastern health-seekers on Florence heights, who were commenting in glowing language on the beauties of our scenery and climate, and was told by them that they came here solely on the strength of information derived from our health reports. They had received the intelligence at first with some misgivings, and had come to investigate, leaving their families at home. Their only regret now was that they had not brought their relatives with them; but they had already sent back for them to come immediately.

With these evidences of what our health reports are accomplishing, I would recommend to your Honorable Board the publication of a pamphlet, carefully prepared by the sanitary authorities of this city in conjunction with the Chamber of Commerce, setting forth accurately, truthfully, and without exaggeration, the advantages I have here merely hinted at, for the purpose of spreading this much desired information among the thousands of invalids who are anxiously seeking a locality specially suited to all their requirements of health, pleasure and business.

And now, gentlemen, it affords me pleasure to congratulate you on the results of the reforms you have instituted in your department of the municipal affairs of this city. The gradual but steady improvement in the health of our people, as shown in our mortuary reports, and especially in that for the month of December just closed, stands out as a bright and shining record of the success of your efforts in this direction. In the table just referred to, it will be seen that the deaths from all causes for December were only 12, in a population of 32,000 (the gain in population that month coming from the annexation of Coronado); this being at the rate of 1 death for every 2,666 persons, or .375 per 1,000 (three-tenths and seventy-five hundredths thousandths of one person). Of these deaths, 3 were from zymotic diseases; 4 of children under 5 years of age, and none of children under one year of age!

In every branch of the Health Department there has been, and still is, a perfect unanimity and harmony of action in all efforts to advance the sanitary interests of our city. It also gives me much gratification to publicly acknowledge the many courtesies I have received at your hands, and to attest to the judicious counsel and prudent advice with which you have favored me in the performance of my duties. Also, to testify to the efficient and faithful services of my assistants in the various departments, who have so materially aided the Health Department to attain its present high standard of perfection.

D. GOCHENAUER, M.D.,
Health Officer.
REPORT OF CLERK

San Diego, Cal., January 1, 1889.

D. GOCHENAUER, M.D., Health Officer:

Dear Sir: I have the honor to submit the following Tables for the year ending December 31, 1888:

No. 2. Cases and Deaths from all Causes.
No. 3. Cases and Deaths from Contagious Diseases, etc.
No. 4. Showing Number of Indigent Sick treated.
No. 5. Showing Number of Marriages.
No. 6. Showing Number of Births reported to Health Office.
No. 7. Showing Number of Still-Births reported to Health Office.

EMMA SMITH,
Clerk Health Department.

Table No. 1.
MORTUARY REPORT FOR THE MONTH OF DECEMBER, 1888.

<table>
<thead>
<tr>
<th>DISEASES</th>
<th>AGES</th>
<th>SEX</th>
<th>NATIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 to 5 Yrs</td>
<td>6 to 20 Yrs</td>
<td>20 to 37 Yrs</td>
</tr>
<tr>
<td>Typhoid Fever</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Malaria Fever</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Cerebro-Spinal Fever</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Enteritis</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Bright's Disease</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Puerpera Hemorrhagica</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Total Deaths: 12

Tables 1 & 2 with commentary by the author on the diseases listed.
Table No. 2.
SHOWING THE NUMBER OF DEATHS EACH MONTH, AND THE CAUSES.

<table>
<thead>
<tr>
<th>CAUSES</th>
<th>JULY</th>
<th>AUGUST</th>
<th>SEPTEMBER</th>
<th>OCTOBER</th>
<th>NOVEMBER</th>
<th>DECEMBER</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class I. Zymotic Diseases-Miasmatic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholera Infantum</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Fever, Cerebro Spinal</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>&quot; Typhoid</td>
<td></td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Typhoid Malarial</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Septicaemia</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Erythema</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Pertusis</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Alcoholism, Chronic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Class II. Constitutional</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Phtisis Pulmonalis</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Cancer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Tabes Mesenterica</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Tables 1 & 2 with commentary by the author on the diseases listed.
### TABLE No. 3.

**SHOWING NUMBER OF DEATHS FROM ALL CAUSES, DEATHS FROM CONTAGIOUS DISEASES, NUMBER OF BIRTHS, MARRIAGES, INDIGENT SICK, AND STILL-BIRTHS.**

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>Cases and Deaths from all causes</th>
<th>Cases and Deaths from Contagious Disease</th>
<th>Number of Births Registered</th>
<th>Marriages</th>
<th>Indigent Sick Treated</th>
<th>Number of Still Births Registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>33</td>
<td>6</td>
<td>21</td>
<td>22</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>August</td>
<td>21</td>
<td>2</td>
<td>11</td>
<td>22</td>
<td>6</td>
<td>3</td>
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<tr>
<td>September</td>
<td>14</td>
<td>1</td>
<td>6</td>
<td>15</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>October</td>
<td>15</td>
<td>2</td>
<td>13</td>
<td>25</td>
<td>17</td>
<td>2</td>
</tr>
<tr>
<td>November</td>
<td>21</td>
<td>1</td>
<td>12</td>
<td>20</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>December</td>
<td>12</td>
<td>2</td>
<td>8</td>
<td>7</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>116</td>
<td>14</td>
<td>71</td>
<td>111</td>
<td>76</td>
<td>17</td>
</tr>
</tbody>
</table>
**TABLE No. 4.**  
**SHOWING NUMBER OF VACCINATIONS AND PRISONERS AND INDIGENT SICK TREATED.**

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>City Prisoners Treated</th>
<th>Indigent Sick Treated</th>
<th>Professional Visits for the City</th>
<th>Number of Office Visits</th>
<th>Total Number of Visits</th>
<th>No. of Persons Vaccinated</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>7</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>9</td>
<td>6</td>
<td>37</td>
<td>5</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>11</td>
<td>7</td>
<td>44</td>
<td>7</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>9</td>
<td>17</td>
<td>41</td>
<td>22</td>
<td>63</td>
<td>373</td>
</tr>
<tr>
<td>November</td>
<td>5</td>
<td>22</td>
<td>46</td>
<td>13</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>4</td>
<td>17</td>
<td>38</td>
<td>7</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>38</td>
<td>76</td>
<td>230</td>
<td>54</td>
<td>260</td>
<td>373</td>
</tr>
</tbody>
</table>

**TABLE No. 5.**  
**SHOWING NUMBER OF MARRIAGES.**

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>Protestant</th>
<th>Catholic</th>
<th>Jewish</th>
<th>By License of Pres.</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>15</td>
<td>3</td>
<td></td>
<td>4</td>
<td>22</td>
</tr>
<tr>
<td>August</td>
<td>11</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td>September</td>
<td>10</td>
<td>3</td>
<td></td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>October</td>
<td>18</td>
<td>2</td>
<td></td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>November</td>
<td>13</td>
<td>2</td>
<td></td>
<td>5</td>
<td>20</td>
</tr>
<tr>
<td>December</td>
<td>6</td>
<td></td>
<td>1</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>73</td>
<td>17</td>
<td>2</td>
<td>19</td>
<td>111</td>
</tr>
</tbody>
</table>
### Table No. 6
SHOWING NUMBER OF BIRTHS REPORTED TO HEALTH OFFICE.

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>White</th>
<th>Colored</th>
<th>Male</th>
<th>Female</th>
<th>Attended by Physician</th>
<th>Attended by Midwife</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>19 2</td>
<td>11 10</td>
<td>17</td>
<td>4</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>11 5</td>
<td>6 11</td>
<td></td>
<td></td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>6 6</td>
<td>6 6</td>
<td></td>
<td></td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>13 6</td>
<td>7 12</td>
<td>1</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>12 5</td>
<td>7 12</td>
<td></td>
<td></td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>8 5</td>
<td>3 8</td>
<td></td>
<td></td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>69 2</td>
<td>38 33</td>
<td>66</td>
<td>5</td>
<td>71</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table No. 7
SHOWING STILL-BIRTHS REPORTED TO THE HEALTH OFFICE.

<table>
<thead>
<tr>
<th></th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Male</strong></td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>Not Stated</strong></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td><strong>White</strong></td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td><strong>Colored</strong></td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>17</td>
</tr>
<tr>
<td><strong>Attendance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physicin</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Midwife</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coronar</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Attendance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>17</td>
</tr>
</tbody>
</table>
REPORT OF HEALTH INSPECTOR.

San Diego, Cal., January 1, 1889.

D. GOCHENAUER, M.D., Health Officer:

Dear Sir: I have the honor to submit the following Tables of inspection made and sanitary work performed in my department, for the year ending December 31, 1888:

I desire again to call your attention to the fact that vaults and cesspools are being dug in some parts of the city, without permits, and in direct violation of the rules of the Board of Health.

In Chinatown, where the filthiest and most dangerous vaults and yards were found six months ago, can now be seen premises as clean and in as good sanitary condition as any in the city.

Over seventy-five per cent of all the families whom I have served with notices to abate nuisances have promptly and cheerfully complied with the same, especially during the last few months; which shows there is a growing interest on the part of the people in sanitary affairs.

I have discovered four glandered horses during the past three months, which I have had killed and removed to the city scow.

Many complaints are made against the filthy condition of the scavenger wagons driven through the principal business and residence portions of the city. I regard these complaints in most cases as just, and I would recommend that more stringent rules be made, regulating these portable nuisances. Owners of these wagons should be made to wash them more frequently; and they should not be allowed to stand on the public streets during the day-time.

Our water front has been the principal source of the unpleasant odors that have annoyed our citizens in the past. Tons of filth, of all sorts, were dumped along the bay, including dead animals, decayed meat, fish, night soil and all forms of garbage; but with the assistance of the Police Department and the Courts, this nuisance may he considered a thing of the past.

The question of how to manage the numerous pools of water caused by embankments made in street grading is one that I have been unable to solve; and I would respectfully ask that you look into this matter, and advise me as to the method for their abatement.

There is another matter, that can scarcely be considered unsanitary, yet it gives our city an extremely unattractive appearance, and should be remedied by some of the departments, I refer to the paper, rags, straw, tin cans, boxes, crates, brush, and many other specimens of bric-a-brac which are thrown upon vacant lots. While, as a rule, no decaying matter is thrown on these lots and back yards, the rubbish that is allowed to accumulate is no ornament to our city, and the practice should be stopped.

I am indebted to the plumbing Inspector, Sewer Inspector, police Department, Sewer Committee, and to a large number of citizens, as well as to your own prompt aid and advice, for for (sic) whatever success I may have attained in improving the sanitary condition of the city.

H. Bailey,
Health Inspector.
**TABLE No. 8.**

SHOWING NUMBER OF NUISANCES REPORTED, INSPECTED AND ABATED.

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>Reported</th>
<th>Inspected</th>
<th>Re-Inspected</th>
<th>Abated</th>
<th>In Course of Abatement</th>
<th>Completed without Abatement</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>113</td>
<td>113</td>
<td>85</td>
<td>80</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>August</td>
<td>253</td>
<td>253</td>
<td>231</td>
<td>185</td>
<td>45</td>
<td>23</td>
</tr>
<tr>
<td>September</td>
<td>330</td>
<td>330</td>
<td>287</td>
<td>225</td>
<td>60</td>
<td>45</td>
</tr>
<tr>
<td>October</td>
<td>345</td>
<td>345</td>
<td>256</td>
<td>256</td>
<td>50</td>
<td>39</td>
</tr>
<tr>
<td>November</td>
<td>149</td>
<td>440</td>
<td>407</td>
<td>340</td>
<td>67</td>
<td>33</td>
</tr>
<tr>
<td>December</td>
<td>159</td>
<td>358</td>
<td>313</td>
<td>296</td>
<td>23</td>
<td>39</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1349</strong></td>
<td><strong>1839</strong></td>
<td><strong>1579</strong></td>
<td><strong>1382</strong></td>
<td>255</td>
<td>187</td>
</tr>
</tbody>
</table>

**TABLE No. 9.**

SHOWING NUMBER OF DEAD ANIMALS AND OTHER OFFAL REMOVED BY CITY SCOW.

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>No. of Trips City Scow</th>
<th>Tons of Offal Carried</th>
<th>Horses and Mules</th>
<th>Cattle</th>
<th>Goats</th>
<th>Dogs</th>
<th>Cate</th>
<th>Tons Condensed Meat</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>9</td>
<td>310</td>
<td>42</td>
<td>1</td>
<td>1</td>
<td>50</td>
<td>59</td>
<td>...</td>
</tr>
<tr>
<td>August</td>
<td>9</td>
<td>397</td>
<td>23</td>
<td>2</td>
<td>0</td>
<td>26</td>
<td>30</td>
<td>...</td>
</tr>
<tr>
<td>September</td>
<td>10</td>
<td>410</td>
<td>26</td>
<td>4</td>
<td>1</td>
<td>15</td>
<td>21</td>
<td>70</td>
</tr>
<tr>
<td>October</td>
<td>11</td>
<td>455</td>
<td>11</td>
<td>2</td>
<td>0</td>
<td>51</td>
<td>21</td>
<td>...</td>
</tr>
<tr>
<td>November</td>
<td>9</td>
<td>292</td>
<td>13</td>
<td>3</td>
<td>0</td>
<td>10</td>
<td>21</td>
<td>...</td>
</tr>
<tr>
<td>December</td>
<td>5</td>
<td>290</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>13</td>
<td>9</td>
<td>...</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>53</strong></td>
<td><strong>2154</strong></td>
<td><strong>125</strong></td>
<td><strong>12</strong></td>
<td><strong>3</strong></td>
<td><strong>165</strong></td>
<td><strong>45</strong></td>
<td><strong>161</strong></td>
</tr>
</tbody>
</table>

[Corrections made according to published errata]
### Table No. 10.

SHOWING NUMBER OF DEAD ANIMALS AND OTHER OFFAL REMOVED BY CITY SCAVENGER.

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>Loads</th>
<th>Horses and Mules</th>
<th>Cattle</th>
<th>Dogs</th>
<th>Privy Vaults Closed &amp; Filled</th>
<th>Privy Vaults Infected</th>
<th>Families Visited for Garbage</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>312</td>
<td>5</td>
<td>8</td>
<td>3</td>
<td>19</td>
<td>8</td>
<td>130</td>
</tr>
<tr>
<td>September</td>
<td>926</td>
<td>4</td>
<td>1</td>
<td>9</td>
<td>21</td>
<td>10</td>
<td>150</td>
</tr>
<tr>
<td>October</td>
<td>725</td>
<td>1</td>
<td>28</td>
<td>7</td>
<td>15</td>
<td>11</td>
<td>163</td>
</tr>
<tr>
<td>November</td>
<td>685</td>
<td>3</td>
<td>7</td>
<td>1</td>
<td>19</td>
<td>13</td>
<td>171</td>
</tr>
<tr>
<td>December</td>
<td>520</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>16</td>
<td>12</td>
<td>275</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3168</td>
<td>14</td>
<td>57</td>
<td>21</td>
<td>90</td>
<td>54</td>
<td>889</td>
</tr>
</tbody>
</table>

### Table No. 11.

SHOWING NUMBER OF DEAD ANIMALS AND OTHER OFFAL REMOVED TO PUBLIC DUMP.

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>Loads</th>
<th>Horses</th>
<th>Mules</th>
<th>Cattle</th>
<th>Goats</th>
<th>Dogs</th>
<th>Cats</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>748</td>
<td>5</td>
<td></td>
<td></td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>908</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>649</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>613</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>524</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>498</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3940</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
REPORT OF PLUMBING INSPECTOR.

San Diego, Cal., January 1, 1889.

D. GOCHENAUER, M.D., Health Officer:

Dear Sir: I have the honor to submit my report for the fiscal year ending December 31, 1888:

93 plans for new buildings, and 187 for old buildings, were submitted for examination. I have also made inspections of plumbing and drainage work of 279 new buildings, and 374 on old buildings.

All plans approved, and all plumbing work done and approved, during my term of office, comply in all respects to the rules of the Board of Health, and a complete record of the same is kept on the files in my desk. I remain in my office from 8 to 9 a.m., and from 4 to 5 p.m., for the examination of plans and consultation with the plumbers. The records of my office show the approval of 280 plans for plumbing work, in old and new buildings; and, considering that I made from two to four inspection visits during the progress of each building, and that some inspections occupy from thirty minutes to four hours, and that this work is scattered over miles of area, it is easy to estimate that a large amount of labor is involved in the duties of the office; and the reasonableness of my request for the use of a horse is made apparent. Much of the plumbing work done during the rapid growth of our city was of an inferior quality, both as regards work done and material used; but since we have worked under the rules of this department, all materials used and labor performed here been strictly in conformity with its requirements, and there is a continual improvement in the quality of the work done. There is also an increasing interest manifested on the part of our master plumbers, who now, without exception, cooperate with me in my efforts to do good and substantial work in this department of our sanitary labors.

There are now 15 master plumbers who hold permits from the Board of Health, are properly registered, and have filed their bonds in accordance with the law; and there are 22 journeyman plumbers who have passed their examinations, hold permits and have registered, all of whom I believe to be competent plumbers; and I am proud to say to say that San Diego to-day has as intelligent, thorough and efficient plumbers as any city in the country.

In compliance with your request, I have carefully investigated the grease traps, and have followed out your instructions to have them retained in all hotels, boarding-houses, restaurants and the like, where quantities of grease are liable to be thrown into the sewer, until the advisability of their abatement is more fully demonstrated. I am of the opinion that their use in such places is indispensable to the success of our sewer system. This is shown in a number of instances, where the excessive amount of grease was found to have choked up the drainage. The present location of the grease traps will need some change, as they are not convenient for inspection and cleaning.

The change from the pan and plunger closets to tank closets, for inside use, is meeting with general satisfaction.

I respectfully call your attention to Table No. 12 annexed to this Report, showing Number of Plans Filed and Approved, and Number of Inspections Made.

GEO. F. KENDALL,
Inspector of Plumbing.
D. GOCHENAUER, M.D., Health Officer:

Dear Sir: I have the honor to herewith respectfully submit the following report and Statement of the Sewers of San Diego for the year ending December 31, 1888:

The system adopted and in use is the Colonel Geo. E. Waring system, and comprises 39 miles of mains, laid throughout the city from the water front to Twenty-fourth street, with 135 flush tanks completed throughout the line. At the terminus of each line is one flush tank capable of holding 150 gallons. Only 72 flush tanks are in use, which are in perfect order, and automatically flush themselves twice in every twenty-four hours. There are 300 inspection holes, for the purpose of ascertaining the condition of the sewers. These holes are so constructed that if there is any obstruction in the sewer it can be detected at once.

There are also 20 man holes, for the purpose of entering the sewer, clearing away any obstruction and making the needed repairs, if any be required.

During the year, only 6 flush tanks have required repairing. In all the many miles of pipe laid throughout the city only one explosion has occurred, and that was in the 24-inch pipe on the main line. 608 feet of pipe was totally destroyed by this explosion, and was replaced by new pipe. In the last six months there has been laid 95,300 feet of 4-inch pipe, and 1,500 lateral connections made. In addition to Colonel Waring's contract, there has been laid by the city 650 feet of 6-inch pipe, which is connected with the Waring system. The Williams & Engle sewers, that were purchased by the city, are abandoned, and the Waring is the only system now in use. It
is proving itself every day as the most durable and satisfactory in use at the present time.

In connection with this, I wish to mention the fact that the 24-inch outlet pipe at the foot of H street has been completely reconstructed; creosote piles have been driven, and the pipe is now resting on creosote piers which, in my opinion, will stand for years without further outlay, if no accident occur.

I would recommend that in connection with the outlet pipe some action be taken to remedy the evil that endangers the health of the city by the extremely offensive odor which arises from the catch-basin or reservoir; and would suggest the bottom be dished to the center and concreted. That the basin be divided, so as to use one-half or less as a flush tank at ebb tide; to wit: after the tide is at an ebb low enough to create a current, the flush water to be turned on by automatic gates and force out to sea, through the 24-inch pipe, the refuse and sediment that now settles on the bottom of the reservoir and lies under the rays of a hot sun, to throw off a deadly stench, as at present.

I would further recommend, as a more simple and less expensive method, to maintain the 24-inch pipe in one continuous line through the reservoir, and connect with the main pipe at the gate-house, in one unbroken flow out to sea. I respectfully submit this suggestion at the earnest solicitation of many citizens.

I have one more matter that I think the Board would do well to consider, and that is the grease traps. I would recommend that they be brought into immediate use again; and earnestly urge that the attention of those using the sewers be called to the fact that they are not expected to carry off the accumulations of a junk shop; and that a free and liberal use of water be employed for the benefit and preservation of our sewers.

S. T. GOLDTHWATTE,
Sewer Inspector.

CITY SURVEYOR'S REPORT ON SEWERS.

San Diego, Cal., January 1, 1889.

D. GOCHENAUER, M.D., Health Officer:

Dear Sir: Table No. 14 is a correct copy of the summarized Table showing the Sizes, Lengths and Cost of the Sewers of San Diego, prepared by my predecessor, O. N. Sanford.

The total length of sewers, not including outlet, is 205,410 feet (39 miles).

The total length of sewer-pipe used, not including outlet, is 211,130 feet (40 miles).

Cost of laying sewer-pipe, not including outlet, $237,671 13.

Other details of the sewerage system, viz: flushing tanks, man holes, outfall sewer, sewage discharge reservoir, engineering, etc., increase the total cost of the system to $400,968 74.

JAS. D. SCHUYLER,
City Surveyor.
TABLE No. 13.
SHOWING NUMBER AND LENGTH OF LATERAL SEWER CONNECTIONS.

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>Lateral Permits Ordered</th>
<th>Lateral Sewer Permits Granted</th>
<th>Lateral Sewer Connects made</th>
<th>Lateral Sewer Cost of Construction</th>
<th>Total No. of Feet of Laterals laid for month</th>
<th>Total Length of Laterals laid</th>
</tr>
</thead>
<tbody>
<tr>
<td>July</td>
<td>200</td>
<td>66</td>
<td>43</td>
<td>25</td>
<td>4300</td>
<td>72,500</td>
</tr>
<tr>
<td>August</td>
<td>127</td>
<td>52</td>
<td>53</td>
<td>15</td>
<td>5300</td>
<td>77,800</td>
</tr>
<tr>
<td>September</td>
<td>320</td>
<td>87</td>
<td>65</td>
<td>42</td>
<td>6200</td>
<td>84,000</td>
</tr>
<tr>
<td>October</td>
<td>492</td>
<td>36</td>
<td>34</td>
<td>18</td>
<td>3400</td>
<td>87,400</td>
</tr>
<tr>
<td>November</td>
<td>465</td>
<td>37</td>
<td>40</td>
<td>20</td>
<td>4000</td>
<td>91,400</td>
</tr>
<tr>
<td>December</td>
<td>250</td>
<td>28</td>
<td>39</td>
<td>9</td>
<td>3900</td>
<td>95,300</td>
</tr>
</tbody>
</table>

Total length of Sewer Mains, 39 miles.

TABLE No. 14.
RECAPITULATION.

<table>
<thead>
<tr>
<th>Size of Pipe</th>
<th>Straight Pipe</th>
<th>House Inspect'n</th>
<th>Street Inspect'n</th>
<th>Length of Line</th>
<th>Length of Pipe</th>
<th>Back-filling &amp; Pipe-laying</th>
<th>Cost of Pipe</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 inch</td>
<td>143,044</td>
<td>9879</td>
<td>686</td>
<td>226</td>
<td>5392</td>
<td>165,125</td>
<td>170,011</td>
<td>$133,656</td>
</tr>
<tr>
<td>8 &quot;</td>
<td>21,125</td>
<td>1306</td>
<td>146</td>
<td>56</td>
<td>532</td>
<td>24,205</td>
<td>25,037</td>
<td>$40,239</td>
</tr>
<tr>
<td>10 &quot;</td>
<td>3,550</td>
<td>161</td>
<td>14</td>
<td>14</td>
<td>1,447</td>
<td>1,447</td>
<td>1,211</td>
<td>$1,785</td>
</tr>
<tr>
<td>12 &quot;</td>
<td>1,335</td>
<td>52</td>
<td>2</td>
<td>2</td>
<td>1,447</td>
<td>1,447</td>
<td>1,211</td>
<td>$1,785</td>
</tr>
<tr>
<td>15 &quot;</td>
<td>2,774</td>
<td>152</td>
<td></td>
<td>2</td>
<td>1,447</td>
<td>1,447</td>
<td>1,211</td>
<td>$1,785</td>
</tr>
<tr>
<td>18 &quot;</td>
<td>905</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td>1,019</td>
<td>1,019</td>
<td>1,069</td>
<td>$1,251</td>
</tr>
<tr>
<td>24 &quot;</td>
<td>6,300</td>
<td>125</td>
<td>14</td>
<td></td>
<td>6,638</td>
<td>6,638</td>
<td>6,960</td>
<td>$6,960</td>
</tr>
<tr>
<td>TOTALS</td>
<td>179,185</td>
<td>11,743</td>
<td>807</td>
<td>315</td>
<td>6224</td>
<td>205,410</td>
<td>211,130</td>
<td>$169,687</td>
</tr>
</tbody>
</table>

FIRE DEPARTMENT REPORT.

San Diego, Cal., January 1, 1889.

D. GOCHENAUER, M.D., Health Officer:

Dear Sir: By special request, I herewith present my report of the condition of the Fire
Department for the year ending December 31, 1888:

SAN DIEGO ENGINE CO. No. 1.

Location on Third street, between D and E.

This company is equipped with a fourth-class La France steam fire engine, built by the La France Fire Engine Company, of Elmira, New York. Weighs 5,800 pounds, and is drawn by two horses.

This company also has a four-wheeled hose carriage, built by P. J. Cooney, of St. Louis, Missouri. Carries 700 feet of hose; weighs 2,200 pounds, and is drawn by one horse.

HAMILTON ENGINE CO. No. 2.

Location on Fifth street, between A and B.

This company is equipped with a second-class Ahrens steam fire engine, built by the Ahrens Manufacturing Company, of Cincinnati, Ohio. Weighs 7,500 pounds, and is drawn by one horse.

There is now on the way from the Sibley Manufacturing Company, of Seneca Falls, New York, a four-wheeled hose carriage, capable of carrying 1,200 feet of hose. The company now have two horses for this carriage.

HORTON HOSE CO. No. 1.

Location on K street, between Fifth and Sixth.

This company is equipped with a four-wheeled hose carriage, built by P. J. Cooney, of St. Louis, Missouri. Carries 700 feet of hose; Weighs 2,200 pounds, and is drawn by two horses.

HOWARD HOOK AND LADDER CO. No. 1.

Location on Ninth street, between H and I.

This company is equipped with a four-wheeled truck, built in this city. Carries 150 feet of ladders, 2 scalers and 16 fire buckets; weighs 2,200 pounds, and is drawn by one horse.

HART HOOK AND LADDER CO. No. 2.

Located on Inter-ocean avenue and Twenty-sixth street.

This company is equipped with a four-wheeled truck, built by Preston, of Chicago. Carries 102 feet of ladders and 1 scaler; weighs 1,200 pounds, and is drawn by hand.

FRANK AVERY,
Chief Fire Department.
### Table No. 15.
REPORT OF SAN DIEGO GAS COMPANY.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length of Gas Mains</td>
<td>10 miles</td>
</tr>
<tr>
<td>Number of Consumers</td>
<td>470</td>
</tr>
<tr>
<td>Monthly Consumption in cubic feet</td>
<td>1,300,000</td>
</tr>
</tbody>
</table>

### Table No. 16.
REPORT OF SAN DIEGO ELECTRIC LIGHT COMPANY.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length of Circuit, miles</td>
<td>29</td>
</tr>
<tr>
<td>Number of Arc Lamps</td>
<td>150</td>
</tr>
<tr>
<td>Number of Towers</td>
<td>10</td>
</tr>
<tr>
<td>Height of Towers, feet</td>
<td>125</td>
</tr>
<tr>
<td>Number of Arc Lights for City</td>
<td>64</td>
</tr>
<tr>
<td>Number of Incandescent Lights</td>
<td>100</td>
</tr>
<tr>
<td>Number of Incandescent Lights for City</td>
<td></td>
</tr>
<tr>
<td>Size of Plant, horse-power</td>
<td>380</td>
</tr>
</tbody>
</table>

R. M. Powers,  
General Manager.

### Table No. 17.
REPORT OF THE WESTINGHOUSE INCANDESCENT ELECTRIC LIGHT SYSTEM.

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total length of Circuit, miles</td>
<td>8</td>
</tr>
<tr>
<td>Total number of Lights in use</td>
<td>1000</td>
</tr>
<tr>
<td>Candle power of each Light</td>
<td>16</td>
</tr>
<tr>
<td>Capacity of Electric Plant, lights</td>
<td>1300</td>
</tr>
<tr>
<td>Size of Steam Plant, horse-power</td>
<td>125</td>
</tr>
</tbody>
</table>

Geo. D. Copeland,  
President.
D. GOCHENAUER, M.D., Health Officer:

Dear Sir: I would respectfully present to you the annual report of the San Diego Free Public Library, for the year ending December 31, 1888:

Table No. 18. Showing Receipts and Expenditures for the Year.

The progress of the Public Library is shown approximately by the following report:

Number of Volumes in Library, January 1, 1888 ..... 6,000
Accessions during past year ...................... 4,500
Number of Volumes lost .......................... 32
Number of Volumes discarded .................... 300

Circulation during the year ..................... 26,792

Circulation by Months

January ....... 865
February ...... 896
March ........... 1,200
April .......... 1,682
May ............ 1,400
June .......... 2,085
July .......... 2,133
August ...... 2,722
September ... 3,045
October ....... 3,269
November ..... 3,128
December ...... 4,367

Circulation Classified

Philosophy ................... 166
Religion ..................... 187
Social Studies ............... 281
Foreign Language ............ 128
Natural Science .............. 514
Useful Arts .................. 238
Literature (Fiction 18,032) .. 20,682
History ...................... 3,363

READING ROOMS.

The attendance at the Reading Room is increasing very rapidly.66

MONTHLY PERIODICALS TAKEN.

Atlantic (2 copies).
Century (2 copies).
Harpers (2 copies).
Eclectic.
North American Review.
Popular Science.
Science News.
St. Nicholas.
Art Journal.
Wide-Awake.
Chautauquan.
Scribner.
Grammar School.
Forum.
Overland.
Golden Era.
American Garden.
Pacific Health Journal.

WEEKLY PERIODICALS TAKEN.

American Field.
Inter-Ocean.
Julian Sentinel.
Christian Register.
Globe-Democrat.
Encinitas Journal.
Lumberman and Contractor.
Frank Leslie.
New York Sun.
Journal of Education.
New York Sunday Tribune.
Harper's Bazar.
Harper's Weekly.
Oceanside Star.
Young People.
Scientific American.
Unity.
Youths' Companion.
Argonaut.
Pacific Rural Press.
American Architect.
DAILY NEWSPAPERS TAKEN.

San Diego Daily Union.
San Diego Evening Sun.
Evening San Diegan.
San Francisco Examiner.
San Francisco Bulletin.
Los Angeles Herald.
Sacramento Record-Union.

L. YOUNKIN,
Librarian.

POUND KEEPER'S REPORT.

San Diego, Cal., January 1, 1889.

D. Gochenauer, M.D., Health Officer

Dear Sir: I have the honor to submit the accompanying statement of the operations of the City Pound for the year ending December 31, 1888.

THOS. WELLER,
Pound Keeper.

Table No. 19. Showing Number of Animals Impounded and How Disposed of.
HUMANE SOCIETY'S REPORT.

San Diego, Cal., January 1, 1889.

D. GOCHENAUER, M.D., Health Officer:

Dear Sir: I herewith tender you a report of the work done by the Humane Society of this city, for the year ending December 31, 1888:

The Special Agent of the Society having received authority from Judge Parker to make arrests, carry weapons and execute the work of the Society, reported regularly at their office, 909 Fifth street, and attended to all business left there.

He visited daily the stables in various parts of the city, and all public works where horses are used. He endeavored to get the co-operation of our citizens with the Society by inviting them to become members, or to report at the office any cases of cruelty that might come under their observation by placing the Society's cards in conspicuous places, and by getting the newspapers to report work accomplished by the Society: and although at the beginning he found considerable difficulty in carrying out the work, yet when parties found out that he was vested with the proper authority to make arrests, and that the law might sustain his action, he had less trouble in protecting dumb animals.

In all cases where he found it to be the first offence, if not a very bad one, he tried persuasion or threats rather than arrests or prosecution, to prevent a repetition, and would only adopt the latter course when he found the offense was committed through malice prepense rather than through
ignorance or negligence.

He found that a great many complaints left at the office were either considerably exaggerated or without any foundation; but in some cases, where he as well as the directors of the Society were convinced that there could be a strong case made before Court, and where the example would be of considerable benefit, he found it impossible to get a conviction. Whether the fault lies with the City District Attorney or with the Court itself, he cannot say. In cases where fines are inflicted for cruelty to animals, the Society is entitled to the greater portion of the fine; but the agent could never get any portion of these fines from the Court.

In cases where there was a doubt as to the ailment of an animal, or its capacity for work, the Agent gets the opinion of Dr. Bourke, veterinary surgeon, who has consented to give his services to the Society gratuitously.

Below is a report of cases having the Agent's special attention for the half year ending December 31, 1888:

June 21. Found junk-store man using horse unfit for labor, and had it stabled and cared for.

June 25. Killed a dog on Florence Heights, dragging its hind quarters on the ground.

July 2. Took a horse with sore back from a Chinaman from Sweetwater dam, and had it cared for.

July 22. Horses under watering carts were ill-treated by drivers when pulling out from watering place on H street. The place was soft and in bad repair. Had it fixed.

July 31. Found a mule in very bad condition in a brickyard. Shot it, and had it removed.

August 1. Found a Chinaman at the end of Fourth street working a lame horse. Had its shoes removed, and the animal cared for.

August 4. Shot a ruptured dog.

August 4. Found a junk-store man, on I street, working a horse with a sore shoulder. Had it stabled and attended to.

August 6. Took a lame horse from a First street car. and had it stabled.

August 9. Took a foundered and lame horse from an Italian on D street. Had its shoes removed and had it stabled.


August 15. Found two horses, near Atlantic and Grape streets, suffering from glanders. Shot them, and had the premises white-washed.

August 17. Fruit-vender's horse going lame on Fifth street. Had it stabled and attended to.

August 19. Horse going lame in wagon belonging to grocer on Thirteenth street. Had it stabled.

August 20. Found grocer on Columbia street working lame horse. Had it stabled and leg
poulticed.

September 2. Found a man working gray house on D street, and as he repeated the offense two days after, he was prosecuted.

September 20. Found a crippled horse near Thirty-second street and National avenue, Shot it, and had it removed.

September 21. Took lame horse from D street car, and had the animal stabled.

September 22. Found a lame horse on Fifth street, and had it put in stable.

September 29. Stopped lassoing of cattle at Pacific Beach sports, as they were conducted in a brutal manner.

October 12. A cow was run over by a Coronado motor, and had its leg broken. Shot it, and had it removed.

October 13. Found a Chinese laundry-man driving a horse with a sore back. Had it stabled.

RECAPITULATION.

15 horses taken from vehicles and attended to.
5 horses killed.
1 cow killed.
3 dogs killed.
2 prosecutions.

WILLARD N. FOS,
Secretary.

FINANCIAL STATEMENT.

San Diego, January 1, 1889.

To the Honorable the Board of Health:

Gentlemen: I respectfully submit the following Financial Exhibit of the three departments under my charge, for the year ending December 31, 1888.

The stipulated salary for the Health Officer includes also his duties as City Physician and Quarantine Officer. I desire to call your attention to the fact that the expenses during the past six months include the complete equipment of all the departments, the greater portion of which it will not be necessary to renew for several years to come.

EXPENDITURES FOR PAST SIX MONTHS.
SALARIES.

Health Officer, City Physician and Quarantine Officer, $900.00
Health Inspector ........................................... 550.00
Health Inspector ........................................... 350.00
Plumbing Inspector ...................................... 600.00
Department Clerk ...................................... 125.00

$2,525.00
Forward ............................................ $2,525.00

PRINTING.

Plumber's Examinations...................$17.50
Plumbing Register ......................... 13.00
Nuisance Register ......................... 15.00
Record of Plumbing Work ................... 15.00
Approval of Plans ......................... 7.00
Application for Inspection ............. 10.00
Non-Approval of Plans ................. 4.00
Final Inspection ......................... 7.00
Certificates of Death ................. 9.00
Return Certificates of Still-Birth .... 10.00
Certificates of Birth ................ 25.00
5000 Copies Plumbing Rules and Regula-
tions, (24 pages) ................. 97.50
Master Plumbers' Permits .......... 7.50
Journeymen Plumbers' Permits .... 12.50
Plumbing Plans ....................... 11.50
Plumbing Specifications ............. 18.00
Plumbing Inspector's Monthly Reports .... 6.50
Cemetery Monthly Reports ........... 15.00
Monthly Health Reports ............. 183.00
Register of Physicians ............... 10.00
Revised Register of Physicians ..... 5.00
Vaccination Certificates .......... 4.00
Report of Contagious Diseases ...... 17.50
Envelopes ................................... 7.50
Letter Heads ..................................... 3.50

531.50

OFFICE FURNISHINGS.

Furniture ............................................. 75.67
Carpet ............................................. 55.59

131.26

MISCELLANEOUS.
Advertising ......................... .. 59 85
Blank Books .......................... 21 90
Postage .............................. 14 00
Horse Feed ............................ 140 00

234 75

Total Expense of Health Department ... $3422 51

CITY HOSPITAL DEPARTMENT.

Telephone Construction .......... 40 00
" Rental .................. 15 00
Vaccine Virus .................. 60 00
Drugs .......................... 19 90
Furniture ...................... 39 13
Bedding ......................... 7 62

Total for Hospital Department ........ 181 65

QUARANTINE DEPARTMENT.

Flag Material .......................... 10 15
Flag Making ............................ 5 75

Total for Quarantine Department ....... 15 90

GARBAGE DEPARTMENT.

Captain City Scow, salary ............. 360 00
Dump Master, " ................... 360 00
Tools ........................................ 6 50  
Printing Scavenger's Orders .......... 6 00  
Removal of Garbage and Dead  
Animals by Scavengers ............. 61 20  

1,733 70  

Total for Garbage Department .......... 2,493 70  

D. GOCHENAUER, M.D.,  
Health Officer.  

TABLE No. 20. METEOROLOGICAL SYNOPSIS

CORONADO WATER SUPPLY.  
San Diego, Cal., January 1, 1889.  

To the Honorable the Board of Health:  

Since the Supreme Court of the State of California has decided that Coronado Beach is a portion of the city of San Diego, I have given special attention to the water supply of that beautiful locality, and find that it will bear favorable comparison with any other of the celebrated waters.  

The Coronado Water Company recently discovered a series of living springs of pure water in the Otay valley, which is soft and pleasant to use, clear, bright and agreeable to the eye, and refreshing to the taste. This water has been piped to South San Diego, Coronado Heights and Coronado Beach; and the present supply, which can easily be doubled, already amounts to a daily yield of over 5,000,000 gallons.  

An analysis of this water, made by the eminent chemist, C. Gilbert Wheeler, of Chicago, gives the following result as compared with the celebrated water of Waukesha, Wisconsin; and an examination of this analysis will show that, while their medicinal properties are almost identical, there is but one-half the amount of organic matter in the Coronado water that there is in the Waukesha water:
**THE ANALYSIS.**

<table>
<thead>
<tr>
<th></th>
<th>Waukesha</th>
<th>Coronado</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silica</td>
<td>.092</td>
<td>.135</td>
</tr>
<tr>
<td>Aluminia</td>
<td>.015</td>
<td>none</td>
</tr>
<tr>
<td>Iron (sesquioxide)</td>
<td>.004</td>
<td>.005</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>.145</td>
<td>1.217</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>....</td>
<td>.114</td>
</tr>
<tr>
<td>Potassium sulphate</td>
<td>.057</td>
<td>.069</td>
</tr>
<tr>
<td>Calcium sulphate</td>
<td>....</td>
<td>.166</td>
</tr>
<tr>
<td>Calcium carbonate</td>
<td>1.478</td>
<td>.811</td>
</tr>
<tr>
<td>Magnesium carbonate</td>
<td>.918</td>
<td>.591</td>
</tr>
<tr>
<td>Organic matter</td>
<td>.248</td>
<td>.124</td>
</tr>
<tr>
<td>Sodium sulphate</td>
<td>.068</td>
<td>....</td>
</tr>
<tr>
<td>Sodium carbonate</td>
<td>.109</td>
<td>....</td>
</tr>
</tbody>
</table>

---

3,134 3,286

Professor Wheeler adds that the Coronado water is highly medicinal, and peculiarly adapted for and very beneficial in all kidney diseases. The truth of this is fully demonstrated by the many cures that have been effected upon visitors who were seriously afflicted with those complaints. The water has been in use for several months for domestic purposes on Coronado Beach, with entire satisfaction to consumers, who all speak of it in the highest terms of praise. Many families even on this side of the bay have it delivered to their houses on account of its many excellent qualities.

This addition of medicinal water supplies the one thing wanted to make Coronado Beach, with its magnificent hotel and beautiful surroundings, the most elegant and attractive watering-place that could possibly be desired.

The discovery of the Coronado water is of so much importance, and has such a bearing upon our standing as a sanitarium, and the facts in regard to it, now in my possession, are so well authenticated, that I cannot but draw the attention of your honorable body to the matter, in the hope that you will give it a wider publicity. On further investigation, I will report on this subject at greater length.

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**D. GOCHENAUER, M.D.,**
Health Officer.

---

**AREA OF CITY**

**AND**

**STATEMENT OF PUBLIC IMPROVEMENTS.**

**AREA.**

Area of City improved .......................... 4 1/2 miles.
" " ........................................ 2876 acres.
Area of City Park ............................. 1402 acres.
STREETS.

Streets Graded ........................................ 38 2/3 miles.
Streets Improved and Unimproved ..................... 226 1/4 miles.
Streets Improved during 1887 ......................... 17 5-6 miles.
Streets Improved during first six months of 1888 .. 15 1/8 miles.

STREET RAILWAYS.

Length of Street Railways in Operation .............. 42 1-10 miles.

SEWER.

Length of Sewer Mains ................................ 39 miles.

PUBLIC BUILDINGS.

Estimated value erected first six months of 1888 ...... $476,697

WATER SERVICE.

Total Length of Water Mains ......................... 46 miles.
Number of Pumps in use .................................. 3

Daily Pumping Capacity of first pump ............... 3,500,000 gall.
" " second pump .................. 2,000,000 gall.
" " third pump ................. 600,000 gall.

Total Pumping Capacity ......................... 6,100,000 gall.

Number of Reservoirs ............................... 4
Average Elevation ..................................... 190 feet.
Total Reservoir Capacity ......................... 3,800,000 gall.
Average Daily Consumption ....................... 1,500,000 gall.

CORONADO BEACH.

Daily Pumping Capacity ............................... 400,000 gall.
Journal of San Diego History

Length of Water Mains ............................. 38 1/3 miles.

Changes have been made in this document according to the Errata included with the original.

Notes


7. Douglas Gunn, editor of the *San Diego Union*, was an ardent promoter of San Diego as a health resort, advocating the building of cottages and hotels for the sick. San Diego’s hotel owners catered to the sick, who made up a large proportion of the new arrivals during winter months. John E. Bauer, *The Health Seekers of Southern California, 1870-1900*. The Huntington Library, San Marino, California, 1959, pp. 61-62.


10. The treatment recommended for tuberculosis at the time was proper diet, rest and fresh air. San Diego’s mild climate was seen as ideal for victims of tuberculosis. Reverend Charles Russell Clarke, pastor of the local Presbyterian Church, came to San Diego in 1869. He wrote many articles on the beneficial effects of San Diego’s climate upon pulmonary disease, drawing in part from his own experience. He died of tuberculosis in 1872. Linda E. Miller, "San Diego’s Early Years as a Health Resort," *Journal of San Diego History*, v. 28, no. 4, p. 235.

11. *Information Relative to the City of San Diego, California*, includes San Diego’s first Business Directory, 1874, p. 18-22. Published by the San Diego Chamber of Commerce. San


14. *San Diego Daily Sun*, June 1, 1888. The difficulty that resulted from efforts to encourage "invalids" to come to San Diego is also evident in the 1874 City Directory. "Only fifty-three deaths from a population of nine thousand, or a trifle less than six for one thousand! and thirteen of the fifty-three were consumptives from abroad who came here diseased beyond recovery." The end of the same paragraph stated "To this wonderful natural sanitarium we specially invite such as have a predisposition to pulmonary disease, not yet fully developed." *Information Relative to the City of San Diego*, 1874, p.25. Research Archives, San Diego Historical Society.


17. There were frequent newspaper accounts of foul odors from decaying garbage along the waterfront and at local dump sites. *San Diego Union*, April 7, 1887, *San Diego Union*, March 6, 1888, *San Diego Union*, February 1, 1888.

18. Members of the first Board of Health were Charles Haraszthy, A.S. Wright, W.E. Rust, and John Conger. They were instructed to "consult on the best means to prevent the introduction and spreading of diseases." The Board was to report to the Common Council and Board members were to serve without pay. *Minutes of the Common Council of the City of San Diego*, September 5th, 1850. San Diego’s original City Charter authorized the Common Council "to establish a Board of Health; …to erect and maintain poorhouses and hospitals; to prevent the introduction and spreading of diseases…" State of California Legislative Statutes, March 27, 1850, "An Act to incorporate the City of San Diego," Section 5. California State Archives, Sacramento, California.

19. Office of the Board of Trustees of the City of San Diego, Ordinance No. 1., March 16, 1869. Section 1. "That the building now under control of this Board, situate [sic] on Nash’s land, east of Las Choyas, in, said City, County and State, be known as the Pest Hospital of the City of San Diego, and shall be used for the benefit of those afflicted with the Small Pox or any other contagious disease, until otherwise ordered by this Board. Section 2. "That Doctors Jacob Allen and Edward Burr, and George Hyde, Esq., be and are hereby appointed and constituted a Board of Health for said City, with full power to take such measures for the vaccination of the
population of said City, not already vaccinated, as to them may seem meet and proper; to employ watchmen over places infected and make all necessary rules and regulations to prevent the spread of Small Pox or any other contagious disease within the limits of said City; and to have the care of and provide suitable accommodations for persons so effected, during such sickness."

San Diego Union, March 17, 1869, p. 2, col. 5.

20. San Diego Union, June 14, 1876.

21. Minutes, San Diego Board of Health, June 17, 1876. The original minutes of the Board of Health are preserved at the San Diego State University Library, Special Collections. San Diego County Department of Health, Box 1b. There is a gap of nearly two years in the minutes of the Board of Health after February 16, 1886, this after an apparent re-organization of the Board of Health by the City Council on Feb 3, 1886. If there were meetings of that Board of Health, the minutes were kept elsewhere and appear to be lost.

22. Minutes, San Diego Board of Health, Book 1b, p. 47.

23. Thomas Coates Stockton was an early San Diego physician. Born in New Brunswick, Canada, he attended Harvard University Medical School and then the Bellevue Hospital in New York, graduating in 1866. He came to San Diego in 1869 and was one of the founders of the San Diego County Medical Society in 1870. Rawson J. Pickard, M.D., San Diego Medical Society History, Part 6, The Bulletin of the San Diego County Medical Society, p 98. He served as San Diego’s Health Officer in 1878 and at various times was County Coroner, County Physician and Public Administrator. He was President of the Board of Health at the time of the publication of the 1889 Health Department Report. Clarence Alan McGrew, City of San Diego and San Diego County, The American Historical Society, Chicago and New York, 1922, v. I, pp. 434-435. In 1889, he and his partners Drs. Northrup and Valle had offices located at 726 5th, between F and G Streets, according to the 1889 City Directory.

24. San Diego Union, March 6, 1888.

25. "Clean the City" editorial, San Diego Union, February 21, 1888.


27. The Weekly San Diegan reported on June 7, 1888, that the Common Council reduced payment of Dr. Northrup’s bill for vaccination from the requested $1066 to $200, noting that the "Board of Health was then hauled over the coals for its negligence in not appointing a Health Officer" and that the Council then removed the Board of Health’s power to appoint a Health Officer, placing that power with the City Council. The Board of Health, at its meeting June 4th, 1888, had recommended that the City Council appoint Dr. R. B. Davy as Health Officer. San Diego Daily Sun, June 5, 1888. The City Council, at their regular meeting of June 5, 1888, accepted the resignation of Dr. Northrup as Health Officer, noting the Board of Health’s recommendation of Dr. Davy as well as other applications for the position of Health Officer from Dr. John P. Moore, Dr. C. B. Putnam and Dr. Edward Carson. San Diego Daily Sun, June 6, 1888. There was no mention of Dr. Gochenauer in that newspaper report.

28. "At the meeting of the Board of Health last night the differences between that body and the City Council were referred to as having been amicably settled. They have beaten their swords into implements of peace, and both bodies will hereafter pull together for the best interests and best possible sanitary condition of the city." San Diego Union, June 14, 1888.
29. Dissent between the Board of Health and the City Council came to the fore on June 6th, 1888, when the Council ignored the recommendation of the Board of Health for Health Officer and appointed David Gochenauer on the second ballot by a vote of 6 to 4. At the same meeting the Council amended the duties of the Health Officer, adding "duties to visit the jail and pest house and furnish medical attendance for the sick and injured in charge of the city, and vaccinate under orders of the Council." *San Diego Union*, June 7, 1888. *San Diego Daily Sun*, June 13, 1888. A week later, the Sun reported that "a bond of Dr. D. Gochenauer as Health Officer was received and approved". *San Diego Daily Sun*, June 13, 1888. The Minutes of the Board of Health for July 2, 1888 were brief but state that the relations of the Council and the Board of Health were discussed at length and a meeting of the two groups was proposed.


33. Minutes and Roll of Members, San Diego County Medical Society, Special Collections, San Diego State University library. It should be noted that the first San Diego County Medical Society was formed in 1870, but there are no records of that organization until the Society was re-organized in 1887. About that time there was a falling out between two factions and for a short time there were two societies claiming to be the true San Diego County Medical Society. *The Bulletin of the San Diego County Medical Society*, p 175.


35. *Minutes, San Diego Board of Health*, p. 135. Letter of resignation, dated October 14, 1890, effective December 1, 1890. Gochenauer’s resignation was reported in the *San Diego Union*, December 20, 1890.

36. Smythe, *History of San Diego*, p. 606. Another account states that "the Agnew Hospital was built in 1900 at Fifth Avenue and Beech street by Drs. David Gochenauer and Charles Lehman." *The Bulletin of the San Diego County Medical Society*, p. 467.


41. The Board of Health recommended to the City Council the issuing of 500 copies of the Annual Report. *Minutes, San Diego Board of Health*, December 24, 1888. The Health Committee of the San Diego City Council "complimented the health report as the best ever issued, and recommended that the Council have 5000 copies published for distribution at a cost of about $400." *San Diego Daily Sun*, February 1, 1889. Given the scarcity of the report, it would seem to be the lower figure of 500 copies printed.

42. "Fresh bovine vaccine" to protect against smallpox was made available to physicians "at


45. The Board of Health had recommended the inspection of slaughterhouses and meat markets before Gochenauer’s appointment as Health Officer. *San Diego Union*, February 26, 1888. The Board had also recommended centralizing slaughterhouses in one location to allow for easier inspection. *San Diego Union*, March 21, 1888.

46. Tuberculosis (TB) in cows is usually caused by Mycobacterium bovis, while the closely related Mycobacterium tuberculosis causes most TB disease in people. Both kinds of TB can be transmitted to humans from cows’ milk and can be prevented by pasteurization of milk, which was not practiced until the twentieth century. Tuberculosis in cows remains a problem in California today. A Tulare County, California, dairyman was recently paid by the federal government to slaughter 6,400 cows after an outbreak of bovine tuberculosis in his herd. *The Fresno Bee*, November 14, 2002.


48. **Errata** attached to the original report: omit the words "and still-births".

49. The term "contagious diseases" probably refers to diseases such as smallpox, measles, and diphtheria, which were recognized at the time as contagious. Other diseases that we know today to be contagious were extant in 1888, notably tuberculosis, typhoid fever and pertussis (whooping cough).

50. For thousands of years, smallpox was a scourge of mankind, killing more than a third of those infected: young and old, rich and poor, native and newcomer alike. Epidemics of smallpox had visited the San Diego region in 1837-1838. In 1863 smallpox killed many Indians in San Diego, Los Angeles and San Bernardino counties. Pioneer Notes from the Diaries of Judge Benjamin Hayes, Los Angeles,1929; pp. 281-283. The years 1886-87 saw the re-emergence of smallpox in California. The first cases of the disease in Los Angeles appeared in February, 1887. Tenth Biennial Report of the State Board of Health of California, 1888. Health Officers throughout the state were encouraged to devote their efforts to vaccination and quarantine. Quarantine, the enforced delay of a ship’s access to a port, and isolation of victims or suspects with contagious diseases were among the few public health measures thought to impede the progress of an outbreak of communicable disease such as smallpox, cholera or typhoid. Quarantine was a frequent topic of discussion among physicians and community leaders. *San Diego Union*, January 3 & 4, 1888. In Los Angeles, there was a rush for the offices of physicians fortunate enough to have the vaccine. Worried by reports of smallpox and rumor of a quarantine in Los Angeles, people filled the trains for San Diego. Tenth Biennial Report of the State Board of Health of California, 1888, p. 120. At least 165 cases of smallpox were identified
in California in 1887-88, of which about 125 occurred in the city of Los Angeles and at least 12 in San Diego, including "a little native California boy, aged twelve, named Pedro Garcia, who, with his little sister, aged eight, had been sent from Los Angeles to the Mission School in Old San Diego, hoping to avoid the disease".

51. Milk from cows was a frequent source of infectious disease before the practice of pasteurization became widely used. The first commercial pasteurizing machines were introduced in 1895. Chicago had the first compulsory pasteurization law in 1908. Even today, in the United States and throughout the world, unpasteurized milk is a source of serious infections from various strains of Salmonella, Listeria, Campylobacter, Brucella and Tuberculosis.

52. Swill fed to animals was believed at the time to produce unhealthy livestock. Today swill is defined variously as table or kitchen refuse, scraps or waste; animal carcasses, offal, or any waste product from the slaughtering or processing of any animal or poultry. Sometimes swill referred to fermented grain from distilleries. Feeding swill to livestock is known to transmit many animal diseases such as Foot and Mouth Disease, gastroenteritis, swine fevers, Aujeszky's disease and Newcastle disease in poultry. The practice is now deemed responsible for the spread of "Mad Cow Disease," or Bovine Spongiform Encephalopathy (BSE). Scientific and epidemiological studies have linked variant Creutzfeldt-Jakob Disease (vCJD), a chronic and fatal neurodegenerative disease that affects humans, to the consumption of beef products contaminated with the BSE agent. Centers for Disease Control and Prevention, "Update 2002: Bovine Spongiform Encephalopathy and Variant Creutzfeldt-Jakob Disease," from the following web site, visited February 26, 2003:
http://www.cdc.gov/ncidod/diseases/cjd/bse_cjd.htm

53. An abattoir is a slaughter house. The Board of Health recommended that the city purchase land near Roseville and relocate all slaughter-houses in that one location. San Diego Union, March 21, 1888.


55. Gochenauer shows that he understood the germ theory of disease and the importance of proper sewerage. Human waste was generally deposited in privy vaults close to or in the cellars of houses, but these vaults had limited capacities and had to be replaced or emptied periodically to prevent overflow. It was known that polluted soil from privies and cesspools could leak into wells and cause disease such as cholera and typhoid. Such pollution of drinking water was first scientifically demonstrated in John Snow's classic monograph "On the Mode of Communication of Cholera," Second Edition, 1854. Snow on Cholera. Haffner, New York, 1965; N. R. Barrett, "A Tribute to John Snow, M.D., London 1813-1853," Bulletin of the History of Medicine, XIX (1946), 531.

56. Cities instituted periodic emptying of privy vaults by private scavengers under city contract, but this often proved inadequate. The 1888 Health Department Report commends an ordinance governing the work of scavengers, as their work was often done carelessly or even fraudulently. Melosi, Pollution, p. 14.

57. The method referred to here is dumping San Diego’s garbage at sea, rather than burning it. San Diego produced an estimated 500 tons of offal per month. San Diego Sun, November 17, 1888. While Gochenauer’s support of such dumping may seem misguided today, the practice of dumping of refuse into the ocean was common in coastal cities such as New York and New York.


60. There was not enough well water to serve the growing population of San Diego. Public and private wells, the chief source of water in early San Diego, were being replaced by public reservoirs delivering water to the city via a wooden aqueduct or flume. The San Diego Flume Company was formed in 1886. From the Helix Water District web site, visited January 13, 2003: http://www.hwd.com/history/18a.htm

The Cuyamaca Dam was constructed on Boulder Creek and completed in 1887, creating Lake Cuyamaca; the redwood flume, completed in 1888, traversed eight tunnels and 315 trestles; water from the flume did not actually reach San Diego until 1889. Joseph Hill, "Dry Rivers, Dammed Rivers and Floods: An Early History of the Struggle Between Droughts and Floods in San Diego," *Journal of San Diego History*, v. 48, no. 1.

61. This wooden flume was elevated but it was not covered. Mexicans and Indians were hired as flume-walkers, to walk along the flume with their bare feet in the water, clearing it of debris, dead rabbits, quail and snakes. "Over the Hill to the Stonewall," *Journal of San Diego History*, April 1958, v. 4, no. 2.


The "Waring system" was widely known for its separation of raw sewage and rainwater into separate drainage systems. Melosi, *Pollution*, p. 56.

63. Errata attached to the original *1888 Health Department Report*: for p. 49, change the word "hundredths" to "thousandths" at the bottom of the Table #1 and [while not stated] should have been changed in this line of the text referring to that table.

64. Glanders is an infectious disease, primarily affecting horses, caused by the bacterium *Burkholderia mallei*. The disease causes symptoms of skin and lymph node infection, fever, pneumonia and fatal infections of the bloodstream.

65. Prior to the 1890s, the U.S. Commerce Department lumped plumbers together with gas fitters and other metal working categories. The engineering community likewise tended to ignore this unglamorous specialty. Olsztynski, Jim, *PM Engineer*, November, 1999, "A History of Plumbing Engineering," from the PM Engineer web site, visited January 13, 2003: http://...