

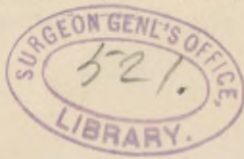
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YELLOW-FEVER THE AMERICAN PLAGUE—  
THOROUGH DRAINAGE AND MUNICIPAL  
CLEANLINESS THE ONLY MEANS OF IN-  
SURING ITS EXTINCTION.\*

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20 WHEN the great West opened its portals to the world, the capital which had been invested in the construction of the Pacific Railway, etc., was so great and the territory to be settled so immense, that extraordinary methods had to be resorted to in order to turn the current of immigration in that direction. Therefore lands were given away, passage money was furnished or advanced, numberless agents were sent to every part of Europe and Asia to advertise the West and to enlist recruits. The two hemispheres were flooded with "Western literature," wherein facts were clothed in such garbs as suited the purpose best. The pictures of Western scenery were all *couleur de rose*, while those of other sections were not very attractive. The South—a rival most to be dreaded—was made to appear as little better than the infernal regions. Its sun was ~~fast~~ hot; its climate so sickly and its people (fire-eaters) so reckless that human life was in constant danger. The success of this enterprise was most wonderful. People from every corner of the world soon flocked westward to fill this "Land of Promise." Cities sprang up everywhere, many of them growing to huge proportions; railways were constructed in every direction until a complete network was formed. The influx became so great that the native Indian had to be forced from his hunting grounds in order to make

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way for the surging mass. Soon it became necessary to check this wholesale immigration in order to protect the inhabitants against want. The Chinese were first placed under the ban; this was followed by other restrictions; but the West has been overloaded, and the surplus has been forced to make its way Eastward in search of bread and money. Southern States need not, therefore, fear competition from that quarter; on the contrary, many of the better class of Westerners may be induced to come and bide with us—if we invite them do so.

Time, the Civil War, the abolition of slavery, facility of communication, cheap travel, and common interests have done a great deal to bring about the intermingling of the people of the Northern and Western States with those of the South; to bury the old distrust and that fear of personal danger in the South which existed in former years, and replace them with good-will and fellowship.

You have met here to-day for the purpose of inviting immigration to the Southern States; and you will not find it difficult to demonstrate the many advantages which the Southern States offer to immigrants. The mildness of the climate and the wonderful productiveness of the soil will enable them to live cheaper in the South than they can in the North, where artificial heat is required nearly half the time. It is also in your power to show that many millions of willing hands can find remunerative employment in the South; some in preparing the growth of our immense forests for the markets of the world, others in bringing to light and utilizing treasures now buried in our inexhaustible mineral beds. Hundreds of thousands of families can find steady and remunerative occupation in the cultivation of cotton, of rice, of tobacco, of sugar-cane, of fruits and vegetables, and in the raising of horses, cattle, swine and other domestic animals, and in many other ways.

But, in order to succeed in bringing the current of immigration through Southern ports, it will be necessary to prove that yellow-fever is fast disappearing from the country; that it is no longer the terrible disease which, for political purposes, the advocates of a national quarantine system have pictured it; but, on the contrary, a preventable disease, and

that it should never prevail again as an epidemic on the Southern coast.

The dread of yellow-fever is so great, that the mere mention of it strikes the great mass of our people with terror. The occurrence of a single case sufficed to depopulate Brunswick last year; and the same dread affects the minds of foreigners and retards *me* emigration to the Southern States. In the hope of removing this fear, and of showing that yellow-fever should not be an obstacle to emigration, I have prepared the following brief history of that disease and of the means which have been successfully used for its extinction :

Three hundred years ago the name "yellow-fever" was for the first time given on this continent to an epidemic disease then raging in Boston, Mass. Since that time (1693) the same yellow-fever has occurred in at least one hundred years at one point or another, or at many points on the Atlantic and Gulf coasts. As this is the only pestilential disease of which a full record has been made in America since that date (barring the Asiatic cholera, which first appeared in 1832), it is reasonable to suppose that the "plague" spoken of by early writers, and which killed so many of the aborigines in times long before the European invasion, was one and the same disease. What other fever but malignant yellow-fever could have destroyed two thirds of the followers of Columbus, in 1494, while upon the island of Hispaniola, West Indies? The fearful loss of life among Spanish adventurers and Spanish troops which in the succeeding years landed upon these islands and the continent was undoubtedly caused by some climatic disease called "pestilential fever" by Torquemada, the Spanish writer and historian. He says that in 1415 Mexico lost 800,000 lives by that fever. To this day yellow-fever is called "plague" in South American States subject to its visitations. Between 1790-1822 yellow-fever occurred in the United States in thirty-seven different years in one or in several cities at the North, while it was almost unknown at the South. From 1781-1810 the loss of life from yellow-fever North was fully 20,000, while at the South it was barely 1000 during the same period. After this date, however, while Boston, Providence, Salem, Portsmouth, Hartford, New London, New York, Baltimore, and other cities North had already rid themselves of

the causes producing the disease, the yellow-fever infection was spreading at a rapid rate, and the loss of life became fearful all along the South Atlantic and Gulf coasts. Between 1845-55 this fever attained its highest degree of virulence in the United States. The death-rate was appalling, reaching at times 35 to 40 per cent of the cases. Southern cities lost fully 40,000 lives by it, of which more than 25,000 were lost in New Orleans alone. The Norfolk epidemic in 1855 seems to have been the turning-point. From that date the type of the disease became milder and milder, and the mortality has diminished with every epidemic, the last of which appeared in Brunswick last year with a mortality of about 50 from August 12th to December 1st in a population of 5000.

While not a single serious epidemic of yellow-fever occurred in the United States between 1855-76, the disease continued to appear in its sporadic or epidemic form here and there upon our coast. During the Civil War, when our ports were blockaded by the enemy's squadrons, and our commercial relations by sea and land were almost entirely cut off, yellow-fever occurred in Wilmington, Smithville, Beaufort, N. C. ; at Charleston, Hilton Head, and Beaufort, S. C. ; in Savannah, Ga. ; on board ship in the river opposite New Orleans ; at Key West, Galveston, etc. The first epidemic of any magnitude subsequent to the war occurred in 1876. That year Savannah and Brunswick, Ga., were infected. Fully 10,000 of the inhabitants of Savannah suffered with the disease ; of these 896 died. Brunswick's loss of life was 176. In 1877 it appeared as an epidemic in Fernandina and other points upon the coast of Florida, doing very little damage ; but in 1878 the infection extended far and wide along the valley of the Mississippi River and along some of its tributaries. The number of persons who suffered with the fever during this epidemic was estimated at 150,000 ; the loss of life, 10,000, of whom 4531 died in New Orleans, and in Memphis 5150. This appears to have been its last great throe ; for while the disease continued to appear almost every year since in Louisiana, Texas, Mississippi, Florida, or Georgia, the mortality has been insignificant.

The lives of millions upon millions of human beings, the prosperity or happiness of great nations, often "hang upon a

thread ;" the misinterpretation or perversion of a single word has brought about some of the most terrific wars. To what are all the misery and dissatisfaction among the working classes, the great bulk of mankind, due, if not to the misapplication of the word "protection"? To a mere difference of opinion relative to the "cause and origin" of two preventable diseases, Europe owes the continuance of the plague (black death) for twenty-five centuries, and the loss of more than 25,000,000 lives, and America a continuance of yellow-fever (black vomit) for three hundred years, with a loss of nearly 150,000 lives.

Long before the Christian era it had already been ascertained that *uncleanliness*—the accumulation of filth in the soil, and its saturation with water in the presence of long-continued solar heat—was necessary for the production of the plague. Those who believed in the local origin of the plague advised the removal of the cause as the only preventive. At that period the plague was epidemic—that is to say, it recurred every year at some of the Mediterranean ports of North Africa. Cases were constantly brought over into European ports, and occasionally the disease would become epidemic and spread in every direction. This caused many physicians and others to believe that it was an imported disease ; that local causes had nothing to do with its production ; and that it was contagious—that is, spread from one person to another by contact. Measures to prevent its introduction and spread were therefore instituted by those in authority. Isolation and segregation of cases were resorted to ; the burning of herbs, incense, etc. ; the destruction by fire of bedding, clothing, and of houses were all resorted to in the hope of checking the progress of the dreaded black death. Having completely failed in these attempts, quarantine was inaugurated and its rules enforced with the utmost rigor. No vessels from the coast of Africa were allowed to come near to land. They were compelled to remain at anchor for forty days or longer, absolutely without communication. Any attempt on the part of passengers or crew to come ashore was punished with death. This rigid quarantine against the plague was kept up for centuries, but it had no perceptible influence upon the disease, which kept up its periodical visitations over the European

continent, causing a fearful loss of life, the death-rate ranging from 50 to 80 per cent of the stricken.

The city of London, where "bills of mortality" were issued, lost 36,000 lives by the plague in the year 1603; 11,785 in 1609; 35,417 in 1625. The loss in 1636-37 was 13,482, and 3597 in 1647; while in 1664 the mortality reached 68,596 in a population of 400,000. One short year after this fearful epidemic, called "the great plague of London," a conflagration swept away every habitation upon a space covering 450 acres in the very heart of the city. Terrible as this calamity was, it proved to be a blessing in disguise. In rebuilding the burned district the streets were made much wider, the houses more spacious, and the air space between them much greater; streets were kept clean and the filth removed. This great metropolis has ever since been exempt from the plague. Not only did London profit by these sanitary measures, but the whole civilized world was benefited thereby. Once convinced of the good effects of sanitation, the heads of governments and municipal authorities in Western Europe strove to furnish the inhabitants of cities subject to the plague a greater supply of fresh air, more and purer water. Sewers were built, the soil drained—filth was removed or destroyed as best they could. The effect was soon apparent. The plague disappeared from Western Europe in the early part of the eighteenth century, while its visitations were as frequent as ever in Eastern Europe, Asia, and Northern Africa, where hygienic measures had not been resorted to. The last epidemic occurred in Constantinople in 1841, and the last outbreak on the European Continent originated on the Volga in 1878 and 1879, causing a panic throughout Europe. Every year we still hear of its occurrence in Persia, Hindostan, and China, where the habits of the people are filthy beyond measure, and sanitation is unknown.

Strange as it may seem, in America quarantine was enforced against yellow-fever long before it was known by that name. "Information having reached the colony of Massachusetts Bay that the plague, or like grievous infectious disease, had raged exceedingly in the Barbadoes and other islands of the West Indies," an order from the General Court was issued in the first month (March), 1647 or 1648: "Vessels shall stop

and come to anchor outside of the Boston Harbor." Here I transcribe part of an act passed in the province of Massachusetts in 1722, which will give an idea of the severity of the quarantine regulations at that period :

"SECTION I. That every ship or vessel shall, before they unload any goods or part of their cargo, be obliged to perform quarantine at least forty days after arrival at such places as shall be assigned for that purpose. Any master or commander of such ships or vessels who shall presume to unload before he has performed such quarantine, or refuse to perform quarantine, shall be deemed a felon, and suffer the pains of death."

Charleston, S. C., was perhaps the second port in which quarantine was enforced shortly after the epidemic of 1696. A few years later (1728) it was established in Philadelphia and in New York (1758). There is not a single port upon the Atlantic and Gulf coasts subject to yellow-fever where a quarantine has not been kept up for years. Was not a quarantine enforced from 1793-1807 when yellow-fever became endemic in New York, Philadelphia, and Charleston? The records of those cities show that it was, and that its regulations were rigid and heartless as those of the Mediterranean ports when the plague was raging. Although the effects of quarantine had always been detrimental to commerce, and the great majority of physicians who had much experience with yellow-fever had no confidence in quarantine as a protective measure, the faith of the people in it was so great that it had to be kept up. During the period between 1855 and 1876, however, it was practically abandoned. Physicians and sanitarians met in convention in Philadelphia, New York, and Boston to discuss that important question. The result of their labor was a very valuable report; in this report it is declared that quarantine as a protection against the recurrence of yellow-fever in this country is useless. Did any bad results follow this abandonment of quarantine? None whatever! On the contrary, during the time mentioned, the number of cases and the mortality from yellow-fever was less than it had been since 1781 in the United States in the same interval of time. And yet it was during this very period that the plans for a revival of quarantine were laid. In 1870-72 politicians and

others in and out of Congress, thinking that a central bureau with power to regulate and enforce quarantine South could be used not only as a powerful political engine, but also as a means to divert Southern commerce to Northern ports, united in an effort to establish such a one in Washington. During its session in 1872 Congress passed a joint resolution "providing for a more effective system of quarantine on the Southern and Gulf coasts." The yellow-fever epidemic of 1876 in Savannah gave these partisans the first opportunity to get through Congress an act "to prevent the introduction of contagious and infectious diseases in the United States." The first attempt made to create a central bureau of quarantine as an appendage to the Marine Hospital Service failed. In its place Congress created a national board of health. This board inaugurated national quarantine stations along our coasts as a sure preventive. But the yellow-fever did come, nevertheless, and the Board of Health, which had been too extravagant, was left to die by starvation; but its powers were relegated to the Marine Hospital Service, under whose charge quarantine has been worked for all it is worth. To the existing maritime inter-State quarantine was added. This gave it control over travel. Then came inland quarantine, with its *cordons sanitaire*, armed guards, camps, fumigation, and other paraphernalia too numerous to mention. Finally the control and management of epidemics was given by Congress to the same service, and an appropriation of \$1,000,000 was made. The powers conferred by Congress upon the head of the Quarantine Bureau are despotic; they are even greater than those assumed by a general in times of war. This was fully illustrated in Brunswick last year, when an epidemic-fever occurred called yellow-fever, causing a mortality of 54 (?) persons in a population of 5000. During the three months of its prevalence the people of the infected districts were held as prisoners by armed guards, and within a radius of at least one hundred miles no one dared to leave home without a written passport from the health authorities. Persons presuming to travel without this permit were hounded down, and, if caught, were sent to a pest-house, to the national quarantine station, or turned loose in the woods; and yet with all this power behind it, quarantine has failed to prevent



the recurrence of yellow-fever. It has failed to stamp out epidemics, and it has also failed to prevent its spread in infected districts.

Ever since 1882, when the Marine Hospital was put in charge of quarantine on the Rio Grande and at Pensacola, outbreaks of yellow-fever have occurred in Alabama, Mississippi, Louisiana, Florida, and Texas almost every year. Therefore quarantine has proved as much a failure against the incursions of yellow-fever in America as it did in Europe against the plague. I will now point out what means were used to bring about the extinction of this dread disease in cities hitherto subjected to its depredations.

On February 13th, 1799, the General Court of the commonwealth of Massachusetts passed an act entitled "An act to empower the inhabitants of Boston to choose a board of health, and for removing and preventing nuisances in said town." A board of health was immediately created which did clean the streets and remove nuisances from the city, but having been put in charge of the quarantine, they made new regulations and enforced them, hoping to prevent the return of yellow-fever; but in 1802, and again in 1805, the disease did return. Then this Board of Health devoted its attention particularly to sanitary measures. The streets and yards were regularly cleaned, low land was drained and transformed into magnificent truck farms, gardens, nurseries, etc. While this work was going on, a few cases of yellow-fever occurred near the town docks and along some of the wharves, but did not spread anywhere else. After suffering severely from epidemic yellow-fever in 1794, 1798, 1800, and 1819, the municipal authorities of Baltimore, by advice of the Medical Society, drained the low, swampy and filthy lands near Fell's Point, where the yellow-fever always started; they also removed the filth from the city more thoroughly, and they discarded the quarantine restrictions which had existed until then. The Monumental City evidently owes her exemption from yellow-fever to these measures. New York had ten epidemics between 1791 and 1822, five of which recurred five years in succession. A board of health was created, but an interval occurred in which yellow-fever did not return, and very little sanitary work was accomplished during that period. In 1819,

however, the fever was epidemic again, and by order of the Board all the poor in the infected district, 150 in number, were removed to Fort Richmond, on Staten Island. All those who sickened while there died of yellow-fever; and although the inmates were crowded together, the disease did not spread. When the next epidemic occurred, in 1822, they depopulated the infected district and cleaned every part of the same. The powers of the Board of Health were now extended, larger appropriations were made, and sanitary work was done in every corner of the city. The wharves and the river were overhauled, the low places were drained and filled, sewers were built, and this work has been kept up and improved upon ever since, with the result of greatly decreasing the mortality, and preventing the recurrence of epidemic yellow-fever, although cases of the disease are brought into the city almost every year.

Philadelphia suffered more and longer from the incursions of the yellow-fever than any other Northern city. This was the field on which the partisans of "the local origin" and the "foreign origin" of yellow-fever fought their battles; the result being that no thorough measure was ever undertaken until 1854, the year after the last visitation of the plague. Then important sanitary works were at last carried out. The sewer system was remodelled, the river was dredged, the wharves, the drainage inside and outside of the city carefully looked after. The filth was removed in a systematic way, and purer water was provided with the happiest results.

Charleston, S. C., where quarantine has been kept up continuously and very rigidly ever since 1696, has had at least 63 recurrences of yellow-fever. The most disastrous epidemic occurred in 1858, while the city was fully protected by as strict a quarantine as the Health Officer (an old army officer) could enforce. Having had two visitations of yellow-fever during the war, while their port was under strict blockade, caused the authorities to lose faith in quarantine, and to resort to other means for protection. Sewers were built, low places were filled, the streets were paved and kept clean, the low lands around the city were drained, and strawberry culture was started. A supply of pure water (artesian) replaced cistern water. The scavenger wagon replaced the buzzard, and 1871

marks the last outbreak of yellow-fever in the city by the sea. There is perhaps no other city upon our Atlantic and Gulf coast where the immediate effect of cleanliness in stopping yellow-fever has been better illustrated than in New Orleans. Built upon a plane below the high-water mark on the banks of the Mississippi River, the soil is necessarily saturated, and no attention having been given to sanitary measures, it soon became one of the filthiest and sickliest cities in the land. In consequence it has been visited by yellow-fever 36 times in the last seventy-seven years, with a loss of life fully one third of that sustained by the United States during the same period. Here quarantine was tried and given up in disgust, and again tried, all to no purpose. Every effort to save the city from the pestilence failed. During the early part of the Civil War, and while in the hands of the enemy, she was cleaned as thoroughly as possible under military rule; and while other cities on the coast had the yellow-fever, New Orleans escaped, notwithstanding the fact that cases originated in the river opposite the city on board ship. The disease did not reappear until 1867—the city having again been permitted to relapse into its former filthy condition, and the yellow-fever to its former habits. Immediately after the terrible epidemic of 1878 a citizens' sanitary association was organized which furnished the money to remove the accumulated filth. The scavenger system was remodelled, steam pumps were used to empty the drains into the lake. Burials within the city were forbidden, and to this day the Southern metropolis has had no yellow-fever epidemic, although sporadic cases have occurred on several occasions since.

Now, if New Orleans, in her unhealthy situation and with so many difficulties in the way to secure either subsoil drainage or an efficient system of house drainage, has been able to prevent yellow-fever epidemics by the systematic removal of filth and surface water, there is certainly no valid reasons why any city in the southern latitudes should be allowed to remain in the condition necessary to create or to propagate yellow-fever.

If the money spent by the State governments and municipalities for quarantine purposes had been used for permanent sanitary works; if the general Government had used the

money spent for quarantine service and for epidemic purposes in the thorough drainage of sea-ports, yellow-fever as an epidemic would have disappeared long ago from Southern cities as it has done at the North and the world over, wherever a sufficient amount of money has been spent for sanitary work. If Congress, instead of giving quarantine officers power to squander money by the million, and trample upon the personal liberties of American citizens, would employ skilled engineers and sanitarians instead, and spend those millions in improving the sanitary condition of filthy ports, our commerce need never again be impeded by the detention of ships at quarantine. As soon as international laws are made and properly enforced, which will secure cleanliness and free ventilation aboard ship, and that hospitals for the treatment of the sick and the detention of the infected will be provided, neither the plague, cholera, typhus, yellow-fever, nor even small pox need ever be feared in this country.

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