VITAL DYNAMICS

OF

NEW ORLEANS:

IN A

REPORT

TO THE

AMERICAN MEDICAL ASSOCIATION.

MAY, 1849.

BY

E. H. BARTON, A.M., M.D.,
LATE PROFESSOR OF THE THEORY AND PRACTICE OF MEDICINE AND CLINICAL PRACTICE
IN THE MEDICAL COLLEGE OF LOUISIANA, ETC. ETC. ETC.

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PREFATORY REMARKS.

It is due to myself to state under what circumstances the following paper was prepared. Responding to the call of the American Medical Association, in May 1848, through its committee, to write a paper on the hygienic condition of New Orleans, the preparation of it was postponed until the winter, from a belief that, as I had been for so many years familiar with and written upon the subject, I could perform my duty in the honourable task assigned me in a brief period: but, when the time arrived, in reviewing the facts I had been collecting for another and more extended purpose, I found the field so vast, the facts so important, and the results so disastrous, that, to do anything like justice to the subject, required researches, calculations, and investigations, that no one man could accomplish, with proper facilities at hand, in months, and I had but a few weeks; and at the very commencement of my labours the epidemic cholera broke out, making a still more urgent call upon my time; so the manuscript has been prepared and sent on guttatim—as it were—by sheets, as I could find time to write it, without being able to retain a copy for correction; this is said in extenuation for that apparent disconnection which I am afraid it will exhibit, and to bespeak for it the charitable indulgence of the reader.

It will be seen, by those conversant with the subject, that my calculation of the deaths to population does not correspond with that heretofore given. The census of 1840, by the United States government, the basis of former calculations, is well known now to have added about 27,000 to our population! but, as it did not add any to our *mortuary list*, it became the source of all subsequent errors in relation to sanitary calculations; and upon a correct enumeration of the population must be founded all truth as to the salubrity of a place. We have, since, another census taken by the city, in 1847, which is probably nearly correct, and I have been enabled to fill the

blanks so long existing in it, and have used it for my own calculations; but the consequences of the error have not probably ended here—in the more abstract fact, the remarkable salubrity which seemed to result from the ratio of *actual* deaths to *presumed population*, seemed to supersede all sanitary measures for the future whatever, for, as it was *already apparently the healthiest city in the Union*, what more was required? This fatal confidence, arising from ignorance of our actual condition (and it is astonishing how averse the public mind is, here, to look into the statistics which exhibit the naked facts), was lulled into farther security from the occurrence of a few healthy years following the promulgation of that United States census, nor has the two last fatal years dispelled the lethargic delusion; they are taken as exceptions! It becomes my unpleasant duty to state the facts—to disperse the seeming security—to sound the tocsin of alarm, and to warn my fellow-citizens of their danger; and if I shall, with the danger, show how it may be avoided in future —convince them how much depends upon their improper mode of living—point out ameliorations in the physical condition which will add to its salubrity—I may be pardoned for correcting an error which has been a source of so much pride and exultation. The climate is more sinned against than sinning; I have said so before. More than twenty years ago, I lauded it, and enumerated the almost unparalleled advantages it offered for the use of its residents; but did not conceal that there were sources of great mortality that it was in our power to control and remove—that we should clean and pave the city—clear and drain the swamps—that we should shut up the "drunkeries," &c. And when, some fifteen years ago, I presented the frightful details (in a public address, in relation to "the true use of stimulants in a warm climate") arising from these latter, they were deemed apocryphal—nay, some were so bold as to say (overlooking their mostly official sources) that I made them! My professional assertion, that *it* was the greatest source of our mortality, was met by similar assertions from others of greater authority and more weight, of an opposite nature. The statistics of temperance societies, at their inception here, could not exist to confirm the astounding fact—which speaks trumpet-tongued, and now gives value to this paper—that the mortality of the members, according to the record of these societies, is less than 1 in 83; while, in our general population, it has been 1 in 19.32, on an average too of ten years. It is not too much to say, then, that this valuable record is one of the most important unpublished of this climate; it shows the *now*

undeniable fact, that temperate people have an "expectation of life" here that is positively denied to others.

In few things is the American character, and particularly the southern, more reckless than in regard to life. That this should be exhibited in great emergencies where personal prowess is required, as in battle, is not at all extraordinary, for here it is less recklessness than heroism. In the great West, this disregard of life is more apparent in exposure to river risks, &c.; farther south, with a heedlessness bordering on temerity, it is more obvious in the almost utter disregard of dangers affecting the health. Many of them are palpable enough; against many others, common sense and common experience would seem to be sufficient; and then of others, they are so obviously forbidden by all we know of *its* (yes, *its*—for I mean intemperate drinking) influence and effects, that every man who will open his eyes may read it as legibly as "the handwriting on the wall," if thou *drinkest* thereof, thou shalt surely die. To my fellow-citizens of New Orleans, who desire personal health, and who wish the prosperity of the city, I dedicate the important truth—the result of long years of experience. Deny it not—your mortuary statistics bear upon them the imperishable record of its truth; your hospitals, your eleemosynary institutions, your courts, jails, penitentiaries, workhouses, and asylums, speak volumes, and are daily robbing your *pockets*—if no more—of large funds due to nobler charities, almost all arising from undue use of the intoxicating bowl.

During the period referred to, the moral aspect of society has greatly improved; but it lacks much of that great standard that *will* make the requisite laws, and *dares* to enforce them, which will put an effectual curb on habits and practices that are incompatible with great duration of life in this climate. It will be seen, from the text, that I do not blame the climate—that *it* is not *lethale per se*, but *is* with certain habits and modes of life; but, by the indulgence of the precepts of temperance, in the enlarged sense, which are now the *dictates* of *experience*, and some other recommendations noted, all the blessings of health, and extended duration of life, can be enjoyed here to a degree equal to that of any climate in our widely-expanded country.

VITAL DYNAMICS

OF

NEW ORLEANS.

New Orleans is situated in latitude 29° 57′ 30″ N., and longitude 13° 9′ W. from Washington, on the alluvion banks of the Mississippi (the longest and swiftest river, susceptible of more extensive navigation, and draining a larger surface of country, than any on earth), and about one hundred and ten miles from its mouth, by the meandering course of the stream, and about ninety in a geographical line. It is protected from inundation by the great stream that glides by its front, at the rate of four and a half miles per hour in the thread of the current, during high water, and four and a quarter miles at low water, by a levee or embankment, about nine feet higher than it is a few squares back; and the city descends by a gentle slope to the swamps and draining canals in the rear, commencing about ——— distant from the levee, where the surface of the swamp is ——— feet below high water mark; but which is now kept several feet (four to five) above water mark, by the Draining Company; all of which will clearly appear by reference to the line of levels annexed (*vide* Appendix A), from the river through the centre of the city to the Bayou St. John.

The geological formation of the soil on which the city is built, is alluvial; the surface and subsoil, to a great extent, being composed of the deposits of the river. In some places, beds of pure white sand occur, at a depth of six to ten feet, showing the former positions occupied by the waters of the gulf. The height of the ground on the river bank is about fourteen feet above the level of ordinary water in the gulf. The river usually commences its rise about the last of November, attains its maximum elevation in March, remaining thus until the latter part of May, then falls more rapidly than it arose, till about the latter part of September, and remains stationary until the autumnal rise.

The city occupies a front on the river of about five miles, by an

average breadth of about three-quarters of a mile. It is bounded on the north by a cypress swamp, of about five miles in breadth, where it reaches Lake Pontchartrain, a large body of water extending due north about twenty-five miles, and east and west from its centre about twenty miles. The Mississippi River runs south of east from New Orleans about twelve miles, and the balance of its course south-east to the Balize. It is bounded to the east by plantations and swamps covered with forest, to Lake Borgne, an arm of the sea fifteen miles distant, of about fifteen miles of irregular diameter. On the south, it is bounded by the Mississippi River, across which are cleared land, and swamps covered with forest growth, to Lake Ouacha (a body of water, about five miles wide, and eighteen long, extending to the south-west, and thence to the sea, it is forty to fifty miles); and it is bounded due west by the meanderings of the river, fine cultivated estates, and forest growth for about eighty miles.

The prevailing WINDS, during *winter*, are, according to respective prevalence, from E., N., and N.W.; during *spring*, from E., S., S.E.; during *summer*, from S.E., E., and S.; and during *autumn*, N., E., and N.E. A perfectly calm atmosphere is very rarely noted; resulting, no doubt, from our alternations of land and water, and the rapid current of the Mississippi before so large a surface of the city. It has been remarked as a fact, pregnant with great consequence to us, that, as the forest is cleared back towards, and covering the swamps, and to the lake, there is more air stirring, and less disposition to stagnation; and with the drainage there is less moisture, and the land rises. The ventilation of the city is not at all defective; the streets are nearly all at right angles (there are few or no blind alleys), of the average width of between thirty to forty feet; four or five of them being upwards of one hundred feet, and most of these planted with trees. There are six public squares, most appropriately termed the "lungs of large cities," and all the streets would be in some measure entitled to the same beneficent appellation, were they planted with forest growth. Owing to the warmth of the climate, the houses are extremely well ventilated, even those of the poor, with but few exceptions in and about the centre, and near the markets, occupied by small traders and emigrants, mostly foreigners; but in general, the labouring population is comfortably provided for, if at all provident; for, such is the facility of acquiring here the necessaries, and even comforts, nay, luxuries of life, and in a few years, a competency, that nearly all provident, temperate people find little difficulty in doing so; the wages of labour, and particu-

larly mechanical labour, are in great demand, very high, and support not costly.

The average annual quantity of RAIN, falling in this city, is about fifty-two inches; and although there is no proper *rainy season*—for, some years, there is just as much falling during one-half of the year as the other—yet in a long series of years (say ten, that I have overlooked my meteorological register for), there was a larger quantity falling in the winter, the next was in the summer, the next was during the spring, and the driest season was clearly and palpably the autumn. But, as the hygrometric condition of the atmosphere is but poorly estimated by the quantity of rain that falls from it, for sometimes it is directly the reverse, I have constructed a chart, exhibiting these *often opposite conditions* (*vide* Appendix C), where this is seen at a glance, and also the thermometric and barometric variations, with their respective relations to each other.

The average temperature of our WINTER months is 53.77; of the *spring*, 67.76; of the *summer*, 79.27; and of the *autumn*, 67.51; making an *annual average* of 67.07, almost that perfect temperature thought to be most agreeable and salubrious to man. The thermometer rarely reaches 90° in a fair exposure, during the summer, and during the winter seldom descends below 30°. The average *daily* range, throughout the year, is near 10°. In more southern tropical regions, where these variations of temperature are unknown, the constitutions of the natives are rendered delicate and most sensitive, by a uniform continuance of a high atmospheric temperature, and if a fall of the thermometer of from 2° to 5° is experienced, serious consequences to comfort, and even health, are experienced. These changes are essential to vigour of constitution, and it would be a great blessing were they much greater. The nights are cool and pleasant; and with more attention to the construction of our houses, to adapt them to our climate, the sleeping rooms in summer facing the southern quarters, whence there is almost every night a body of air stirring; and planting trees in the principal streets, the heat would be much less, radiation from the brick buildings would be arrested, the air purified, and the great extreme at midday and towards night, almost thoroughly controlled.

The effects of planting trees in the streets, and of the multiplication of public squares, are well-established facts, of which there is now no dispute; experience here is too strong even for theory. A statement was published here some years ago, by one of our most respectable journals (*The New Orleans Delta*), and said "to be derived

from one of the old respectable inhabitants, and one of the chief magistrates of the city," that there had rarely "occurred a death on the Place d'Armes, in twenty-five years." This is the most beautiful public square in the city, and on two of its sides has a dense population. The influence of luxuriant foliage and abundant shade in the public squares and streets of large cities, and particularly southern ones, is susceptible of very easy explanation; they absorb deleterious gases, and receive or prevent that reflected heat from brick houses, which is so oppressive to those who cannot otherwise escape their influence; and they hence assist in likening a city to the country, between which there is so great a discrepancy in mortality, and the difference is mainly in ventilation, shade, and foliage.

Truly, this may be considered a "SUNNY CLIMATE," for of a series of observations, extending into many years, in reference to "clear," "cloudy," and "rainy," from my meteorological journal, more than two hundred and forty days were registered "clear," seventy odd "cloudy," and about thirty "rainy" (of the three hundred and fifty noted). And from consulting a register kept here more than forty years ago, the "clear" days have greatly increased since that period; there is much less moisture in the atmosphere, less rain falling, and fewer storms; the winds diminished in strength, and more regular, the heat sensibly less, and the climate, in many respects, greatly ameliorated. All this has resulted, doubtless, from cutting down the forest growth of the neighbourhood, clearing, cultivating, and "subduing" the land to the purposes of man, and instituting that system of drainage that is destined to give this country all the advantages of an elevated champaign country, together with its own, of incomparable fertility, as much moisture as is needed for the purposes of agriculture and health, with the assurance of ample ventilation. For more particular reference to the meteorology of New Orleans, I refer to Appendix B and C, embracing an average of three years (anterior to 1843), containing a pretty fair estimate of the climate.

From all the exhibits, then, in relation to ventilation, it is apparent that the mortality of the climate arises from no noxious principle derived from stagnation of air, and that we are located in that happy medium, removed from the violence of the winds of the tropics, where the natives seem to dread it more than almost anything else, from their greatly enhanced susceptibility of nervous system, and the frequent stagnation of temperate regions. Here,

then, there is *nothing* stagnant, neither the elements nor man; though the latter is too "go-ahead" for his interests or his health.

The city is now drained from its surface, which is extremely imperfect, and in this climate highly objectionable. The gutters are cleared by rains; by letting in water from the river at particular points at certain stages of elevation; by a steam engine in the First Municipality, for the streets appertaining to it and running perpendicular to the river; and very partially by the Water Works Co., and all most imperfectly done. The mode of removing ordinary street accumulations, from constant filling up of the gutters, and the mud pressed up from a most imperfect system of paving, with large irregular pebbles, on a moist mud substratum, is, to throw or scrape it up from the gutters, and about the surface into the streets, in heaps, for its more fluid parts to drain off, and then, after abundant exposure to the sun, it is carried off in uncovered carts, from time to time to the rear, to fill it up, at great expense to the city, and at some offence to our olfactories. The law now requires all offal from the houses to be thrown into the river, instead of the back lots, which it aided in filling up, at no expense of health to the vicinage, but sometimes offensive to smell. It is all most imperfectly carried out.

Time does not permit me to go into a system of drainage and sewerage, that is demonstrable, from effects already produced on the swamps in the neighbourhood, can make this city as dry, and, with the water power and convenience unparalleled, always at command, and at small expense, as clean as need be. It is my duty to allude to it, however briefly. It will be seen, from Appendix A, of a profile line of levels, that the river, at high water, is about fourteen feet above the level of the swamps, and that the Draining Co. has actually drained five feet *below* this. So we have here upwards of fifteen feet from the level of some of our principal streets, in a distance of half a mile to a mile, for the most perfect system of drainage and sewerage that need be required. And it is a fact well known to us all, that boggy swamps that could not be passed through a very few years ago, by man, and scarcely by beast, and only inhabited by amphibious reptiles, are now high, dry, cultivated, and prepared for the residence of man, not only without consequences injurious to health, by the exposure of such a surface to the light of day and the winds of heaven, but greatly ameliorated by this increased ventilation. The moisture has sensibly diminished, and the ground has evidently risen (one of our oldest surveyors, who has been personally conversant with it for more than forty years, thinks) more

than ten inches. This invaluable company, which has accomplished so much, and can accomplish so much more for this city, was incorporated in 1835, and has been steadily pursuing its great destined object since, under numerous difficulties, with an intelligent engineer corps and directory. It has drained the First, Third, and part of the Second Municipalities, by digging extensive canals and ditches, to lead the water to their reservoirs, where are located their steam-engines, embracing in their range a certain section of ground, which is first levelled to prevent back water from the lake to reach it by the natural drains; the water is now pumped out of these sections, from these reservoirs, into these natural drains, and thence flows to the lake. These extensive sections, embracing an area of over two miles in diameter, are now free from water, even soon after the heaviest rains; and most of it is cleared and much built upon; and with its proposed labours of drainage, and clearing the forest growth to the lake, will accomplish more for the comfort and salubrity of New Orleans than all other improvements combined, not excepting paving.

Most of the principal business streets, to six or seven blocks back from the river, are paved, and some of those perpendicular to the river much farther back; it is done mostly with round stones, which, on such a subsoil, require constant expensive repairs in moist weather. The balance, or half the city, is unpaved, and is easily and soon cut up, in wet weather, by ordinary usage. Now the sewerage and drainage, properly conducted, would dry the subsoil, remove all offensive smells and sights, keep the lots and surface dry, and take off a very large proportion of the expense in cleansing and repairing the streets. It has already had so much effect on the burial-grounds in the rear of the city, that the dead can be placed under ground, where formerly you could not dig six inches from the surface without coming to water; and, consequently, the dead had to be buried in brick tombs (or the coffins sunk below the surface of the water by boring holes in them), which, in this climate, in a few years give way, impairing the purity of the atmosphere. It would also make the climate more dry, and prevent all the consequences injurious to health, merchandise, business, or pleasure, from being in excess.

These wonderful results are destined to be carried out to their utmost extent, by our successors, by those who shall have grown wiser by our omissions, who shall be warned by the catacombs of victims our negligence (not poverty—not ignorance) has caused,

and who shall properly appreciate the inestimable position of New Orleans. It is notorious that all the large cities of America are underdrained, and also in England, and on the Continent of Europe, and so vitally important has it proved to be to health by most valuable experience, that it is notorious in many cities, where these drains exist, the inhabitants are almost exempt from fever, and where *they exist not, there is fever!* The towns along the river Po, the fens of England, and the low grounds of Holland, are all situated as New Orleans is, where the source of the water, and to which it is to be elevated, are all *above* the surface to be drained. If the indefatigable Hollander has seized from the ravages of the ocean, and the others converted swamps into rich fields, and appropriated them to the use of man, in comparatively inhospitable climes, and under governments where the rights of man are comparatively in their infancy, how much greater reason have we to appropriate from the "father of waters" a portion of the otherwise waste swamp—now, or but lately, a hotbed of disease, of the richest soil and finest climate in America, and under civil institutions, where man is blessed with every privilege he can enjoy.

The city is supplied by water, for potable purposes, by a company which was incorporated by the legislature in 1833, and began to furnish water to the city in 1837. It now has its pipes extended through various parts of the city, to the extent of thirty-seven and three-quarter miles. The engine by which the water is pumped from the river, is situated, with the reservoir, in the upper part of the city; the mound on which the basin is built is two squares back from the river, twenty-five feet above the adjoining streets; its area is 320 feet square, is divided into four compartments, each one successively supplying the city, while the sediment is being deposited from the others; it is capable of holding four millions of gallons of water, and the engine can pump up from the river daily, six millions of gallons of water. The cost has been upwards of a million of dollars.

There are yet but few manufacturing establishments here: one for cotton, several for spirit gas, one paper mill, extensive forges, and on the opposite side of the river several ship-yards, and floating dry-docks.

The city is well lighted with gas, and the pipes extend near thirty-four miles, at an original cost of $800,000, and an annual expense of about $100,000.

Probably no city is more bountifully supplied with aid for the sick

during epidemics; associations for their relief are extended with a true Samaritan spirit all over the city, and thousands upon thousands are distributed with no stinting hand. The large Charity Hospital is at all times open to those asking its eleemosynary assistance, and on an average of the last three years, near 9000 beneficiaries per annum have there found an asylum, with every appliance that humanity or science could desire, or charity ask for; and at an annual expense of about $56,000 per annum, derived most appropriately, principally from a tax on passengers, balls, and places of public amusement. There are three private hospitals for the accommodation of the sick, besides an elegant U. S. Marine Hospital on the opposite side of the river, intended for the commercial marine.

There are two canals connecting the city with Lake Pontchartrain, the avenues of an extensive inland or coast commerce; and two railroads, one to Lake Pontchartrain, and the other to Carrolton, a town of about 1200 inhabitants, distant by the river about twelve miles; on the trajét of this road (about four miles) are fine seats for our wealthy citizens, and the country in the vicinage has numerous country residences for ease, health, and pleasure. The roads or drives in the neighbourhood of the city, during dry weather, are numerous and fine, and conduce much to health.

There are few subjects more cherished here than that primary one of education; receiving its impetus about eight years since, from the enlightened, intelligent zeal of Alderman Peters, and Recorder Baldwin, assisted by an intelligent municipal council, and public-spirited citizens. The holy feeling was ere long caught by our neighbours below—of the 1st, 2d, and 3d municipalities; and now the whole south of the city is, or may be, taught at the public schools, at the public expense. The system now works well; the rich and poor all receive together, the inestimable blessing of education; and here first imbibe that valuable practical political axiom of equality, as at the altar of their God. Commencing with a few scholars in 1841, there are now over 5000 in the primary, intermediate, and high schools; there are probably 1000 in private schools, and about 500 taught at their homes by private teachers. It may be seen how the value of this boon is estimated, when, according to the returned assessment, there were but about 10,000 of the proper age (between six and sixteen), in the school limits; it is then truly esteemed here a public blessing, and considered a sacred public duty to foster it; and, as such, it has been incorporated into the State Constitution. It may be mentioned, to the high honour of this young State, where

the easy accumulation of property is so constantly seducing one to mammon by its alluring temptations, that more money has been spent in attempts to foster the interests of education, in proportion to its white population, than any other in the Union. The revenue for their support is derived from a tax of one mill on every dollar of the cash value of property on the rolls, besides a poll tax; and there is spent in this city, for these purposes, about $135,000 per annum. Libraries are being formed, attached to them, to foster and encourage a taste for reading, that admirable asylum, refuge, and protection against improper company; that of the 2d municipality already reaching upwards of 8000 volumes.

The vital statistics of New Orleans constitute a problem, and a very important one, that never has been solved; and I approach the subject with great humility and unaffected diffidence, statements having been made in relation to them, at variance with the now (I believe) ascertained facts; the true data have been heretofore wanting—the primary bases of all calculation, viz., the number of the living, and the number of the dead.

Of the first, we have to presume the U. States census for 1830 to be correct; that of 1840 (*the cause* of all the errors), we now know was not; a census was made in 1847;* it was partially correct only; the entire population *almost certainly* was not given; and then there were no details of ages, &c., and of course no basis for calculating the average age of the living; so I have taken these for 1830 as my basis, and calculated it at twenty-four years one month. In the census for 1847, none but strict *family residents* were taken; the thou-

* This is presumed to be as near correctness as we could acquire under the circumstances; by the U. States census of 1840, the population was stated to be 102,204; the over-estimate was supposed to have arisen from some vile political, or pecuniary purposes, and all the calculations in relation to the health, since, have been based upon it. To see how far this census differed from or corresponded with that of 1830, to find out where was the source of error (my only resource left), I calculated the average age of the living, according to it, to compare it with that of 1830, and found it differed but a few months, that of 1830 being as above, 24 years and 1 month, and this 24 years 10 months. It particularly becomes me to expose this vile fraud, because I have been made the innocent victim of propagating errors, in relation to the sanitary condition here, to the public, based on it, on which some reliance may have been placed, and I seize the first opportunity to wash my hands of the imposition. Nevertheless, error or not, New Orleans has been more rapidly on the increase than any large city in America, New York excepted, for, on the lowest estimate, it has been at the rate of 5.32 per cent. annually, since 1830; (the American portion, the 2d Municipality, more than doubling itself in twelve years!) while between 1830 and 1840, by the U. S. census, from the calculation of a friend, Philadelphia has increased 3.67 per cent., Boston 3.45, Baltimore 2.69, and New York but 5.81.

sands that count New Orleans their homes, and are occasionally absent, were left out entirely; such, we know, was not the case elsewhere. I have, accordingly, on the best advice, added only 5000 for this large population, to enable me to make my ratios as correct as possible.

But there is a large class, the floating population, not enumerated in the census, that furnishes a very large per centage of our annual mortality, estimated, by those best entitled to judge, to amount to between 20,000 and 30,000, adding probably about one-fifth to our mortality, as is proved by the returns from the Charity Hospital for the last eight years, constituting one-fifth of the entire mortality, those from Louisiana forming from one to three per cent. of the admissions; besides this, there is a large number of strangers who die here, that our cemetery records do not specify as "non-residents." By reference to Appendix D, it will be seen that I have merely corrected the census of that year by adding the small number of 5000, making it 100,028, and the mortality the average of eight years, 5177, or one in 19.32, embracing all the *yellow fever* cases I could ascertain, viz., 5910! embracing also some of the sickliest years that the city has known; to show how this varies, the mortality in 1845 was one in 33.07. I have added in that table various comparative data of other cities, which will not be found without their interest.

A still greater difficulty remains in relation to the dead. I have laboured many years to acquire something like truth and certainty on this subject, and I think I am entitled to the credit of rescuing from oblivion some ten or fifteen years of the records of mortality which had been *surreptitiously* made way with. I have collected now the mortality for about forty years; but then there is wanting those valuable details of special diseases, ages, and periods of residence, &c., which should give it its greatest value; to be sure, I have some of these, and must make the best use of them I can: but it is impossible, without procuring the requisite materials, to give that accurate estimate of the "expectation of life," or its "value," or such a view of the true sanitary aspect of the climate, which is so much needed by the statistician, the insurer on lives, or him who wishes to know the risks he runs in coming here before he ventures, nor does time permit me to use, in a proper manner, all the materials I have collected.

The vital statistics of this great city in embryo, and of course what may ameliorate it, are of the last importance to the citizen, the

patriot, and the philanthropist. I do not wish to dodge what may and must be considered a large mortality: but it is due to truth, to science, and to the place; to all those great interests involved—and not merely the local ones, to those who live here themselves, and expect to raise their families here, or those whose property is here, on whose proceeds they are luxuriating in other climes—but to more than half this great confederacy, who are deeply interested in this great entrepot, for which there can be no substitute—to make such explanations as to put fairly before the eyes of the public, and their servants and agents (the public authorities), to amend errors, correct defects, and to make such improvements as the country requires, and the climate (if bad) is susceptible of. Is this climate, then, *lethale per se?* does it belong to its position? and is it irremediable? Or, does it spring, in any measure, from habits and customs that are incompatible with the climate? These are questions of the last importance to us, to the American people, and to science. I enter into the very limited discussion of these great questions with a deep conviction that the facts demonstrating the convictions I feel are correct. I have fruitlessly sought everything bearing upon this subject for years, and though I have gathered sufficient to satisfy my own mind, and, I think, most that are open to the truth and unprejudiced; yet there are some gaps in my investigations, that may fail to produce on other minds that conviction arising from demonstration.

That diseases, or what may be called unhealthy years, occur in cycles of irregular return, is well known in the historical records of nations, in our country, as well as in others, and even among nations whose condition may be considered stationary; in many, they are doubtless much influenced by the agency of man; that various parts of our own country are being, and have been, constantly influenced by these means, is doubtless true: it is within my own recollection, and thousands now living, of various parts of our own State, where the mortality is now much less than half of what it was when passing through what may be termed its TRANSITION STATE, or that from its primeval, or forest state, to that fit for the purposes of man, and arrived at it, and made so by clearing, draining, and cultivating the land, is unquestionable. It is a general fact, that, as a country becomes cleared of its forest growth, and exposed to the influence of the sun, there is a diminished annual fall of rain; how it has been for the last four or five years here, I cannot say, from my own observations, as I have been absent—travelling,—but, upon a

comparison of journals kept here some forty years ago, and the recollection of the older inhabitants, compared with my own observations up to 1844, there is no doubt that this is true here also. Such experience is applicable to the whole of our western country, within the knowledge of the present generation, and that all our new States to this date, have been the graves of unnumbered thousands; nor is it to be now told, for the first time, that the pioneers of civilization are to be made the first victims to the numberless blessings *to be inherited* from their toils. Such, too, is the actual fact in relation to cities; old cities are wealthier, *cæteris paribus*, than new, and new parts of old cities are more unhealthy, generally speaking, than the old; new ships are often less favourable to health than those more old. WHY, during this "transition state," there should arise a condition unfavourable to health, is difficult to say; numberless theories have been invented by the ingenuity of man to account for it; most of the hypotheses of the miasmatists have had their origin here; it is so much easier and more soothing to one's pride, if not conscience, to ascribe to some unknown, invisible agent, the cause of our diseases and afflictions, than to find fault with our own dear habits; that the various changes in all our various modes of life and our habits, the disrupture and vicissitudes to which all are thus subject, tending to destroy that balance and equilibrium on which a continuance of health so essentially depends, is much more probable, I have no doubt; for it would be almost impious to refer the greatly increased mortality to obeying one of the plainest of God's commands, that "of subduing the earth," and subjecting it to the purposes of man as a cause of disease! rather than to breaking his laws, and obeying our own passions and vicious inclinations.

That there is a peculiar air hanging over and through cities, or all great aggregations of human beings, is probable enough; indeed, every page of recorded time shows it; asthmatics feel it; the most sensible of our race feel it; children, delicate females, or those in delicate health: nay, who is insensible to the difference between country and city air? Let any one leave a city, and go a few hundred yards, on land or water, and particularly the latter, to sea, and he will be immediately sensible of it. This is independent of mere ventilation. I have myself often experienced it, and particularly during my heavy duties at Vera Cruz, when surgeon of the U. S. Army at that place during the summer of 1847, when, in attendance on the shipping off and near the harbour—immaterial which way the wind blew, from sea or shore—the peculiar feeling of

the stomach was not experienced until we reached some hundred yards from shore. There is an atmosphere about cities that is, in a great measure, very much independent of perflation, for an epidemic will commence and be continued during, and in spite of, a rapid wind blowing all the time; that this is not from simple putrefaction, is apparent; that it is independent of, in the very face of winds that should directly blow it away, and which seems to be constantly changing the atmosphere of the place; it does not exist most where all kinds of putrefaction most abound, as in barn-yards, cat-gut, and other manufactories, where animal and vegetable substances are constantly going through this process; in butcheries, swamps, &c. &c.; it exists concentrated in filthy hospitals, where many diseases originate; others can scarcely be cured for it; it is eminently rife in blind alleys, cellars, and dirty houses, where there is a stagnant air: it prevails to a great extent wherever there is a defect of domestic and personal cleanliness, and probably more from the latter, than the former. Now it is evident the nearer we make the condition of a city approach the condition of the country, the more likely it will be to enjoy that salubrity which it enjoys over the city.

To apply the results of this well-established principle to this city, it is but fair and just, that, until its neighbourhood shall be cleared, drained, and cultivated; the sub-soil kept dry by sewerage; the streets properly paved with flat stones; the glare of the sun or reflected caloric controlled by planting trees, and particularly in the wider and less business streets; wide sheds built over our great thoroughfare (the levee, where the mass of the business is done, and, in a great measure, by people unaccustomed to the climate); the refreshing current established in our gutters, with an efficient police, *with proper habits in the people*, a large mortality will inevitably ensue, together with such an occasional epidemic, with its devastating horrors, as will cast a lasting stigma on the salubrity of the place, and retard its permanent advancement to a prosperous and stable condition. When these improvements shall have been effected, I do not doubt its being made the healthiest large city in the Union, and, withal, one of the *pleasantest* places of residence. As yet, hygienic observances have done little for New Orleans.

The actual mortality of this city by ratios (now only correctly stated), as compared with other cities (in appendix D), is certainly very large;* but then it is evident, from the ages of those who die,

* "The exposure of the mortality of New Orleans, if made years ago, might have had the same influence as a similar discovery made through statistical records in Eng-

and from their short residence here, and from their course of life—not at all adapted to the climate—it is perfectly evident that the climate *per se* has less to do with it than other conditions. That man must mould his habits of living to the climate—or the climate to them—is as palpably evident as any proposition in Euclid; or that the same course of life is not equally adapted to all climates. Now, as it is somewhat difficult to accomplish the latter, he had better pursue the part of wisdom and discretion, and adapt himself to the former. "Mould to its manners his obsequious frame, and mitigate the ills he cannot shun." Man, in fact, is the only animal that can adapt himself to all climates, and he does it by the exercise of that intelligence with which the Great Father of all has endowed him, by: 1st, exercising that great principle of TEMPERANCE *in all things*, characterized in the Holy Book as of such vital importance; and then, 2d, adopting the rational habits of the natives of the different climes to which he proposes to adapt himself. Now, with the native, or well acclimated population, the mortality is very small; to the two extremes of infantile life and advanced age, it is extremely kind; to middle life, the male sex, and the over-free, hard, and rapid liver, it is obnoxious. That all these are undeniable facts, the records will show.

To prove that this large mortality does not proceed from the climate necessarily, we have a most unanswerable argument derived from three sources. The first I shall mention, is to show the influence of temperance on it: "Civilization, which has done so much to mitigate the physical, as well as moral ills of life, and prolong existence, can hardly be debited, with but one exception to its innumerable blessings. The modern art of distilling spirituous liquors, which has put such an unfortunate facility in the hands of the mass, who have so little control of themselves, may, by

'——— Eking from each infirmity that brings
Untimely age on us,'

be that exception. The public exposure of the evil, by the publication of the statistics of these societies, will open the eyes of the public to its magnitude, and force it to correct the evil."

I have received, on application, an official document from G. W.

land and Massachusetts, by their invaluable registration laws, where situations supposed to be healthy (and who lives in a *sickly* place!!) were only found, by the corrected returns of the mortuary records, to be eminently the reverse, and by an examination into the causes and removal, a healthy condition may be restored."

Powell, Esq., G. W. P. of the *Sons of Temperance* in this city, exhibiting the mortality among the members of that body during the two last most fatal years known to this city, when it has been scourged by the combined influence of yellow fever and cholera, with an acknowledged mortality from them, during the period which this document embraces, of 5653! Of the 2427 members, there have died in two years, to the 1st of April (that is, from their commencement to that date), but 29—or 1 in 83.41! This most valuable report goes on further to state in detail, that, of this mortality, 8 died of yellow fever, and 2 only of cholera—that about one-third of these deaths were of *transient brethren* visiting here for their health! And, moreover, that nine-tenths of all these members were of that *very age* (between twenty and forty) most subject to the supposed malign influences of this climate!

It is said that figures cannot lie. There is no need of it here, for this I consider but a fair exponent of the effect of the clime on those who live according to the dictates of reason and prudence (in other words, according to the rules of temperance).

The second proof I shall mention bearing upon this subject, is the influence of the climate upon that sex who are proverbially temperate everywhere. Of the large mortality by yellow fever during the last eight years, but about *one-seventh* were females! In relation to other classes of fever, &c., in this country, my own experience is equally expressive. Here, then, is another great proof, not only of the value of the principle, but a corroborating proof that the climate is not fatal *per se*.

3d. But there is still another. It is now a well-established fact that incarceration in prison most fully protects the inmates from the yellow fever. Insulation can act only in one way; it protects from disease by controlling the *habits of the individual*, subjecting him to that course of regimen prescribed by the rules of the place, utterly incompatible with any kind of intemperance.

"In Mexico, the same immunity occurred with those incarcerated during the prevalence of cholera; and, from the *same cause*, scarcely a case occurred among the temperate in its present visitation in New Orleans."

In all these cases, then, the same air is breathed by all, and they constitute a very fair test of the influence of the climate upon individuals who live regular, prudent, and temperate lives. I believe such is its actual influence on the mass of those here who pursue such rules as a guide of life. I consider that document furnishes

one of the most unanswerable arguments in favour of temperance and the climate that was ever published in this country, and is all that was wanting to put both upon their proper footing before the public.

Temperance is a common virtue in nearly all tropical countries; stimulants of various kinds are used, but they are not of the diffusible character of alcoholic drinks, being mostly of the class of condiments, supporting the action they excite. Mortality too soon follows in the footsteps of the inebriate for the natives of hot countries not to see the graves they would be thus digging for themselves: it is then mostly confined to the emigrants from northern nations who come to this country with the additional vigour of a more rigorous climate, who are alone able to stand it long; and with them, the mortality is greatly increased thereby. It is in vain to say—by those fond of indulging themselves—in the face of all these facts, that the free liver does not hasten his end. Thirty years' experience here, and in other more tropical regions, convinces me of its truth. All records go to prove it. My cotemporaries know full well, though this kind of life gives an appearance of fine ruddy health, that these appearances are deceptive; that they do not last many years; that ere long the system shows unequivocal signs of sinking, either by the occurrence of some form of stomach or bowel-complaint—by apoplexy, palsy, or some congenerous ailment, indicating the wearing out before their time of the organs essential to life.

These are unpalatable and unpopular truths; but to my profession belongs the important, though disagreeable task, as sentinels on the watch-tower of health, not only to point out the mode of curing, but often the more important one to communities, to indicate, for the sake of avoidance, the source of danger. To my personal knowledge, the medical profession here for the last thirty years has done its duty, and done it at every hazard to fame, to life, and to profit; and if their advice had been followed, New Orleans this day would be nearly as long ahead of its present destiny. It was the opinion of our distinguished countryman, Dr. Rush, that the medical profession was about twenty to thirty years ahead of the public, in information in relation to health; in *that time*, the public usually becomes sufficiently enlightened to estimate the value of hygienic laws, observances, and improvements, from time to time recommended by the profession. If a present outlay of a few thousands is more valued than human life, that outlay will be more than tenfold repaid by the increased value of property, by increased population,

METEOROLOGY OF NEW ORLEANS.

The Black *lines indicate the* Barometric *Movement*
„ Blue *„ „ „* Thermometric *„*
„ Yellow *„ „ „* Hygrometric *„* *or Dewpoint taken once a day at midday*
„ Red *„ „ „* *the monthly quantity of* Rain *in lines, or 10ths of inches.*

(Average of three years.)

Barometer	Thermometer	Hygrometer Dewpoint	Rain by lines or 10ths inches
			Inches.
30.700	96	96	11.00
	95		.90
	94	94	.80
	93		.70
	92	92	.60
.600	91		.50
	90	90	.40
	89		.30
	88	88	.20
	87		.10
.500	86	86	10.00
	85		.90
	84	84	.80
	83		.70
	82	82	.60
.400	81		.50
	80	80	.40
	79		.30
	78	78	.20
	77		.10
.300	76	76	9.00
	75		.90
	74	74	.80
	73		.70
	72	72	.60
.200	71		.50
	70	70	.40
	69		.30
	68	68	.20
	67		.10
.100	66	66	8.00
	65		.90
	64	64	.80
	63		.70
	62	62	.60
30.000	61		.50
	60	60	.40
	59		.30
	58	58	.20
	57		.10
.900	56	56	7.00
	55		.90
	54	54	.80
	53		.70
	52	52	.60
.800	51		.50
	50	50	.40
	49		.30
	48	48	.20
	47		.10
.700	46	46	6.00
	45		.90
	44	44	.80
	43		.70
	42	42	.60
.600	41		.50
	40	40	.40
	39		.30
	38	38	.20
	37		.10
.500	36	36	5.00
	35		.90
	34	53	.80
	33		.70
	32	32	.60
.400	31		.50
	30	30	.40
	29		.30
	28	28	.20
	27		.10
.300	26	26	4.00
	25		.90
	24	24	.80
	23		.70
	22	22	.60
.200	21		.50
	20	20	.40
	19		.30
	18	18	.20
	17		.10
29.100	16	16	3.00
			.90
	14	14	.80
			.70
	12	12	.60
29.000			.50
	10	10	.40
			.30
	8	8	.20
			.10
	6	6	2.00

January. February. March. April. May. June. July. Aug.t Sep.tr Oct.r Nov.r Dec.r

Quantity of rain by 10ths of inches

Mean of Barometer

Extremes of Barometer in each month

greater

Extremes of Thermometer.

Hygrometer

Quantity of rain each month by 10ths of inches measuring from the bottom

and by a vast addition to our comforts.* If eternal vigilance is the price of liberty, why should it not be of health? I am fully aware that this country can never be entirely healthy, whatever may be its changes in its physical condition, *unless the habits of the people* are entirely adapted to it. I am not so Utopian as to believe that man will enjoy perpetual health, or live to extreme old age, anywhere; but the history of our species in all quarters of the globe, and at all times, will serve to show to the unprejudiced observer, that that great blessing is rather the reward of his adherence to the laws of hygiene than of external conditions, though these are of great importance, and essential to enable him to carry out, and put in execution, some of the most important laws of hygiene, and especially in relation to dryness and moisture, ventilation, and exercise.

* These important truths now find universal acceptation. "Whatever preserves health, serves society; for sickness, besides its vexation, occasions a loss of property and a loss of time, and often it involves both the property and the time of others."—*Ensor*, London, 1818.

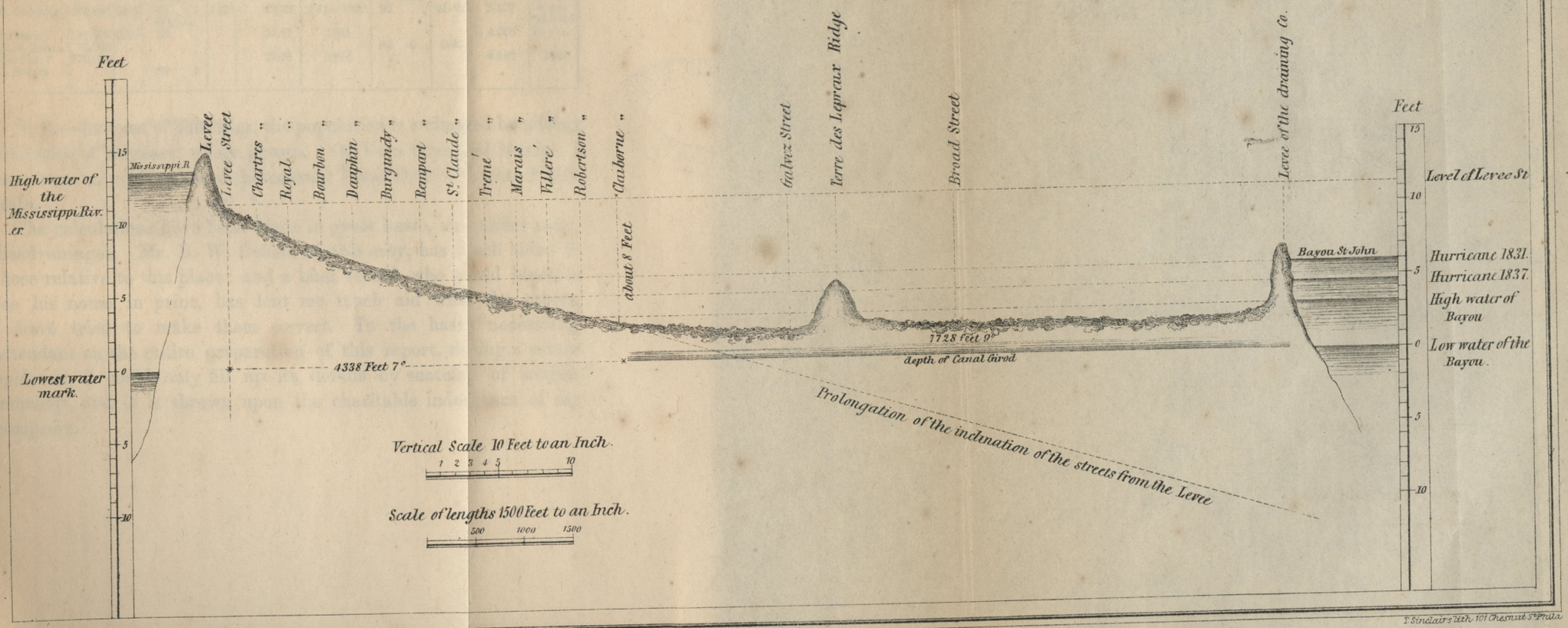
APPENDIX B.

MONTH.	THERMOMETER. 4 observations per diem.									BAROMETER. 4 observations per diem.								HYGROMETER. Once a day—at midday.				ASPECT OF THE WEATHER. 3 observations per diem.				WINDS. 3 observations per diem.							
	Average at sunrise.	Average at midday.	Average at sunset.	Average at 10 o'clock at night.	Highest.	Lowest.	Mean for the month.	General range.	Average daily do.	Average at sunrise.	Average at midday.	Average at sunset.	Average at 10 o'clock at night.	Highest.	Lowest.	Mean for the month.	Monthly range.	Highest.	Lowest.	Mean for the month.	Range.	Clear.	Cloudy.	Rainy.	Quantity of rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Jan.	53.04	57.70	53.53	52.18	74.33	33.	53.28	41.	10.59	30.193	30.113	30.123	30.103	30.460	29.790	30.117	.63	68.21	26.32	49.66	41.89	16 1/6	7 2/3	5	10.820	7	4 2/3	7 1/6	2 1/3	5 2/3	3 2/3	1 1/3	2
Feb.	53.57	63.16	59.44	55.22	74.33	37.33	57.93	37.	10.89	30.140	30.143	29.823	30.127	30.456	29.860	30.146	.66	69.42	29 51	50 92	38.91	17 1/6	8 2/3	2 2/3	6.890	3 2/3	1 2/3	9 1/3	2 2/3	3 2/3	3	1 1/6	3 2/3
Mar.	60.12	71.14	65. 1	62.92	78.66	51.	65.00	27.66	8.68	30.096	30.040	29.916	29.956	30 326	29.823	29.996	60	72.57	32.03	59.13	35.54	19 2/3	9 1/3	2 2/3	3 965	4	2 1/3	7 2/3	3 2/3	6 2/3	4	1 2/3	1 2/3
April	61.76	76.25	70.34	68.54	82.66	57.33	69.17	25.33	10 27	30.110	29.943	30.090	30.066	30.273	29.933	30 040	35	74.77	48.92	67.67	29.18	21	3 2/3	1 2/3	4.918	2 1/3	3	8 2/3	4 1/3	6	2 1/3	2	2
May	69.30	80.47	73 82	72.37	84.	59.	74.23	28.	8.29	30.110	29.910	30 093	30.113	30.326	29.900	30.096	.43	75.92	53.67	67.83	22.58	27	3 1/6	1 2/3	2.963	3 1/3	3	7 1/6	2 2/3	4 2/3	4 1/6	1 2/3	3
June	74.37	83.78	78.68	73.78	87.66	10.	77.82	17.66	9.98	30.146	30.060	29.936	30.113	30.240	29.800	30.100	.44	78.57	64.67	73.78	13.69	23 1/6	3 1/3	3 1/3	3.954	1 1/6	2	7 2/3	3	5 2/3	8 2/3	1 1/3	1/3
July	77.89	83.90	79.06	79.02	89.33	72.66	79.80	16.66	7.44	30.143	30.090	30.136	30.146	30.226	30 036	30.143	.19	80.28	72.33	75.77	7.95	16 2/3	6 1/3	2 2/3	5.900	3 1/3	1 1/6	5 1/3	5	8	5 2/3	4 1/3	1
Aug.	75.20	84.35	79.30	77.33	87.66	69.	78.82	19.	8.80	30.100	30.113	30.133	30.116	30.266	30.020	30 093	.24	78.98	66.99	74.59	11.99	21	4	3 2/3	5.813	4	3	6	3	2 2/3	5	2 2/3	1 1/6
Sept.	72.22	80.70	76.17	74.61	88.	63.66	75.92	21.	9.41	30.150	29.870	30.086	29.983	30.190	29 930	30.006	.25	78.07	59.92	73.47	18.48	17 2/3	8 1/3	2 1/3	3.930	4 1/3	6	11 1/3	2 2/3	2 2/3	1 2/3	1	1
Oct.	62.98	74.06	68.03	66.61	80.66	47.	67.64	34.35	10.82	30.110 2 yrs.	30.086	30.123 2 yrs.	30.113 2 yrs.	30.376	29.923	30.113	.48	76.20	44.69	61 53	34.98	24	4 1/3	2 2/3	2.840	8 2/3	4 1/3	11 1/3	1 2/3	0 2/3	0 2/3	1 2/3	2 2/3
Nov.	51.16	62.95	56.26	53.87	75.66	34.	55.22	41.66	11.99	30.100	30.100	30.205	30.190	30.443	29.796	30.200	647	70.73	31.16	52.04	39.58	22	6	2 2/3	2.370	7 2/3	4 2/3	7	1 1/6	2 1/3	2	1 1/3	3
Dec.	46.50	57.95	51.42	47 62	73.66	34.33	51.91	40.	11.60	30.195	30.183	30.185	30.180	30.443	29.986	30.190	.487	62.26	31.34	46.54	30.92	19	8 2/3	3 1/3	4.690	8 2/3	3 2/3	6 1/3	2	2 2/3	1	2 2/3	3 2/3
							67.22	29.10	9.93							30.072	.433					245	72	29	58.654								

PLAN

of the Levels of the high and low waters in the Mississippi and Bayou St John, which leads from the back part of the City to lake Pontchartrain, and profile of the inclinations and rise of lands from the Levee to the Bayou.

New Orleans 3 February 1840 Chas. Lesseps.



T. Sinclair's Lith. 101 Chesnut St. Phila.

APPENDIX D.

CITY.	Population.	Year.	Average age of the living.	Year.	Ratio of deaths to population.	Year.	Average age at death.	Year.	Average annual deaths.	For No. of years.
			years mo.				yrs. mo.			
Boston	114,366	1845	23 5	1845	1 in 48.87	1845	20 3	1845	1.919	10 yrs.
New York	421,791	1846	23 1	1840	27.83	Dr. Stevens	18	1846	11.069	1 yr. '46
Philada.	101,345	1845	24 1	1840	48.92	1845	19 11	1845	5.881	'45–'46
			Whites							'35—'45
Baltimore	124,331	1848	23 1	1840	29.37	1848	19 9	1848	3 258	10 yrs.
			Whites				Whites			'35—'45
Charleston	29,261	1840	24 3	1840	48.36	1840	35 11¾	1848	.739	10 yrs.
			Whites				Whites			'41—'41
N. Orleans	100,028	1847	24 1	1830	19.32	1841—1848	26	'41-'48	5.177	8 yrs.
			Whites							'36—'46
Havana	162.508	1841	28		35.87	1841			4.568	10 yrs.
Vera Cruz	5,500						24 6	1846		
Mexico	170,000				27.76	1844			6.122	1844
U. States			22 2							

N. B.—In some of the cities, the population is estimated by adding the ratios of increase, where known. Of Vera Cruz and Mexico, I have seen no publication of the census; I was then told what I here state.

The calculations have been made in great haste, and under many disadvantages. Mr. B. W. Cohen, of this city, has much aided in those relative to this place; and a kind friend, who would blush to see his name in print, has lent me much aid with the others. I have tried to make them *correct.* In the haste necessarily attendant on the entire preparation of this report, during a severe epidemic, I could only fill up its details by snatches of anxious moments, and it is thrown upon the charitable indulgence of my compeers.

APPENDIX E.

Statement of the Winds, in New Orleans, by Months and Seasons.

AVERAGE NUMBER OF DAYS BLOWING FROM THE RESPECTIVE POINTS OF THE COMPASS.

	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	
BY MONTHS.									
January	6	3⅛	6¼	3⅛	3	2¼	2¼	2⅜	Being on an average of 8 years, viz., from 1835 to 1842, inclusive.
February	3⅜	2	5½	3½	2	3⅛	1⅜	4⅜	
March	3⅝	2	6¼	3⅜	6¼	2⅞	1⅝	2⅛	
April	1⅜	2⅜	7	4⅜	6⅜	2⅛	1⅜	3⅛	
May	2¼	2⅛	6	4⅛	5⅝	4¼	1⅛	2⅜	
June	1⅛	1⅛	5¼	4⅞	4⅜	6¾	2⅛	1⅜	
July	2⅛	1⅜	5	6	6	4⅝	3⅜	1⅜	
August	3⅝	3⅛	4⅜	4¼	3⅝	4	2⅞	2	
September	5¼	5⅝	6⅝	2¼	2⅛	1⅛	1⅛	2	
October	6⅛	5⅜	6⅜	1⅛	1	0⅞	1⅞	3¼	
November	8	3	4⅜	3¼	2⅛	1⅛	1⅜	3⅛	
December	7⅛	3⅜	6	2⅜	2⅛	1⅛	2⅛	4¼	
BY SEASONS.									
Winter	6	3	6	3	2⅜	2⅓	2	4	Average number of day's winds each month of the season.
Spring	3	2⅓	6⅓	4⅓	6⅓	3⅓	1⅜	3	
Summer	2⅛	2⅓	5	5	4⅜	5¼	3	2	
Autumn	6⅜	4⅜	5⅜	2⅓	2	1⅓	2⅜	3	
Winter	17¼	9¼	17⅝	9⅜	7⅛	6⅞	6⅛	11¾	Total number of day's winds each season.
Spring	7¼	6⅞	19¼	16	18¼	9¾	4⅞	8⅜	
Summer	7⅜	6⅜	14⅜	15½	14⅜	14⅜	8⅜	5½	
Autumn	19⅜	14	17¾	7	5⅜	3⅛	4¾	8¾	
Winter	2d	5th	1st	4th	6th	7th	8th	3d	Relative frequency of each wind during *each season.*
Spring	6th	7th	1st	3d	2d	4th	8th	5th	
Summer	6th	7th	2d	1st	3d	4th	5th	8th	
Autumn	1st	3d	2d	5th	6th	8th	7th	4th	
BY THE YEAR.	2d	5th	1st	3d	4th	6th	8th	7th	Relative frequency of each wind during the *year.*
Actual No.	51¼	36⅛	69⅛	47⅛	45⅜	34⅛	24⅛	34	

Total number of days noted having been 342¾.

APPENDIX F.

Comparative Statement showing the Proportionate number at each interval of Ages, in every 10,000 *Living, in Louisiana, America, and England.*

AGES.	United States.	Louisiana.	New Orleans.	England and Wales.	United States.	Louisiana.	New Orleans.	England and Wales.
Under 5 years	1744	1933	1239	1324				
5 and under 10	1417	1476	1205	1197				
10 " 15	1210	1217	940	1089				
15 " 20	1001	1032	949	997				
20 " 30	1816	1882	2158	1780				
30 " 40	1160	1215	1756	1289	3708	3753	4924	4028
40 " 50	732	656	1010	959				
50 " 60	436	347	433	645				
60 " 70	245	169	192	440				
70 " 80	113	54	81	216				
80 " 90	32	14	27	59				
90 and upwards	4	4	8	5				
100 and upwards	1		2					
	10,000	10,000	10,000	10,000				