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Gazzo (J. B. C.)

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PARISH OF LAFOURCHE, LA., 1878.

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The present essay might be devoted to many interesting subjects, physical and medical, but I am induced from many considerations to restrict my attention particularly to three articles. You have long been acquainted with the important controversies that have existed on that great subject of medical disputation, contagion, with the various and contradictory opinions that have been promulgated as to its nature and effects, and with the manner in which these controversies have been conducted, especially by French, German and Italian physicians. The question of contagion and infection has also occupied, as you well know, a large share of the attention of the medical writers of Great Britain, especially within the last thirty years. Much less diversity of sentiment, however, exists in this country than in our own, and in the discussion much less of asperity has been manifested.

Some experience with yellow fever in the city of New Orleans, in 1837, and in the city of Vera Cruz, Mexico, 1839, and for the last forty years in the parishes of Lafourche and Terrebonne, La., and the perusal of most of what has been written upon the subject have impressed convictions, the truth of which, if they be conformable to fact, is so important as to make it justifiable, if not a duty, to give them publication at the present time, without claiming novelty for my views. Therefore, my purpose is to endeavor to give the results of a careful investigation of the facts, and, if possible, an approach to a consistent hypothesis, with direct practical application. To this end, it will be best to attempt a brief summary of the subject in a methodical form.

Yellow fever is usually classed with the fevers of remittent type, and in all essential particulars this is certainly the relation

of febrile affections to which it presents most affinity. However, yellow fever is, in certain epidemics, marked by a tendency to divide itself into distinct and separate phases, rather than by any characters of daily remission of the pyrexial phenomena, the name given to that acute disease which, during hot weather, particularly after the summer solstice, prevails among human beings on the continent of North America. It also occurs in the south of Europe, on the coast of Africa and within the tropical regions of Asia. In a particular manner it originates and prevails in ships and sea vessels of all kinds, which are suffered to become tainted by deleterious emanations from organic matters or malaria.

The term "yellow" is given to the fever because many who are invaded by it become tinged or even deeply tinctured with that color. This change of complexion is no sign of fatality of the fever; therefore, many persons or patients recover after having become remarkably yellow. In many cases the yellowness increases or comes on after death. But frequently, too, it happens that persons who undergo severe attacks of fever have little or no yellowness. The word, therefore, being employed to express a sympton which many cases of the disease do not possess, which is very improper. It is sufficiently clear that the yellowness is not owing to absorbed or requigitated bile. It is, therefore, wholly different from the hue which prevails in jaundice, which is only alteration from the coloring matter of the bile that passes into the circulation in sufficient abundance so as to impregnate and give that yellowish tinge to the body.

It has been called by nosologists a "fever," though many persons have undergone it within the city of New Orleans, and also in other places; as, for an example, during the epidemic of 1837, three brothers (the Messrs. Dupasse), of that family at New Orleans, all of them natives of the city of Marseilles, France, without any symptoms of preceding chill and augmentation of febrile heat, and neither increased frequency of pulse, etc., which nosologists consider as necessary assimilation to it, although they were attended by Dr. M. Halphen, an experienced and highly intelligent physician, who had no hesitation in pronouncing these cases yellow fever. My impression and

observation derived from practical experience in treating yellow fever is, that it is a violent acute disease of single paroxysm lasting about seventy-three hours, more or less, and presenting strongly marked characteristic symptoms by which it may readily be distinguished from all other types of fevers. The truth is, yellow fever is so closely allied to various remittent types that no uniform and reliable distinction can be drawn between them in its early progress. It is through these sensations of chilliness which accompany the heat in the febrile condition. They are in reality but peripheral phenomena, which the outer parts of the body are freezing and the inner are burning. Increase of temperature to the extent may be of 4° above the standard is to be regarded a constant and at least an essential condition of fever, while the natural blood heat in health may be about 98°, when the stage of heat or fever is developed. The thermometer in the mouth, the axilla, and suitable parts of the body will be found to indicate an increase of the patient's temperature to 100°, 102° and 104°, and it may be even above those degrees or indications. The pulse 100° and respiration about 20′. This increase of heat is the surest mark of the existence of yellow and typhus fevers, which produces a maximum of caloric, and being the one in which a considerable elevation of fever exists with a moderate acceleration of the pulse. My views in regard of using the thermometer in diseases were published in the American Lancet at New York, vol. XL, 1854, principally in testing and showing the value in the phenomena of fevers. The fever makes its appearance with lassitude after more or less malaise and sensation of fatigue, in which vibrating chills, with a fever, during which a febrile excitement, accompanied by headache, pain in the back, the thighs and calves of the legs, the skin is generally hot and dry, the heat of the body is very pungent.

The malady has also been distinguished by the appellation of "black vomit," because in some of the worst forms of it, and very often the cause of negligence in not calling a physician in time, and especially in maltreated cases, who are attended by persons having no experience in the science of medicine, by the use of improper remedies in these cases, the sick eject from

the stomach a dark-colored or black liquid. This is the pure *vomito pruto*, or black vomit. This, however, is only a symptom of certain violent and disorganized structures of the whole system within these cases, but by no means a characteristic of the yellow fever in all instances. The actual experiments and researches on black vomit by Dr. Joseph Jones, Professor of Chemistry, etc., in the Medical Department, University of Louisiana, "has given the proof of the changes in chemical and physical alteration of the blood in black vomit of yellow fever." Thus in the phenomena, which results from the organic changes of the tissues in the essential elements and chylification of the blood, is the cause of black vomit in yellow fever, which has time to take place in the circulation. Then the blood flows of a black color, which is vomited or thrown up of that hue, and in other hemorrhagic forms, which are never single, nor from any one source or organ only. Black vomit is combined with profuse intestinal hemorrhages, with bleeding from the nose, the mouth and the gums, etc., and also from several parts of the cutaneous surface, denuded of epithelrium by visication, and in fact abrasure gives rise to bleeding more or less profuse, and the only means we can obtain at the prognostic that yellow fever is in a state of existence and prevailing, is by observing the final issues, whether in death or convalescence, and the former is by far the most conclusive of the two indications. Even in the epidemic of this year, 1878, many cases occurred which no one would have thought of calling it yellow fever, if it had not been known that many of the same character and appearance had terminated with the black vomit.

Certainly there seems to be no reasonable ground for the belief of contagion in yellow fever. How is it possible to maintain it after the dangerous experiment of Dr. Chervin, of Paris, upon himself as testing black vomit and innoculation with it and with serum and saliva of patients with the fever. I have myself, after being acclimated by the process of yellow fever, slept for a considerable time on repeated occasions, for want of better quarters, under the same roof and in immediate contiguity with my patients laboring under a very high stage of yellow fever from the first day of the attack to the last hour of

existence. I have also denuded the cutaneous surface of my hands when handling black vomit and other fluids and tissues of the body of patients who died of yellow fever and still suffered not least inconvenience from this contact and exposure, and I do not believe the exhalations from the bodies of those affected have the least effect in reproducing the yellow fever. Doubtles the vitiation of the air by means of these effluvia is a strong predisposing cause in the same degree that an impure atmosphere from any other cause would be and certainly is.

It is frequently the case that the onset of the yellow fever is of so mild a character, that the subject of it continues walking about for five or six days, thinking himself not very ill, and even refusing to consult a physician until black vomit appears, not being upon his back probably more than twenty-four hours, indeed, some of the most intractable and fatal cases are those of which the early symptoms are the mildest in foreigners, and apparently inconsiderably so, that the violence of the invading approach of the yellow fever is no indication of its danger or its liability to proceed a to fatal issue. Therefore it is necessary to be on the guard or watch. Yet there are some of these cases that do not terminate fatally, for one week or three weeks or more, consequently these cases are probably seen for the first time, after the disease has had almost uninterrupted sway during five or even seven days. The patient at this time is unable to give any account of himself. These cases linger sometimes for many days or even weeks or months, and die eventually of softening of the brain, spinal marrow and spleen arises doubtless from complete mortification of the mucous membranes of the stomach and intestines, and by proper medical and judicious management may sometimes recover.

The Creoles and natives of most Southern States are not subject to the fever in its continued form, but when it does invade them, it more commonly assumes a remittent or intermittent type. Europeans and northern Americans, who have resided during a period of several years in the country or parishes of the State of Louisiana, are seldom attacked with the fever in its continued form, but when it seizes them it com

monly assumes the type of a remittent. These persons of this class, the body from long exposure to the climate has become *creolised or acclimated.* Women and children are less frequently the object of its attack, and when it does seize them it is commonly milder and less rapid in its progress.

If the yellow fever is protracted beyond seven or twenty-one days, which in certain cases occurs, it presents more characteristic appearances of enteric fever. This change is evidently a continued fever of a single paroxysm, in which remission and exacerbations is seldom observed, and in the worst cases too, in the paroxysms which constitutes second stages never occurred, but the disease passed immediately from the first into the last stage, without going through the second type of reaction. These are the cases which run in the congestive variety of yellow fever, and attended with great prostration and oppression.

Its exciting causes may even be engendered in the human stomach and bowels, from venous azotic materials of our food. Hence sporadic cases of yellow fever or typhus fever have occurred to individuals who had never visited a ship or a city, etc., and who lived in a healthy neighborhood and in a clean house. For instance, I have seen and observed in the Faubourgs of the city of Montreal, Canada, in 1827, many cases of that kind which occurred among the voyageurs, the Canadian name of a class of men employed formerly in transporting goods from remote stations on the Ohio and Mississippi rivers and in the nort-west trade, occurring very often in an overheated close room, warmed by a large fiery stove, which are used in Canada during winter seasons, which has consecutively bad effects, so as to produce various changes within the system of these persons and mask the symptoms of its malady, who have lived most all their life out-doors in a pure atmosphere in the active occupation they pursue. Such is very often the case in patients who have never been confined in closed quarters, are more liable to become very sick and which will promote the malignancy of the disease. Men on board of vessels should not be allowed to sleep on board in the hold of a ship when in Southern ports. It is possible for such

persons to be thrown into typhus or yellow fever, from substantial septic matters engendered within their own alimentary canal.

It is a characteristic evidence of yellow fever and the unmistakable criterion which its attack is known to be ushered in with a chill and pains in the back and loins and in the limbs, the knock down influence of the yellow fever upon the patient's strength from the first moment of invasion. The Jesuits and Domican Fathers described such cases as "*coup de Barre*," and of frequent occurrence in the epidemic of the West Indies and the shores of the Mexican coast, which is met with in the epidemics of Vera Cruz· However, during an epidemic all diseases will assume the types of yellow fever, but they have other predisposing causes than that which initiates the real yellow fever, into organized individuals full of health. But a few hours before a sudden change in the temperature provokes, the latter particularly in the afternoon as the sun's rays leave the earth. When the thermometer falls sensibly, at the period of the epidemic visitation, are to the acclimated invigorating to the frame. A disagreeable fetid odor, arising from the perspiration of the sick, and this odor is also conclusive of the presence of yellow fever, and is familiar as such to every physician who has acquired knowledge of the fever. To prevent it being noxious to the patient, from reinhaling it, is to purify the atmosphere of it, by insensible ventilation, it is simply to take one of any of the various kind of glass lamps, for burning coal oil, as for example, and fill it with chloric ether. This suggestion is really worth remembering in burning one of these lamps, for the comfort of a sick room, because it is easily accomplished in purifying than any process known.

Yellow fever, "for we must call it so, notwithstanding impropriety of the name," seems to have an immediate connection with an atmosphere locally vitiated. The common mischievous agent is septic exhalations, formed from alluvial marshy soil. The period at which the effluvia is eliminated is during the process of desication. Wherever the disease is found in its endemic form, as it is only met with in such

situations that breed vegetable substances, which contain its radical azote or septon, the basis of this acidissible gas becoming hydrogenated is highly active and deleterious, exciting a multitude of bad effects upon constitutions predisposed to be acted upon by it. This is clearly proven by the conditions of things in the lower lands and marshy swamps of Louisiana, where the disease is endemic. Now here we have two conditions of soil brought in immediate contrast, one constantly inundated and the other to periodic inundation and evaporating, and whilst fever is frequently raging in one situation, it is never known in the other. Thus, when men are working in the swamps of Louisiana, they are never attacked by disease, whilst those kept outside upon the coast of the river and in mouths of bayous, are more liable to be sick with fevers. This I believe is also the case in every country where yellow fever prevails, and this was found to be true in Vera Cruz, Mexico, in the epidemic of 1839. Here also the disease is confined to the same condition of soil, for it is not found upon the elevated lands but always confined to marshy districts overflowing. Now it is positively certain that when yellow fever prevails there is also found generally all varieties of remittent and intermittent fevers. These diseases arising from the same cause by different degrees of intensity of the ozote or air-viscée.

In the year of the bombardment of the city of Vera Cruz, Mexico, 1838, by the French upon the Island Salmadina, where they had placed their Naval Hospital but removed not less than five miles from the Mexican shore, being a small Coral Island, perfectly dry and very healthy, yet upon this spot there were men attacked by the yellow fever who had not been off it for weeks and months. Thus showing that yellow fever is not a contagious disease, as these cases only occurred during the prevalence of strong and continued breezes from the land, which invariably produced a great number of cases and aggravated the symptoms of those already sick. The very reverse was the case during the prevalence of strong and continued breezes from seaward, these never failed to reduce the number of cases and improve the condition of the sick.

As a change in the winds become almost as certain an indication of the number and condition of the sick as the thermometer of the temperature of the air, and heat was excessive that season, it ranged from 90° to 100° in the shade. The ordinary degree being 85°. Therefore the idea that malaria can only be carried a short distance, which I apprehend is an error, but on the contrary, that it can be born, to very great distances through the medium of the air.

The places where the mischievous agent is most readily formed and most highly concentrated is on board of sea vessels which contain corrupting articles of freight, which constitute a large proportion of the cargoes; they frequently get into putrefactive state on board, and then the exhalations pent up in a tight vessel become very malignant and venomous; hence it happens that so many of our seamen are cut off in this trade—they are killed by the malarial air engendered in their own vessels and that not unfrequently when they are outward bound, but more commonly while they lie in foreign harbors or are returning home, because there has been longer time given for the septic or azotic matter to turn to an noxous effluvium and insinuate itself through every space within her. Hence the crew are thrown into ship-typhus or yellow fever. One of the best illustrations perhaps, is furnished by the sailors or river men belonging to the bayous and lake schooners or vessels frequenting the Mississippi river. These men, as a body, are in the prime of life, robust and well fed. Most of them are Italians, Americans, French and of the British nations. But as I found by examining many of these schooners, the place where they sleep, the forecastle, is excessively small and confined with this serious additional evil, that as the hatchways usually flush with the deck, it becomes necessary whenever there is much sea, to close it down, when the unfortunate sailors must be without any window, as if shut up in a close box. When too, the schooners come to New Orleans, as only one man is required to keep watch at night, all the sailors are crowded together in their closely packed berths.

Many years ago, the attention of Dr. McKelvey, the dis-

tinguished surgeon of the U. S. Marine Hospital of New Orleans, and also Dr. John J. Ker, of the Circus street Hospital of the same city, who in addition to the above, know of several cases in their hospitals, and both physicians were attracted to the large number of typhus cases which were admitted in 1851, and to the fact that of all the vessels in New Orleans, the bayou and river men or sailors, were most subject to the fever. In investigating this question, I could detect no other cause than the polluted air which these men must have breathed in the confined forecastle and that there is nothing connected with a sailor's mode of life to expose him to typhus fever, which is proved by the experience of well managed vessels or ships which have never had a single case of that disease on board.

Yellow fever has been said to have been imported from foreign places into the United States, and with this opinion many of our fellow-citizens console themselves. They are positive that the disease originates solely in the West Indies, and is merely derivative to them. To these persons it is a sufficient reply that the people of the West Indies are quite as positive that it never arose spontaneously in their towns or cities, but in all cases, without exception, is imported to them from Baltimore, Charleston, New Orleans, Philadelphia, New York and our other Atlantic and Gulf settlements. The truth is, that it does in some degrees arise from the local and domestic causes in all these places, which might be owing to physical changes in the constitutional element of men. Thus, probably, the co-incidence which are the climacteric diseases and mortality among the northern people in their cardinal evolutions, and more particularly is locally engengered on ship board. Filthy and polluted vessels, the *factorium*, the nurseries and vehicles of yellow and ship fevers thus sail from port to port and give color to the unhappy and pernicious notion, that the place from whence they last came is sickly; whereas, there is in fact no more connection between the sickness of a crew and the state of health in the place whence the vessel sailed than there is between the corrupting of a cargo of provisions and the latitude of the place at which they were

produced, though the exciting cause of yellow fever may be on board a ship from the West Indies or Mexican port; that the port or place has nothing to do with it, for it was bred on board the vessel. The way to destroy it is to cleanse the ships or vessels. When filthy, may be rendered clean by the same means that houses are purified, to wit: by lay lime, chlorides of lime and zinc, carbolic acid, etc. Consequently the exciting cause of yellow fever is locally produced within ships and not imported from foreign countries. It is, however, not contagious, as some have mistakenly supposed. In the summer of 1839, there were a great many naval and merchant vessels lying at anchorage at Anton Lizardo, twelve miles south of Vera Cruz at the distance of at least three miles from shore, with which there was no communication, and yet men were constantly attacked by the yellow fever, notwithstanding they had not left their ships for a very long time before the disease appeared.

Next to sea vessels, cities and towns are most unhealthy, because many of them are built upon low grounds, are inhabited by large numbers of intemperate and filthy people, and are governed by a wretched police. Nothing is known as to the effects on the human system of the meat of animals butchered while suffering from blood diseases, such as the serious zymotic diseases, as western hog cholera and Texas cattle fever. Surely this a matter which merits through scientific investigation, as says, Dr. S. S. Dozinsky in the Medical and Surgical Report of August the 17th, 1878, and thinks the government in these United States, should take it in hand, and the corrupting provisions in the supply of life, are usually stored, and kept indiscriminately within them, and often vitiate the atmosphere to an noxious degree. In many places the foundation of the streets, houses and yards, is a mere collection of putrid mud, corrupting recrements and animal offal hardened by commixture with some sand by pressure and by paving, and in addition to these abundant and alarming, it is the fashion in some of the cities of the United States, to collect and retain all the excrements of the inhabitants from year to year and from century to century. In Boston and New York, this precious

material is preserved with great care and expense, the proprietors of towns lots dig deep pits into the earth, and these they surround with walls of brick and stone, and cover with strong timbers and planks, that nobody may have access to it and steal it away. Here the owners flatter themselves it lie safe and dormant, but they are mistaken; already has this accumulated excrements perniciously poisoned below the surface of the soil their water, and annually when the weather is hot enough, does it rise in pestiferous gaseous vapors; in fact the atmosphere then sicken or destroy those from whose bodies it was discharged and as well as to others, hence, therefore, are the most frequent manufactories of night soils, which go under various names, these kind of matters being of an noxious emanation and undergo most inconvenience in deranging the functions through pestilential disorders, which that offspring of contamination and corruption excites. From the like materials and malarial which effect ships and cities, many particular tracts of country, individual houses, public hotels, single rooms in a house, or even particular parts of a chamber, become charged with essential materials that may turn to pestilence, kindle up typhus or yellow fever, and end in black vomit, or by dark colored dejection through the bowels; hence, we hear of these fevers now and then in cities, and also in the interior parts of the land, far away from ships and seaport towns and cities.

PREVENTION.

Quarantine is now carried out by towns and villages, and even by certain police juries of parishes within the State of Louisiana, as a part of their duty. Thus as being no protection and interest that such sanitary applianees are not yet all that could be wished in these communities, and are they available and do they do any good? I say no, particularly if the views advocated in the preceding pages are correct, it falls to the ground, of course. But we have more than that to say against it; it never has succeeded, and never can. Let us look at the facts:

I have copied three or four clauses from the report of the General Board of Health, England, in the conclusions of the preceding evidence, respecting yellow fever, which have been published since in the New Orleans Times, and also in the Louis-

ville Courier-Journal. The board, comprising all the eminent and skillful physicians of the day, was assembled in the College of Physicians, London, and after declaring opposition to the unanimous opinion of the physicians of Malta, West and East Indies, that no measures of external precaution for preventing the introduction of the yellow fever, by rigorous quarantine, have hitherto been found ineffectual, and after considering a great deal of testimony relative to the localizing condition which favor the origin and spread of yellow fever, and showing the evidence of identity, as found within all countries where it prevails, and propagation of it. Therefore I note the following sections of this important and valuabl ɒocument, as a synopsis in consideration of that subject:

"That yellow fever epidemics break out simultaneously in different and distant towns, and in different and distant parts of the same town, often under circumstances in which communication with iafected persons is impossible.

"That yellow fever epidemics when they invade a district do not spread from the house first infected to the next, and thence to the adjoining, and thus extend from a centre; but on the contrary, are often confined to particnlar rooms on the same story.

"That in general when yellow fever breaks out in a family, only one or two individuals are attacked; commonly the attendants on the sick escape; and when several members of a family are successively attacked, or the attendants on the sick suffer either, the epidemic was general in the locality.

"That when yellow fever is prevalent in a locality, the most rigid seclusion in the locality affords no protection from the disease."

The object of quarantine is to prevent the introduction of epidemic diseases from one country into another, and the agency which it employs for this purpose is the isolation of the sick, the detention of and the placing under inspection, for a given period, persons who come from an infected country or district, though they may not be actually sick, and purification of commerce presumed to be capable of imbibing and conveying pestilential *virus*, before such goods are landed and dispersed. It appears that facts and observation place beyond all reasonable doubt the utter inutility of this system.

If there be any truth in the preceding representations, that epidemic diseases are universally and inseparably connected with an epidemic atmosphere, the question is at once decided. Quarantine can exercise no more control over this epidemic atmosphere than over the solar system and temperature of the common atmosphere, and the directions and force of the wind.

"Yellow fever," says Senator L. Q. C. Lamar, of Mississippi, "though a malignant scourge to the world, will, through the wise beneficent dispensation under which we live, be productive

of consequences favorable alike to science and humanity. Being instrumental in throwing much light on the practice of physic, it will prove highly influential in extinguishing the belief in pestilential contagion and bring into disrepute the quarantine establishments that have hitherto existed."

One of the most important and interesting facts connected with the history of quarantine occurred at Natchez, Miss., and the same predicament or category appeared this year and since in many places who had the belief in the doctrine of quarantine as a safe protection. Having suffered to an extent truly appalling in the year 1837, the citizens determined to establish *cordons sanitaires*, which was enacted and no doubt as rigidly enforced as human efforts would admit. Natchez not only escaped an epidemic, but there was no case officially announced or admitted during that period, and they thought they had found in quarantine a guardian angel for all future time. But two years after, 1839, though the same restrictions were more rigidly enforced than in 1837, Natchez had an epidemic of yellow fever. As an instance of this, Natchez may serve as an illustration and warning to other cities. That city, with a vast number of inhabitants, active, commercial and industrious, many of them manufacturers and artizans. A quarantine of twenty days, with difficulties almost insurmountable which it entailed, was established on the borders of the Mississippi river and around the city, maintained with a rigor which might serve as a model to other countries. But in the midst of this apparent security, an Irishman living in the back part of the town was attacked by the yellow fever, and in a few days the fever appeared. The most minute researches on the part of the public authorities could not discover any communication between this Irishman with any stranger or goods suspected of being infected coming from the city of New Orleans; but when the fever spead and developed itself gradually and progressively the authorities saw too late the deep injury which their sanitary quarantine had inflicted. A multitude of families and hundreds of individuals were plunged into extreme misery. For the sudden cessation of commerce and consequent suspension of labor had deprived them of the means of subsistance.

"All these circumstances," says Dr. Chervin, of Paris, France, in speaking of restrictions and cruelties of quarantine, "are calculated to fill with horror the breast of every feeling and honest man, and we are really obliged to offer violence to ourselves in not giving vent to indignation against the partizans of contagion who yet desire to continue to defend their erroneous opinions and who to this day have used all their efforts to make obscure and disfigure the subject to the great detriment of truth, who have never ceased to deceive governments which think it their duty with regard to this disease (yellow fever) to surrender themselves to the judgment and presumptive knowledge of medical men, who have never ceased to describe it as conta-

gious, and have induced those authorities to adopt, with respect to it, the most false and contrary measures, and to neglect the suitable, prophylactic and preservative means and others which might have put an end to the disastrous epidemics of this disease, and that it is they that have always acted contrary to truth, to the interest of governments and humanity."

I am of opinon that the oppressive features of our quarantine system should be reckoned among the relics of knownothingism and of uncivilized savages, which an enlightened legislature should make haste to abrogate for the sake of our character as a nation. There is no pretext for the perpetuation of a system founded in ignorance and fruitful only in public and private injustice, cruelty, injurious and faulty, etc., etc.

Dr. G. Milroy, one of the ablest and most industrious sanitarians of our time, states in his "Essay on Cholera and Yellow Fever"—which are from a condensation of the conclusions in the preceding evidence respecting cholera and yellow fever—and this is his account of the state of quarantine in different countries:

"What is most remarkable in the quarantine regulations of different countries at present is the fact of their want of accordance, hardly any two being alike. Another noticeable point is, that the more liberal the government of a country generally, and the freer its institutions, the fewer and less stringent are the quarantine restrictions. In the Baltic States, in Sweden, Denmark, Prussia, Holland, the regulations formally enacted may be considered almost as a dead letter. So in Belgium, where they are nominally, really in force. In the United States of America, each State of the Union has its own code, all of them according to the resolution of the Quarantine Convention of 1857, inefficient and often prejudicial to the interests of the community. In Chili and Peru along the whole western coast of South America, the tendency is to disregard all quarantine regulations as interfering with the freedom commerce. In that anarchical country, Mexico, quarantine is under no legislation, the board of health having unlimited power, which it sometimes exercises most tyranically."

The inefficiency of quarantine as a matter has been proved by demonstration; quarantine, even when rigidly enforced, has not kept out diseases of the contagious nature, of which there is no question, such as small-pox and other exanthemata, within Southern and Northern regions of countries.

Great many of the European nations, taught by sad and lamentable experience, have withdrawn their quarantine regulations and acknowledged not their mutility, but that they are productive of immense evils, and those evils of quarantine are great, almost incalculable. Sir Robert Peel, speaking in the House of Commons, London, in 1849, gave it as his belief that the losses from quarantine in Europe and America, on these two continents, were not less than fifty millions sterling

annually. But what if instead of preserving, quarantine actually involves often sacrific of life with yellow fever; the quarantine epidemic in New York harbor in the year 1863, exemplefied this in various quarters; reports of travellers have shown the miseries and dangers of the Lazeretto and the confinement on those vessels or ships detained in quarantine.

What more do we need to show in this instance, than the casualty of the steamship Virginia, which arrived from Liverpool at New York Quarantine Station. The officers of health ordered and directed the Virginia to undergo quarantine before landing the passengers, which the captain of the said steamship would not consent to; so she left for the city of Quebec, Crnada, arrived at the Grass Isle Quarantine Station with 1044 passengers, most being German and Dutch. On leaving Liverpool the ship fever broke out among the steerage passengers in the orlop, below the deck, and beneath the water line Forty-nine died during the voyage. After reaching quarantine, being detained there, the fever increased, but still it was exclusively confined to the steerage passengers. The disease did not exist at Liverpool, and had not since, as shown by a number of arrivals at the Quebec harbor from the port of Liverpool. Later did not exist at Liverpool. It was on the voyage, and at the Quarantine Station, confined entirely to the steerage passengers, of which a large number sickened and died on board the vessel.

Will give another account of another steamer, attacked within the same latitude and longitude as the steamship Virginia. The steamship England, of the Canadian Dominion Line, in the year of typhus ship fever, in North America, sailed from Liverpool to a port of Quebec. Fifty passengers out of 1204 died on the vessel during the voyage, chiefly Irish and German emigrants. She was prohibited from entering the harbor of Quebec; all were detained on board at Gross Isle Quarantine, and by June the 29th, 150 more deaths occurred. In all 200 died while in quarantine. If the 1200 passengers had been landed and scattered on Gross Isle, a very large island in the St. Lawrence river, I, for one, doubt the occurrence of the disease of ship typhus fever in ten of their number, especially as it was reported as altogether confined to the steerage, and will give a striking confirmation of the statement I have in relation reported.

Were such measures sure to preserve from the epidemic the whole people of our continent, a sacrifice like this might find excuse in principle of truth and reality. I regard it as an act of cruelty and savageness. General Pelissier, in Algiers, was thought a monster for suffocating a band of guerrillas in a cave, but what are these cases of the steamships Virginia and England more like, except in motive? It is closing up hundreds of people for death, as though it might be owing to an impropriety of unsuitableness in the construction of narrow

doors and high windows from the bottom of floors so as to impede or prevent the escape of thousands of our fellow-citizens from a burning theatre, such as that of which we read an account in the newspapers of the day, some time since, of the Brooklyn and Fifth Avenue Theatres, in New York city. And what, says the American Journal of Medical Sciences, January, 1875, in reviewing several recent works on Quarantine, these changes are all in the direction of improvement. This will inevitably follow until the last remnant of the semi-barbarism of personal quarantine shall have gone out of existence. Intelligent measures, not only of local preventive sanitation, but of maritine hygiene and also of the inspection and compulsory purificationof vessels at quarantine stations, will remain and will produce those effects vainly sought through rigid quarantine.

In Prussia and Austria in 1831, all sanitary measures enforced by these powerful governments, were unable to prevent the approach and spread of the cholera throughout these empires, and such was the case with many of the Northern States and Canada. Prussia employed seventy-five thousand of her best troops to enforce her rigorous restrictions and travellers bear testimony to their severity. What have been the results? An immense expenditure of money. The suspension of commerce, a stop put to all industry, multitudes deprived of the means of acquiring subsistence, and whole families plunged into misery and rendered favorable subjects for the disease, but with no stop to its extension, on the contrary its progress was rendered more fatal.

Dr. Harris of the United States Sanitary Commission, says there were in 1863, over two hundred cases of yellow fever, which occurred in the river fleet of which fifty-seven died. From this fact we find that rigid military discipline did not make quarantine a protection against yellow fever. The city of New Orleans was more exempt from fever during the five years preceding the war, with all its filth, want of sanitary police and no quarantine, then it was during its military occupation under General Butler with its military quarantine and sanitary police, and proper measures, that made it the cleanest city in the United States of America. And also in the history of Mobile we have an interesting parable to the history of New Orleans, in regard to the yellow fever during the war, situated in a different latitude and longitude from the latter city, having greatly suffered during the years 1837, 1839, 1841 and other years. Therefore there was no epidemic from 1854 to 1867, and not a single case during the entire war, though blockade runners were coming in every week.

In the year 1847 the Irish and German emigration exceeded that of any previous years. The anxieties to reach America, after severities of famine, forced them to take the first chance for passage, and in almost every instance ships arrived

burdened with more than the number of passengers allowed by law, into the ports of Quebec, New York, New Orleans and others, they were, of course, subject to diseases,

Ship and typhus fever owe their origin to this cause. The reports on every arrival gave a large proportion of deaths on the voyage, the survivors, debilitated by short rations of food and pure water, arriving in a climate so different from that they had left, under any circumstances should have exercised prudence in their food and cleanliness in their habits, to ward off the diseases of various latitudes; instead of which, they indulged together in damp and unwholesome residences. The sisters of charity, above all, in the above cities were called without pause and interruption near the sick emigrants, over the couch and watch by the side of the children of affliction, whether protestant, catholic, Israelite and of other faith did suffer considerably.

If the great practical truth, taught by modern investigation and experience, be, that the only real security against any kind and degree of epidemic diseases is an abundant and constant supply of pure air. The prevention of over-crowding and the dispersion of the sick especially is of notable importance; that is, the establishment of emigrant houses in salubrious places, five or seven miles from the limits of a city, into which persons from tainted vessels, most liable to yellow fever, cholera or typhus, may be received. On the occurrence there of the first cases, and if as is generally agreed, confinement in a foul atmosphere can convert any fever into pestilence, and ventilation and dispersion can dissipate any contagion with proper sanitary measures, then quarantine must be not only useless but pernicious. Since the unmistakable effect of quarantine as hitherto practiced in all countries, has been the congregation and confinement of the sick and of those who though not actually sick are suspected to have in them the seeds of disease, requiring only a few days or hours for their development. Therefore the congregation and confinement of persons in a limited space, often in a filthy ship or lazaretto, and an unhealthy locality and always under circumstances calculated to excite apprehension and alarm, which are conditions in the highest degree favorable to the generation and spread of disease;—it follows that quarantine, instead of guarding against and preventing yellow fever, fosters and concentrates it, and places it under conditions, the most favorable that can be devised for its general extension, and therefore must not only fail to accomplish its object, but to produce the very calamity which it endeavors to prevent. The principal ground on which objections are made to the continuance of quarantine is that the fundamental principle on which it is based is fallacious, and that the only means of preventing the origin and spread of the epidemic yellow fever, is the adoption of sanitary measures, substitution of sanitary

measures for quarantine restrictions, which would render the transmission of any disease from one country into another in the highest degree impossible.

Quarantine would no longer occupy the legislature and the medical world in learned interminable disputes of its questionable utility. It is only impossible and imperfectly fulfilling the objects of quarantine to keep off a diseased or an infected subject or to prevent the spread of malarial effluvia, by fumigating a ship-hold: Doubtless the vitiation of the air by this agent, when the half starved or poorly provisioned emigrant is either sent to the city convalescent, without ability to work or penniless, and not equal to it, they then have to feed upon the cheapest grub, huddled together in delapidated houses or hovels, and form of themselves a focus of infection for the whole city, when the money thus lavished upon quarantine laid out in two or three buildings and provisioning in large and commodious emigrant houses, not distant from the vicinty of the city of New Orleans, where both sick and well of the steerage passengers of vessels should be forced to remain at least a week or two, until they undergo complete cleansing of their persons; wholesome air and food would then dispel the effects of ship confinement and the regret of their native country. In such establishments labor would seek them, averting from them the evils arising from runners of low boarding houses who not only rob them of their little store, but fatten on the premium obtained from the sale of their time to contractors. Such an establishment would be philanthropical, benevolent and economical. The mortuary statistic of all sea port towns furnish us with the fact that the poor emigrants introduced or if not generated and disseminate disease among assimilating elements in all of them. It is evident that such an institution would be a benefit for the State economy and to the whole people's industrial resources, consequently would be a falling off in the admissions to our public hospitals, a protection and a gain to the public health, and in its turn increased wealth to the people in general and a saving of money to the State of Louisiana. With such legislative enactment, the sanitary board in the department of health could take care of its control and duties in regard of the emigrant houses.

But it will be asked, would you abolish all quarantines and abandon all inspection of ships whatever? No, I would not, but I would abandon althogether the whole theory of quarantine, as against yellow fever and cholera, most particularly. Sanitary inspections are paramount necessity, and it is an imparative duty to see them duly carried out, as if properly performed; they will tend greatly to prevent an hrruption of yellow fever. These are the most efficient means for neutralizing and destroying the force of epidemic diseases, and thus tend generally, if not to the prevention of epidemic, especially of yellow and typhus fevers at least, powerfully to diminish

their virulence, for the *pabalum* of all infections. Complaints is found to exist in the mephitic air of low, moist, closed and narrow streets and shut up retreats, where these are crowding, bad ventilation and the invariable accompainments of poverty and drunkeness; add to these, impure water, and there is all that is requisite to breed sickness and to invite and arrest yellow fever in its prevalence.

Ships should be inspected on approaching ports, because they may have unsanitary conditions intensified in them, on a scale sufficiently to be important. This should be a part of sanitary police, nor should include any restriction of persons, at the most, longer than enough for cleansing of the body and of the clothing, and purification of merchandise by fresh air and possibly by some disinfecting process in certain cases.

A careful sanitary police, hence the absolute necessity for systematic sanitary visitation of the dwellings of the poor, and the yards, courts and alleys wich they inhabit; such as of late exist in certain cities, as in Canada and Great Britain, and which can be effectually carried out only in the appointment of "Inspectors of Nuisances," by able and intelligent men, which includes the protection of available measures for the prevention, and obviating the development and extension of the disease in any place.

On this ground the sanitary precautions are not many, nor always difficult of observance, but they are imperative and commonly very effectual and to be relied upon with confidence, and are familiar. Thorough and frequent cleansing of all streets, alleys, yards, wharves and vessels, private and public buildings and empty lots, the abatement of all nuisance, daily removal of offal, efficient sewerage, etc. The emanations from privies are always offensive and injurious to health, particularly in close, pent-up yards; even the best constructed water closets are not at all free from objection. The cleansing, ventilation and disinfection of cess-pools and water closets among all signs of danger of the location of yellow fever, none is more significant than the privy odor. Let it be everywhere annihilated. Lime, charcoal, dry earth, chloride of lime, liquid coal tar, chloride of zinc, sulphate of iron and carbolic acid, are about the most available of disinfectants. The next point of importance that may be used to correct foul smells, yet it must not be forgotten that they do not entirely destroy the noxious effects of the effluvia, the shoot, which ii an excellent deodorizer of every house, should be collected, to be strewn occasionally into the privies and water closets.

The floors of the dwellings should be well scrubbed with lie or chloride of soda at least once a week, and thorough ventilation, every tenement should be supplied with abundance of good water. That from wells in ordinary yards is always more or less impure and is frequently most injurious, being saturated with all the fifth that soaks through the earth from the privies.

Chloride of lime or carbolic acid may be placed in a plate in any suspected rooms or other locality in a house during the prevalence of yellow fever. Lime, dried pulverized plaster of paris, mixed with rather more than one-fifth its weight of powdered charcoal is a cheap disinfecting compound, may be thrown every three days on the floors or any other places. It entirely removes the noxious emanations from decomposing organic bodies and matters, especially in case of the patients with the disease. Every vessel used may and should be disinfected constantly by a diluted solution of chloride of zinc ore, Sir Wm. Burnett's disinfecting fluid; yet it is very manageable and efficient that every house should be supplied with a little of this fluid, to which there is always attached clear directions for its use. The immediate removal of all discharges from the sick room, their disinfectionand transportation to the safest possible place of elimination, oughtto be imperatively maintained. All foul bed apparel and clothes must be promptly washed, or if very bad, disinfected. These precautions have been proved to be capable of essentially limiting and mitigating the prevalence of epidemic fevers. Therefore, internal sanitary arrangements and no quarantine and sanitary lines are the safeguards of nations against epidemic diseases.

What is very good to cast into cess-pools and drains, some of the black ammonical liquor which is antiseptic and disinfectant, that abounds in the New Orleans and Jefferson gaslight factories, and also the lime that is served for the purifying of the gas is very useful in destroying noxious odors. All holes and cavities about dwellings should be filled with old mortar, ashes and lime from the New Orleans gas factories, which seem to be even better deodorizers than fresh lime. All three substances are excellent disinfectants, and instead of being converted into nuisances in the streets, should be used in the manner indicated, by which they would become useful and be sought after. Epidemics are sure to alight where terrestial emanations of a mephitic nature exist.

In cities and towns it has almost always been the lowest, most crowded and most filthy sections that have suffered most. Where there is not a free circulation of air, and where the cheering breeze of the wind seldom penetrates, these localities are always raw and chilly, and there is constantly a very perceptible repulsive and musty odor, and the inhabitants are pale, "*Fievre lente*" and debilitated, and the utmost care should be observed to obtain perfect ventilation. Whilst impure and confined air in crowded apartments or rooms is always deleterious, it is eminently so in times of yellow fever and during the prevalence of all epidemic diseases. The breathing of foul air predisposes to every disease, enervates the body and destroys all moral and physical energy. The fire-places and windows should be kept open, and every room have, if possible, an openinto the chimney near the ceiling for the escape of the heated

and deteriorated air. A fire should be kindled for the double purpose of imparting ventilation and causing a draught in the house.

TREATMENT OF YELLOW FEVER.

The investigation of the nature of Yellow Fever continues in all parts of the world, but as yet with no positive results. I have endeavored by patient examination to arrive at some conclusion from the various statements made by learned men, but in vain. All that the most careful dissections have taught us is that there is no invariable or essential doctrine of the endemic. Only one thing certain has been found out,—that there is an alteration of the blood within the body. Thus in the serum of the blood which loses one third of its fibrine and brings forth a considerable diminution of chyle and propagates a very large excess of nitrogen and hydrogen in the circulation; whether these changes are primary or secondary no one can tell. Therefore I may assert that all the changes of these causes might be owing to the defalcation of its alkalies as being the proper agents to maintain and to hold in the state of the process of its nutriments, which nutrition of the body is dependent upon the healthy action of the alimentary organs, which effects indicate a continual presence of bilious action, but actually produces a morbid alteration in the blood before it induces fever. This exciting disorder is due to the amount of alkalies wasted in the chyle and are due to the increased excretion of urea and phosphates from the kidneys.

The most formidable affection presenting itself in the stomach and intestines of yellow fever patients, is that in which we have a congested, yet weakened and atonic state of the mucous membrane. Hemorrhage, and more mucous irritation precede this condition, and after a time we have gaseous motorism of the intestines. The abdomen is distended and find tympanitic sound on percussions. This distension of the intestines is a source of distress in two forms, firstly, from the accumulation of air in the stomach and bowels themselves; and next from interference with the process of respiration. The descent of the diaphragm being impeded and prevented by the swollen state of the intestines, we often find in connection with this state an irritation of the gastric membrane of the stomach, such that the patient rejects a portion of almost everything that is swallowed. There is at the same time an irritable action of the kidneys, when elimination is defective, leading to accumulated excretions and with retention of urine, or with the discharge of only small quantities of it. Under these circumstances drink and medicines accumulate in the intestinal tract, while gases are generated in excess. The absorbent powers of the mucous surfaces seem for a time to be in abeyance, while the muscular fibres are loss of voluntary motion and the

stomach and intestines seem incapable of freeing themselves of their matters by peristaltic or anti-peristaltic. There can be but little doubt that the state above described is one often brought on by the injudicious use of medicines. Very cold water and farrago of substances supposed to be proper or useful in the sick room; the injudicious use of mercurial drastics or saline purgatives at the outset of the fever, leads in some instances to hypercathasis within. We still have to apprehend an atonic state of the muscular coats of the stomach and its results as above described. The excessive and rather abuse of cold iced drinks and fruits and all the other stimulating slops supposed to be necessary or good to the yellow fever patient, conduce to a like effect. This irregular and nervous stage is always to be regarded as a formidable complication and state in the yellow fever and when developed to an extreme degree and persisting for two or three days resisting treatment, it is an indication of all but fatal consequences.

The fever, seizing with peculiar violence upon the organs of the secretions, and especially upon those which belong to the digestive operations, hence the liver will suddenly pour forth an immense flow of bile, so vitiated in quality as to irritate and inflame whatever it touches, and so abundant in quantity as rapidly to diffuse itself over every part of the body, and to tinge every tissue and every fluid at the same time; the stomach and the intestines may be involved in such acute fever that the power of life may be exhausted in a few hours, by incessant vomiting. That there is from the beginning a great prostration of strength and a rapid increase in the derangement of the nervous and sensorial functions, together with a brown tongue and dark and offensive stools, which show the continual presence of the exciting bile, which, but actually produces a morbid alteration within the blood before it induces febrile heat to high degree.

The death in yellow fever by mecurializing patients out of the world, is all wrong and pernicious; never meddle with the stomach and other functions; which we learn from Sir John Gilpin of the British army, and Dr. P. C. A. Louis in the epidemics of yellow fever in Spain—the stomach is the "throne of yellow fever," and if in undisturbed state, left in perfect repose in that stage, will not throw up black vomit. But all this is too plain perhaps, for the utera prescribers in mineral and vegetable poisons, too unsophistical for mysterious dogmas of charlatans. Dr. Hosack, of New York, was laughed at for praising castor oil and catnip tea, the humble instruments by which the quaker physician, Dr. R. Underhill, cured so many persons in one of the worst scourges of yellow fever in Philadelphia.

Soon as the patient is attacked, put him in a warm bath in which two drachms of strong sulphuric acid, has been dissolved

to each gallon of water; the patient remains in the bath a quarter or half an hour and is afterwards wrapped in a cotton sheet and sponged with the same fluid as that which forms the bath, every two or three hours; this procedure or mode of treatment, which seems to act through the blood in inducing diaphoresis, and then by lessening at the outlet the primary febrile paroxysm.

The indications for the employment of curative agents in the form of fever are furnished by the state of the suffering organ; the skin, which is hot and acrid, and the mucous membrane require to restore their appropriate secretory and absorbing functions, and the glands to their secretory and depuratory office.

On the skin we should act at once by means of cool air and by immersion in a sulphuric acid bath, has been attended with excellent effect by often arresting the fever in its first stage, and by greatly mitigating the violence and gravity of the symptoms in its progress, in which the capillaries are in a state of morbid excitement and largely evolve by heat; at the same that the breathing is labored and the brain oppressed, a sulphuric acid bath rouses the nervous system from its torpor and restores the respiration to its former state. According to the predominance of excitement in an organ or region—as, at one time of the head, at another of the epigastric region—which will be the special direction of the refrigerant applications to the head; and I have used with marked benefit the following lotion, to be applied to the epigastric region, head and over the abdomen; the febrile part of which, indeed, is often very excessive in yellow fever.

℞.	Liquor Soda Chlorinata, "Labarraque,"	℥viij.
	Sp. Lavandula,	℥iij.
	Sp. Rosemarini,	℥v.
	Soda boras,	℥ss.

Add two pints of cold water to the above formula,

Directions: Wet a piece of cotton cloth three or four in thickness, sufficiently large to cover the epigastric region and abdomen; should be re-applied every time when dry in order to maintain an equalization of the temperature in the body and proper distribution of circulation. The temperature of the patient should not be allowed to run above 103° or 104° Fahrenheit. Usually the temperature may be kept within this range by means of the above application, and the patient will press with evidence of pleasurable sensations of the lotion on his epigastrique and ask for a renewal of them.

If remission or retirement of fever and perspiration has been attained, sulphate of quinine in ten grain doses, every two hours, until its effects on the nervous system and circulation is fully obtained through the normal temperature, which consists in not allowing the temperature to rise above the regular stand-

ard. If it does it is at once lowered by the sulphuric acid baths and topical means which this will arrest the rapid reproduction and keep down the excessive burning heat within the body.

Under the supposition that our patient is laboring with completely formed fever and is in that stage in which professional assistance is commonly wanted in the forming or preliminary stage of the yellow fever, that in which the nervous system is the part chiefly affected and in which the temperature of the surface is unequal, the patient at one hour shivering, at another complaining of too much heat. A warm hip or foot bath in which has been dissolved a considerable quantity of chloride of lime, this bath must be continued until the patient perspires when given; these baths have no other advantage than that of purifying the atmosphere of the room, and will prove to be soothing and salutary, and may, if its operation be aided by simple drinks, such as elder flower tea, orange leaf tea or flower tea, to bring on diaphoresis or produce perspiration, which will restore the skin to its natural state and contribute to an equalizing of other deranged functions. It is important to bear in mind the fact that the salutary change which is brought about in the capillary circulation and secretions of the skin, are responded to in a similar sense by the gastro-enteric and pulmonary mucous membrane. The thirst, dryness and heat of the mouth and face, and the gastric sensation of heat, are all greatly mitigated after a chloride of lime bath, and, in combination with the refreshing lotion on the whole body of the patient; the breathing also is freer, and the expired air less hot and offensive.

Various means have been proposed and recommended to calm the stomach. Leeches and cups to the epigastrium, in cases where they are admissible, have occasionally been found beneficial. The physician must watch the efforts of nature and promote any critical movement she may indicate. The most alarming symptoms in this fever is irritability of the stomach, and in many instances associated with vomiting. It is apt to be present and so often uncontrollable that it is of importance to indicate remedies to check them. When the gastric juice is about changing or deriorating in the stomach, there is a burning sensation, is generally relieved by the use of chlorate of potassium, super-carbonate of soda or lime water. I have generally succeeded with the following prescription, viz.:

℞	Acid citric	ʒss.
	Sub. carb. amon.	℈ij.

and when the effervesence has ceased, add simple syrup, two ounces; camphor water, one ounce.

Give one tablespoonful every half hour or two hours, according to the attack, and for the excessive nausea and efforts to vomit in the gastric disturbance, a mixture which acts quite promptly.

R	Chlorate hydrat	℥j.
	Potassa bi-carbonate	℥ij.
	Spt. Chloroform	℥iij.
	Syr. Tolu	℥ijss.
	Aquæ camphora	℥j.

one teaspoonful every half hour or half a tablespoonful every hour, if this mixture do not suppress vomiting, you may have recourse to the following preparation to check vomiting.

R	Bromide potassa,	℥ij
	Syr. zinzileris.	
	Tinct. opii. camp. aa. fl.	℥ij

Dose.—Give one teaspoonful every half hour, or each time after the patient vomits.

Or, the following prescription of Bromide, after the more decided in the depress powers of life, and prevent the tendency to collapse:

R	Bromide potassa,	℥j
	Syr. zingeb. fl.	℥j
	Sr. menth. pip.	℥iij
	Chloroform,	℥j

One teaspoonful every two or three hours.

We must continue by the use of purgatives, elimination of matter from digestive organ, which was begun by the efforts of vomiting. In the inception of the fever, by this treatment we remove some of the probable causes, and abate, if not dissipate, some of the obvious troublesome symptoms in the first formed stage of yellow fever in milder cases. This is often alone sufficient to check the farther progress of the disease and to bring on convalesence. Whether we suppose that there is a morbid excitement which required subduing, or an effusion which ought to be eliminated, we are fortified in acting on the stomach and intestines in the manner already mentioned. If we do not thereby cure, we, at least, diminish the probabilities of further injury. By the acid sulphuric and chloride of lime bath, and the continued application of refrigerants, lotions, externally, we abate the excessive fever or burning heat, itself a disturbing cause both to the nervous and circulation of the sanguine systems and we rouse the patient from the delirium to which he had been thrown by the workings of malaria on the brain and other organs and functions of the body.

R	Spirit aetheris nitrosi,	℥j
	Citrat potassa,	℥ij
	Liquor ammonia acet,	℥iij
	Soda et potassa tart.	℥iij
	Aqua rosa,	℥xij

Two tablespoonful every half-hour or four tablespoonful every two hours, according to the case, and to be given in the fever at its highest warm stage, or exacerbation of the fever.

I have therefore, so also employed the boracic acid as

means of prevention in the incipient stage of mortification, and the sedative action which retain its efficacy for a long time as antiseptic agent, and remedy in doses of from six to ten grains or more as a corrective of bilious putrefactions.

The Geneva medical papers, say that Prof. Schiff, formerly of Rome, Italy, has discovered an infallible remedy, in the salicylic acid, as a prevention of putrefaction changes in febrile cases, and assimilated as a sedative. All reports agree that fifteen or twenty grains of salicylic acid per day may be taken without any notable disturbance or alteration of the alimentary canal.

An invalid of yellow fever must be treated like a child. He must be kept entirely under control; it is a safe rule to follow, to do for the patient precisly opposite to what the latter wishes, or what he does. If he is thirsty, a piece of ice may safely be placed at intervals in his mouth, which is better to allay the heated thirst, is to place around the neck a piece of muslin saturated in cold water. His excessive thirst must be restrained by four or six tablespoonfuls of lemonade or cold water after being boiled, at some intervals; should he throw off his bed coverings, it will be found that his extremities are cold, and that the circulation must be equalized by warm or hot chloride of lime foot bath and keep them well covered to induce perspiration, then to place at intervals on the forehead a cloth saturated in cold water, and if he requires the unremitting aid of external topical applications and sponging in ablutions constantly with Louisiana Rum, diluted with lime juice and with cologne water, and lavements when necessary, specially if much fever and head-ache, every two or three hours, with a decoction of flaxseed or okra. (Hibiscus Exculentin.) If he is disposed to coma rigid, or to be watchful, invite him to sleep, by fanning, and by the frequent passage of cologne moistened cloth on the forehead and temples; if too much prone to sleep, enliven him with such subjects only as will not create excitement, by inducing too much though fullness in a word. The deceitfulness of symptoms to the physician and patient is a characteristic feature of the yellow fever, creating desires and wishes in the patient almost always antagonistic to his well-being.

Strict attention to the diet of the patient is not less important in the successful management of the fever. In the early stages it should be very light, consisting chiefly of liquid substances, solutions of gum arabic, rice water, orange leaf tea, tost water, preserved jellies mixed with water, and similar preparations may be successively or interchangably employed; cold lemonade or orangade and pure rain water in moderation may also be used as drinks in the hot stage of fever, at a more advanced period, after five or six days for example, when the symptoms of debility begin to show themselves, it will be

necessary to support the strength by a more nutritive diet, which, however, should not be stimulating. Preparations of rice or arrow-root of a nearly gelatinous consistence, thick gruel or panada, may new be given, flavored with nutmeg or other spice, and sugar, etc. It will often be desirable to give these in certain quantities at certain intervals, so as to insure that enough is taken. I have generally been in the habit of directing that a cupfull be given every two or three hours, or less frequent, according to the apparent strength of the patient. A cup of tea may also be allowed with dry toast or water crackers, morning and evening; still further on in the stage of the fever, milk in small quantities, frequently repeated, will be often found to suit the case admirably well; two table-spoonfuls of it may be given every hour or two through the day, and if the stomach be irritable, it may very properly be associated with one-third quantity of lime water. In the last or prostrate stage it is proper that the diet should not only be nutritive, but also stimulating; animal broths and chicken soup may now be given, and in lowest cases it is necessary to resort to egg, beat up with wine, milk punch with Jamaica rum, and essence of beef or mutton throughout the whole case. The greatest attention should be paid to cleanliness and ventilation, and when the atmosphere cannot be sufficiently purified by these means, as sometimes happens when many patients are crowded together, recourse may be had to the corrective influence of the chloric ether lamp in purifying it.

One parting word may properly be added on the subject of the treatment of yellow fever. It is important that the public should understand that the disease has definite *minimum* direction, which nothing can alter. That her natural tendency is, on the whole, to a favorable termination, and that the best and most enlightened physicians are the most fairly convinced that there exists no practical means of shortening the natural term of this malady. Therefore, when I speak of treatment by medical attention, I mean no more than this, that the interference of a vigilant and skilful physician, frequently prevests the patient from sinking under the disease, before it has run its natural course and averts some of those evil consequences which are apt to follow when the patient was previously in delicate health or was affected with latent tendencies to constitutional disease. It is perhaps, a matter of doubt, whether the erroneous popular notion on this point, which attribute to the skilful physician the power of cutting short the most acute fevers with a few doses of medicine, have not exercised as disasterous an effect on medical sciences, in the confidence of patients, in their advisers. Unconsciously and involuntarily medical practioners have been sometimes tempted by the urgent desires of their friends, for speedy relief to the sufferers and for his immediate deliverance from danger, to spend their energy upon the weakest and to neglect

to stronger part of the defense against disease. It can never be too often repeated, that by the most difficult and scientific portion of the medical man's task, in the treatment of yellow fever, is the direction of hygienic measures, and above all, the apportionment of the medicines, and the exact manner in which that medicine shall be given, and that these are the means by the right practice of which the physician saves his patients, in ninety out of a hundred cases, which recover from dangerous attacks of malignant epidemic yellow fever.

REGULATION OF CONVALESCENCE.

When convalescence has begun, the patient should be closely watched, lest by some impropriety he be suddenly cut off. Even after having passed near unto death's door, and when his march toward health, with all its renewed charms and prospects, the most important part of the management of convalescents refers to diet and exercise, etc.

The necessity of caution in the quantity and quality of food at this time is even greater than during the progress of the fever, and cannot be too strongly urged upon the attention of the attendants. From simple liquids which were all that were required to satisfy the desires of the patient during his period of febrile excitement, and to more stimulating and solid nourishment, the transition should be gradual.

From inattention to this point in the management, a speedy and happy convalescence has often gravely interrupted, and many instances are on record of death having resulted. No error is greater and more common among patients and their friends than supposing that debility is always to be removed by nourishing and stimulating food, wine or other stimulating beverages. I have seen convalescents suffer most severely from a single improper meal.

The first change of diet should be to another article of the same kind of food as was allowed during the progress of the disease. For example,from simple arrow root mucilage to arrowroot and milk or to some other of the farinaceous compounds. From this advance may be made to corn or ricemeal mush, milk and rice, well-boiled, and served up with milk and sugar, nutmeg or other spice, rice pudding and custard. If the patient desire it, he may partake of some of the fruits, such as oranges, strawberries and grapes, freed of their skin and seed. In the allowance of animal food, it is best to begin with broths of chicken, squirrel, beef or mutton, on account of its less stimulanting nourishment and easy digestion. When wine is used, attention should be paid to the kind and quantity. Sherry and claret are, perhaps, preferable. In fixing the quality to be allowed, the age, the degree of debility and previous habits of the patient, should be taken into account. It should be remembered that young persons and females are more easily excited by stimulants of this class than older persons; that young per-

sons, as a general rule, convalesce more rapidly than the aged; therefore, they require less stimulant in proportion. If the patient, when in health, has been in the habit of taking wine or other alcoholic stimulants, he will requre wine in more liberal quantities than if he had been strictly temperate, both during the fever and in convalescence. As health becomes confirmed, it should be gradually withdrawn.

When convalescence becomes tedious and profuse and exhausting sweats occur at night, much benefit will accrue from the administration of the aromatic sulphuric acid. Convalescence appears to be sometimes very much retarded by a debility of the stomach, which disable the alimentary canal. From its appointed function, a species of hectic excitement is sustained for a long time. The pulse remains frequent, something like a febrile paroxysm occurs every afternoon and the patient sweats copiously at night. Under these circumstances I have found nothing so effectual as the following formula:

℞	Iodine,	ʒj
	Potassa Iodide,	ʒij
	Syrup auranti corti,	℥iij

M.—Ten drops in two tablespoonfuls cold water every three hours.

With regard to exercise, not less care is required than concerning the allowance of food. Convalescents soon grow tired of their beds, and not a few, if unopposed, will overtask their feeble strength by long sittings out of bed. Errors of this sort have not unfrequently been followed by very bad consequences. In quitting his bed the patient should do so gradually; even should the observance of this advice be unnecessarily strict, no danger can result; whereas, if disregarded, dangerous if not fatal consequences may be incurred.

Especial care is to be observed in the return to out-door exercise. The patient may have acquired sufficient strength to allow of his being out of the bed the greater part of the day, but he should not on this account thrust himself out of doors. Injury has often resulted from venturing out too early during the hot weather of summer and fall. That many persons who have struggled through a most dangerous fever, have, from imprudent exposure to heat, been seized with intense inflammation in some organ which rapidly destroyed life. The Editor of the London Lancet, Feb., 1872, remarks, as bearing upon the important question of restraining extreme heat of the body in fevers: "We must remember that, whereas, the nitrogen containing tissues are hardly consumed at all in circumstances of health. The febrile state involved a large destruction of the most important organs of the body, partly from the effect of the excessive febrile heat on the vitality of the blood. Excessive heat does not mean plenty of strength, but exactly the opposite; it is an absolute proof that the reserve forces of the

body are exceedingly low, and are being constantly and rapidly reduced."

During convalescence every source of mental exertion should be strictly avoided. The mind should be engaged without being oppressed. Much advantage may be afforded the patient by a proper selection of visitors. For, above all things, the presence of idle gossipers should be avoided. These miseries, with which the State of Louisiana is infested. are usually very kind indeed, that they almost invariably leave an infallible prescription of medicine or diet at each successive visit, which benefitted Mr. and Mr, so and so, who was for all the world in a similar condition, and it was used by Dr. somebody and highly recommended by the Reverend Mr. Sool.

The imprudent use of cold water when a person is over-heated almost invariably produces spasms of the stomach, when specially bathed in sweat after fever; this dangerous and fatal practice, if it even does not produce immediate death, almost invariably lays the foundation of lingering and destructive fevers which are extremely difficult of cure. That eminent and distinguished physician, Benjamin Rush, describes the causes of fatality in these cases, in the following manner: "When large quantities of cold water are taken into the stomach, under circumstances of fever or over-heated system, the person in a few minutes afterwards loses his sight and everything appears dark about him, the breathing soon becomes very difficult and a rattling noise is heard in the lungs and throat, the feet and hands become cold, and the pulse cannot be felt, and generally death is the consequence, unless speedy relief can be obtained." Iced toddy, when taken under the same circumstances of being overheated, has often been known to produce the same fatal effects, and I have known many instances within the city of New Orleans and in my parish, in which ladies in full health have been brought to the brink of eternity in a few minutes from eating iced cream when over-heated by dancing. The truth is that very cold drink, even when the body of a patient moderately cool, in fever, sometimes in peculiar constitutions are productive of dangerous consequences; therefore, cold water should not be used as a beverage in fevers; boiled water and cold quenches thirst more permanently, and is not liable to produce vomiting, and does not lower the temperature of the constitution in fever as it does not in air, after being boiled.

There are no countries within the regions of endemic and sporadic fevers, which therefore are subject to intermit during periods of greater or less extent. In the city of Vera Cruz, the yellow fever, now so prevalent, did not prevail during the space of nineteen years. The first distinct account of its appearance given at Barbadoes in the year of 1607, as it appeared in that island in 1608, it occurred at Boston and Quebec, and the next year appeared at Richmond, Va.,

and in Brazil the yellow fever appeared in the years 1687 and 1693, then the disease did not prevail for one hundred and fifty-nine years during that whole length of time. After some years it declines from its producting real effects, and recurring at interval periods of time and thus, on certain series of years, with severity as all epidemic fevers do. Consequently yellow fever like all other epidemics, which have been already observed and reported from real statistics in various parts of the world, has its period of activitity and lay up at intervals in harmony for a space of time, between each event. New Orleans was free from it during thirteen years from 1841 to 1853, except an endemic of ship fever or typhus, which occurred in the year 1847, amongst emigrant passengers to the port of New Orleans. All epidemics of yellow fever are like all other, owing to no aclimation and being an inurement of benefit, once having it, and is an advantage for those persons who are to be insured, whether native or foreigner against its prevalence, although having been acclimated at that season however, which should be considered an acclimating fever, which is to most persons a condition of being secured from the further anxiety of the future.

Its epidemic aspect was of the earlier and more frequent occurrence in northern cities than in the southern cities. During this century and its epidemic wave, was never known south of the equator; on its first appearance in the last century, within the southern regions of countries in North America, in the single year 1872, more than two hundred thousand died in cities of Montreal, New York and Philadelphia, in America, and Paris, France, and other cities in Europe, one hundred and thirty thousand were victims of an essential disease typhoid fever. Meanwhile at times, the phenomena of fever, which seemed to prove its nature to be highly malignant in severity, in a great many parts of the world, and we have a striking illustration of the elements of both, the typhoid and yellow fever, consequently, through the efforts of the medical profession and judgment are of the opinion that the former epidemics of yellow fever have greatly ameliorated its severity. Therefore, we should look forward to a great change and perhaps exemption from an epidemic visitation in our loved land for many years.

There should be no panic about yellow fever, particularly in the State of Louisiana. Let the authorities do their full duty in sanitary measures of local improvement and renovation, not to hide themselves out of view through the delusive scheme of quarantine bubbles, who lie concealed in the very focus of its existence and production, and are more liable to its efficient effects on their system. Let them give to our parishes and our metropolis, the city of New Orleans, its pristine cleanliness, and yellow fever may reach and sweep across the equator without a case occurring in our State. Baltimore and Wash-

ington City have had such an immunity of visitation of yellow fever more than once, and in our worst eruption the mortality has not been very great. Apprehensions, moreover, aggravate the danger, while, if it appears again, those who can leave, as well as those who cannot, will undoubtedly be most safe in the open country, for those whose duties keep them in the metropolis of New Orleans. Courage and equanimity are not only becoming but expedient.

In referring to the production of yellow fever in every instance to a material agency, we mean, also, to deny its propagation by contagion. Many are acquainted with the foregoing facts. Dr. L. Lamar, a physician who practiced in the city of New Orleans, in 1837, made many trials by experiments, to produce yellow fever by direct contact, who had inhaled his patient's breath and inoculated himself with the blood of yellow fever patients and tasted their dejections without receiving the yellow fever, and Dr. L. Lamar, in Havana, who in that city in 1839 and 1841, during the yellow fever epidemics of those years lay all night in the beds and in the clothes of many of his patients, but was not affected or attacked by it. I have made many other experiments, as Dr. Lamar, without suffering any injury or sickness whatever. There is but slight exaggeration in proverbial assertion that pestilence kills thousands, but fear tens of thousands. Above all, tell every man in Louisiana, in the hope that no mistaken terror of contagion will ever lead to the extreme barbarity of deserting of the sick, whether rich or poor, or neglect of the dead.

Yellow fever is not after all a very serious disease to treat. To many experienced physicians it is one of the easiest to cure and is one of the most reliable to prevent death, when attacked from other diseases afterwards, and from any other forerunning maladies of the human races in the world, and who has had it once or having passed through it, which has been ascertained by established truth and fact of proofs.

The subject being entirely practical, I have confined myself as much as possible to a detail of facts. If at any time I have been led into digression, it has been solely with the object of elucidating some point of evincing importance.

LAFOURCHE PARISH, LA., October, 1878.