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IRVINE'S TREATISE

ON THE

YELLOW FEVER.

[1820]

ADVERTISEMENT.



THE ensuing Treatise, has before appeared in detached Essays in the Southern Patriot Gazette. The talent displayed in the Editorial department of that Paper, and the readiness with which its columns are opened to all such discussions as promise or promote any useful end, have secured to it a very general circulation; it might therefore seem scarcely necessary again to bring forward opinions, which have already received extended publicity. The author however, was solicited by his friends to embody his ideas in a more permanent form, and yielded the more willingly to their desire, as the present publication afforded an opportunity of correcting many errors, and supplying some omissions, which unavoidably occurred in the haste with which its different parts were first sent to the press.

CHAPTER I.

On the Origin of the Disease.

Of the various opinions and theories which have at different times been offered to the public, on the subject of Yellow Fever, there are none, it is generally admitted, which are at all satisfactory either as to the nature or origin of the disease, or the proper mode of treating it. Its late ravages in most of our principal Cities, and the probability of its frequent and even speedy recurrence among us, are considerations, which render it the incumbent duty of the Practitioners of this Country to use their most earnest efforts in the investigation of its true character, and the causes of its production, and to contribute to the common stock of information, any such results of their experience, as are at all calculated to throw the least light on these important points. Actuated by this sentiment, the author of the following observations comes before the public with no object but that of serving it, and with no other pretensions, than those grounded upon experience.

We will attempt in the first place to establish that the Fever is of domestic origin. It becomes necessary to do this, as the late conduct of the Boards of Health in Baltimore, New-York and Philadelphia, and the opinions expressed by some of the Physicians in those places, have contributed in a great degree to revive, and give fresh currency to the doctrine of

contagion, which assigns a foreign derivation to the Disease. If this opinion be erroneous, it is of importance that it should be strenuously opposed; for among other strong objections that may be urged against it, it has the disadvantage of tending to produce a neglect or relaxation of Police regulations on which the health of our Cities so essentially depends, and occasions a resort to systems of non-intercourse, and quarantine restrictions, that have a serious effect upon the commerce of the Country, and vexatiously interrupt the communication between the different portions of the Union. I hope to place the subject in an entire new light, and to illustrate it by some facts, which as far as my knowledge extends, have never before been brought forward, or adverted to. But though it is not my intention to go over, or recapitulate the usual arguments employed by the Non-Contagionists in this dispute, their reasonings and statements are too much to my purpose to be wholly overlooked; I shall therefore adjoin various extracts, in the form of an appendix, which will be found to exhibit a view of the principal grounds relied on, by the writers on this side of the question. The doctrine is at once so rational, and is supported by so many obvious facts, that, it had at one time made its way to almost universal reception; but some distrust of its correctness has latterly been entertained from its having been observed, that our Cities have often enjoyed an exemption from the pestilence, during those seasons, when the causes which are ordinarily supposed to be the most concerned in its production, (such as the effluvia from docks, drains, sinks, &c.) have existed in full operation, while, *vice versa*, some of its severest visitations have occurred at periods, when the circumstances of the climate, and the strict execution of our police laws, have seemed to promise us a freedom from its attacks:

and that finally, in seasons of totally opposite character, either very wet or very dry, it has still made its appearance. The medical world has been much puzzled by these phenomena; and while some few adopted the notion of contagion, a majority of those who have speculated on the point, though they admit the disease to be of indigenous formation, seem to have come to the conclusion, that its real cause is altogether inscrutable, or is involved in some occult principle or unknown condition of the general body of the atmosphere. All the above difficulties are, however, I conceive, to be solved, or in a measure reconciled, by advertence to a single fact, which has hitherto been unaccountably overlooked; it is this; that at every period in which the Yellow Fever has appeared in Charleston, the Summer, or *season at large*, has been *unusually sickly*, that is, the Country as well as the Town have been afflicted by Fevers of a fatal and violent type. I am enabled from my own experience and observation in the course of the last twenty years, to bear testimony to this circumstance, the philosophical application of which seems at once obvious. It is easy to perceive, that if to an atmosphere, which has already, from various causes, become so deleterious, as to occasion *general unhealthiness*, be *superadded*, all those effluvia which from foul streets, sewers, &c. are constantly contaminating the air of Cities, a malignant disease must necessarily be produced; and accordingly under such circumstances, the Yellow Fever has invariably broken out, with ~~greater~~ greater or less violence, in proportion to the sickness of the *Country, or season generally*.*

* Another particular in the history of the Fever, remains to be accounted for, which is, that it is confined to maritime situations, or those within the influence of the Tide Waters of Rivers. It is probable that there is always a superabundance of moisture in these situations, which relaxes the human system, and throws it open to disease. The action of the sun or the waters during dry summers, in combination

compare ordinary remedies with

The causes arising within the City, acting alone, that is, during healthy Summers, are never sufficient to produce the Fever; Charleston being always healthy, when the Country around it has continued free from any remarkable mortality. The Fevers of the Town and Country being thus always concomitant, surely indicate beyond the possibility of dispute, that they have a common origin, or are congenerous to the climate; though indeed widely distinguished from each other in symptoms and character.

It is scarcely necessary to observe, that the type of the diseases in the two cases being wholly unlike, is simply ascribable to the difference of local circumstances: the miasmata which affect the air of the Country, are in the first place not so much confined and contracted as those of the City, and being mostly of paludal and vegetable origin, are of consequence less pernicious than the putrescent and animal effluvia, which arise from amidst the dense population of the latter. It will not be of course contended, that the Fevers of the country are either imported, or contagious; yet that they do, as above stated, make their appearance, and continue contemporaneously with the Yellow Fever, is, I reiterate, a concurrence, which has invariably taken place within my own experience.*

Though I am unable to support this statement by any direct documentary evidence, there being no Parish Registers regularly kept in any part of the State,

with the agitation of the tides, would occasion a ^{prevalence} ~~fourthness~~ of moisture at such seasons, nearly as great as that which exists in rainy periods. This would account for the Fevers appearing in seasons of entire opposite character.

* The sickness of the last year in the Country, which constantly kept pace with that in the City, and even penetrated to the Pine-land settlements, hitherto deemed healthy, is fresh in the recollection of every one.

yet sufficient testimony on this head may be gathered from the works of Chalmers and Huztt, who preface all the accounts they give of the Epidemics which desolated Charleston in the early part of its history, (which were undoubtedly Yellow Fever) by saying that the summer of those years. were unhealthy. That in using this language. they refered to the Country as well as the Town, is I think fairly to be concluded, as those authors write the history of the colony at large; and the work of Dr. Chalmers is expressly entitled an *account of the weather and diseases of Carolina.*

Another proof, which assists to throw light upon the connexion, subsisting between the states of the air in Town and Country, is, that a stanger, arriving direct from Europe, may without risk spend the summer in Charleston, whenever it happens that the country around it is unvisited by sickness; for the Town, as already observed, then also remains healthy, though the communication with the sea-ports of the West Indies where the Yellow Fever permanently exists as an endemic, continues open and unrestricted.* It is, moreover, very observable, that a stranger does not obtain security by having been exposed to a season of this sort, but in order to be completely climated, must actually pass through a Yellow Fever summer: The safety acquired in the latter case, as well as the remarkable immunity enjoyed by natives cannot be accounted for but upon the hypothesis I have been advocating, that of the domestic ingeneration of the disease. It results from the mildness of our winter vicissitudes, which leave the system in possession of

* Dr. Bancroft well remarks, that "while it is so notorious that the Yellow Fever cannot be propogated a single mile from Philadelphia or New York, it is completely absurd to suppose that it can have been transported by a contagious quality one or two thousand miles across the Ocean.

Dr. Bancroft has seen

that peculiar organical modification, which it undergoes by exposure to the epidemic in the first instance, when the plasticity of the animal economy enables it to adapt itself to the climate and to resist infection. The indiscriminate attack of the disorder upon both natives and strangers in the more Northern Cities, is to be explained upon an analagous principle. The severity of the winters in those places, while it destroys all the seeds of the epidemic, creating a totally new climate, also produces an entire change in the constitution, obliterating all those summer habits of the system, which give safety to the inhabitants of Southern and tropical countries. Dr. Bancroft has broached an ingenious theory to account for the fevers being confined, as he erroneously believed, exclusively to strangers in warm climates. He supposes that the constitutions of those who come from higher latitudes, "are habituated to the generation of great portions of animal heat, and that the cold which forces this habit upon them, will naturally produce in them a considerable rigidity and strength of fibre, with an inflammatory diathesis, and that when they remove directly into an intertropical situation, they will commonly carry with them a great *accumulation* of excitability which co-operating with the established habit of generating much animal heat there, may readily produce to them a most aggravated and violent form of fever, &c." The Doctor however was not aware that Children in warm climate (it is at least the case in Charleston,) are from the age of one, up to twelve years, equally subject with strangers to the disease, this single circumstance totally destroys the effect of the above plausible explanation; for it is manifest that the constitutions of the inadult would become early adapted to the climate, and would not be in the habit of generating over proportions of heat,

any more than the older natives.* The liability of Children to take the fever until a certain age, I conceive to be owing to the alterations induced by growth upon their tender constitutions, which are constantly effacing those impressions of the climate, which become permanent in adults and strangers: they are hence placed in this respect on a worse footing than the latter, though they are certainly less apt than strangers, to take the disorder. We thus see that all the anomalies and peculiarities which have been enumerated, become at once simplified, and are to be philosophically accounted for, by admitting the doctrine of the agency of climate and the operation of local causes, while they must forever remain inexplicable upon the hypothesis of importation or contagion. I shall not deem it necessary to enter into a particular investigation of the merits of the latter opinion, but shall content myself with proceeding to notice some of those local peculiarities which seem to be in a very especial manner connected with the history of the Fever.

The geographical limits to which it is so singularly confined, is a part of its history, requiring notice in discussing the important question of its origin. It is generally known, to be restricted in its range, to the littoral borders, or maritime regions of the American Continent, and the West Indies; never spreading in the Country, or beyond those places situated within the influence of the *tide-waters* of rivers: for though persons who have taken it in the latter places, have often carried it into the interior, the cases have always terminated with the individuals who have so conveyed it. I am aware that some of our Towns in

* The Doctor speaks of an inflammatory diathesis, but neither dissections nor external indications, evince that there is any thing inflammatory in the disease. The fever can only be regarded as a transient effort of the *vis-medicatrix* of the constitution, exhibiting no marks of high excitement or inflammation.

inland, and mediterranean situations, have been subject to epidemic visitations, which have been supposed to be Yellow Fever; yet that the disorder was mistaken in these instances, and was really a high grade of Bilious Fever, we must believe; for certainly, if the above places were liable to the former disease, the interior Towns of the West Indies would likewise be subject to it, of which there is, as yet, no example. On the contrary, strangers may go to any part of the West Indies, other than a sea port, with perfect safety, in those seasons, when the maritime Towns are desolated with Yellow Fever. Every Practitioner who has had sufficient experience in the complaint, knows how often it happens that other diseases are mistaken for it by those who have not had an opportunity of becoming familiar with its distinguishing symptoms: even fevers of a remittent type, are frequently pronounced to be Yellow Fever, though the last, as I shall hereafter more particularly remark, is neither ushered in by chills or resolved by perspiration, and consists of but one paroxysm, followed by a collapse, and prostration of the whole system, which forms the second stage of the disease. The black stuff ejected from the stomach in high grades of Bilious Fever, gives origin to this mistake, being generally supposed to be Black Vomit; though when held up to the light and closely inspected, it will be found to exhibit a green or coppery tinge, indicating its Bilious origin, while the Black Vomit of Yellow Fever, however narrowly examined, appears in every light, of a peculiar, and unvarying blackness. But more detailed views of the distinction between the two diseases will be given hereafter. It would then seem, that there is some quality in the air in the neighbourhood of the sea, and of its tide waters, which is necessary to the spread and action of the infection. What this *airy something* may be, I shall not at pre-

sent attempt to investigate. I should also be inclined to consider it as a matter of mere philosophical curiosity, to enquire into the nature of those peculiar *lædentia*, or specific gaseous poisons, which may constitute the immediate causes of Yellow Fever; for even were we enabled precisely to identify them, their widely diffused and general agency, probably places them beyond our control, and we could only counteract and prevent their effects, by the same means which we adopt in our ignorance of them; that is, by directing attention to the cleanliness of our Cities, and improving and enforcing our police regulations. If the foregoing views be correct, in order to the production of Yellow Fever, the following exciting causes must combine; namely, a Town of dense population in the vicinity of the ocean, or within the influence of its tide waters, and, above all, a season *generally sickly*. Under a combination of this kind, the Yellow Fever may always be expected, and where the most rigid attention is not paid to the means of prevention, never fails to appear, with a recurrence as certain as the uprise of the sun, or any of the most fixed operations in the general course of nature.

Another argument that I shall urge in proof of its non-contagious nature, is deduced from the success, which has attended the application of police measures to its prevention, in the case of Philadelphia. Though that city has resorted to the experiment of quarantine laws, sporadic cases of Yellow Fever take place there every summer; yet the disease, as we have seen, never spreads itself, but is kept down, or confined to very narrow limits, certainly by no other conceivable means than by the vigilance with which every thing is removed that might favor its extension, or impair the general state of the air. It being then a matter of record and of unvarying experience that the Fever never originates *without*, nor never spreads *be-*

yond the limits of a city; when it is notorious that natives in many parts of the continent, as in Charleston, are exempt from the malady, which can only be understood by admitting the influence of climate; when further it is an established law of contagions, that they are not affected by the access of cold weather, but on the contrary are arrested by atmospherical warmth, which is known to be the very reverse of the history of Yellow Fever :* can the members of the Boards of Health in the Northern Cities seriously believe the disease is to be kept *at arms length* by a system of *quarantine*, and is to be arrested *within cannon shot* of their shores!—This with a reversal of the application, is realizing the fable of the one-eyed stag. While they thus exclusively direct their views to the ocean, and are keeping a vigilant lookout towards the only quarter from which no danger is to be expected, the disease wafted on the wings of exhalation, makes its deadly approaches from behind, and with the true characteristics of pestilence and death, glides unseen along the streets, into the palace and the hovel, “wasting at midnight and the undreaded hour of noon,” and like the wolf among the silly sheep, quietly selects its victims for destruction. It is to be hoped that so enlightened a Physician as Doctor Hosack, who has been cited as advocating the doctrine of contagion, may on a little further reflection be induced to take a more philosophic view of the subject than a mere quarantine officer, and will see the propriety of assisting to open the eyes of his fel-

* “I have already noticed the constant extinction of Yellow Fever by frost, as one of those points in which it exactly resembles the *marsh*, and only the *marsh* fevers. This instructive and highly important fact is however, capable of a more extensive application, for it not only proves the origin and nature of all these fevers, but it also proves decidedly that the Yellow Fever has no power of *propagating* itself by contagion; and consequently, that it never *proceeds from it.*”
BANCROFT.

low citizens to the real sources of the disorder. By an attention to these, the managers of our Boards of Health throughout the United States, will at once be more *at home*, as to the origin of the disease and the proper methods of preventing its ravages.* There can be no doubt that in those places, in the neighbourhood of New-York and Baltimore, where the Fever

* "Party zeal and prejudice often render men incapable of deriving any evidence or information from facts, but such as suit their own views and purposes. Doctor Chisholm, at page 205 of his *Letter* to Doctor Haygarth, introduces *one* to himself, from Doctor Hosack, dated, New-York, July 9th, 1808, in which there is an abundant display of zeal, I do not say for maintaining the cause of truth, but for asserting the supposed contagion and importation of Yellow Fever: he also communicates his intention to *write* and *print* a letter, charging Doctor Miller with "*want of candour*," in his official report to the governor; which charge he founds upon the following statement, viz.

"As a member of the Board of Health, he (Dr. Miller) must have known that the disease was confined for many weeks to a *small portion* of the *eastern side* of the city, and that, not a case occurred in any other part of the town, that was not referable to *that*, as its source. Such was the statement of the Board of Health to our citizens, and, in consequence of which, they forbade intercourse with the infected portion of our city, and ordered an abandonment of that part of the town, &c."

"He adds, a few weeks after, the infection extended a few streets further. The Board of Health accurately defined its limits, and again declared, that still not a case occurred but could be traced to this *spot* of the city, as its source. Doctor Miller carefully enumerates the cases occurring, and the numerous parts of the city in which the sick reside, but as carefully *suppresses* the *observation* of the board, of which, too, he was a member, and must have known, that the persons so taken sick, had, prior to their attack, been exposed to the infection by frequenting the infected spot." How strangely Doctor Hosack *here* mistakes the obvious import or evidence of an important fact! One of the strongest proofs of the *local* origin of Yellow Fever, results from the circumstance of its *beginning*, and remaining, almost exclusively, in particular spots or situations. Of this, Doctor Miller was very sensible; and, if he omitted to state "the observation of the board," respecting it, he could only have done so because it appeared *superfluous*, after he had so distinctly mentioned the facts to which it related. And is it then possible, that Doctors Hosack and Chisholm can have been so inept as to believe that these facts could operate in supporting their opinion of the importation and contagious nature of this disease? Do they conceive, that if it were contagious, it would have been so many weeks confined to *one spot*, and that when

lately raged there existed local causes, which uniting with a state of the air, that *predisposed* to sickness, gave rise to the disease. I shall proceed to offer some suggestions towards preventing a recurrence of the disease among ourselves. On this subject, Philadelphia holds out to us an example, which we cannot too closely imitate. We have, indeed, already many admirable ordinances, which only require to be revived and enforced, to place us on a level with that city, on the score of cleanliness, and excellence of police. It would be expedient, also, that the Legislature should aid the City Council to provide for the paving of our streets

it afterwards "extended a few streets further." those only would have been attacked by it, who had *visited* that identical spot? This is exactly what would happen in regard to a disease not contagious, but arising from miasmata; because, the soil in which they are produced being *immoveable*, and its exhalations incapable of causing disease, at any considerable distance from their *source*, persons to be acted upon by them must necessarily approach that source. But contagion having no such immoveable origin will not be thus confined; persons infected by it, and sickening in different places, naturally infect others, who soon spread the disease widely, so that the spot where it first appeared often becomes less dangerous than most others and its atmosphere does not continue to produce disease, when the sick have been removed, and the houses shut up, as happens in cases of Yellow Fever. With the same *fatuity*, Doctor Chisholm, in his letter to Doctor Haygarth, has published one from Doctor A. Fothergill, late of Bath, who, writing to the American Consul, at Bristol, of the Yellow Fever at Philadelphia, in 1805, and mentioning that it had, in November, received a *check*, apparently from the *cooler season setting* in; adds, "It remained for some weeks a *local disease* in the southern suburbs," (adjacent to the *marshy low grounds*, at the confluence of the Delaware and Schuylkill) "but, at length, was communicated to several of the principal streets in the city, as far as Eighth Street, westward," (persons who had been exposed to miasmata in other places, happening to fall sick in these) "but it chiefly *infested* Water Street, Front Street," (running parallel with, and next to *Water Street*) "and the margin of the Delaware" He adds, "many of the professors, and medical practitioners here, *deny* that the disease is contagious, and in this *notion* the body of merchants bear them out" Dr. Fothergill, however, adheres to the *old notion* of contagion and importation and no wonder that it should have adherents, in men who fancy they can see evidence of a contagious quality, in facts which decidedly prove the contrary, to all who are able to reason with impartiality." BANROFT.

and lanes, as paved ways are more easily kept clean, than those, which are all the year deep in sand or mud, in which many animal and other putrescent remains, are often buried and concealed, while the exhalations from the mud, after wet weather, contribute greatly to impair the general state of the air. It would be further advisable, that the City Engineer should be employed to take the general level of the Town, and that the inequalities of the streets should be filled up, or levelled away, so as to afford a regular surface, from which by means of side drains, running to the waters edge, every offensive matter might be completely carried off. The present system of subterraneous sewers, I consider as of more detriment to the health of the City, than all the other sources of infection put together. In addition to the effluvia, arising from the mass of obstructed matter concealed within them, the necessity of frequently opening them and returning their foul contents to the surface, from which they are never removed, so that the soil of our streets becomes a compost of every thing deleterious, is a disadvantage which calls for their obliteration, or the effectual sealing up of their grates, as soon as proper side drains can be constructed. I am persuaded, that it would add much to the health of the town, if the citizens would be induced to abandon in the future construction of buildings, the present custom of digging subterraneous cellars, which become receptacles for foul air, and often from springs or rains. form bodies of stagnant water. The ground on which our City stands, is of too low and springy a nature, to admit of these substructions. Cellars above ground would answer every purpose, and would not be attended by any of the above inconveniences. Being convinced the dreadful malady which has so often arrested the prosperity of our City, is of domestic ingeneration, I had hoped that to demonstrate this,

as far as I was able, might perhaps have the effect of exciting a more serious attention to the means of averting its visitations. I have pointed out some of these means, and have shewn that the happiest success has attended their adoption in other places. It was generally understood that the Legislature would take up the subject, and perceive the *policy* and importance of making every effort to render the emporium of the State, the seat of Health, to which foreigners may safely be invited to become competitors in our market, for the products of our industry. This reasonable expectation however has been disappointed and the proposition to appropriate a sum of money for the improvement of the City was rejected in that Body.

It could not reasonably be required of the advocates of the measure, that they should furnish complete proof of the adequacy of preventive means to keep out the disease; the object proposed would necessarily be somewhat of an experiment, but it is an experiment which ought to be made. If however, satisfactory evidence on this head, be rigidly demanded, it may be said to be at hand, as we see in the instance of Philadelphia, that an exemption from the infection has been obtained by a strict attention to preventive regulations.

The last season was peculiarly calculated to test the effect of such regulations, as the Yellow Fever made its appearance in all its former haunts, and among other places in Philadelphia, but there, as we have seen, created but little alarm and soon disappeared. With this example before their eyes, of an apparent control exercised over the disease, quietly to look on, while hecatombs of victims among ourselves are almost annually swept off, is nothing less than criminal neglect in our public authorities. Our present system of public works, having for its ulti-

mate object, the improvement of the Market of the State, the opposition to a measure, which was intended to promote the same purpose, remains to be reconciled with consistency. This proceeding, by which the work of improvement was arrested at the very point, where it ought both to begin and to end, was indeed opposed by the best talents of the House, and stands recorded, as *a measure* of the wisdom and patriotism of a bare majority. Soon after the rejection of the appropriation for Charleston, a proposition was introduced for the establishment of a *Lunatic Asylum*, which it must be acknowledged, followed in very natural order, and ought to have succeeded: the Institution it contemplated, would have afforded appropriate accommodations for those who on the former question, had sturdily withstood every evidence of truth, every plea of humanity, and manfully opposed the plain interests of their constituents and the State. No expense, it seems, is to be spared in the opening of our rivers, in constructing roads and canals, and producing a convergence of all these towards the Capital; but the latter is to be left a prey to desolation, and the career of improvement is to stop short at its gates. The superintending care of the Legislature extends no further than to the Lines of Charleston, there suddenly encountering a magical barrier, which cannot be overpassed, or as if it were expected, that the corporation, which has only the municipal regulation of the city, should undertake and carry on those great objects of internal policy, which were involved in the proposed appropriation. But *finis coronat opus* ought to be the motto of the Legislature on this subject; the improvement and embellishment of the City ought to go on, hand in hand, with those other goodly works, which have been so happily begun, and be made to crown the whole. Were this policy pursued, our

Capital would, like the human body, acquire beauty as it improved in health, and become a point of increased attraction to trade and foreign enterprise. It would enjoy its due share in the vast prosperity of our country, and participate as largely as any other City of the Union, in its extended and increasing commerce, which

Ranging every azure swell,
And floating under every star.

places within our reach, the wealth and advantages of the remotest climes.



CHAPTER II.

On the distinction between Yellow and Bilious Fever.

Although the greatest writers on the disease have concurred in pronouncing, that it is totally distinct from Bilious Fever, and is characterised by a deficiency of bile, and notwithstanding the complete proof of this fact, afforded by the investigations of Dr. Physick and others, it is still a very general opinion with the public, and an idea yet lurking in the minds of many of the profession, that the former Fever is but a higher grade of the latter, or that at any rate the two diseases are mutually convertible into each other. The yellow suffusion under the skin and in the eyes, which so generally takes place in this epidemic, though it does not proceed from bile, yet so much resembles that secretion in color, and is so striking an appearance, as to have the ef-

fect of constantly reviving and keeping up the above delusion I shall endeavour once for all, to put an end to this ignorant mistake, first by ad lucing the decisive results of the dissections made by Dr. Physick, whose name must ensure attention to every thing which appears under its sanction. This great man whose science and success in his profession, have given it a new title to be called the Healing Art, and whose philanthropy and generous sympathies, impart to his medical attentions, the grace and consolations of friendship, has shed a broad and lasting light over this subject, which ought long since to have dissipated the errors that still prevail respecting it. To the extracts from his letter to Dr. Mitchell, I shall add the opinions of several other distinguished Physicians, illustrative of the same point. The following are the results of Dr. Physick's researches: "the liver was generally found of a pale appearance. The matter of Black Vomit, commonly found in the stomach, and sometimes in the intestines, *was never discovered* in the gall bladder, the liver, or any other viscus or cavity. The stomach has sometimes been loaded with this black matter, while in the same subject, not only the liver was free from disease, but the bile in the gall-bladder was in its natural healthy state; and this in several cases where a contraction of the pylornus had completely obstructed the passage from the dusdenum into the stomach. The matter of black vomit is, besides, essentially different from bile; it differs in color, for however dark the bile may appear in its most concentrated state, it always displays a yellowish or greenish yellow tinge, when spread on a white surface, or even diluted; but if the Black Vomit be treated in the same way, it retains its black or dark brown appearance. It has also been found that an addition of bile to the latter, altered its nature, and gave it consequently a different appearance;

nor could the Black Vomit be imitated by any mixture of various proportions of dark colored bile with the fluids found in the stomach. It differs likewise most decidedly in taste; the Black Vomit being always insipid when freed from other foreign matter, whereas the bile can never be deprived of its intense bitterness—The above observations have appeared to me (says Dr. Physick) to overthrow the idea of the Black Vomit being secreted by the liver.”

Doctor Henry Warren, in his treatise on the Malignant Fever in Barbadoes, (1740) observes: “That the Fatal Black Stools and Vomitings, are vulgarly supposed to be only large quantities of black bile or cholera; which *false notion* seems to be owing to that *fixed unhappy prejudice* that *the Fever is purely bilious*. But any one will soon be undeceived, by dipping in a bit of white linen which will be tinged of a deep bloody red, or purple, as I have proved by many experiments.” Dr. Bancroft also says, “That the true explanation of the most common formation of Black vomit seems to be that it is merely blood, which has been effused from some of the small arteries, and coagulated within the cavity of the stomach, or on the surface over which it was effused, and having been afterwards detached and triturated by the violent and frequent contractions of that organ, in the efforts to vomit, has had its appearance as a coagulum of blood altered, and its color changed by some chemical decomposition or darkened by the gastric juice.” These facts, as they decidedly shew, that there is no bile in the case, likewise necessarily establish that Yellow Fever never can become a Bilious Disease, and proves in fine, the inconvertibility of the two disorders into each other. The Yellow Fever, occurring in, or near to those situations, in which autumnal or Bilious Fevers usually prevail, is a coincidence, that has had a further effect in producing the idea of

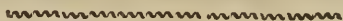
a consimilarity between the two diseases. I have, however, already endeavoured to shew, that the remote causes in the two cases are, to a certain extent, distinct; and that it is a combination of these causes which gives rise to Yellow Fever. I have mentioned that the effluvia arising from the concentrated population of a City, are not sufficient of themselves, to create the latter disease, and that it is only when they come in contact with an unusual mass of miasmata in the general atmosphere, that the Yellow Fever is produced. That therefore the country must be unhealthy before the town becomes so. When the great body of the air is loaded with those deleterious exhalations which occasion bilious remittents, the superaddition of the various noxious emanations proceeding from an ill cleansed City, necessarily ingenders a malignant disease. Individuals labouring under intermittents, having been sometimes attacked with Yellow Fever, is another misleading circumstance, which has strengthened the notion of the interchangable character of the two disorders;* but this fact, surely proves nothing more, than that during the prevalence of a desolating pestilence persons are not secured against it by the presence of other diseases; an impaired state of the health, indeed, would only the more readily invite its attacks. Neither does the dreadful Epidemic we are discussing, resemble any of the Fevers of a Nervous or Typhus type, inasmuch as it is never ushered in by any very decided chills, or rigors, has no remissions or inter-

* "As a farther proof of the identity of Yellow and Marsh Fevers, I shall remark that, besides their *simultaneous concurrence*, and *mutual interchanges*, as before mentioned, they are not unfrequently converted one into the other, in the very same individual." BANCROFT.

Never (says Dr. Rush) has the unity of our autumnal Fever, been more clearly demonstrated, than in our present Epidemic. Its four principal grades, viz. the Intermittent, the Remittent, the Inflammatory Bilious Fever, and the Malignant Yellow Fever, *have all run into each other* in many instances.

missions, and never resolves itself by perspiration, or profuse sweatings, the system seeming quietly to collapse and succumb under the force of the disease. It is also especially to be observed, that though it is accompanied by the utmost debility and prostration of strength, the practitioner cannot, as in the fore-mentioned diseases, avail himself of the aid of stimuli, to arouse, through the medium of the stomach, the dormant and flagging principles of life, being precluded from the use of this class of remedies, by the peculiar irritability of the stomach, in all Yellow Fever patients, which renders it little less than death, to administer any thing of an exciting or stimulating quality: and though it arises like the Jail, Hospital and Camp Fevers, from the effect of crowded situations, where animal emanations, or human effluvia, meeting with miasmatic principles in the air, favourable to the production of disease, return in a morbid shape and act deleteriously on the body; it is also widely distinguished from these diseases. It is unnecessary to enumerate the discriminating symptoms, but the circumstance before alluded to, that of the irritability of the stomach in Yellow Fever, which deprives us of the use of that organ as a point from which, by means of diffusible stimuli, to call into action the latent energies of life, constitutes a sufficiently broad line of demarkation between the respective diseases. In every view then, the Yellow Fever is a disease strictly *sui generis*, which cannot run into any other, or any other into it; neither of these occurrences being any more possible than that Small Pox should become Measles, or the latter be converted into syphilis or Jail Fever. As it is a point gained, to establish what a disease *is not*, as well as to ascertain its proper diagnostics, I have thought it right to premise thus much, as to the individual and peculiar character of this order, to which a Protean,

or omniformous quality. has been so erroneously ascribed. I shall next offer my views on the subject of its pathology, in which there will necessarily be some blending of theory with facts; but not to the extent of substituting mere speculation for reasoning and the results of experience.



CHAPTER III.

Theory of the Disease.

That on the correct theory of a disease, its successful treatment essentially depends, is so obvious a truth that no labored argument is necessary for its support. A late writing, in adverting to this principle, quotes a passage from the celebrated Boerhaave, to the same effect, who says that it is a custom among the Turks, which it might be expedient to adopt, never to allow a Physician to prescribe for a Patient until he has given an explanation of disease. So far is the Medical world at present, from having attained any precise knowledge of the distinctive traits of the Yellow Fever, that not only are the various appellations by which it is distinguished, confessedly inappropriate,* but we also find the most recent wri-

* "This Fever has been called Typhus Ictorodes, by Suavages, and Typhus Cum Flavidine Cutis, by Cullen: among the French it is known by the names of Maladie de Saim, and Fievre Matelotté: and among the Spaniards, by those of Vomito Prieto. and according to Coreal and Ulloa, Chapetonada. The title bestowed by Suavages, is improper, because (independently of any discoloration of the skin) it is not connected, at least, usually, with any morbid state of the liver or of the bile, nor with any permanent obstruction of the passage of that fluid into the duodenum, causes to which Icterus or Jaun-

ters on the disease, confining themselves almost exclusively to the use of negative terms. in their various attempts to describe it. We are very correctly told, that it is not bilious, that it is neither putrid nor inflammatory, but in what its specific character consists, no one has as yet been enabled successfully to determine. The observation made by Dr. Physick, that the black vomit, as well as the dark matters ejected from the bowels, are secretions from the inflamed blood vessels of the stomach and intestines, is in my opinion the nearest approach which has yet been made towards a development of the true nature of the complaint. That *morbid secretion*, forms the immediate source of the disease, all its various phenomena and symptoms tend, I think, most clearly to establish. This diseased process extends, in my view of the subject, to the entire mass of the smaller arteries and blood vessels, and is carried on in every part of the System to which they reach, as is plainly evidenced by the yellow depositions under the skin and in the eyes, and the effused matters found in the

dice is commonly referred. Dr. Cullen's words, *Cum Flavidine Cutis*, as well as the English of that, "Yellow" are objectionable terms, because they draw the character of the Fever, from a symptom which is very often wanting even in the most severe cases of the disease, and which, certainly, is not always of high importance when it does occur, very many persons having recovered after being remarkably Yellow. The term "Black Vomit," is likewise objectionable, because this symptom does not occur in a very large proportion of the persons who are attacked by this Fever; it is moreover certain, that neither the yellowness of the skin, nor a discharge of a dark colored matter by vomiting, nor even the existence of both these symptoms in the same patient, is peculiar to the disease. It is unquestionably of great moment, both for the advancement of science and the prevention of dangerous errors in practice, that diseases should not be arranged under improper titles, and of all titles none can be more improper or tend more to embarrass inexperience, than such as are borrowed from certain symptoms, which, like the yellowness of the skin and the Black Vomit, besides being wanting in the great majority of patients do not in general make their appearance, when present, till towards the close of the disease." BANCROFT.

brain, which are unquestionably secretions from the minute ramifications of the arteries and veins of those points. The smaller blood vessels taking on this morbid secreting action, and thus creating disorder throughout the whole animal economy, I consider in a word, as the disease itself, constituting a peculiar vascular affection, to which I should apply the term *Morbus Vascularis*, as more appropriate than any other designation which it has yet received. The broken down and disintegrated state of the blood, which is remarked in all genuine cases of the Fever, probably excites in the first instance, and at any rate supplies and keeps up the vitiated secretions which have been described: It is not perhaps given to us, to live into the cause of this singular condition of the vital fluid, but our ignorance in this respect may not be of much consequence, if it can be shewn that it does not prevent the successful treatment of the disorder, which is what I hope to do in the course of the present undertaking. The different effects of climate will never perhaps be satisfactorily accounted for; we see its impression sometimes manifested in the disorder of particular Viscera, as of the liver, in many instances; and thus in Yellow Fever, the lesser blood vessels appear to be specifically acted upon. If the doctrine be admitted, that the whole *onus* of the disease, falls exclusively on the vascular system, not only may most of the symptoms which present themselves in its progress, but also the appearances which are exhibited on the dissection of the Yellow Fever subject, be readily traced to an intelligible origin. The secretions entered into by the blood vessels of the stomach, by ultimately occasioning the engorgement and distention of those organs, would necessarily produce a thickening and enlargement of the coats of the stomach itself, and thus give rise to its peculiar irritability which forms the most distressing and unmanagable

symptom of the complaint. A similar process going on in the sanguineous vessels dispersed through the substance of the brain, will account for the stupor and other cephalic affections, and particularly for the dreadful delirium, and those paroxysms of violence which characterise the more fatal and malignant cases. The remarkable suspension of all the natural secretions which occurs so early in the Fever, adds, I conceive, a very strong corroboration to these views, as it takes place simultaneously with those unhealthy secretions, commenced in the lesser blood vessels. The functions of the liver seem totally suspended, while the dryness of the fauces and paucity of urine, throughout the attack, indicate a like non-performing state of the kidneys, and salivary glands. The inertness of the skin, also deserves our very particular attention, as it is greater in this than any other form of Fever whatever, the disease never resolving itself by perspiration, or any critical discharges from the surface. The brain, which is to all intents and purposes, a discerning organ, as it separates from the mass of the blood the nervous fluid, to distribute and circulate it through the system, partakes in like manner of this general suppression of the natural secretions. The excessive debility and prostration of strength, so conspicuous in all cases, must be ascribed to an interruption of the supply of the *Vis-Vitalis*, or nervous influence, on the due dispensation of which all the healthy actions and vigor of the system seem essentially to depend. The influence of the nervous over the arterial system, is admitted by all Pathologists, and where we have, as in this epidemic, but little Fever, with a fatal debility and prostration of strength, the office of the brain must be supposed, to be materially interrupted, if not nearly suspended.

The last circumstances which I shall deem it necessary to notice, in considering this part of the subject, are those profuse hemorrhages, both external and internal, which make their appearance in the last stage of the disease. The origin of these is obvious, according to the foregoing ideas. A necessary effect of the inordinate secretions, which I attribute to the minuter blood vessels, would be the over distention and final rupture of their extremities, resulting in those discharges of depraved blood from the stomach, and also from the fauces, nose, ears, and every esmunctory of the body, which generally terminate the catastrophe of the disorder. The short paroxysm of Fever, with which patients are at first attacked, is only to be regarded as a transient struggle of the *vis-medicatrix* of the constitution, against that undue action in the smaller sanguineous organs, which I have indicated as the primary source of the disease. The indication of cure to be drawn from the survey here taken, after a short description of the symptoms, as they have presented themselves to my observation, will form the subject of another chapter.

SYMPTOMS.

THE particular time at which persons are attacked, seems first deserving of notice. This is generally just before day break, at the period when the collapse of sleep is probably most complete. The seizures which occur thus early, I have observed to be usually more severe, and are more apt to terminate fatally, than such as take place in the forenoon, for persons are rarely attacked at any other than these periods, in the twenty four hours. In the first instance the patient often awakes in violent tormina, effecting the stomach and bowels, which seems to

suspend, or put off the febrile action, for it is not until the decline of the pain that the fever commences. In common, however, the symptoms are such as have often been described; namely a sense of lassitude with pain of the head, back and limbs, accompanied by *nausea*, and uneasiness of the stomach. The fever sometimes immediately succeeds these affections, at others it is ushered in by an obscure chill, or slight rigor. The arterial action is considerable, attended by a parched state of the skin, with flushing of the face, and redness of the eyes—the last however is not an invariable symptom. The pulse is in most cases tense and strong, but in a few instances, irregular and oppressed, while the tongue continues clean and gummy, being very seldom foul or covered with a white furr. The patient always complains of great oppression of the Præcordia, and is exceedingly dispirited, sighs much and is often affected with slight delirium or wanderings of intellect. These symptoms are followed by frequent retchings, and the discharge of various foul matters from the stomach, the chief of which seems to be a bilious saburra, which is probably always more or less accumulated in the first passages. In these vomitions pure bile is sometimes thrown up, but which, as has been shewn, has nothing to do with the disease, being caused altogether by the violence of the efforts to vomit, which has the effect of emulging the biliary duct, as often happens in cases of common sea sickness. Flatulence is another distressing symptom, which seems to be confined wholly to the stomach, and though the patient appears to be often on the point of getting rid of it by ucteration, a regurgitation to the stomach takes place, and this wind or gastric gass thus continues to undulate, creating great distress and restlessness. The paroxysm seldom extends beyond thirty-six hours, though it may be pro-

tracted to forty in a few instances. Its subsidence, which is never marked by any critical or perspiratory discharge, is succeeded by a remarkable quiescence, and in fact collapse of the whole system. The pulse becomes equable and natural, the skin relaxed and cold, the intellect clears up, and the patient appears to be doing well. There is sometimes, however, at this period of the complaint, a stupor, which is always a symptom of great danger—another bad sign, in a morbid irritability of the stomach, manifested by a renewel of the efforts to vomit whenever pressure is made by the hand on that organ. It is also a very unfavourable symptom, when the patient expresses an opinion that he is well, or that very little is the matter with him. The last and most fatal effects of the disease, are an increased debility and prostration of strength, a sinking of the pulse, and an exarcebation of the irritability, pain, and heat of the stomach, followed by incessant strainings to vomit, and repeated discharges of the black vomit, or stuff resembling coffee grounds, with a dejection of similar dark matters from the bowels. The urine at this time becomes dark and fetid, the yellow suffusion with petechiæ make their appearance, and hemorrhages from the fauces, nostrils and other external surfaces take place. Finally, the pulse intermits, the breathing becomes laborious, the extremities gradually grow cold, and life ceases. The symptoms here detailed, are not, it is to be observed, invariable either in order or occurrence. Patients often die without either the hemorrhages, black vomit or yellowness of the skin. The last-mentioned peculiarity sometimes shews itself immediately on the decline of the fever, and may always be regarded as a certain precursor of the formation of the black vomit. In the early part of the season, the cases usually terminate on the fourth day, (reckoning always the natural day

of twenty four hours.) As the season advances, they extend themselves to the sixth day, when the worst symptoms appear on the fifth. Towards the end of the summer, the disease is sometimes protracted to the eighth and thirteenth days; during this long collapse, the patient generally remains perfectly quiet, though very much prostrated, except where injudicious attendants tamper with the stomach, by improper administrations, and bring on the vomiting and other afflicting symptoms.

Although, as I have before observed, this disease is dissimilar from every other whatever, it is yet susceptible of a certain degree of modification, as we have a *sub-grale* of it, which in a majority of cases, eventuates favorably on the third day, by perspiration, and is never accompanied by the Black Vomit, Hemorrhages, or any of the more violent symptoms. This mild form of the Fever, is capable however of being exasperated into a serious disease, by improper treatment, particularly by the administration of *mercury*, which being an excitant of secretion, brings on all the fatal affections which characterize the higher grade of the Fever. In connection with this part of the subject, it is proper to observe, that strangers are frequently seized in the early part of the season, with Bilious remitting and intermitting Fevers, and though where they recover from these, they are less likely to have the Yellow Fever, they are still liable to take it, by improper exposure or excitement of the system. As persons in this climate can never have the disease but once,* there can be

* In the first part of these numbers, I endeavoured to account for the liability of Natives to the disease, in the more Northern Cities. In this I have yielded to the authority of Physicians in those places, who have so reported the fact. I am, however, strongly inclined to doubt, whether an adult, who has once passed through a Yellow Fever summer, or through the disease itself, is ever subsequently in any danger from it. Where the contrary has been supposed to ap-

no doubt, that where strangers experience a second attack, either in the course of the same season, or at any subsequent period, that the disease was mistaken in the first instance and was not Yellow Fever. Evils arise from a misapprehension of this sort; in the first place, an erroneous practice is adopted, for the same remedies that cure a Bilious remittant, are injurious to the Yellow Fever patient; in the next, the person who has been illusively led to believe that he has undergone the necessary seasoning to the climate, throws off all precaution, and is liable to be carried off by the genuine disease. From the description which has been given, it will be seen, as observed in the former part of this discussion, that the Fever consists of but *one paroxysm*, a circumstance which has never been sufficiently adverted to.—For want of attention to this fact, the mistakes above described, have but too often been made, and Fevers of a Bilious character, which are mostly very manageable by common means, have been pronounced to be Yellow Fever, and the latter disease, supposed to be cured, where it never existed. The young practitioner is apt to be deceived by success of this sort, and at once imagines, that like the Chalcas of Homer, he has discovered the true means of arresting the arrows of pestilence. Those, however, who indulge in this overweening confidence, should bear in mind, that it is only by experience and close attention, that any accuracy can be attained in distinguishing between the two diseases, and that in fine, there is no *short way* to success in this or any other science, not even for the most gifted minds. The soil of genius is indeed endowed with natural riches; its surface is covered with flowers, and

pear, I cannot but believe that a high grade of Bilious Fever has been mistaken for the more Malignant Epidemic.

its bosom filled with gems, but though the first may be gathered without labor, to grace the hand of Rhetoric or the wreath of Poetry, the latter are not to be come at, but by a process of mental mining, and patient toil, the hard condition annexed to every acquisition, that is of any real value or utility to mankind.

CHAPTER IV.

Medical Treatment.

Although there will be found a strict agreement between the Theory of the disease, which has been advanced, and the Medical Treatment, now about to be recommended, the latter was not originally deduced from or founded upon the former. In practising in the Fever, it was an obvious indication, to allay or reduce as far as possible the inquietude of the stomach, which is so afflictive to the patient, and forms so baffling a symptom to the physician. Finding, after the trial of a variety of remedies, that the *saccharum saturni*, or *sugar of lead*, was the most effectual for the purpose, the rationale of its operation led to those views of the disease, presented in the third Chapter of this Essay. It may be right, before entering more directly on the present subject, to give a general idea of the powers of this medicine, and to remove the mistake respecting the supposed danger of administering it internally, a notion very prevalent with the public, but known to physicians to be without foun-

dation. I shall adduce authorities on this point, which will be found to be perfectly satisfactory and decisive. I deem it necessary to premise, that it is not my intention to hold up this remedy, as a specific in the Yellow Fever, but simply to shew, that its exhibition has been successful in so many cases, as to render it deserving of attention, and that its known properties adapt it, in a peculiar manner, to meet the different symptoms of the complaint. It will be in my power to corroborate my own statements respecting its efficacy, by the concurring testimony of physicians of eminent character in this place, who, having tried it, highly approve of its use. Among these I will take the liberty of mentioning Dr. Samuel Wilson, sen. whose experience, extensive practice, and distinguished standing in his profession, must give weight to his attestation on such a subject: Dr. Furman also, whose superior intellect, and medical erudition, entitle his opinions to peculiar attention; having given a full trial to this medicine, is convinced that its administration in Yellow Fever, is attended with the highest advantages. The public production of names, is always a matter of delicacy, I cannot however refuse myself the satisfaction of adding to the above, that of Dr. Wm. Warley, whose talents, judgment and integrity, must give impressiveness to his testimony in the minds of all who know him. He informs me, that though his experience in the disease, and with the use of the remedy, have been limited, he has been struck with the admirable effects of the lead, and thinks that it will prove a valuable remedy in the Fèver. I should state, that it was not until the complete failure of mercury as a cure, that I resorted to the article in question. It will hereafter be shewn, more at length, that mercury is not merely ineffectual, but inert, in the worst cases, and only operates when, by an effort of nature, the disease has

taken a favourable turn, and the revived sensibility of the system enables it to act, or, in other words, to salivate after the danger is past. Salivation and recovery being merely coincidental, and not connected in the order of cause and effect * I am further countenanced in recommending it, by the high opinion of its powers expressed in a personal communication by Professors Chapman and Physick, the present luminaries of the University of Pennsylvania; an institution, which in the learning and ability of its teachers, and the number and proficiency of the graduates, whom it annually adds to the ranks of science, is on a level with the most celebrated seats of learning in the old world. That it may continue to flourish, must be the wish of every friend of science and of the glory of this country; and it is consoling to reflect, that its extensive reputation and venerable standing can never suffer diminution, while its most important chairs are filled by such illustrious ornaments of their profession, as a Physick and a Chapman. Dr. Cullen in speaking of the effect of the *saccharum Saturni* in repressing hemorrhagy, observes, that if there be an article of the *Materia Medica*, which is entitled to the character of a specific, it is this, as in arresting the eflux of blood, it certainly exercises a power more striking, and more directly conservative of life, than any other medicine whatever. Of its efficacy in uterine, and also in pulmenary hemorrhage, Dr. Barton, in his edition of Cullen, thus expresses himself:—“The observation of the respec-

* From 500 to a 1000 grains of Calomel have been given in some cases, without producing any sensible effect, the prostrated state of the vital powers affording it no basis on which to act: as soon however, as the renewed vigor of the system allows it to operate, it produces all the inconveniences, distress and injury, of salivation, besides retarding the cure. Those who thus surcharge their patients with *quicksilver*, should not be surprised at their *slipping through their fingers*, as they so often do.

table Dr. Reynolds of London, are well known; and the experience of other Physicians, has, I think, sufficiently established, the vast and unequalled powers of this article, as a sedative or astringent, in dangerous bleeding from the various parts of the body. In many cases of such bleedings, either uterine, or from the lungs, I have exhibited the sugar of lead, generally, in combination with a pitance of opium, or sometimes with a portion of Ipecacuanha. Seldom have I been disappointed in my expectation of benefit from the medicine, which of all the articles of the *Materia Medica*, seems to possess the greatest command over the arterial system. In no instance have I perceived any dangerous effects, and rarely any temporary inconvenience from the employment of lead." Dr. Chapman, also says,—“Not a doubt do I entertain of the utility of the acetate of lead in uterine hemorrhage. The testimony of so cool, so cautious, and so deliberate an observer as Dr. Barton, whose scope of experience with it, has been very wide, is alone satisfactory to me, but to those who are less acquainted than myself, with the acuteness of the discernment and the accuracy of the judgment of that truly philosophical Physician, it may not be altogether improper to mention, that his *original* account of the success of this medicine, in uterine hemorrhage, has been fully convinced by the *subsequent* observations of a very large number of respectable practitioners throughout the country.”

Dr. DeWees, in his abridgement of Heath's translation of Baudeloque's system of Midwifery, remarks, that his author “was not in possession of one of the most powerful remedies yet discovered, for the suppression of hemorrhage, the acetate of lead.” After giving some general directions as to the treatment to be pursued before exhibiting it, he goes on, “The acetate of lead may be given with freedom and cer-

tainty, from three grains to ten, every half hour, until its effect is obtained. It will perhaps surprise, when the remedy is recommended in such large quantity, and in such quick succession; but I have not only found it safe, in such quantities, but necessary." A case of epilepsy, cured by this medicine, is reported in the 2d volume of the Medical Repository, by Dr. Earle, of Manchester, Pennsylvania, who states, "that from the first exhibition of the remedy, the disease never returned. He (the Patient) however continued to use the medicine for five successive periods of full moon, in order more effectually to break through the former morbid habits of his system. He now enjoys perfect health, nor did he experience any ill effects from the lead during the time he took it, except some slight cholic pains. a few days after he had taken the first dose." These evidences, while they are sufficient to shew, that it may be taken internally without danger, also prove it to possess curative virtues of the highest order. But if it be thus useful in the cases, which have been described, it must be a still more valuable application in the hemorrhages of Yellow Fever, which are the result of a general diathesis, and particularly in the stomach, constitute a pathognomonic symptom. Dr. Cullen observes, that it is more especially in those bleedings which result from a relaxation, or loss of tone in the extremities of the blood vessels that the lead does good; and precisely of this description, are those oozings of blood from the ends of the arteries and veins, which occur in the Yellow Fever. It is an opinion with many Practitioners, that it is apt to conflict idiosyncrasy. or particular habits of constitution, but so far from finding this to be the case, it has in my hands been more uniform in its effects than any article I have ever employed, this being, according to

ges. I have before remarked, that in Yellow Fever, the stomach is incapable of diffusing stimuli of any sort, owing to its peculiar irritability, the whole sensorial power appearing to be concentrated upon it, through the medium of the nerves. It is surely then a desideratum to find a remedy, which shall at once allay this irritability, and at the same time exercise subtonic powers upon the system at large. This advantage appears to be supplied by the sugar of lead, which while it tranquilizes and is retained by the stomach, has the effect of constringing the muscular fibre, and imparting tone to the vital powers generally. It also acts indirectly as a tonic by quieting the system, and allowing Nature an opportunity of reviving and the vis-medicatrix of the constitution to come into play. Its impression conveyed through the channel of the nerves to the sensorium communcæ. gently excites the vital energies, and occasions a salutary diffusion of the nervous influence throughout the system, being the only medicine that can produce this desirable effect, without offending or irritating the stomach. It is supposed by many, that it is liable to produce obstinant constipations, but this is a mistake; the first does even very frequently operate as cathartics and the bowels always retain their sensibility, when the highest doses are given. I think it apparent then, that in directing ourselves to the symptoms of the disease, as they are presented to common observation, and without reference to any theory, the practitioner would have every inducement to adopt this medicine, and would give it a preference, simply for its effect in composing the stomach, the seat of so much inquietude, and of so many formidable and fatal symptoms. It seems to have been demonstrated by the investigations of comparative anatomists, that the stomach forms the most essential organ of the living system, as there is no example

of any organized being in whom it is wanting, while there are many animals, who are without the other important viscera, such as the liver, lungs, and even brain. Another proof of its primary importance in the animal economy, is, that fevers affecting the whole system (as is observed by Dr. Webster, an eminent European Physician) are often cured by remedies addressed to the stomach alone. An emetic dislodging its foul contents, and arousing its energies into action, has often succeeded in breaking and dissipating a fever, that has resisted every other mode of treatment. I conceive it therefore to be of the utmost consequence in the Yellow Fever, to obtain a mastery of the stomach, not only as it appears to be primarily affected, but as it affords the proper point from which to act with success upon the sensient or vital principle, and counteract the disease. Opiates and stimuli of all kinds are found to exasperate its irritability in the highest degree, and even calomel, though it is better retained than the former, is yet extremely oppressive and must therefore be injurious. A dose of calomel disorders this organ in the healthy subject, and of consequence cannot but be pernicious to the diseased stomach of the Yellow Fever patient. I have thus endeavoured to shew that the use of the *saccharum saturni* is called for, even according to the usual views entertained of the disease; but if there be any correctness in the idea broached in the former part of this essay, that the disorder arises from, and depends wholly upon morbid secretion, the employment of this remedy seems to be more especially demanded. The first effect of the *saccharum saturni*, is to tie up and correct those viciated secretions, which are constantly acting upon and destroying the texture of the blood, and thus directly invading the source of life, and giving rise to those violent affections of the stomach, brain, and

other viscera, which are unhappily familiar to the unprofessional as well as the practitioner. The rejection of mercury, which is an excitant of secretion, necessarily follows from these ideas, but a distinct section will be devoted to the consideration of the Ptyalismal treatment which is still so much relied on. I shall now proceed to detail, the general treatment which I have pursued in the disorder:

Notwithstanding the prejudice which prevails against the use of Emetics, in this disease, they may be resorted to on the first access of the fever, and before the irritability of the stomach commences, with very great advantage. In all cases, the stomach is loaded with various foul matters, which can never be effectually dislodged by cathartic medicines, and only to be got at by the direct operation of emetics. In the commencement, therefore, of the febrile stage, an emetic will be found useful, though its repetition is never adviseable. During the progress of the complaint, saline purgatives, occasionally administered, according to the state of the bowels, will answer every further purpose of evacuation. Great caution, however, is necessary in having recourse even to these, for the disease is marked by so much debility, that every care must be taken to avoid weakening the patient, or exhausting the vital principle. Depletion therefore, as a mode of cure, cannot be too much reprobated, as every thing should be done to conserve the strength, and keep the system easy and undisturbed. The abstraction of blood can but rarely be requisite, and the practitioner has only one great and plain rule to observe, that of *keeping his hands off the patient* as much as possible, and allowing nature to do her part, only occasionally favouring and assisting her efforts. He is above all to avoid tampering with the stomach, which is so easily exasperated into incurable irritability by

administrations of an exciting quality. The ulterior effects of the disease certainly shew themselves most conspicuously in the stomach and bowels, but practitioners in endeavouring to relieve these, though right in their object, have been often wrong in their practice. Bark and wine, and stimulants of all kinds, do infinite harm in this disease, and are forbidden by every view of its phenomena and symptoms. Where we have, as in the second, or collapsed stage of the complaint, a sunken pulse, livor and paleness of the countenance, with uneasiness of the stomach, and every evidence of excessive prostration, connected with irritability, to tranquilize and support the patient are surely the leading indications. Blisters are beneficial, both during the febrile action, and after its decline, and may be applied in greater or less number as the nature of the case may demand. Their application over the region of the stomach, seems to produce the most good, by diverting irritation to the surface, and tending to translate secretion from the internal cavities to the skin. It is on the decline of the fever, that the exhibition of the *saccharum saturni* is recommended. It may be given in doses, of from two and a half grains every two hours, to three grains every four hours, either in pills or solution, but always uncombined. The intervals between the doses, are to be shortened or extended as the greater or less urgency of symptoms may require. Some of the profession, who have been induced to use this medicine, have complained of being disappointed in its effects, but, in these instances, it has seldom received a fair trial, not having been resorted to until every other remedy has failed, and was thus employed too late or not persevered in sufficiently. Bark does not always cure intermittents, or mercury eradicate syphilis, and thus the *saccharum saturni*, though it deserves, I think, to be considered

as a valuable remedy in Yellow Fever, will yet, no doubt, often fail of the desired effect. After having given the fullest trial to various methods of cure, particularly to the plan of mercurialization, and the course of super-venesection, once so strenuously recommended by Dr. Rush, and the ultra-phlebotomists of his school, I have found the simple mode of treatment above laid down, to succeed better than any other; producing a favorable result in majority of instances, and always mitigating the symptoms even where the disease terminated fatally.

As the Yellow Fever is a subject which materially concerns the interests of the city and community, I have thought it right to offer these facts, the result of long experience in the disease, to the public. I by no means flatter myself, that the remedy I have been recommending, will be very readily adopted by my professional brethren. In every science, an opposition is generally manifested to whatever wears the air of novelty or innovation; and by no body of men, is this oppugnation of what is new, more apt to be displayed than by the members of the Medical Faculty. I am far however from objecting to this caution, for though it often assumes the appearance of illiberality, I am convinced that it is in the end productive of good, as it prevents the success of empiricism, and gives currency only to those just and sterling ideas, which have received their stamp in the mint of experiment and time.

CHAPTER V.

On the Mercurial Practice in Yellow Fever.

Mercury, though with justice ranked among, what have been emphatically termed, the heroic remedies, being unquestionably one of the most valuable articles of the *Materia Medica*, has yet been so extensively abused and misapplied in practice, that it may well be doubted, whether it has not much oftener done harm than good, being always more of a poison than an antidote, in the hands of the rash and injudicious. By many of the profession, indeed, it is treated as a Panacea or universal medicine, and is resorted to in all cases, whether the disease be Consumption or Yellow Fever, an eruption of the skin or a fit of hypochondriasm: both the *mala majora* and *mala minora*, are equally supposed to be under the power of Mercury, and either exhibited internally or laid on by inunction, it is applied as a sovereign remedy for all evils bodily and mental. To *touch the mouth*, seems to be regarded as little less than a magical operation, for in too many of the cases in which salivation is induced, it would be vain to seek for any rational indication, warranting a resort to it. These observations are, however, chiefly applicable to some of the practitioners of this country, for on the other side of the water, physicians seem to be rapidly passing to an opposite extreme from this, and now question the necessity of employing Mercury, even in those diseases which it controuls with the most effect, on the ground that these may be cured by other medicines, which are not attended by the inconvenience and injury of salivation. Dr. Thomson, Professor of Military Surgery in the University of

Edinburgh. has recently written against its use even in *Lues Venerea*, maintaining that this disease, can as well be cured by sarsaparilla in conjunction with other means, as by Mercury; and prefers the former, as not being followed by any permanent or ill consequences to the constitution. Dr Shepherd, another late writer, is for rejecting Mercury in all fevers or pyrexial disorders; and in the Clinical Reports, also, of the Edinburgh Royal Infirmary, the salivating practice is condemned in this class of diseases. The writers on this side of the question, have reduced their doctrine to the following axiom:—"That the Mercurial unsusceptibility of the system, is in the ratio of the concentration of the disease;" or in other words, that it is only in the milder grades of fever that Mercury acts as a syllagogue, (which, therefore, could be cured without it), while in cases of a more violent type, it proves totally inert. I need not urge that these opinions are deserving of serious attention, not only on account of the authorities on which they rest, but also from the intrinsic importance of the subject.

The lasting injury often done to the constitution by Mercury, is certainly a consideration which ought to lead to its disuse, in every instance in which it is proved, that the disease can be conquered by other and more innocent means. Without, however, going the length of the writers here cited. I shall confine myself solely to the consideration of the Mercurial Practice in Yellow Fever: and shall oppose it, first upon the principle just noticed, that of the unsusceptibility of the system, to the Mercurial impression, in all concentrated cases; and next, on the ground of the excitive effects of Mercury on the secretory organs, the primary affection of which, I consider as forming the foundation of the disorder. The debility which it induces, is another objection, which

will be urged, as prostration and weakness, constitute the leading difficulties which we have to contend with in the course of the disease. Dr. Bancroft, on the first point observes, "I am not convinced of the supposed benefits of Mercury in this complaint; for should it even be the case, as is pretended, that the patients in whom a salivation can be excited, generally recover, I do not perceive that we could thence fairly infer, that their recovery was effected by the salivation. It is well known that in many cases, more than 500 and in some more than a 1000 grains of Calomel have been given internally to a single patient, without producing any sensible effect on the salivary glands, or even on the intestines; and although, to explain this inactivity of the Mercury, it has been supposed that in such cases the absorbents alone were in fault, by not taking up the Mercury; this explanation cannot be admitted, because the intestines have been as little excited by the calomel thus introduced as the salivary glands; and it seems, therefore probable, that a general torpor, or defect of excitability, and of vital energy, existed in such patients, and that the Mercury proved inefficacious in them only because they had already made considerable approaches towards the condition of a dead body, in which it is obvious that no quantity of that medicine however large, could exercise a stimulant power. If this reasoning be just, there will be room to suspect at least, if not to conclude, that when patients die of the Yellow Fever, after all attempt to excite salivation in them have failed, their deaths have resulted, not from the want of any good effect which salivation may be thought capable of producing, but because the condition of their living or sensorial power, and of the functions depending thereon, had already become so morbid as to render their recovery impossible: and on the other hand, that where persons have recovered from the Yellow

Fever after having been salivated, their recovery was not occasioned by the salivation, but was the consequence of such a condition of the powers of life, and of the functions connected therewith, as induced a mitigation of the disorder;* for the same reason, and perhaps, *cœtiris paribus*, in the same degree, as it favoured the operations of mercury upon such persons; and therefore that although recovery has not unfrequently followed, or accompanied salivation, the latter was not a cause of the former. There is no source of error more common or productive, than that of supposing an event which closely follows another to have been occasioned by it; and it may be doubted whether a great number of the advocates for mercurial salivation in the Yellow Fever have any other, or better foundation, for their conviction of its efficacy. In order to attain the truth upon this important subject, we must ascertain whether those practitioners who excite salivation in as many of their patients as may be susceptible of it, do in fact lose a smaller proportion of them than those who purposely abstain from all endeavours to produce that discharge: and on this point I must declare that, after some experience, assisted by no ordinary portion of enquiry and information, I have not been able to discover that the salivators have been more successful than the others; and, if not more successful, their practice has certainly been hurtful; because, in most of the persons who have recovered, the (perhaps useless) salivation had retarded the convalescence and produ-

* Dr. Rush has recorded facts illustrative of this idea, but being ignorant of the above principle, did not know how to apply them. He says in his account of the Bilious Fever of '94, "Mercury seldom salivated until the fever intermitted or declined. I saw several cases in which the salivation came on during the intermission, and went off during its exertation, and many in which there was no salivation, until the morbid action had ceased altogether in the blood vessels by the solution of the fever."

ced troublesome affections of the tongue, mouth and throat, with other ill consequences, as is well known, and acknowledged, even by its advocates. Dr. Rush has candidly stated, that in the City Hospital of Philadelphia, where bleeding was sparingly used, and where the physicians depended chiefly upon salivation more than one half died of all the patients who were admitted. Dr. David Grant, of Jamaica, avers that “although he attended many under salivation, *not one* survived, and that they became more the victims to the mercury than even to the Fever.” Dr. Shepherd concludes his essay with remarks to the same effect: he says, “It may appear, perhaps, fastidious, thus to impugn the truth of a doctrine so plausibly constituted, as to hinge on the imposing coincidence of a declension of fever, and the supervention of salivation. But in conclusion, I must repeat my belief, for the reasons above assigned, that the reputation of mercury in fever, has been derived from a fallacious source, that when its uncombined exhibition has been followed by salivation and recovery, the disease has been of a mild grade, which would have yielded to ordinary measures with greater promptitude than to mercury alone, without the inconvenience of the consecutive salivation, and that where it has been associated with depletion and other evacuants, the extinction of Fever has been effected by those remedies, and not by the specific operation of mercury; the system under fever, being susceptible of that effect, only when the violence and danger of the disease have been removed, by such effectual preparation.” These opinions receive still further support, from a quarter where most experience has been had upon the subject. Dr. McCabe, in his account of the Epidemic Fever of Trinidad, in 1817, makes the following statements: “To doubt the efficacy of mercury in the cure of the Fever of the West In-

dies, may appear extraordinary; the following circumstances, however, together with an impartial attention to its effects, induce me to doubt whether mercury is entitled to the great praises bestowed on it in this disease, and the reliance placed on it to the almost total exclusion of other remedies. That the action of mercury does not supersede the action of fever, every Medical Officer must have seen, who has had charge of a hospital in the West Indies. There may be frequently seen patients dying of fever while under the influence of mercury; the fatal termination of the disease will there be observed to take place during every stage of the effects of this medicine, from a slight soreness of the gums, to the most saturated stage of Ptyalism. I have seen persons using mercury for the cure of other diseases, and when Ptyalism was present, attacked with Fever and die of it. In such cases it also appeared that the progress of putrefaction during the disease, and after death, was even more rapid than in ordinary cases."

In the third chapter of this Essay, I have labored to prove, that the disease depends on, and is entirely ascribable to a morbid secretion, carried on by the smaller arteries and blood vessels of the system, accompanied by an almost total suppression of all the natural secretions. The illustrations and arguments which have been used in support of this idea, need not be repeated here; it is hoped that they are sufficiently strong, to warrant some reliance upon the doctrine, and if it be at all correct, the administration of mercury, which directly keeps up the unhealthy actions, which have been indicated as the source of the disease, cannot but be highly hurtful and pernicious. The *modus operandi* of mercurial medicines, has been a subject of much dispute in medical science, but it seems to be agreed on all hands, that

they act in the first instance, as stimulants upon the arterial, or sanguiferous system.* This admitted, their more remote effects, may, I think, be explained in the following manner: Mercury is found to diffuse itself more extensively than almost any other medicine, with which we are acquainted, permeating the minutest vessels of the system, and even transpiring through the pores of the skin, as is evidenced by its producing a discoloration of metals in the pockets of salivated persons. This penetrating quality, which carries it to the remotest organ of the living body, while it enables it to excite the excretory glands, and bring on salivation; also occasions it to act upon, and when too profusely used, to destroy the texture of those pellucid and delicate vessels, or compages of vessels, which form the periosteum. It is in this way, that it denudes the bones and exposes them to disease, or to that mercurial *necrosis*, so well known to Physicians. It is upon the same principle that it operates efficaciously in discussing tumors, nodes and other local affections, when moderately applied. Being conveyed by its diffusibility to the most distant parts; it acts upon and ultimately obliterates the anomalous organization, from which these topical formations take their rise, and at the same time stimulates the sanguiferous system so as to excite the veins to more active absorption, enabling them rapidly to take up the various morbid matters deposited in the above disorders. Dr. Matthias, who has written upon the *Febris Mercurialis*, or Mercurial Fever, which he aptly terms *the disease of the remedy*, attributes to mercury the power of producing a specific diseased action; it is not there-

* I have purposely abstained from any discussion of Assimilation, Vascular Spasm, and other theories of absorption, as the simple fact, that certain quantities of Mercury ^{are} capable of pervading every part of the living system, is sufficient for my present object.

fore difficult to conceive, that its too free exhibition, should result in the destruction of those finely elaborated vessels which compose the covering of the bones, and occasion the affections of the alveolar processes and other osseous surfaces, which so commonly ensue from its indiscreet use. Having then no tonic powers whatever, and operating altogether as an irritant, its administration in Yellow Fever is contra-indicated by every symptom, but more especially by the particular condition of the stomach, in all cases of the disease. A great portion of the weight of the disorder appears to fall upon this organ, affecting it with a degree of supersensibility, and throwing it into a convulsed and irretentive state, which renders the exhibition of so oppressive and irritating a medicine as mercury, both locally and generally injurious. It is important to observe, that while in this viscus, the nervous sensibility is unduly accumulated, rendering it peculiarly susceptible of the impression of mercury; throughout the rest of the system, the powers of life are to a remarkable degree prostrated and suppressed, so that the medicine acts violently upon the stomach, where it does the most harm, but becomes immediately inert, on passing into the intestines and primary passages. This at least happens in the worst cases, and in milder attacks, its specific operation upon the secretions, produces salivation, which invariably aggravates the disease, and retards the cure. Its debilitating effects, form an equally serious objection to its employment in this disease, which is marked by a prostration, and exhaustion, greater than in any other species of Fever. Dr. M'Cabe, before quoted, speaks, "of having repeatedly seen calomel thrown in, in large quantities, with the view of inducing the action of mercury in the system, fail in removing the Fever, and greatly increase the faintness and exhaustion." He again says,

“I have seen such a degree of faintness and exhaustion, succeed to even moderate doses, that the pulse became almost imperceptible, and the other functions were equally enfeebled.” Its reputation as a preventive, stands on no better foundation than its claim as a cure. That it is not only destitute of prophylactic virtues of any sort, but is actually disadvantageous to those who take it as a security, and disposes them to receive the infection more readily; many instances which have come under my own observation, and others already on record, sufficiently establish. The writer last cited, mentions particularly the case of a gentleman, “a great admirer of mercury, who, during the prevalence of a Malignant Fever, by way of securing himself against the disease, took three grains of calomel every day. This gentleman was attacked with Fever and died.” The view with which it is generally given, that of creating a *new action*, or by one disease, to drive out another, is at once so mistaken, absurd and unmedical, as scarcely to deserve a serious notice. The above notion that two diseases cannot exist at the same time, in the same patient; the experience of every day proves to be without foundation. Decisive evidence upon this head, might be adduced from various quarters, but the cases recorded by the respectable Dr. M'Bride, ought forever to terminate this question. He states that between the years 1765 and '67, hundreds of cases of small pox and measles, co-existing in the same person, occurred in the Dublin hospitals under his immediate observation; and facts of a similar kind are testified to by other physicians.* It is certainly, *prima faciæ*, a circum-

* Since writing the above, I have met with the following facts brought together by Dr. Francis, in his remarks of the *modus operandi* of mercury, “That the human body is susceptible of the ope-

stance unfavourable to the exhibition of any remedy, when it is given with the express intention of crea-

torily shewn by the facts recorded by Dr. Patrick Russell, of the small pox and measles which prevailed at Aleppo, in 1765. On the authority of Bergius and Tandon, mention is made of several cases in which the measles and small pox appeared together in the same individual. Dr. Willan witnessed the occurrence of hooping-cough (a disease of acknowledged specific contagion) during the eruption of the small pox in the same person; the former disorder remained a long time after the latter without any material alteration. Cases of small pox combined with measles came under the notice of Dr. Walker. Dessessarts mentions the complication of small pox with scarlatina. Mr. Leese inoculated an infant while laboring under measles, and both diseases went through their ordinary course. Two cases which exhibited unequivocal evidence of the possibility of two distinct diseases, small pox and measles, arising at the same period in the human constitution, and each preserving its ordinary course as when separately existing, attended with all their usual characteristic symptoms, are recorded by Dr. Tracy. A number of cases of small pox co-existing with measles, and the two diseases, going through their regular stages in the same individuals, occurred at the Foundling Hospital, at Dublin, as appears from extracts from the memoirs of the Medical Society of that city, communicated by Dr. Rainey. All these instances of the continued operation of measles with other disorders of specific contagion, it will be proper to bear in recollection, are cited from modern authors: the opinions of the more ancient writers on this point being disregarded on account of the errors into which they were led from adopting the principles of the Arabian Physicians, and considering and generally treating these different specific disorders, small pox, measles and scarlatina, as modifications of the same disease.

“ Mr. Maurice vaccinated two persons who had been previously exposed to measles. The vaccine infection and the measles went through their usual course at the same time. It appears from the observations of Dr. Woodville, Dr. Willan and other writers on the cow pox, that if the constitution be submitted simultaneously to the action of the small pox and the vaccine diseases, that these disorders go through their course at the same time without influencing each other. Many cases of this kind might be mentioned.

“ In the report of the New-York City Dispensary, published July, 1809, the physician of the cow pox department, recorded the case of a child who, on the eighth day after it was vaccinated, had the vaccine disease with all its characteristics, and at the same time, laboured under a “ plentiful eruption of the small pox,” to which disorder it had been exposed by an imprudent visit some days previous. The two diseases appeared entirely distinct and independent of each other. The physician vaccinated six children from the fluid of the vesicle, who all had the regular cow pox, and were afterwards te-ted by the small pox inoculation without effect. Several children were inoculated with the matter from the small pox eruption who took the disease in its usual form. Dr. Adams himself, the unqualified and indiscrimi-

ting a disease; and an examination into the grounds of this practice will not be found to lessen the objection to it. The idea of creating a *morbus medandi*, or *curative disease*, carries on the face of it, absurdity; for it is plain, that a medicine to do good, must act, sanatively, and where it does not effect this, if it possesses any activity it must do harm; thus the above is not a mere harmless paradox, having I am persuaded destroyed thousands, for error and evil are indissolubly connected in the order of cause and effect. Dr. Francis, Professor of Materia Medica, in the Medical College of New-York, expresses himself very strongly upon this subject. The following passage is from his pen, and deserves to be pondered upon:—"At the present time, the practice of salivation seems to owe its general reception to the well known principle espoused by Mr. Hunter, that no two morbid actions can exist at the same time, and that one irritation destroys another: yet nothing can be more evident, from Mr. Hunter's writings, than this very method of cure, met in him a decided enemy. It is of minor consideration to be informed of the source which gave origin to this mode of treatment; and, painful indeed, the recollection of the miseries it has created. No absurdity in medical practice has been the destruction of more lives, none the source of more pain and calamity. Well might Dr. Hoffman pronounce the abuse of this remedy in the hands of the unskillful, to be more terrible than the sword. The pages of the older writers, as well as the modern, fully confirm this fact; yet this method of cure is still *popular*, still pursued both in private practice and in public institutions." Any medicine, indeed, given in the quan-

nate panegyrist of the doctrines of Mr. Hunter, asserts, that small pox and cow pox 'will proceed together in the same person without the smallest interruption to each other's course.' "

tities in which calomel is usually administered in Yellow Fever, would produce ill effects, and one half of the injury done by Mercury in this disease, results from the excessive use of it. The remedy I have endeavoured to recommend, the super-acetate of lead, or *saccharum saturni*, may be said to afford a complete contrast to mercury, in all its effects. It restrains, while the latter promotes secretion, it tranquillizes instead of exciting the stomach, and supports instead of exhausting the patient. Its effects also cease with the disease, while those of Mercury are perpetuated after it, and often become permanent. The injuries done by large quantities of mercury, are certainly worthy of the consideration of patients, if not of their physicians. The loss or impairment of the teeth, the diseases of the bones and other consequences of repeated and profuse salivations, ought to be borne in mind by all who value the blessings of a sound constitution. Dr. Adam Hunter, on this point, observes, "salivation with whatever care produced, gives a shock to the system, which is not easily got the better of, and the continued influence of the Fever and Mercury call into activity, any latent pulmonic or scrofulous (and he might have added, cancerous,) affections, which is often attended with deleterious consequences."* I have entered into the foregoing questions, solely with the hope of throwing some light upon a subject of extensive importance to the community, and having discharged the task to the best of my ability, here terminate the discussion.

* It might be said, that mercury can seldom be given in Yellow Fever, in such quantities as to create the ill effects above enumerated; but it is known, that ounces have in some instances been administered before Ptyalism could be induced; and as remittents are so often mistaken for Yellow Fever, persons are frequently subjected to repeated salivations in the course of the same seasons. Children also require a great deal of mercury to salivate them, and when the effect is produced, they suffer more from it than grown persons.

Some of the topics perhaps, required to be more enlarged upon, than they have been, but as they embrace matters of general interest, and the opinions and views presented, are for the most part such as have never before been touched upon, I was apprehensive that a lengthened or diffuse dissertation might prove repulsive to the majority of readers, and therefore studied the utmost brevity and condensation, and confined the present publication within narrower limits than I should otherwise have prescribed to myself.

CONCLUSION.

In the commencement of this Treatise, I promised an Appendix which was to contain an abstract, or synoptical view of the state of the question respecting the domestic origin of the Fever: I now however deem it unnecessary to swell the present publication with the additional matter I contemplated introducing, as I observe that the subject has been taken up in one of the Scientific Journals of the day, the New-York Medical Repository, in a late number of which, there are several papers relative to the local production of the disease, and the editors are pleased to quote with approbation the first part of this Essay. One further observation on the subject I would make, which was omitted in its proper place; it is this, that in the West Indies, the general condition of the air, from the excess of tropical heat and other causes, is always such, that in combination with the deleterious effluvia of their ill cleansed Towns, it occasions the constant existence of Yellow Fever, and renders it endemic in the sea ports of that part of the World; while in Carolina, from our more temperate position as to latitude, the disease is only *occasional*, occurring in particular seasons when inordinate heat, moisture and other circumstances prevail, which are favourable to the formation of the fever. I cannot quit the topic, without once more urging upon my fellow-Citizens, the necessity of early directing their most earnest attention towards the object of improving our police, and to the prompt revival and enforcement of the many excellent ordinances which already exist. On the commencement of the summer, I would recommend that Commission-

ers should be appointed in every Ward, charged with the duty of looking into and reporting upon all nuisances, or local circumstances likely to be injurious, and which they may deem susceptible of removal or remedy.

Those selected for this office, should be from among the most respectable characters in our community, in order that the Citizens might be the more readily reconciled to the disagreeable domiciliary visits, to which the proposed regulations would subject them. One of the Reverend Clergy therefore, (who would no doubt willingly enter on so useful a duty,) should be attached to each commission, and one of the Medical Faculty also, who would be able to direct the attention of his associates to the proper objects. Were a plan of this kind zealously pursued, there can be no doubt that the pestilence would either be averted, or mitigated in its effects, and confined in its range. A reapplication to the Legislature would also I think be expedient, for it is probable that if it were made manifest to that body, that the Medical Faculty of this Country are almost unanimously of opinion that the disease is of domestic formation, and that evident success has attended the exertions made in Philadelphia and New York for its eradication; it would be induced to assist the City with a sum of money towards the object in view. In New-York where immense improvements have been made within a few years, the mayor and corporation are invested with powers not given to the Council of Charleston, and which at present can only be exercised by our Legislature itself.

The above is in substance, the plan proposed in a late number of the Edinburgh Review, for preventing the recurrence of Typhus Fever which lately desolated some parts of the United Kingdom. It is certainly simple, and might be readily put in execution. It would be expedient also, to appoint persons to the du-

ty of attending to the ventilation of the shipping in the harbour during the Summer. The uncleanness which generally prevails on board vessels, and the foul air in their holds, contribute very greatly to contaminate the atmosphere of the city.

ERRATA.

- Page 4. 2d line from the bottom, *de have*.
6, 16th line from top, for *contracted* read *concentrated*.
7. 2d line from top, for *Huett* read *Huett*.
9, 1st line from top, insert *those of* between *than* & *the*.
10, 14th line from top, for *with* read *by*.
13, 8th line from bottom, for *form* read *of*.
19, 10th do. do. for *duodenum* read *duodenum*.
23, 4th line from beginning of chapter, for *writing* read *writer*.
24, 8th line from top, for *ejected* read *dejected*.
26, 2d do. do. for *of* read *at*.
25, 4th do. do. for *secretting* read *secretory*.
25, 11th line from bottom, for *on* read *upon*.
28, 5th line from bottom, for *acteration* read *evolution*.
33, 9th line from bottom, for *have* read *has*.
34, 6th line from top, for *it*, read *the lead*.
35, 11th line from bottom, for *convinced* read *reined*.
37, 14th line from bottom, for *does* read *it does*.
41, 9th line from top, insert an *a* between *in* & *majority*.

Photocopy, made in 1959, of the
errata leaf in a copy of the Treatise
in the possession of Dr. Joseph I.
Waring of Charleston.

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