

An account of the yellow fever which appeared in the city of Galveston, Republic of Texas in the autumn of 1839 : with cases and dissections / by Ashbel Smith.

Contributors

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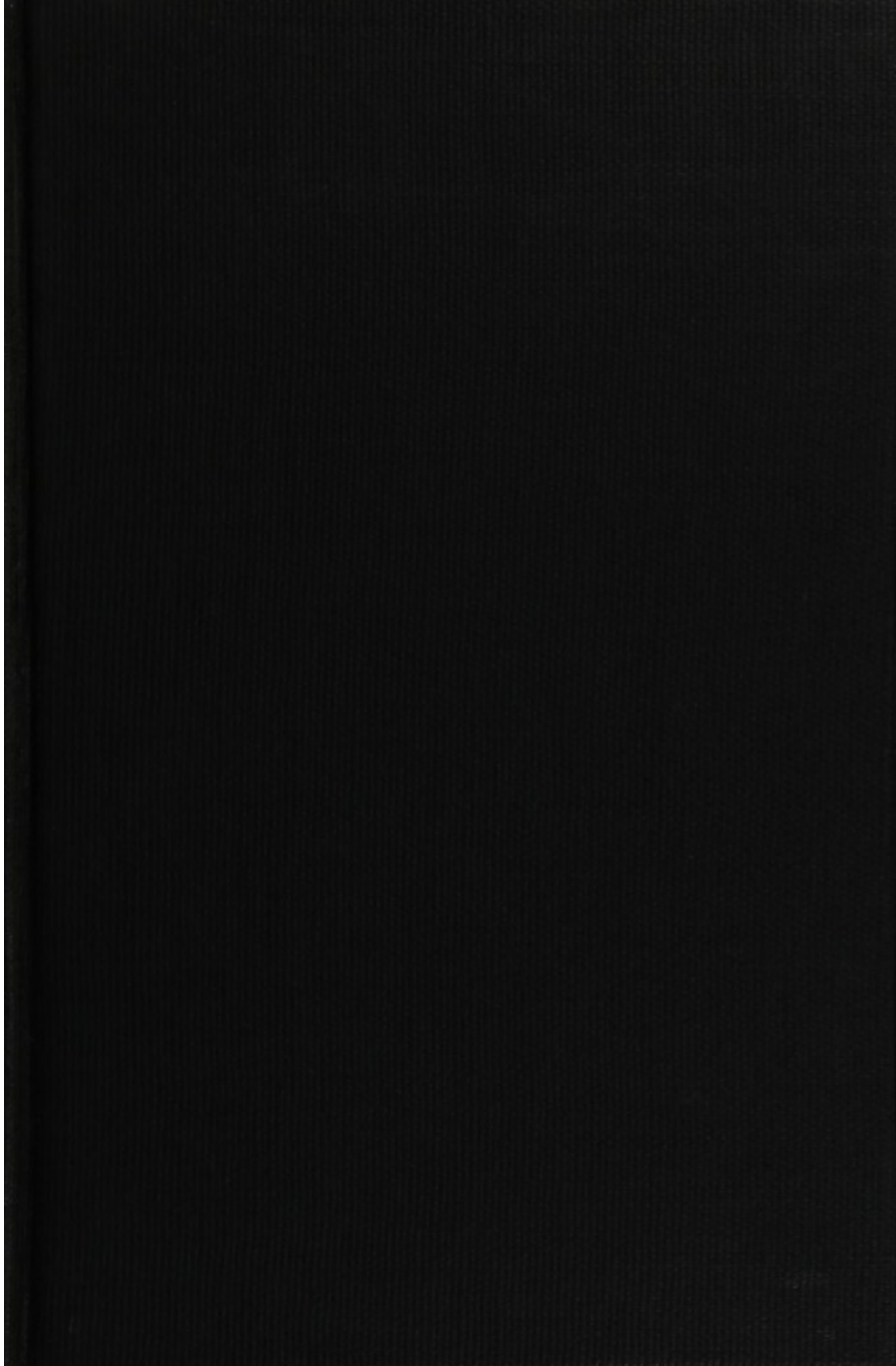
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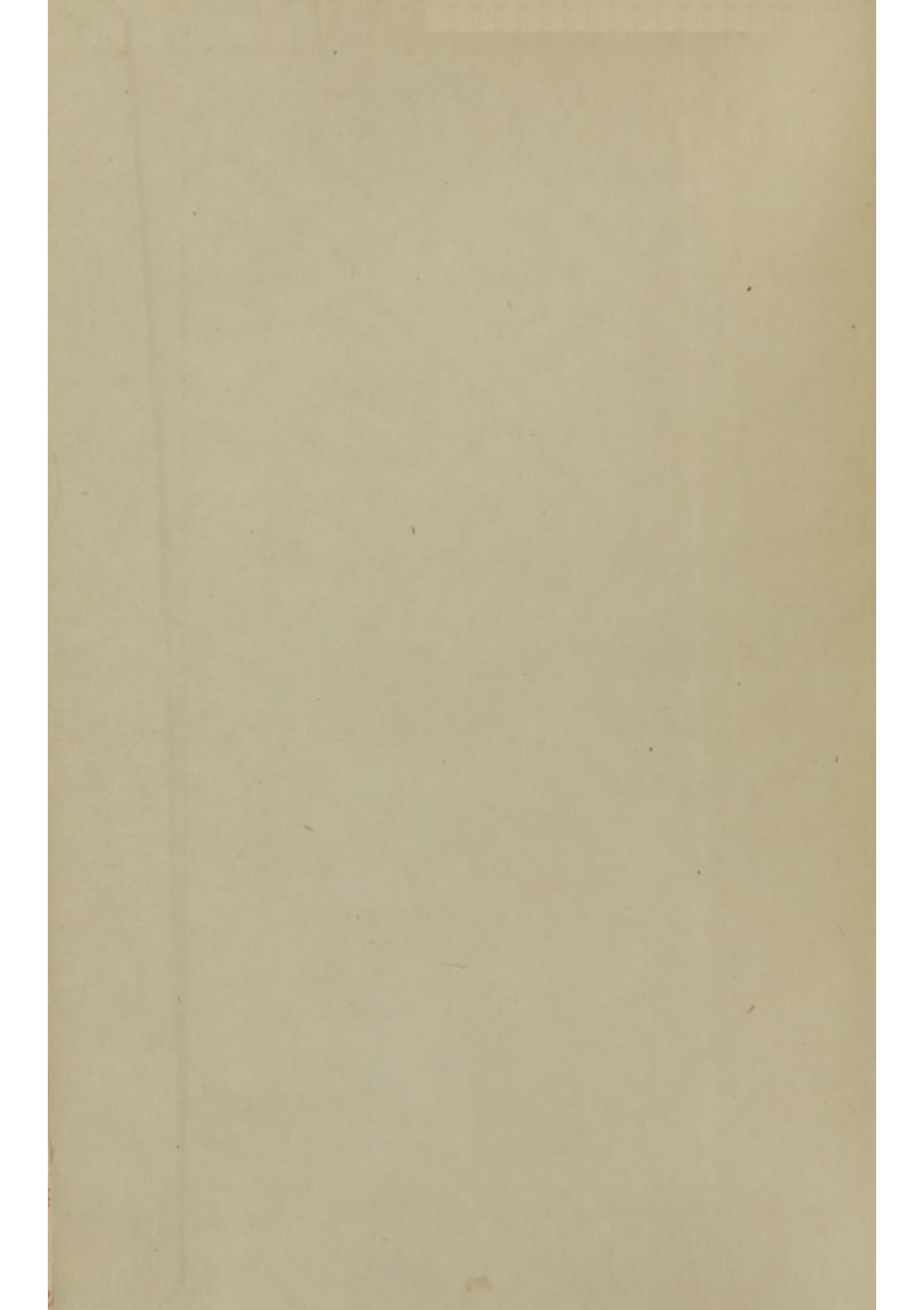


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AN ACCOUNT
OF THE
YELLOW FEVER

WHICH APPEARED

IN THE CITY OF GALVESTON,

REPUBLIC OF TEXAS,

IN THE AUTUMN OF 1839,

WITH CASES AND DISSECTIONS.

BY ASHBEL SMITH, M. D. A. M.

EX-SURGEON GENERAL OF THE TEXIAN ARMY.

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1839.

ANNEX 70000 R 71
Fever, Yellow

YELLOW FEVER

OF THE

IN THE CITY OF SAVANNAH

RECORDS OF THE

IN THE AUTUMN OF 1833

WITH CASES AND DISSECTIONS

BY ABRAHAM SMITH, M.D.

DEPARTMENT GENERAL OF THE TOWN AND

RECEIVED BY HARRISON L. SMITH, DEPARTMENT OF THE TOWN AND
HARRISON L. SMITH, DEPARTMENT OF THE TOWN AND

1833

PREFACE.

In the composition of the following pages, it was not my object to write a treatise on the Yellow Fever, but to furnish a description of this disease as it recently appeared in this city. Accordingly, I have avoided making quotations from other writers on this subject, or allusions to any variety in its type which the disease may have displayed elsewhere. It is *strictly* a history of the Galveston Epidemic, and lays claim to no higher merits than a truthful narrative of facts carefully observed here. The necessity of such a history in the event of our being again visited with this or any similar scourge, will be strongly felt by those who remember the absurd denial of the existence of Yellow Fever among us, and the more *gross ignorance* of those who wasted in idle disputes about the name of the disease, that time

which might have been better devoted to the sick, some of whom lacked the commonest offices of social life, and to the employment of sanitary measures for preventing the extension of the Epidemic. That these rash and wicked assertions, by lulling persons living in the infected district into a false security, and by destroying confidence in the usual remedial means, the least judicious of which are better than none, occasioned the loss of several lives; no observer of what passed here can doubt.—Many knew not for a short time what to believe—and it was by some deemed incredible that Galveston, although situated on a low level Island, with New Orleans on one side, Tampico and Vera Cruz on the other, with the Havana in front—all of them the habitations of endemic Yellow Fever,—should be afflicted with the same disease. And when the author of this pamphlet first declared the existence of Yellow Fever in this city, it was received by a few with as unkind a spirit as if he had been the author of the pestilence.

I hope too, not to be charged with a want of modesty, in supposing that a sketch of the medical topography of a part of this new and almost unknown country, with the his-

tory, pathology and treatment of an Epidemic which prevailed here, will not be unacceptable to medical gentlemen in other parts of the world. I will also state that the present little treatise, although got up in haste amid laborious professional duties, may be considered as a specimen of the work I am preparing on the more important diseases of Texas. Large opportunities for observation have enabled me to collect a mass of materials on this subject, and some of the articles are already written out; but broken down health has compelled me to discontinue my labors for the present.

Many of the cases transcribed for publication have been left out—those inserted have been much abridged, and the remarks appended to the individual cases greatly curtailed or wholly omitted.

I anticipate that the distinction I have attempted under the pathology, between the sanguineous engorgement of the stomach in Yellow Fever, and common gastritis, will not accord with the views of some pathologists, since the term gastritis has of late been so extended as to embrace almost every possible disorder of this viscus. Whatever estimate shall be put on my comments, I trust they

will find the pathological *facts* recorded in the dissections neither valueless nor wholly unsatisfactory. To explain the omission of the treatment in most of the cases of autopsies, I will mention, that only two of the eight cases examined after death, were my patients.

The recent Epidemic ought to excite in the citizens of Galveston no distrust in the general healthfulness of this city. No part of the world is exempt from epidemic diseases; and places generally regarded as the most salubrious, have been visited with pestilences far more direful than the sickness that has prevailed here. And probably of all Epidemics, Yellow Fever is in fact the least terrific—for its narrow and well defined limits can be easily avoided by the prudent.

That my pamphlet may be serviceable to my fellow-citizens in the event of another Epidemic, is the wish of

ASHBEL SMITH.

John W. Francis
with the kind
regards of
Abigail Smith

1845 W. H. Brown
1846 W. H. Brown
1847 W. H. Brown
1848 W. H. Brown

AN ACCOUNT
OF THE
YELLOW FEVER

WHICH PREVAILED IN GALVESTON.

A. D. 1839.

GALVESTON ISLAND forming a part of the coast of Texas, is about thirty miles long, and of an average breadth of four or five miles. It is but little elevated above the surrounding water, quite level, destitute of trees, and presents altogether the general appearance of a prairie. The soil is light, porous, of a darkish grey color, with a large admixture of sand as you approach the margin of the Island, and every where covered with a luxuriant grass. Water of rather indifferent quality, but just admissible for culinary uses, may be obtained by digging a few feet in any part of the island.

The City of Galveston is situated near the Eastern extremity of the Island, in latitude 29 deg. 18' N. and longitude 96 deg. 6' W. from Greenwich. The town site as laid out, extends quite across the Island, which here varies from a mile and a quarter to two miles in breadth. The City is thus washed on its South Eastern border by the Gulf of Mexico—while its opposite side which has a North Western aspect, is washed by Galveston Bay, a broad sheet of water extending about 40

miles into the country. A gentle curvature of the Island on the Bay side, Pelican Island a long, level tract of land of about one thousand acres, situated at two miles distance north of the City, and the peninsula terminating in Bolivar Point to the North East, form the harbor. The heaving of the tide has formed a natural levee along the shore of the harbor, of about two feet in height and one hundred feet in breadth. Immediately in the rear of this levee, the land is low, being nearly on a level with the water at middle tide, and overflowed at high tides. Further in the rear, the land is again elevated and consists of a firm, dry, porous soil. From the overflow of the tides and from occasional rains, there exists at all times, between the levee and the elevated land in the rear, either a quagmire or a sheet of shallow water, three fourths of a mile long, and varying from one hundred to three hundred feet in breadth, exposed to the rays of an ardent sun. In front of this portion of the City, the shipping from twenty-five to fifty craft, ride at anchor. Along on the levee and immediately contiguous to the morass, runs the Strand, the principal business street of the City.— Nearly all the stores and buildings on one side of the Strand, are erected in or over the morass, without its having been filled up at all, or but very inadequately.— In addition to the mud and moisture suffered to remain beneath, and in the rear of these buildings, the filth which business and population engender, has been permitted to accumulate. The rest of the City, with this single exception, from the porous nature of the soil, is dry and presents an aspect of general neatness, comfort and cleanliness, rarely to be seen in any part of the world.

The City of Galveston is yet scarcely two years old, and is estimated already to contain from two thousand to twenty-five hundred souls. The houses are framed buildings, most of them painted white, and in their external appearance, resembling the neatest houses of this sort in the small towns of the Eastern States.

For general healthfulness, Galveston Island including the City, is probably unsurpassed by any place in the world. We are here exempt from the typhus fevers of cold climates, and the malignant endemics of

the miasmatic regions of the south. The few diseases that occur here, are for the most part of a moderately inflammatory character, and readily yield to the simplest treatment. The mild breezes that are wafted over us, bear no unseen deadly poison on their wings. When the South wind prevails, the transparent clearness of the skies and balmy softness of the atmosphere, realize all that poets have sung of the *Ægean*. The winds from the East and North East are more harsh, and when they blow for a considerable period, produce an inelastic state of the atmosphere, and dispose to agues. The brisk Norther, coming from a point West of North, depress the mercury in the thermometer lower than easterly winds, but are justly regarded as less prejudicial to health. The range of the thermometer in this climate is high during the warm season, but the bland breezes from the South, which prevail very constantly throughout this period, and are usually strongest at midday, render the heat very seldom oppressive.— They produce an elastic state of the atmosphere, the nights are cool, and a large portion of the citizens wear cloth the whole year. During the summer months, Norther is of rare occurrence; they generally commence blowing moderately early in October. Frost commonly makes its appearance between the 1st and 10th of November.

Galveston continued in the enjoyment of its general healthfulness, the present season, furnishing very few cases of severe disease, and these were mostly contracted elsewhere, until the latter part of September. About this time a Mr. Tichenor, keeping a retail store on the Strand, died rather suddenly with well defined symptoms as was reported of Yellow Fever. This report, however, did not attract much attention. Two or three days afterwards I was called to see a Mr. Lang in the Ten Pin Alley on the Strand, opposite Mr. Tichenor's, presenting the prominent symptoms of the same disease. In the progress of this case blood oozed freely from the patients' gums for sixty hours. He nevertheless recovered promptly. At this time, Sept. 30th I was called to see in consultation H. Abrahams, who had been sick for three or four days. I found him with

a violent hiccough, and an irritability of the stomach, which suffered nothing to rest upon it. In a few hours the Black Vomit unequivocally declared itself; he died the next day, and the body became of a deep *yellow* hue. There were two other attacks which I did not see, a day or two previous to the 30th, both of which proved fatal. On the 30th, several new cases occurred, and the number increased daily until the morning of the 9th of October, when the epidemic appeared to be suddenly arrested for a period of about sixty hours.

On the 30th September, and for some days previously, strong Easterly winds prevailed, with cloudy weather throughout the twenty four hours. From the 1st to the 5th Oct. the wind blew from the East and N. East in the morning, it hauled round to the S. East, and near South in the course of the day and evening, gradually becoming lighter and dying away in the fore part of the night; and regularly springing up about day break, with stiff breezes from the N. E. and E.—We afterwards had light south easterly and southerly breezes throughout the twenty four hours, with occasional lightning and a few drops of rain about midnight, until the morning of the 9th October. At this time a stiff norther set in with drizzling rains, which lasted till the middle of the forenoon of the 11th. From the 30th Sept. to the 9th Oct. the thermometer ranged at midday in the shade, from 84 to 88 deg. On the 9th it stood at midday at $69\frac{1}{2}$, on the 10th at $66\frac{1}{2}$, on the 11th at 79, on the 12th at 80 deg. Within the fifteen hours immediately preceding the norther and fall of the mercury, I was called to eight new cases, and I have been informed of some others. During the prevalence of the norther, I do not believe, after careful inquiry, a single new case occurred. Subsequently the epidemic reappeared in a somewhat mitigated form—the first fresh attack occurring, I believe, about 5 P.M. on the 11th. Subsequently to this date the thermometer ranged generally from 80 to $85\frac{1}{2}$ deg. at midday—descending one day as low as 70 deg. with variable winds chiefly between the N. E. and S. until the morning of the 5th Nov. when a stiff norther set in which blew three days. The thermometer on the 7th, stood at 45 deg. in the morning, and 58

deg. at midday. There was on the night of the 6th and 7th a slight frost, which it is hoped has put an end to the epidemic. It may be observed here, that although the Northerners prevented new cases, they were believed to be pernicious to persons previously attacked.

DESCRIPTION OF THE DISEASE.

The fever which I am about to describe, made its appearance on the Strand, and no case has occurred in the City, except among persons living or spending much of their time on this street or its near vicinity. Persons in every condition of health, were subject to the disease, the robust being apparently equally obnoxious to it as the feeble. The larger number of cases was of men about the middle period of life. The other sex was not exempt, and a few well marked tho' not severe cases occurred in young persons, not arrived at puberty.

Very slight indisposition, without any particular premonitory symptoms in most cases preceded the attack. The invasion occurred at any time of the twenty four hours—more frequently I think between midday and dark, or between midnight and day.

The disease commences pretty uniformly with pains of the bones, a little sickness of the stomach; some fulness of the head, moderate chilliness, very seldom amounting to a complete rigor; and the slight diminution of nervous sensibility of the extremities, usually felt in the forming stage of most fevers. This state continues only a short time, from a few minutes to two or three hours, when it is succeeded by intense pain through the forehead and eyes; excruciating pains in the loins, extending sometimes down the thighs, and great restlessness. The eyes are bloodshot, and have a peculiar shining, drunken appearance—the face is flushed and bloated—the skin hot and generally dry, sometimes moist and warm—the pulse is full, frequent, in some cases bounding, not hard—the pain of the bones and sickness of the stomach, which were present in the forming stage, continue. Sometimes there is copious vomiting within the first few hours, but as often

at this period there exists only nausea or slight sickness, Sickness of the stomach is very seldom, if ever absent, but the patient does not always mention it, ~~except~~ when inquired of, his attention being directed to his intense suffering in the loins and forehead. The tongue is moist, rather large, moderately furred, in some cases bordered with a well defined red edge, not unfrequently of a healthy aspect. The thirst in some cases is moderate, in others considerable, seldom very intense. The epigastrium is slightly sensible on pressure, in many of the severest cases, quite indolent—the mental operations are in rare instances disturbed, very generally coherent, in some quite natural, in many sluggish, unless roused by the severity of pain. There is this noticeable in the restlessness, that it is not accompanied with jactitation, but consists in a disposition to rise from the bed and walk about. Frequently on turning round I have found a patient sitting on the edge of the bed, who a moment before was lying quietly.

always A diminution of the pains and febrile excitement very generally takes place, from eight or ten, to twenty hours after the invasion. If the disease proceed to a favorable termination, the abatement of all the symptoms continues gradually, and convalescence at length commences without any marked crisis, that I have been able to discover, except this gradual disappearance of all the morbid symptoms, and the resumption of the functions, as in health. In many cases, it might be dated as early as on the third day—and in a few, perhaps even sooner—and this early convalescence has happened when the attack was ushered in with great violence. In others, convalescence commenced about the fifth or seventh day—in one case not until the 15th day. Convalescence may have declared itself on the intermediate days—it being difficult to determine this point precisely in the absence of marked crises. It was very short, recovery was prompt, and I am not aware of a single case of relapse.

When the disease proceeds to a fatal termination, the diminution of the febrile symptoms and pains, goes on as described in the preceding paragraph, until about the end of the second or third day, the pulse becomes of its

usual frequency, the surface of its natural and pretty equally diffused temperature. In the mean time, the sickness, of the stomach which although uniformly existing to a greater or less degree during the preceding period of excitement, was not often a subject of much complaint by the patient, is *insidiously* and gradually augmenting until it soon amounts to uncontrollable irritability, with frequent retching and vomiting. The fluids discharged at first are watery, clear or colored by the beverages taken. The restlessness is increased, the patient sleeps scarcely at all or but a few minutes at a time. The tongue becomes thinner and redder at its margin—in some however, it is quite or nearly natural—the thirst much augmented, the epigastrium becomes now somewhat tender, or exquisitely painful on pressure particularly adjoining the right hypochondrium.—As this period approaches to its close, the sympathies of the system appear to be destroyed. The pulse is slow and languid, the surface is dry and of the temperature of health, the intellectual faculties are clear, these functions give no token of the fatal state which is on the eve of being developed. A faint yellow tinge may now be discovered about the neck, on the breast, between the alae of the nose and corners of the mouth, about the eyes and roots of the hair on the forehead—the blood-shot appearance of the eye, gives place to a faint yellow suffusion of the adnata. Slight eructations of air from the stomach take place, at first at distant intervals and unnoticed by the patient, but soon assuming the form of a very frequent and convulsive hiccough—the black vomit speedily declares itself unequivocally—the matters vomited vary in appearance, from a dull brownish translucent liquid, with a few minute flakes swimming in it, to one resembling a strong turbid decoction of coffee—the alvine dejections become dark and resemble a mixture of thin starch and soot—the matters voided by stool and those vomited in very malignant cases, sometimes have a sanguinolent teint—the urinary secretion is suspended—hæmorrhages from the mouth occur—the patient makes occasional feeble efforts to vomit, many of which are abortive, others are followed by discharges of black vomit. About the time the black

vomit makes its appearance, the restlessness very generally subsides. The mind too is singularly quiet and free from agitation, even in persons who have been apprised by their friends that death was inevitable. This state may continue from a few hours to several days,—when it has been protracted, the vomiting has in a few instances ceased, and the inexperienced have indulged the delusive hope, that the patient might recover, but death is sure to close the scene with coma, or a few slight convulsive spasms. Sometimes the vital cord is suddenly 'snapped' at an early period of this stage, and death takes place with scarcely a struggle.

As dissolution approaches, the yellowness increases and in a few hours after death, becomes intense all over the surface, except where this is occupied by livid patches.

Death commonly occurs from the third to the seventh day, most frequently I believe on the fifth:—in one case on the fourteenth. I heard of two cases which were said to have been fatal in the first twenty four hours.—I saw three cases which run their career without any interruption from medicine or attendance *whatsoever*, in seventy two hours very nearly.

The bowels during the early periods of the disease, are costive unless moved by cathartics. The first dejections are commonly feculent, in some cases colored with bile, in others inclining to a light drab hue. When the appropriate cathartics are not exhibited or fail to arouse the liver and other glands to healthy secretions, the stools in the course of the disease become lighter and frequently present in color and consistence a starchy, creamlike, or puruloid aspect. About the time the black vomit commences to be formed, the aspect of the stools is changed, they become darker as the fatal symptoms proceed, until they resemble a mixture of thin starch and soot, become sanious, or sanguinolent. It is proper to state that in many cases, I have been unable to note the variations of the stools, so as to speak with sufficient precision of their prevailing character. It has occurred to me, however, to witness the black dejections near the close of fatal cases, more frequently than any others.

I have several times observed a spongy state of the gums as if ptyalism were about to commence in patients who had taken no calomel.

During the latter periods of this disease, the pulse beats with its natural frequency in a remarkable manner, being perhaps rather more languid than in health—very seldom accelerated until the patient is moribund—when it is irregular and fluttering, not uniformly frequent.

The mind too preserves an undisturbed serenity, which the old stoics might have envied, while irretrievable ravages are going on in the vital organs with frightful rapidity, and life itself is on the very brink of dissolution.

The *Black Vomit* as already stated, varies considerably in its appearance. The characteristic marks are however, unequivocal—they are *dark flocculi* swimming in a fluid, varying from a brownish or whey looking liquor to one resembling a strong decoction of coffee. In the first portions vomited, and in milder forms, the flocculi are generally few and minute. In more aggravated cases, they are very abundant and present every variety of shape, like fine powder, stelliform, linear, or in shreds. In the most malignant cases, the black vomit approaches in appearance to dissolved blood. The flocculi subside very slowly to the bottom of the fluid, and the latter is seen to be of a light greenish or whey colored tinge. Sometimes however, the flocculent portion swims on the surface, and in appearance is not unlike the inside of the dry mushroom, called puff-ball. In portions of black vomit which had been kept a few days, the flocculi which at first had subsided, slowly arose and swam on the surface of the fluid. The common comparison of black vomit to a turbid decoction of coffee, probably conveys the best idea of its usual appearance. It is inodorous and insipid or nearly so.

After the most careful inquiry I am of opinion that very nearly all—as many as nine out of ten of the fatal cases, were accompanied with black vomit. In one body examined after death, which occurred on the 14th day after the attack, I found the stomach distended with genuine black vomit, although it was asserted that

none had been ejected during life. I have also often seen its well known, dark, dusty-looking stains on the bed clothes, when the attendant had not yet suspected its existence-

In the congestive fever and other climatic diseases of this country, I have never seen any thing vomited, which was liable on careful examination, to be mistaken for black vomit; although the mixture of porraceous and dull grayish matters sometimes vomited in severe congestive fever, has been rashly pronounced black vomit by careless observers—to which when accurately examined, it bears *very little* resemblance. I have observed a very prevalent disposition to exaggerate the color of matters ejected from the stomach.

I have witnessed eight cases of *haemorrhage from the mouth*—five, after black vomit had declared itself. There have also been cases of *haemorrhage from the nose and bowels*.

Hiccup was a pretty frequent, though not invariable symptom of fatal cases. It was always troublesome, and has appeared to me to furnish a scarcely less unfavorable prognosis than black vomit, of which it was a frequent precursor.—*Petecchiae* and large *livid patches* have appeared in a few cases.

Picking of the bed-clothes and a mild wandering delirium in some cases preceded death by many hours.

The severity of the disease is not always in proportion to the violence of the invasion—many of the severest cases having set in with mild symptoms.

The *yellow suffusion* after death was of *very uniform* occurrence, being seldom or never absent.

In the description just given, it has been seen that without any formal division into stages, I have nevertheless regarded the disease as exhibiting different conditions or periods.—*First* the forming stage—*Second*, the period of high vascular excitement, with pain in the forehead, eyes and loins—*Third*, the period characterized by the abatement of the symptoms of the preceding stage, and terminating in convalescence—or in the

black vomit, or the assemblage of symptoms usually accompanying black vomit.—*Fourth*—the period characterised by black vomit. The black vomit has been so uniformly present in the last period of fatal cases of this epidemic, that it appears to me correct to regard it as the characteristic of this period. And as the patient often survives three days, and in one case four and a half days after its unequivocal appearance, it would be manifestly improper to regard it as a *mode* of death.

It is proper here to add, that there has been great uniformity in the leading symptoms of all the cases. *Pains in the head, eyes, and loins*—the *characteristic expression of the eyes--vascular excitement and gastric irritability* in the *first* periods:—*augmented gastric irritability, and black vomit* near the fatal termination, and *yellow suffusion* after death, have been more or less observable in every case. I have therefore regarded these as the *pathognomonic* symptoms of the disease.

PATHOLOGY.

Intending to give among the cases, the post mortem examinations I have made, I shall omit under the present head, unimportant details, and confine my attention chiefly to the essential pathological condition, which was identical in its nature in every case examined. What follows is the result of seven autopsies.

The *mucous coat* of the stomach is the tissue on which the disease uniformly and mainly commits its greatest ravages. Other structures experience its fury, give rise to various symptoms, and doubtless contribute to the fatal issue. The peritonæal, muscular and cellular coats of the stomach, present so far as I can determine, no pathological lesion whatever. Viewed externally this organ is of a pretty uniform dull pearl color, except where the trunks of the blood vessels are rendered visible by the darkish blood with which they are more or less distended. The stomach on being opened was in all cases found to contain a considerable quantity—from half a pint to a pint of black vomit—whether the

patient had vomited for some time preceeding his death or not. On pouring off the black vomit, dark colored flocculi—the flocculi of black vomit—are seen *adherent* to the mucous coat of the stomach, dispersed as well over its superior portions as its inferior—the body lying horizontally and on its back—thus showing they had not subsided after death. The flocculi being detached by washing the stomach in water, the mucous membrane is found *entire*, of a dull pearl *whitish* color, much *thickened* and *softened*. In ~~two~~ cases the softening was so great that the villous coat could in portions be scraped almost into a pulp, with the finger nails. The thickening of the mucous coat is not uniform, but presents in portions, particularly about the lesser curvature, *rugæ*, and an unequal surface somewhat like the unevennesses of the rind of a lemon—~~the statement is incorrect~~. No erosions or abrasions have I yet witnessed, unless I except in two cases, an *apparent* ulceration or two of the diameter of a pin's head;—and a very slight abrasion in two cases of the edge of the reduplicated fold forming the border of the cardia. Neither was there any thing in the matters vomited in the most ferocious cases, which on careful examination could be mistaken for detached portions of the stomach. A *very few* points and small stelliform, *spattered* patches of bright red, as in common inflammation of this tissue, existed;—but these points and patches of red would not, except in a single case, form a surface in their aggregate an inch square. In two of the cases examined, the whole mucous coat of the stomach presented the white, much thickened and softened condition above described;—in four cases, from three fourths to five sixths only of the mucous coat presented this condition, commencing at the pylorus and terminating within one or two inches of the cardiac orifice;—while the remaining portion surrounding the cardia, was the seat of a *most intense diffuse red injection*—preserved its *usual firmness*,—was but little if at all *thickened*—and entirely *destitute* of *flocculi* adherent to its surface. This injection does not present the pointed, stellated or spattered patches of common *active* inflammation; but the blood appears to be *diffused* throughout the mucous tissue, and the co-

lor is more or less intense, in proportion to the quantity of blood contained in the different parts, and is of a hue between venous and arterial blood. The line of demarcation between the pale or colorless and injected portions of the mucous coat, is for the most part, as well defined by the different thickness of the two portions, as by their different color,—the white, thickened condition of the one part, the intensely engorged, red color of the other, which still preserves its normal thickness.

I entertain no doubt that the mucous coat which is thickened and softened, with dark flocculi more or less dispersed over its surface, and destitute of blood in its texture, is in a pathological condition, more advanced than the injected portion. That the thickening and softening supervene upon, or is a sequel of the intense injection or engorgement:—and of course, that a state of high sanguineous engorgement is *invariably* precedent to that in which the larger portion of the mucous coat is uniformly found after death. The disengorgement in whatsoever way effected—whether by an imperfectly performed process of secretion, as appears not improbable, or whether the blood is effused pure and undergoes some change by admixture with the fluids of the stomach—forms the black vomit, or furnishes the material for it, and leaves the mucous tissue bloodless, colorless, thickened, more or less softened and unfit for the purposes of life.

If it be borne in mind that the colourless portion of the mucous tissue is softened and thickened—that the injected portion is not—and that these pathological lesions do not promptly disappear;—that a careful examination shows the flocculi which are dispersed on the colorless mucous tissue to be closely adherent, as if formed there, while the injected portion is not only destitute of a single flake, but that none will adhere to this portion;—that the colorless condition of at least a large extent of the mucous tissue, was an invariable concomitant of black vomit, while the injected condition was wanting in three cases,—we can feel no doubt of the order in which these lesions succeed each other.

What I wish particularly to insist on, and what appears to me to be amply borne out by the examinations I have

made, is that the essential pathological conditions of the stomach in fatal cases of the present epidemic, so far as these conditions are cognizable by our senses, are: first a state of high sanguineous engorgement of the mucous membrane of this organ, which engorgement is relieved by the formation of the black vomit—a process fatal to the vital uses of this tissue, and of course fatal to life, where a large portion of it is involved. The engorgement is not a condition similar to gastritis—at least to its *common* forms. It does not give rise to the same aggregate of symptoms—it does not present essentially the same pathological appearances—its terminations are altogether unlike.

At what period of the disease the engorgement takes place, I am unable to say with precision. In cases which convalesce rapidly, I believe it does not take place at all. In other cases I believe it seldom occurs to any considerable extent, until the close of the period of excitement. And I have been disposed from the most careful appreciation of symptoms to regard the augmented or renewed gastric irritability occurring at this time, or at a subsequent period, as the first symptom of the commencement of serious engorgement. And in the treatment it will be found a very important indication to prevent any torpor of the cutaneous vessels, or reflux of the blood from the surface upon the internal organs.—What is the condition of the mucous tissue or of the gastric nerves, which invites so singularly in this disease to engorgement, I am wholly unable to conjecture.

In one case the stomach presented numerous bright red points and extensive red spattered patches as in the more common forms of active inflammation of this tissue; and they were chiefly abundant about the cul-de-sac of the stomach. The mucous membrane generally was thickened, softened and in the colorless, disengorged state hitherto described. The appearances in this case were interesting by comparison with the *diffuse* redness seen about the cardiac orifice in other cases.

I deem it almost unnecessary to say, that the examinations were conducted with great care, and the existence of the injection in the texture of the mucous coat and not in the subjacent tissues accurately observed.

Intestinal Canal.--Viewed externally, large portions of this canal are of a deep dark color—not gangrenous. This color is owing in some degree to that of the contents, but the intestinal tube itself is pretty permanently imbued with a dark brown color which does not wholly disappear on washing. There is usually moderate congestion of the bloodvessels. In some cases, sections of the intestines are pale and much contracted. The external coats of the canal are healthy. We find more or less dark matters throughout the tract—those of the duodenum are sometimes mingled with black vomit, which has passed the pylorus, perhaps after death:—lower down, they are black as tar and gelatinous, sanguinolent near the ilio-cæcal valve in one case,—in the contracted portions, moderate in quantity, pasty and colorless. The intestinal mucous membrane is smeared with a starchy material more or less glutinous in different parts; and pathological lesions sometimes are found in the *duodenal* and *ilio-cæcal* portions.—The glands of Brunner and Peyer are sometimes greatly developed, at other times apparently healthy. There was no obvious and uniform pathological condition apparent to me, in this membrane—it was neither thickened nor softened in any noticeable degree. The upper portions of the tube were more commonly distended, the lower portions contracted.—Not a particle of bile was ever found in the intestinal canal. Whether this deficiency will explain most of the morbid appearances, I am unable to determine. The absence of bile in the alimentary canal is by no means of unfrequent occurrence in the febrile diseases of this climate; and whenever this condition exists, it very uniformly occasions *black stools*, sometimes viscid and sometimes watery. I have often seen stools as *black as tar* wholly and almost *instantaneously* checked by a single discharge of *bile*, and the stools forthwith become healthy. While on this subject, it may not be amiss to mention that dark, tarry stools are often supposed to be and described as vitiated *bile*, when they do not contain a particle of bile. The morbid appearances of the intestinal tube were much less severe than those of the stomach, as well as widely different.

The liver—was found in all cases of its usual dimensions,—of ordinary firmness, and without any obvious *structural* derangement. In three cases it was of a very light drab color externally and internally, and destitute of blood—in one, of a dark claret color and congested with blood—in the others of its usual appearance and containing a moderate quantity of blood. In all cases there appeared to be a suspension of the biliary secretion; no bile could be squeezed from the substance of the liver. The bile in the gall bladder was deficient in quantity—in some, dark and very tenacious, in others yellow and thin—in only one case was the gall bladder distended. The mucous lining of the gall bladder was in one case *intensely* inflamed. It is scarcely necessary here to contradict the popular error, that black vomit is a vitiated product of this organ, for nothing of this nature was discovered in any part of its substance, nor in the ducts leading to the alimentary canal. On the contrary the *ductus communis choledochus* as in the case of Robinson, contained a little yellow bile, while the stomach was full of turbid black vomit of the deepest dye.

The *yellow suffusion* of the surface is properly considered among the *post mortem* appearances. That there is a total want of the biliary secretion during the latter periods of this disease is an unquestionable fact. There is no bile contained in the stools that can be discovered,—none is found after death in the alimentary canal, in the substance of the liver, and but a very small, less than the usual quantity in the gall bladder. Where is it? At what time this suspension of hepatic action takes place, I am unable to say with precision. From observation of the symptoms, I believe it occurs as early as engorgement of the stomach commences, and is perhaps synchronous with this event. Slight yellow suffusion of portions of the superior parts of the body, occurs as has been described, about the time that other symptoms lead us strongly to suspect the commencement of engorgement. The intense yellow color after death depends on the coloring matter of the bile which has been deposited by the blood. Whether there has been a reabsorption of the biliary secretion, or whether the elements have never been eliminated, is immaterial to

the appearance now under consideration.—During life, the yellow color is in some degree veiled by the red coloring matter of the blood;—on the separation of this fluid after death, the serous or coagulable portions are of a yellow hue,—the red globules produce the livid patches. Wherever in the present disease I have found serum after death, as in the pericardium, it has been *invariably* of the hue of the surface.

The bladder of Urine—was in some contracted, in others distended—and presented nothing worthy of particular notice, except in a single case—that of Forsyth—to which reference may be made for the facts. *The Kidneys* when examined offered nothing worthy of note.

The pancreas was generally firm and dry. *The spleen* natural.

The thoracic viscera are sound. A few drams of yellow serum are commonly found in the pericardium:—and in one case a large false polypus of a bright yellow hue in the left ventricle. *The Heart* usually contains a moderate quantity of darkish blood. The blood is healthy, neither putrid nor dissolved.

The Brain and Spinal Marrow, were not examined.

According to the pathological conditions above described, it appears that two important organs have *invariably* suffered—the *stomach* and the *liver*. The *mucous coat* of the former organ *always* has presented *severe structural* derangements:—a condition which I am strongly disposed to regard as the proximate cause of the death of the individual, the *mortis ratio sufficiens*.—The latter organ, the *liver*, has with *equal uniformity* exhibited undoubted evidences of severe *functional* derangement—or accurately speaking, a *total suspension* of its function of *biliary secretion*. How intimately these two conditions are associated,—what relation they bear to each other in the chain of cause and effect, or whether they are independent effects of some common cause, I cannot determine. From the suspension of the urinary secretion, which very uniformly occurs without ap-

preciable lesion of the kidneys, during the last period of the disease; and from the occasional pathological lesions of the mucous linings of the gall bladder and of the urinary bladder, &c. it would appear that most, perhaps all the glandular and mucous tissues respectively of the abdomen, are prone to be in some degree similarly affected in this disease.

The obstacles to extensive dissections in private practice, rendered it impracticable to make examinations of the brain and spinal marrow—as was desirable; although the symptoms would I think justify the doubt, whether any *peculiar, appreciable* lesion of the nervous system existed..

The *blood* drawn during the stage of excitement, appeared to me not to vary from a healthy condition. It *coagulated with moderate firmness, without inflammatory buff, or tendency to putrescence*. Nor were there any symptoms or appearances which I regarded as showing any defect in its decarbonization by the lungs.

TREATMENT.

It is a remark that has come down to us from the fathers of medicine, and approved by all conversant with Epidemic Diseases, that each particular epidemic requires modifications of treatment, to be learned only by a careful study of its constitution, and observation of the effects of remedies. Such was the case in the Epidemic which I have endeavored to sketch. When called on to prescribe for the disease before us, several cases presented themselves in rapid succession. Guided by the vascular excitement and local pains, the furred tongue and sickness of the stomach, I bled and prescribed calomel. The bleeding produced some mitigation of the suffering. Returning in a few hours, I found my patients had vomited, and the irritability of the stomach increased. I repeated the calomel to quiet the stomach, and the same results followed as before. I varied its mode of administration. I gave it in two and five grain doses—in ten, twenty and thirty grains

at a dose—to some I gave it in pills made up with gum arabic or blue mass—to others I administered it in a bolus, with a few drops of molasses. I combined it with Dover's powder—with camphor;—I had it carefully rubbed with crude opium. Its administration was invariably succeeded by a renewal of the vomiting.—I have been so long in the practice of controlling gastric irritability, restoring healthy secretions and the balance of the circulation in the violent congestive fevers which are the endemic of the interior country, with calomel, that I could not readily relinquish the use of it.—And so strong was my confidence in calomel from having witnessed its good effects, not only in Congestive Fever, but in nearly all the climatic diseases of Texas, that I suspected at some moments, the bleeding might have been mischievous. To relieve the vomiting and irritability of the stomach, which had now in some patients become quite aggravated, I employed cupping over the abdomen, sinapisms to the same region and to the extremities, with various internal medicines—but most of them with very insufficient results. I had come fully to the conclusion, that calomel was not the remedy, and I abandoned it. In the mean time two of my patients died with unequivocal *black vomit*—and by the politeness of my professional brethren, I had been called to see three other persons laboring under the same fatal symptom, all of whom shortly after died. Other fatal cases quite similar, were related to me on competent authority. I examined the body of one of my patients after death, and embraced with avidity the courtesy extended to me by my professional brethren, to examine with them the bodies of two of their patients, who had died with the black vomit.

Several cases of unequivocal *black vomit*, with other pathognomonic symptoms of Yellow Fever, left no doubt as to the true character of the disease—but I was ignorant of a successful method of treating the present Epidemic. My situation was painful in the extreme. With a considerable number of patients looking to, and depending on me for whatever aid medicine could afford, I had been baffled and disappointed in those remedies wherein I had placed my chief reliance. My medical

brethren who had had any cases of the *Epidemic* to manage, professed themselves to have as little cause for self congratulation in their treatment, as I have done.

Under these circumstances I was compelled to change my treatment. The inspection of three bodies had revealed the awful ravages of the disease on the stomach. Mercurials had mainly failed to procure stools. I sought a cathartic, which should promptly unload the alimentary canal, without irritating it—and which might be given in small and frequently repeated doses, so as not to offend the stomach by its bulk, and thus excite vomiting. I pitched on the old senna and manna physic, and noting the entire absence of bile in the alimentary tract, I added rhubarb to the decoction, as well to act on the liver as to supply the deficiency of bile, by the substance most analogous to it. I gave the senna and rhubarb infusion in small and repeated doses, and found that, so far from adding to the irritability of the stomach, it allayed it, and operated promptly with copious bilious stools. I gradually returned to a very confident employment of the lancet. Without going over the other steps which led me to the practice I have adopted, I proceed to detail that practice.

To be combatted successfully, this disease must be attacked PROMPTLY; it is then *very easily* manageable. But if the period of excitement, which rarely lasts till the end of the second day, be suffered to pass without the use of appropriate means, the prospect of recovery is rather unfavorable, and becomes proportionably more so, as these means are delayed. An *ever watchful* and *trusty* attendant or nurse, is of *indispensable* importance. Without such an attendant, the most skilful medication will frequently be followed by death. This is more emphatically true in the disease before us, than in any other I ever treated. With prompt medical advice, and a good nurse—who by the way, has little else to do than to prevent the patient from exposing himself to cold air—I know no severe disease so perfectly within our control, and requiring so little medication.

When called to a patient, if the excitement is fairly developed, I immediately bleed him in a sitting posture till slight faintness, or a mitigation of the pains is produced. This usually requires from twelve to eighteen ounces of blood. At the same time, I order a strong hot mustard bath for the feet, to be used immediately after the bleeding, and applied as high up the extremities as can conveniently be done. Immediately the patient removes his feet from the mustard bath, he is to be carefully placed in bed, and most sedulously guarded against any current of cold air, or any extensive exposure of the surface to cool air, although quiescent; and an infusion of senna and rhubarb prepared as follows:—*R. Sennae fol: unc: ss.---Rhei opt: p. drs. iii—Aq: bullient:-- unc viii* Cola et adde mannae unc: ss—to be administered in two ounce doses, every hour or two hours till it operates freely on the bowels. For a beverage I prescribe warm tamarind water or any warm mild tea, as sage tea, in moderate quantity, which the patient may prefer. From this time he must be most assiduously guarded against any exposure, which may repel the blood from the surface upon the internal organs. So careful am I on this point, that I think it advisable when the sick room does not admit of a regulated temperature, for the patient to use his close vessel, with a blanket about him, on the bed, during the operation of the cathartic. After its operation, the patient seldom requires any further internal medicine whatsoever, except the warm tamarind water or sage tea. I however, repeat the mustard bath for the feet, once, twice or three times in the twenty four hours, as a means of sustaining and assuring a continued glow of the surface. Seldom is any nourishment whatever required, until convalescence declares itself, unless this event should be much protracted. When this has fully taken place, and food becomes proper, the patient will generally relish a little toast and tea.

The bleeding has never failed in my hands to produce considerable mitigation of the pains, heat of the surface and vascular excitement—the operation of the cathartic infusion farther promotes the relief of the pain, diminishes excitement, quiets the gas-

tric irritability, and leaves the skin soft and perspirable—if indeed perspiration has not already, as it generally does, ensued on the bleeding.---I attach great importance to the lancet in this disease, and my confidence in it is increasing; I have not however repeated the bleedings, as perhaps I ought to have done. The vomitings which sometimes occur *directly* after the invasion, are of far less consequence, than those ~~which~~ ^{which} supervene at a subsequent period of the disease; ~~the early~~ vomitings may be safely favored by drinking freely of tepid water. They are soon checked by the cathartic infusion.

If after the symptoms of the period of excitement shall have abated, the extremities become rather cool and dry, the *hot* mustard bath must again be promptly resorted to and the stomach must be watched lest any irritability creep on unobserved. *Nausea* or *vomiting* at this period, must be *met at once* with from six to fifteen drops of *Black Drop* or of Laudanum; and repeated every few hours, till the gastric irritability be quieted. The *mustard bath* and *opiate* seldom fail to effect our object, if employed before severe engorgement of the stomach has taken place. This gastric irritability with cool, dry surface, is usually accompanied with a rather *languid* pulse. I have accordingly, in addition to the means just mentioned, given with advantage, a decoction of Virginia snake-root, combining it with small quantities of the rhubarb and senna infusion, to keep up a moderate action of the alimentary canal. Of late however, I have had much less occasion than formerly, to use either the opiate or snake-root. The stomach being rendered tranquil, and a glow reproduced on the surface, I let the patient repose from further internal medicines, and rely on careful covering and an occasional mustard bath for the feet.

When, as has happened in several cases, the excitement was not fully developed at the time I was first called to the patient, I have deferred bleeding until this condition took place, administering in the mean

time, the senna and rhubarb infusion and the mustard bath, and resorting to the lancet afterwards.

After the bleeding, the pulse commonly rises again, though with abated force, and I believe the bleeding might be sometimes repeated with advantage, but I have not often found it necessary, trusting to the copious evacuations which the cathartic infusion seldom fails to produce. I am, however, careful to bleed from a large orifice, in order to produce the most effect, with the loss of a given quantity of blood. And I use the precaution of employing the mustard bath *immediately* after bleeding, before the system reacts from its effects; and when employed subsequently during the period of *excitement*, it should be only *tepid*, so as not to increase the vascular action. The strong *tepid* mustard bath at this time acts as a most soothing anodyne.

The alimentary canal having been once freely evacuated, no advantage has appeared to me to follow a repetition of the purgative:—on the contrary, my object then is to leave the stomach and bowels to repose. At an early period, I kept up a moderate action of the bowels, by small doses of the infusion, at distant intervals. Of late I do not repeat the cathartic, until twenty four hours shall have passed without a motion, and I discover no inconvenience from the moderate costiveness, which very usually follows the operation of the cathartic.

During the period of excitement, no nutriment whatever is required. As this period subsides, I have given toast-water acidulated by cutting a lemon or sour orange in it, in small quantities, and have found it grateful to the patient. I have, however, in a number of cases pursued a system of *total abstinence* until convalescence was fully declared, although this should not take place until the fifth day; and in no single instance has the smallest inconvenience arisen. On the other hand, a moderate portion of light nourishment has several times excited unpleasant symptoms.

I have endeavored to insist strongly on the necessity of protecting the patient against exposure, which should repulse the blood from the surface, upon the stomach, and other internal organs. I wish to be explicit on this

part of the treatment. It is neither desirable nor proper to load the patient with bed clothes. A single thick woollen blanket, with a cotton coverlid, or at most, two blankets, will be quite sufficient. The patient should not be sweltered—but only a *mild glow* or *gentle perspiration* kept up on the surface—in effect, a *diapnoe* rather than *free diaphoresis*. It is, however, *essential* that this mild glow be not repulsed. When by exposure this happens, the mucous membrane of the stomach becomes gorged with blood, its irritability greatly increased, and its healthy functions arrested—at the same time the skin becomes *inactive*, moderately cool, and *dry*; the pulse languid, and there succeeds if not obviated, the train of symptoms described as tending to a fatal termination.

In this condition our main reliance is on *opiates* administered internally, and the mustard bath frequently repeated—Opiates have acted remarkably kindly in this stage of the disease, and have uniformly proved very beneficial. They have appeared to save some who were rapidly tending to a hopeless condition. I have usually alternated them, with the infusion of senna and rhubarb, with very great apparent benefit—controlling gastric irritability and gently moving the bowels at the same time. Even in forlorn cases of violent hickup and black vomit, when we do not expect to save the patient, opiates enable us to relieve, in some measure, these distressing and harassing symptoms, and often to procure quiet and refreshing sleep, lengthen the few remaining hours, and smooth the pillow of the dying. I have not observed in these cases, that the mind has been clouded at all by the administration of opiates:—but on the contrary the feelings have appeared renovated. I have preferred the black drop or rather the liq. opii acetat: and have given it in doses of from five to ten drops every four or eight hours according to circumstances—sometimes in larger doses. I have given the same quantity of laudanum with an absorbent—in the form of the chalk mixture. It has sit well on the stomach and acted kindly.

The *temperature* of the room should if practicable, be regulated and kept moderately warm. Proper ventilation should not of course be neglected.

The patient should be *moderately and carefully* covered till convalescence is declared. One of the best evidences of this condition is the return of a natural appetite for *plain light* food.

I have spoken only of mustard baths for the *feet*. It is because we cannot here speedily command any other. Did circumstances enable me, I should use general mustard baths, or at least the semicupium, especially in cases where they are required after the period of excitement has passed.

When the bleeding, senna infusion, mustard bath and mild beverages have been seconded by *attentive* nursing, I have found nothing else required, in a large majority of cases.

Cupping, sinapisms, blisters, &c. I have not had much occasion to employ of late, except the mustard in the manner mentioned above. I applied external irritants and cupping over the epigastrium, in some of my early cases, and witnessed the use of these means in the hands of others. When the gastric irritability is very considerable these means will not control it; they however have sometimes proved useful auxiliaries.

I have not found *tonics* serviceable either during the disease or convalescence, except in a single case. I have known *quinine* and *diffusible stimuli* administered but not with such results as to lead me to their employment. There is no special tendency to putrescence or collapse in the disease before us.

I gave *ice* to a few patients—it increased the gastric irritability. When patients have drank cold water, they have generally complained that it hurt them. I saw a young patient of Dr. K's who was suffering from severe determination of blood to the brain, greatly relieved by the application of ice to the forehead.

Castor Oil.—I gave castor oil to a few patients, and was not dissatisfied with its effects. I have however given a decided preference to the senna and rhubarb infusion.

Of saline purgatives—I have made no use whatever having heretofore wholly abandoned them in the cases

of severe disease which occur during the *latter* periods of the warm season in this climate. In these cases they often produce frequent watery stools; harass and weaken the patient, render the bowels irritable,, augment the thirst, and fail to arouse the liver, or to diminish the febrile excitement: The same remarks will hold true of antimonial medicines. And I feel quite confident that I have known several autumnal fevers converted from an inflammatory to a congestive type by these medicines, particularly antimonials. In our vernal diseases, both antimonials and salts, the latter given in conjunction with the senna infusion, are beneficial and safe.

Of *Mercurials*—I have spoken so fully as to leave but little more to be added concerning them. In the present epidemic, when given at the *commencement* of the attack, they have signally failed. Why they should have failed so *noticeably*, when so plainly indicated by the pathology of the liver, can only be accounted for by the state of the stomach, which in severe cases does not admit of their being carried into the circulation. We are then obliged] to resort to milder cathartics, and avail ourselves of the cutaneo-hepatic sympathy to rouse the liver. Perhaps mercurial inunctions would have been of more service, but besides the unavoidable exposure, the want of attendants for the sick, rendered their use impracticable. Among the early cases, two of a mild character were salivated and recovered: their convalescence was not very speedy. Mercurials may however in subsequent epidemics, should any occur, prove our chief dependence—and the use of them in a few cases, *after the excitement was much abated, combined with opiates*, was apparently of service.

I have not found *Emetics* serviceable, their effects which I learned from the experience of others having induced me not to make any trials of them. They not only fail, particularly antimonials, to remove gastric irritability, but on the contrary aggravate it. As an alterative, and determining to the surface, *Ipecacuanha* is in some cases admissible.

Sudorifics.—Dover's powder, nitrous powders and diaphoretic teas, I have made very little use of, except of

the serpentaria as above mentioned. So far as my experience and information have extended, diaphoretic teas *alone* have failed to afford any relief, when the surface is dry and cool. And as a beverage, I prefer the milder diluent teas. While the excitement lasts bleeding is our most certain and prompt diaphoretic. Very *copious* diaphoresis is not desirable at any period, as it does not produce a solution of the disease.

Enemata—were employed by me in several cases, at an early period of the epidemic, but with no very important result. Latterly I have had no occasion for them, as I have found no difficulty in evacuating the bowels freely without their aid.

When severe hickup or black vomit has made its appearance, I have found no permanent advantage from any treatment. Charcoal, lime-water, opiates, yeast, spirits of turpentine, tonics as quinine, diffusible stimuli of various kinds, absorbents, *total abstinence* from all ingesta, and even emetics, have been tried and utterly failed. I can however believe that recoveries from black vomit *may* take place: for the pathological state of the mucous membrane furnishing this fluid, may perhaps be of so small extent as not necessarily to prove fatal.

I have thus stated somewhat at length, the treatment which I have found to be most successful, and those means which I have known to fail or prove injurious; believing it to be of importance to mention the latter as well as the former the *lædientia* as well as the *juvantia*.

Should any person be disposed to treat lightly or negligently a disease requiring only moderate bleeding and a milder purgative—mustard baths to the feet and warm diluent beverages and to lie quietly covered in bed—three days will rouse him, too late indeed, from his fatal delusion.

Having commended so highly the mild treatment, it may be expected that I should furnish some data as evidence of its success. I have lost but two patients since I abandoned the use of calomel: except the patient when *first* seen, was *already* laboring under hickup or black vomit. One of the two fatal cases was much neglected, having the “semblance not the substance” of attention. To the other, I administered calomel.

PROGNOSIS.

The remarks already made under the preceding heads preclude the necessity of minute details regarding our prognosis. It ought at all times to be guarded: This disease is eminently *insidious*; and direful changes suddenly take place, which no prudence can foresee. I have pretty uniformly observed that the most violent attacks yield most certainly and promptly to curative means. From the frequency of the pulse, the appearance of the tongue, temperature of the surface, or clearness of the intellectual faculties, a favorable prognostic should be formed with extreme caution; as these frequently do not vary from the standard of health, in cases of extreme danger. Observation at the bedside will at length however enable us to detect a delicate shade, a *nuance* in the grouping of these symptoms, which reveal with great certainty the actual condition of the patient. A slight yellow suffusion occurring pretty early in the disease with a cool skin and languid pulse; increase of thirst, of gastric irritability and restlessness, are frequently forerunners of very dangerous symptoms. Yellowness occurring about the seventh day, I have observed as a symptom of recovery. It then becomes very intense all over the surface. A mild glow on the skin, a moderately open pulse, diminished thirst and a tranquil stomach are of favorable augury. I have confidently predicted a fatal issue a long time before the occurrence of any of the more alarming symptoms, by observing a slight eructation of air from the stomach at distant intervals, with so little noise or effort as not to have attracted the notice either of patient or attendant. I have too remarked the aqueous matter ejected from the stomach to assume a delicate slate color many hours before the black vomit declared itself.

Excessive thirst, extreme irritability of the stomach, burning sensation at the pit, hunger, delirium, hæmorrhages, suspension of the urinary secretion, denote *extreme* danger. Hickup has been scarcely less unfavorable symptom according to my observation than black vomit.—From black vomit there has not been a single recovery in Galveston.

It would be very difficult if not impossible to decide

CONTAGION.

with certainty, whether this fever was imported from abroad, or is of domestic origin, if we regard only the circumstances of its first appearance on the Island.—There is at all times a pretty brisk intercourse between New Orleans and Galveston, and yellow fever had been some time prevailing in the former place when it made its appearance in the latter. On the other hand, the abundant local causes; the *exclusive* confinement of the disease to persons much exposed in the *infected* district; the frequent removal of the sick from this district to the healthy parts of the city, without communicating the disease to the attendants or any other persons whatsoever, strongly confirm the opinion of its non-contagiousness. The local causes are the decomposition of *abundant* animal and vegetable matters, going on under and around the houses on the Strand, and the exhalations from the extensive adjacent marsh and quagmire, exposed to an ardent sun, whose thermometrical range in the coolest shade for several hours daily, has been from 84 to 89 degs. of Farenheit.

The sick have been in numerous instances removed from the infected district, to the healthy sections of the city, and in no case so far as I can learn on careful inquiry, have the attendants or inmates of the houses, contracted the disease. On the contrary, the city with the exception of the infected quarter, has enjoyed its unsurpassed general healthfulness.

I have made several *post mortem* examinations—handling every organ without squeamishness; immersing my hands freely in the black vomit and other fluids; smelling and viewing them closely; I have *repeatedly tasted black vomit*, when fresh ejected from the stomachs of the living; and I am not aware of ever having experienced further inconvenience or effect than fatigue.

Of the Physicians who practised in this disease, all escaped an attack except two. These two *resided* in the *infected* district—the others lived without it.

After a careful observation of the history of the Epidemic, no fact has come to light which would show that the disease is contagious, that is communicable from a person laboring under it to one in health; but that it is contracted only by exposure in the infected district.

The subject of contagion is one of great importance. A belief in the contagiousness of this disease, would deprive the sick of the most necessary attentions.—Non-contagion destroys many of the horrors of an Epidemic, as a removal only a short distance, places us beyond its influence.

MORTALITY.

From the want of accurate data, the mortality cannot be ascertained. According to the best information I can procure, I do not think the number of deaths from the late Epidemic, varies greatly from one hundred. Some persons estimate it much higher.

GENERAL REMARKS.

Some persons regard Yellow Fever as an aggravated type of Bilious Fever. I am not of this opinion. These two types of fever are quite unlike in important particulars:—neither do they run into each other by imperceptible gradations. A *mild* attack of Yellow Fever is *distinctly* characterized; and there are degrees of violence in this fever as well as in bilious fevers. Yellow Fever was sometimes succeeded by an intermittant, but this was of *rare* occurrence in the present Epidemic.—I can on the other hand, very readily trace the various gradations from a mild intermittent to the severest endemic congestive fever of the interior. When the system emerges from the congestion, the disease not unfrequently displays the form either of a violent remittent fever, or any other intermediate type, down to a mild intermittent.—Common congestive fever pervades broad regions, regardless of local circumstances of limited extent. Persons residing in the region, are subject to an attack, and to repetitions of it, with a liability probably increased by the previous attacks. Yellow Fever is confined to narrow limits, which may be easily learned and thus avoided; and recovery from one attack affords some though not complete protection against fu-

ture ones. Yellow Fever requires generally for its development, proximity to water, and an ardent sun; and shall I not add, a population, more or less dense? Congestive Fever may occur in any part of Texas where marsh miasmata exist, and at any season of the year.—The violent affection of the stomach in Yellow Fever presents an aggregate of symptoms in their general complexion, as well as in important particulars, quite unlike those which denote the severe gastric inflammation which often accompanies *bilious* fevers of a high grade.

Ten or twelve days after the appearance of the Epidemic, as has been before stated, it was wholly checked by a fall of the mercury to $67\frac{1}{2}$ degs and there was no new case for nearly three days. The disease was at that time confined within very narrow limits. As the temperature became again elevated, new cases appeared and the limits of the infected district were gradually much extended and extending, when a fall of the mercury to 45 degs. occurred. But the Epidemic influences were now become so inveterate as not to be wholly destroyed by this low temperature, until the Norther setting in on Nov. 20, depressed the mercury to 40 deg. which has, it is believed, wholly arrested the disease.—Had the appropriate sanitary measures been taken at the time the disease was suspended by a fall of the mercury to $67\frac{1}{2}$ degs. it is reasonable to suppose, that it might have been permanently arrested. But the efforts of the citizens even then were paralyzed, by the absurd denial of a few who feared their pecuniary interests would be damaged by a knowledge of the existence of yellow fever among us, aided by the *gross ignorance* of others, who in their pointless hostility to the name of yellow fever, declared the recent Epidemic to be the Plague.—They were, however, most signally rebuked by the disease stamping almost every fatal case with its *unequivocal seal of black vomit*.—Whoever mistakes Black Vomit for Plague, which according to Bancroft, is *always* accompanied with buboes and carbuncles, might be expected to declare a mild intermittent, to be a case of malignant small pox.

Should the Yellow Fever again visit us, which God grant may never be, the remembrance of what has recently occurred, ought to operate as a salutary caution, not to waste in bootless disputes, the time which should be devoted to combating the disease.

In my meteorological remarks, I omitted any description of the weather during the past summer preceding the breaking out of the epidemic, as my time has been passed until recently in the city of Houston. It may be generally stated that the thermometer during the hottest season in Texas ranges for some weeks from 90 deg. to 98 and 100 deg. in the shade; that there were abundant rains at Galveston about the middle of August, and that the season generally has not been marked by any observed peculiarity.

CASES.

For convenience of reference, the cases accompanied with dissections are arranged at the close of the others.

CASE I. Mr. D. aged about 35, of large frame, excellent constitution and very robust;—slightly indisposed for several days past—feeling very unwell this morning about 10 o'clock, Oct. 2, quit work—was attacked violently about midday—took some medicine, after which he vomited excessively.—About 8 P. M. I saw him, when he presented the following state—*most intense pain through the forehead and eyes—excruciating agony in the loins extending down the thighs—his sufferings are maddening—he rolls from side to side on his bed which he quits every few minutes to walk about the room—he utters frequent exclamations of torture, with heart-rending cries for relief—face flushed and swollen—eyes red, shining, blood-shot and protruded—skin warm and dry with occasional fugitive moisture—pulse full and frequent—tongue moist and moderately furred—stomach rather irritable—abdomen indolent on pressure.*—Ordered 40 grs. of calomel and 10 grs. of p. ipecac. et opii. c.

Oct. 3. He passed a night of horrible suffering with frequent vomiting—no alvine evacuation-- Ordered 30 grs. of calomel in syrup, which was vomited—afterwards in pills, 10 grs. to be given every 3 hours; these were vomited, and no operations procured on the bowels.—Injections were used, but they failed to procure free evacuations.

P. M.—*Very great restlessness, with difficulty can be kept quiet and in bed—thirst is becoming very urgent—violence of pains a little slackened—general condition worse.* Ordered castor oil with oil of turpentine.

Oct. 4. Castor oil and turpentine are operating pretty freely with darkish stools—gastric irritability, restlessness and pains continue but rather mitigated—no sleep since the attack—tongue becoming rather dry and thinner—thirst urgent—slight sensibility of the epigastrium. Ordered *ice* and *iced water* for a beverage. P. M. *Ice* seems to augment his thirst and gastric irritability—discontinued. Force of the pulse and heat of surface considerably abated—both still above par. Bled him 10 oz.—52 hours after attack—and applied three large cups to abdomen which furnished but little blood and harassed him exceedingly, which prevented the application of more—a large blister over the cupped region and a mustard bath for his feet. No moisture of surface. Infusion of serpentaria as a beverage, and *horâ somni*, 8 drops of black drop and 30 drops s. s. nitre. From the bleeding he found very sensible relief of a fulness of the head which he complained made him almost crazy. His countenance to-day exhibited a mingled expression of wildness and anguish perfectly indescribable.

Oct. 5. Slept a little last night and is rather more comfortable this morning—feelings greatly refreshed. Some fulness of head; pains of forehead, loins and legs, gastric uneasiness and general restlessness remain. He frequently requests to be permitted to get up or sit up. Bowels costive, surface dry. Ordered the infusion of senna and rhubarb every 4 hours with decoct. of serpentaria. This operated pretty freely on his bowels. In the evening, a good deal of gastric uneasiness, and restlessness. Ordered the black drop and s. s. nitre as before.

Oct. 6. The anodyne of last night alleviated the gastric symptoms, and produced some slumbers.

From this date, he suffered a good deal from restlessness, want of sleep, urgent thirst, gastric irritability, sensations of extreme muscular fatigue, fulness of the head and slight incoherence of memory,—gradually declining until the 17th day of the month—the 15th of his attack—when I considered his convalescence pretty fairly established. The tongue which in this time had become dry, thin, red, and *cracked* open in the central portion, regained its moisture. The adnata of his eye, and surface became quite yellow. The symptoms above enumerated were controlled by the very sparing and cau-

tious administration of black drop, in which I had not yet gained confidence, and it was used rather to obviate urgent symptoms than with a view of permanent good. His bowels were kept open by the occasional use of senna and rhubarb infusion; he used various diluent beverages, as corn meal gruel, toast water acidulated with the sour orange. A variety of means was employed to combat the symptoms, but with very insufficient results.—Circumstances not necessary to be here mentioned, delayed blood letting and rendered me timid in its use. Of the importance of bleeding in this epidemic, I may here mention that I certainly know of but a *single* recovery *without its use*. I attribute *essential* service to the opiate. None who saw his wildness, anguish, wakefulness, urgent thirst, harassed feelings, his muscular fatigue, joined with the impossibility almost of remaining quiet a few minutes, supposed he would recover. These symptoms disappeared before the opiate.

He recovered slowly, without adverse symptom.

CASE II. Mrs. K. a native of the north; married, aged about 25 years, tall and slender, of good constitution and good general health. *Sept. 30.—7 P. M.*, has been slightly indisposed for several days—was attacked this evening with pains of the limbs, moderate chilliness, fullness of the head and slight sickness of the stomach. She now presents the following state—*violent pains through the forehead and orbits, in the loins, and of the limbs—face flushed and swollen,—eyes injected, shining and intolerant of light—surface warm and dry—slight sickness of the stomach—no tenderness of the abdomen on pressure—moderate thirst—bowels costive—smart restlessness—pulse frequent and full*. Bled about 12 oz., which produced a good deal of mitigation of the pains and vascular excitement with tolerably free diaphoresis.—R. calomel 20 grs.

*Oct. 1.—*Passed an uncomfortable night—slept a little towards day—vomited several times—considerable thirst—had a small dejection. Symptoms same as yesterday evening, a little abated. R. a pill of rhubarb, ipecac.

and calomel every 4 hours. Toast water as a beverage. A good deal of gastric irritability and slight vomiting during the day; with a few moderate alvine dejections. At night. R. calomel grs. 20—p. dover grs. 5—pediluvium.

Oct. 2. Was vomited by the powder, slept indifferently well the latter part of the night. Decided to let her stomach rest to-day on toast water. Slight gastric irritability throughout the day without vomiting—with considerable restlessness—thirst a little urgent—other symptoms smartly abated. R. *horâ somni*. Blue mass 12 grs.—tinct. opii acetat. 6 drops—foot bath.

Oct. 3. Tolerable slumbers through the night, vascular excitement moderate—not much pain remaining;—feels as if she ought to have an operation—no passage since yesterday. R. Infusion of senna and rhubarb, which operated kindly and copiously.

Oct 5. Convalescent, appetite natural. Recovery was prompt and uninterrupted.]

This case is given as an example of a mild, but distinctly marked attack. It run its course in five days, and the febrile and other symptoms gradually subsided without any marked crisis. The pains disappeared in the first three days. The calomel alone, and in combination excited emesis, and the thirst was augmented. The cathartic infusion was the last medicine she took. She was carefully attended, drank only warm beverages and was not at all exposed to cool air. She passed the rest of the epidemic period in the centre of the infected district, with numerous cases occurring in her own house and on every side of her, without the least subsequent indisposition.

CASE III. Mr. G.—tall and slender, of good constitution and good general health, residing in the same house with the preceding case, was similarly attacked 8 or 10 hours afterwards, about 3 A. M. of Oct. 1.—At 7 o'clock, 4 hours after the attack, he presents the following state. *Intense pain through the forehead and orbits of the eyes,—and in the loins—face flushed and bloated—eyes protuberant, bloodshot and shining,—intolerance of light—pulse very full, frequent about 100, not hard—*

surface very hot and dry—slight gastric irritability—very little tenderness of epigastrium—thirst moderate—tongue a little furred—great restlessness—disposed to move from one bed to another and to throw off the covering—mind clear.—Bled 16 oz. from a large orifice, which brought on immediately free diaphoresis, with much mitigation of the pains particularly of the forehead. R. calomel grs. 25.—Returning 4 hours afterwards found the calomel had vomited without any operation on the bowels.—Ordered a pill of calomel, rhubarb and blue mass once in 4 hours.—In the afternoon he had, I found, taken two pills, both of which excited emesis.—Discontinue the pills.

Horâ somni.—Great restlessness.—R. calomel grs. 25 p. dover 10 grs.—and foot bath.

Oct. 2. Had a very uncomfortable night, vomited severely after taking the powder. Symptoms same as yesterday, somewhat mitigated with the exception of the thirst and restlessness which are much increased—one or two small stools—general aspect quite unfavorable—throws off the covering of the bed and is making incessant changes of place and position.—R. ol. ricini oz. $1\frac{1}{2}$ —this produced smart retching, with free alvine dejections.—Restlessness abated somewhat.—R. *horâ somni*—warm bath for feet.

Oct. 3. Occasional slumbers during the night—condition improved.—R. infusion of senna and rhubarb to keep up moderate action on bowels.—Under the use of the infusion his stomach become quiet—other symptoms disappeared—and no further medicine was required.

He became fully convalescent on the fifth day and his recovery was speedy. He remained on the Strand without any subsequent illness.—His restlessness was very great under the use of the mercurials—it subsided on the exhibition of the milder cathartics.—He was well nursed and carefully protected from exposure. He lay immediately beneath the roof, and his chamber was at all times very hot.

CASE IV. Mr. L., age about 28—of middle stature, good constitution and good general health, was *violently* attacked about 6 P. M. Oct. 5, with the characteristic symptoms of the epidemic.—He took 30 grs. of calomel.

Oct. 6. He slept very little during the night—his restlessness was very great, he could be kept in bed only by incessant watching. He suffered much from *gastric* irritability and occasional severe vomiting;—he had a slight stool or two, but there had been no decided effect of the calomel manifested on his bowels.—The calomel was given at intervals throughout the day in the form of pills. He suffered greatly from irritability of the stomach and vomiting; his bowels were moved slightly during the day. The pains of the forehead, and loins, and the restlessness were urgent in the evening—when I bled him 16 oz.—and gave him the senna, rhubarb and manna infusion, and diluent drinks.

Oct. 7. The cathartic infusion operated freely, bringing away copious bilious and feculent stools; after which the patient slept a little, but indifferently well. The gastric irritability is somewhat abated, though still considerable,—thirst moderately urgent, tongue coated, no tenderness of the epigastrium. There is less severity of pain and the general restlessness is not so great, but there is an unquiet manner about the patient, and the complexion of his symptoms is not flattering.—I gave him 8 drops of the black drop and repeated the cathartic infusion occasionally.—The gastric irritability and restlessness were much relieved—he had some refreshing sleep in the course of the day—the vascular excitement moderated. At night I repeated the black drop.

Oct. 8.—The patient slept tolerably during a part of the night—his bowels have been kept open by the cathartic infusion—his condition generally is much improved—the vascular excitement continues moderate.

After this the symptoms gradually subsided and convalescence might be dated about the fifth or sixth day—without any marked crisis.—Calomel was given freely on the 1st and 2d days of the attack and appeared to aggravate the gastric irritability and failed to unload the bowels.—The cathartic infusion effected this object promptly and completely; and the opiate was attended by the most

happy effects.—It not only relieved the sickness of the stomach and restlessness, but changed the aspect of the case which had been previously very unfavorable.

CASE V. Gamble about 25 years of age, middle stature, general health rather impaired for some months past—has been sleeping on the floor of the Ten Pin Alley and attending on L.—was attacked this evening about dark. Two hours afterwards, Oct. 7, at 8½ P. M., he presented the following condition.—*Severe pain through the temples, eyes and loins—eyes bloodshot, shining, protruded,—face flushed and very turgid with blood—pulse full, frequent, not hard—tongue somewhat furred, moist—slight sickness of the stomach—a little tenderness of the epigastrium on smart pressure—has not vomited or retched—bowels constipated—pains in the bones of the lower extremities.*

I bled him about 12 oz., which produced considerable mitigation of his pains and of the arterial action; ordered warm mustard bath for feet, and the infusion of senna rhubarb and manna.

Oct. 8. Neither of the prescriptions were put in execution, through neglect of the person who was charged with this service. Mr. E., who was himself the subject of the next case, kindly undertook the administration of the medicines, but being himself attacked in the course of the day, this patient was left without any attendance whatever. I found it impossible to procure any person to attend him.

Oct. 10. Since he was bled, this person received no medication nor any attendance, until the afternoon of to-day. I have been in the meantime so seriously indisposed myself as to be barely able to see my patients and prescribe, without assisting in the administration of remedial means. The gentlemen of the city council have now zealously devoted themselves to the alleviation of the persons laboring under the epidemic.—I found G., quite in his right mind—his skin was of a deep yellow hue and dry except a little moisture about his forehead—extremities cool—he complained of cold and thirst—his pulse was

slow, feeble and creeping. ---A glass of brandy toddy was held to his mouth---with assistance he raised himself on his elbow and endeavored to hold the glass---a convulsive tremor agitated his limbs---he swallowed the toddy and in a few minutes rolled over and vomited the black vomit of an intensely dark color. I saw him carried to the grave yard two hours afterwards---not quite 72 hours after the invasion.

I have given these imperfect details as furnishing some idea of the progress of a case left to run its course without any disturbing treatment---except the moderate bleeding at the commencement. The attack was of moderate severity---the symptoms of excitement were fully developed---the temperature of the air was not such that the patient suffered from cold.---I took care that he had a sufficient quantity of mild beverages---food he took none. The neglect of this patient is attributable to that intolerant and disputatious spirit, which Rush more than once eloquently alludes to, as prevailing in cities, on the breaking out of malignant or contagious diseases. The existence and nature of the disease are violently disputed by persons who never raise a finger to alleviate the sufferings of its victims.

CASE VI. Mr. E., a native of Europe, aged about 30 years—robust, of good constitution, plethoric habit, and in the enjoyment of excellent health—was attacked about 1 o'clock P. M. Oct. 8, with severe pains of the bones and some chilliness and general indisposition. An hour afterwards he presented the following state—*Excruciating pains* through the *forehead*, in the *loins* and *limbs*—*eyes severely bloodshot* and very *painful*—*face highly flushed* and *swollen*—*skin hot* and *dry*—*pulse very full* and *frequent*, not *hard*—*tongue moist* and a little *furred*, *clean at the edges*—*slight sickness* of the *stomach*—*no tenderness* of the *abdomen*—*mind* a good deal *agitated*, *coherent*—*much general restlessness*. He urgently calls for relief of his sufferings—appears very anxious, but says he is not alarmed—tosses about and can with difficulty be kept quiet.

I immediately drew about xvi oz. of blood from him in a sitting posture, which produced *complete syncope*. On coming to, he felt his pains much mitigated—and a *copious* perspiration broke out all over the surface. His feet were put in a warm mustard bath—and he was carefully covered up. Ordered every two hours, two ounces of the senna and rhubarb infusion, and warm tamarind water for a beverage.

7 o'clock P. M.—The pains and symptoms of excitement have returned—but are considerably less intense than they were before bleeding—with moderate and rather fugitive moisture of the surface at this time—he has had some delirium—before the infusion was prepared he vomited abundantly—at the present time his stomach is tranquil and mind coherent, says he is rather better,—has taken two doses of the infusion as yet without effect. Continue the infusion; repeat the mustard bath.

Oct. 9. Great abatement of all the symptoms—slept some during the latter part of the night—bowels freely operated on—gentle and equally diffused moisture and warmth of the surface. Continue the tamarind water as a beverage. At 7 P. M.—no material change since morning. A genial glow on the surface—thirst moderated—no gastric irritability—pulse rather frequent, of moderate volume, compressible.

Oct. 10. No febrile excitement—stomach quite tranquil—appetite *returned, moderate, natural*,—asks for toast and tea, which were given. Take a little of the infusion to keep the bowels soluble.

Convalescence which might be dated from this time—the *third* day—was sustained, and very prompt. In two days the patient resumed his usual business. No nourishment whatever was taken during the attack. The *only* remedial means employed were *prompt bleeding*, the *cathartic infusion*, the *mustard foot bath*, and *careful guarding* of the surface against cool air; yet the attack was of very great violence—the tossing, mental agitation, and agony of the patient impressed on the by-standers the belief that the case at the onset was desperate, yet none yielded more readily:—and in no one was there greater *promptness* in demanding the resources of the healing art.

CASE VII. Mrs. W.—in the prime of life, of moderate embonpoint, muscular—has been indisposed for a few days—was attacked to-day, Oct. 8, after dinner. At half past 4 P. M. she presented the following state—*severe pains of the forehead, orbits, and of the loins and lower extremities—eyes bloodshot and shining—pulse full and frequent—surface warm and dry—tongue moist—thirst not very urgent—stomach irritable—epigastrium slightly sensible on pressure—bowels constipated—general restlessness not very considerable.*

This case was treated like the preceding, with free and prompt venæ section, two hours after the attack—the warm mustard foot bath—the cathartic infusion of senna and rhubarb—careful guarding against exposure to cool air—and total abstinence from nourishment of every sort. Convalescence might be dated as early as the commencement of the third day; it was prompt and complete.

CASE VIII. Mr. R. a native of England, aged about 25 years, of middle stature, well proportioned, of fair complexion, pretty good constitution, leads a sedentary life, is subject to costiveness—health otherwise good.

Oct. 8, 6 A. M. was attacked in the night about $\frac{1}{2}$ past 1 o'clock. He now presents the following state, 4 hours after the invasion—*excruciating pains through the forehead and orbits of the eyes and in the loins—face flushed and bloated—eyes bloodshot—surface hot, the heat is equally diffused, with a slight fugitive moisture—pulse full, frequent, not hard, about 100—considerable gastric uneasiness—tongue moist, moderately furred—some thirst—no tenderness of the epigastrium—severe bone ache of the lower extremities—great restlessness, with a disposition to get up—mind agitated, but its operations coherent.*

I immediately bled the patient about xiv oz. which produced slight faintness and considerable mitigation of the pains. When the blood ceased to flow, a smart moisture broke out over the surface. His feet were immediately placed in a warm mustard bath—and he was carefully covered. R. sennæ fol. ozss.—Rhei. pulv. drs. ij.—aq.

bullient oz. viij. ft. infus: dein. cola. adde. mannæ oz. i. capiat. unc. unam. omni bihora. For a beverage, tamarind water.

P. M.--Senna infusion has operated moderately:---slight mitigation of the pains---has vomited occasionally---surface warm; pulse frequent and tolerably full; mental operations sluggish but coherent. The patient is compelled to get up and be exposed during the operation of the medicine. Repeat the mustard foot bath---continue the cathartic infusion and tamarind water.

Oct. 9. Had rather a restless night, with a good deal of gastric uneasiness and occasional vomiting. He tosses from side to side---throws off his bedclothes, and appears dull of mind and regardless of himself---surface cooler, of nearly natural temperature---and on inquiry says all of his pains, particularly of his loins, are much abated.

His partner was attacked in the night; and they now lie side by side---sometimes the head of one near the feet of the other---uncovered or nearly so---frequently tossing about, and apparently indifferent, each to his own fate and that of the other. These patients have now no attendant except a person in very feeble health, himself requiring medical aid. I requested this person to use his best endeavors to keep the patients covered. Repeat the warm mustard foot bath---and take occasionally of a warm infusion of Virginia snake root.

In the evening a competent attendant was procured; the directions of the morning were faithfully executed, and the case has assumed on the whole a more favorable complexion. Repeat the mustard bath and continue the snake root infusion.

Oct. 10. The patient slept some last night---his mind is clear, and there is less restlessness.

I will abridge the remaining details of this case. The gastric irritability was considerably augmented in the course of this, the third day, and was becoming quite troublesome. Its aggravation was accompanied with a considerable subsidence of the symptoms of excitement, and an incipient lemon hue of the surface. The stomach was at length effectually quieted by the occasional exhibition of the black drop in doses of 5 drops. An ounce of the senna infusion was given from time to time to keep the

bowels in a soluble condition. Strong toast water acidulated with sour orange served for a beverage and nourishment, and the mustard bath was regularly employed to arouse and keep up the action of the surface. The patient had refreshing naps of sleep--all the morbid symptoms gradually disappeared; and convalescence, without any well defined crisis, may be dated as early perhaps as the 5th day--I did not regard it however as firmly established until the 7th day. Recovery was rapid and complete.

I regard the subsidence of the symptoms of excitement, the incipient lemon hue and aggravation of the gastric symptoms on the third day as threatening great danger. They yielded however pretty promptly to the treatment that was pursued. The opiate, especially, appeared to me to be of the promptest utility. Some degree of vascular excitement returned, and existed during the progress of the disease. During convalescence the pulse for two or three days was only 38, and the most careful examination could not detect any intervening stroke. This slow pulse did not retard the convalescence, nor produce any symptom or sensation traceable to it. It recovered the natural frequency in a few days.

CASE IX. Mr. L., age about 30, of middle stature and good constitution, appears to enjoy tolerable health, leads a sedentary life, not much exposed to the heat of the sun. Oct. 9. This patient came to my house about two hours before day this morning, having been attacked an hour or two previously. The cool air of the night had driven the blood from his face. The pallor of his features, the blood-shot, glaring eye, the anguish from his sufferings rendered his countenance ghastly, and unnatural beyond description. I directed him to return forthwith to his house, put his feet in a warm mustard bath, and take every hour two ounces of a warm infusion of senna, rhubarb, Virginia snake root and manna.

At 7 A. M., I visited my patient and found him lying as described in the preceding case, apparently rather listless or slightly stupid, *suffering smart pain through the*

forehead, eyes and loins—eyes shining and bloodshot—countenance rather haggard—heat of surface and fullness of pulse not yet completely established—thirst considerable—tongue moist, with its margin of a bright red color—smart gastric irritability—slight tenderness of epigastrium—no jactitation.—R. Repeat the mustard bath and continue the senna and serpentaria infusion—keep carefully covered.—In the course of the day the excitement was developed and he was *bled*, with very sensible advantage.

P. M. The cathartic has operated pretty freely—and the patient has vomited. His stomach is now tolerably quiet.

Oct. 10. Has slept some during the night.—The thirst, pains and vascular excitement are subsiding pretty rapidly.—R. Warm tamarind water as a beverage—careful covering and a repetition of the mustard bath.

Oct. 11. A. M., *Third day.* *The surface of the patient is cool,—the pulse of its natural frequency,—his pains nearly disappeared,—his mind scarcely coherent and very sluggish in its operations—great and increasing gastric irritability.* The patient was suffered last night to throw off his clothing and raise a window, which admitted a current of cool air blowing over him. Ordered immediately 6 drops of the tinct. opii. acetat., (black drop,) to be repeated every 6 hours—a weak infusion of senna, rhubarb, serpentaria and manna to be drunk warm, and the warm mustard bath for feet, morning, noon and night—to be carefully covered.

Oct. 12. A. M.—The patient has suffered considerably since yesterday morning, with uneasiness of the stomach, retchings to vomit and occasional vomiting—his bowels have been moved moderately—frequently changes his position in bed and attempts to get up without appearing to be conscious of what he is doing—moderate stupor—memory rather impaired, and he is apparently unconscious of his situation—heat of surface greater than yesterday, equally diffused, still rather below the healthy standard,—no moisture of the skin—pulse nearly natural. The complexion of the symptoms generally is on the whole less unfavorable than yesterday morning. Continue the same treatment.

Oct. 13. Condition somewhat improved—mind more clear and active, surface warmer, pulse good, restlessness subsided—had a refreshing nap in the night—bowels had been opened once in the last 24 hours. Continue the same treatment.

Oct. 14. Last evening feeling considerable uneasiness of the stomach and restlessness, he took of his own accord 30 drops of tinct. opii. acetat.—He says he slept well after taking it. This morning his mouth is rather dry, and he complains of some fulness of head. These disagreeable symptoms were relieved by free operations on his bowels produced by the infusion of senna, rhubarb and manna.

From this time he continued to improve; no adverse symptom occurred afterwards. Convalescence declared itself about the 15th, the following day—and his recovery was prompt and complete.

The condition of the patient was one of extreme danger if neglected only for a few hours, on the morning of the 11th and during the two following days, when the vascular excitement and pains had subsided, the pulse become natural and the surface cool, with an increase of thirst and irritability of stomach.—At the same time there commonly exists as in this case, some sluggishness of the mental faculties and an indisposition to make complaint unless particularly inquiry be made. This condition of a patient is very sure to mislead the careless or inexperienced; for unless the case be watched carefully and treated appropriately, black vomit creeps upon the patient before its approach is suspected—and in a few hours a fair prospect of recovery is supplanted by the certainty of death.—Cases of this kind have not been of rare occurrence—According to my observation, our main reliance is on opiates to quiet the irritability of the stomach and guard this organ—and with external irritants to arouse the cutaneous vessels which are quite torpid, although the skin to the feel is nearly of natural and equally diffused temperature. The taking of 30 drops of black drop without any serious inconvenience, led me to think that the opiate might be administered with safety in larger doses than I was accustomed to give it.

The only nourishment the patient took, was strong toast water.

CASE X. Mrs. A., aged about 25,—married, of middle stature, rosy complexion, sanguineous temperament, of excellent constitution, and commonly enjoys perfect health. This patient has been slightly indisposed for the preceding day or two, and very apprehensive of an attack of the prevailing epidemic. She was in effect seized about 3 P. M. to-day Oct. 9., with the following symptoms:—*intense pain through the forehead and eyes, in the loins extending down the thighs—face flushed and swollen,—eyes bloodshot and shining—intolerance of light—pulse very full and frequent—surface warm with a little fugitive moisture—considerable gastric uneasiness—very slight tenderness of the epigastrium—tongue moist, moderately furred—thirst moderate.—This patient labored under great nervous excitement, occasionally uttered very piercing cries—the jactitation was excessive and incessant—she could with difficulty be kept sufficiently quiet to be bled.*

I drew about 14 oz. of blood, which was followed by a copious perspiration and considerable mitigation of the pains. Her feet were put in the mustard bath, and she was carefully but lightly covered. She was however so restless as to demand incessant attention.—The senna and rhubarb infusion were given; and tamarind water for a beverage.

Oct. 10. The pains recurred with some severity in the night, but have since much abated. The cathartic infusion operated freely and with a sense of relief.—She made occasional efforts to vomit, but did not reject much. She now lies quite composed, except a disposition occasionally to leave the bed, the jactitation has disappeared, Her stomach is quiet.

The symptoms in this case continued from this time regularly and rapidly to subside, and convalescence declared itself about the close of the third day, without any adverse symptom.—Her bowels were kept open with the cathartic infusion; this, with the bleeding and occasional use of the mustard bath formed the whole medication employed.

CASE XI. Mr. P., about 25 years of age apparently of good constitution and good general health—was attacked between midnight and day, Oct. 13, with the characteristic symptoms of the disease.---This case yielded readily to the use of the senna and rhubarb infusion which produced free operations on the bowels---to the warm mustard bath for the feet, and careful covering in bed, with warm diluent drinks.---The attack was moderately severe, and perfectly defined. I have omitted the details of the case as they furnish nothing of interest except the omission of bleeding in the treatment, and as being the only example of recovery so far as my observation has extended, in a smart attack when bleeding was not employed.

CASE XII. Mr. K., aged about 28, of middle stature, rather slight form, of tolerable constitution, and usually enjoys good health, was attacked about the dawn of day, Oct. 14.---Two hours after he presented the following symptoms:—*pain through the forehead and eyes, in the loins and limbs—face flushed—eyes shining and bloodshot—pulse full and frequent—surface warm—tongue moist, bordered with a bright clean red edge—thirst inconsiderable—smart gastric uneasiness—epigastrium insensible on pressure—considerable restlessness—mental faculties unimpaired.*

I bled him about 12 oz.---his feet were put in a warm mustard bath---ordered the infusion of rhubarb and senna, 2 oz. every two hours till it should operate, and to be carefully covered in bed---warm sage tea for a drink---abstinence from food.---The bleeding produced a noticeable mitigation of the pains and vascular excitement and was followed by moderate diaphoresis.

P. M., The senna and rhubarb infusion brought down free stools---the patient passed on the whole a tolerable day---the pains being much alleviated, though still quite severe.---Repeat the mustard bath---continue the warm diluent drinks.

Oct. 15. Slept some during the night---not soundly.---Symptoms nearly the same as yesterday;---vascular excitement and restlessness abating. Repeat the mustard bath---toast water flavored with slices of sour orange.

P. M., The bowels were opened during the day, with a small quantity of the rhubarb and senna infusion.

Oct. 16. Slept rather indifferently---considerable gastric uneasiness, and occasional efforts to vomit---the heat of the surface, vascular excitement, and pains, nearly subsided---restlessness and thirst rather increased.---Ordered 6 drops of tinct. opii. acetat., every 6 hours or *pro re nata*---mustard foot both---warm sage tea and acidulated toast water.

P. M. Condition nearly the same as in the morning, rather improved---more warmth of surface and vascular excitement---occasional recurrence of the gastric uneasiness. Same prescription as in the morning.

Oct. 17. Slept some last night. The glow on the surface appears to be re-established; and the patient is on the whole considerably better, though occasionally experiencing slight gastric uneasiness---thirst quite moderate.

The patient took of the black drop again this morning, his bowels were opened during the day with the infusion of senna and rhubarb---and the black drop was repeated at night---he drank of sage tea and the toast water acidulated with sour orange---and without any medicine afterwards, he appeared firmly convalescent on the 19th and recovered rapidly.

CASE XIII. I was called to-day *Oct. 16*, to see a little girl, aged 6 years, living on the Strand nearly opposite Messrs. K. & W's. warehouse, laboring under a clearly defined attack of the epidemic, with the leading symptoms enumerated in the preceding cases. It yielded very readily to bleeding, mustard bath and infusion of senna, rhubarb and manna. She was convalescent on the third day.

This was the youngest case I have witnessed where the symptoms were clearly defined.---Two other cases, children of Mrs. R., whose case will be reported further on, one of them at the breast, had attacks of fever which wore the *livery* of the prevailing epidemic.---Both recovered.

CASE XIV. A.—A Mexican, of middle stature, stout frame, full habit, of a dark copper complexion, about 40 years of age, was attacked in the night. At this time, 9 A. M., Oct. 19, he presents the following state. *Excessive pain of the forehead, eyes and loins—face much swollen—eyes bloodshot and shining—pulse full and frequent—surface warm and dry—frequent nausea and retching—great restlessness. His countenance is expressive of intense suffering—and he calls my attention to the seats of his pains by carrying his hand frequently to his forehead and loins. No pain on pressure of the epigastrium.*

I bled him immediately and copiously in a sitting posture, which was followed by copious perspiration and great relief :—his feet were put in a warm mustard bath, a beverage of warm tamarind water was prepared ; and the cathartic infusion of senna and rhubarb ordered, and he was directed to keep carefully covered in bed and to repeat the mustard bath in the evening.

Oct. 20. The patient appears improved, all the symptoms enumerated yesterday still exist, but considerably abated in severity. He was ordered to continue the warm tamarind water as a beverage, to keep carefully covered and repeat the mustard bath immediately, and again in the evening.

Oct. 21. On visiting my patient this morning, I found him sitting up, dressed and with his shoes on.—His aspect however was by no means that of a convalescent. His features were no longer bloated ; his surface was cool, the vascular excitement had wholly subsided ; the pulse was natural, the pains of the forehead and loins were become quite moderate ; his eye preserved its shining appearance, the bloodshot condition was giving place to a yellow suffusion of the adnata ; the gastric irritability which had not at any time been wholly allayed was now become very urgent ; the restlessness and jactitation which had hitherto been troublesome were no longer observed, but were now succeeded by an inclination to get up and walk about, as if unconscious of the slightest indisposition. The general aspect of his case was altogether very unpromising.

I had been able to communicate but very imperfectly with this patient, from his ignorance of the English language. The careful inquiry which his present condition prompted, revealed to me that the infusion of senna and rhubarb had not been prepared, and that the patient had had no operation on his bowels since his attack.

His feet were immediately put in a hot mustard bath—10 drops of black drop were given him to allay the irritability of his stomach, and two ounces of the cathartic infusion were given every hour.—He was put again in bed, with his clothes on, as it was impossible to procure an attendant who should be with him at all times and keep him covered.—His bowels were operated on during the day with copious bilious and feculent stools mixed with cream like matters.—The opiate acted kindly on his stomach; it was found necessary to repeat it occasionally through the day; it did not interrupt the action of the cathartic. The mustard bath was repeated in the evening.

Oct. 22. The condition of the patient on the whole is rather improved—some glow on the surface with moderate vascular excitement has been re-produced. The gastric irritability is rather less urgent, but still requires to be controlled by frequent recurrence to the opiate.

From this time the patient took nothing but black drop and warm teas. The gastric irritability without any considerable change in the other symptoms, was very urgent at times for three or four days, and the black drop was freely resorted to, as occasion required. He took in all nearly three drachms, and entertained the liveliest sense of the relief it afforded him. A yellow suffusion took place gradually and became very intense about the eighth day. By this time the pains and irritability of stomach had quite disappeared and he begun to take light nourishment. He was in a sadly dilapidated condition of health, and wore the appearance of one emaciated by a severe jaundice of many months' duration. He slowly recovered.

In this case the opiate was of essential service and appears to me to have saved life.—Near the termination of the case, when the first quantity of the black drop was exhausted, the desire of the patient to procure more was extreme. This was one of those cases in which an *intense yellow suffusion* of the surface occurring between the

6th and 9th day accompanied a favorable crisis, of which we have several examples. The intense yellow suffusion is not always a sign of recovery, as in the case of L—among the autopsies.

This patient appeared to improve for two days without any operation on his bowels; and could he have been carefully nursed, he might perhaps have recovered without any cathartic whatever, by means of the bleeding and adjuvants mentioned; although the onset of the disease was a furious one. I did not discover any connection between the constipation and the aggravation of some symptoms which occurred on the third day, having often witnessed similar changes when the *primæ viæ* had been freely evacuated.—The only nourishment was toast water—and during the latter period, light animal broths.

CASE XV. Mr. N., mate on steamboat R., plying between Galveston and Houston. This patient was *violently* attacked in the night of the 20th and 21st with the characteristic symptoms of Yellow Fever. When I saw him on the morning of the 21st, he presented the following state—*intense pain through the forehead and orbits of the eyes, in the loins and extending down the thighs—eyes shining and bloodshot—face flushed and bloated—severe gastric irritability—pulse full and frequent,—great restlessness.*

This patient was bled,—freely purged with the infusion of senna and rhubarb—employed the warm mustard bath for his feet twice in the 24 hours, drank warm tamarind water and observed total abstinence from all nourishment for three days, when he appeared convalescent. On the fourth he had a severe paroxysm of Intermittent Fever, which was repeated on the night of the 5th day.—The Intermittent yielded at once to a free use of the sulphate of Quinine.—This was one of the few cases in which the epidemic terminated in or was followed by other forms of fever—I have omitted the details of the case as offering nothing worthy of especial notice.

CASE XVI. Mrs. R.—age about 30—the mother of two children—of middle stature, lean, apparently of good constitution and enjoys good health.—R. whose case is reported among the dissections died in her house on the strand. She then moved up town—She has resided four years on Galveston Island, some miles below the city, without sickness.

Oct. 23. Mrs. R.—has been indisposed for some days—felt pains in the bones between 10 and 11 o'clock to day—no rigor;—dates her attack at 12 o'clock.—Two hours afterwards, I saw her.—*Violent pain through the forehead eyes and loins;—eyes bloodshot and quite characteristic of the disease—they are so painful that she is obliged to shade them from even a dull light,—tongue clean or nearly so, moist,—smart sickness of the stomach and thinks she will vomit soon,—not the least tenderness of abdomen,—surface hot;—pulse frequent, full, soft—about 100.—she frequently desires to get up out of bed,—bowels regular before attack.—Bled her about 12 oz. which produced a slight mitigation of the pain and some abatement of heat of surface and frequency of pulse.—Ordered hot mustard bath for feet—and the infusion of senna according to usual form in wine glass doses every two hours—and the strictest injunctions to keep carefully covered.—Warm tamarind water for beverage.—*

8 P. M.—The patient has been a good deal restless with frequent desire to get up from bed,—she commenced perspiring about three hours after venesection and foot bath, and is now in a fine moist glow,—vomited once—sickness of stomach persists,—pains of head, eyes and loins still severe,—pulse upwards of 90, moderately full not hard—medicine operated slightly.

Continue senna infusion—warm tamarind water and exclusion of cool air from body.

Oct. 24. A. M.—Senna has produced several pretty copious fecal stools.—Slept some during the night.—Pains considerably mitigated but still quite troublesome with some slight nausea. Surface in a moderate glow with moisture:—pulse nearly 90.

Continue tamarind water—repeat warm mustard bath.

12 M.—The pains have quite disappeared:—tongue a little furred—more so than at the invasion.

Oct. 27.—It is not necessary to continue the details of this case.—After the subsidence of the pains of head and back, on the 24th, there was no recurrence of them—the gastric irritability and restlessness with the disposition to rise, shortly afterwards disappeared. The thirst and frequency of pulse gradually, but more slowly abated.—This morning the 5th day—she is quite clear of disease and has asked for toast and tea.—She has not taken a particle of nourishment since the invasion, except what the tamarind water may have contained ;—nor felt the smallest inconvenience from the want of it.—On the 4th day in the morning, having had no passage for 24 hours, it was thought prudent to repeat the senna and rhubarb infusion. She likewise made daily use of the mustard bath.—The attack was one of much severity. This patient did not get off the bed a single time, not even for the operations of the medicine, from her attack till convalescence was fully established, which was the fifth day.

CASE XVII. H.—about 30 years of age, of middle stature, constitution and general health unknown—had been sick of the prevailing epidemic and under treatment for three or four days. His medical attendant being unwell, I was requested to take charge of the case. The treatment hitherto had been *mercurial*.

Oct, 25, 7. P. M.—I found the patient lying on his back and afraid to move, *as the least motion excited his stomach which was extremely irritable, to vomiting—his surface was cool* nearly of the healthy standard—*his pulse slow, full, and very compressible—slight pressure on the epigastrium nauseated him—tongue moist and moderately furred,—obstinate constipation of his bowels—incessant watchfulness*—he complains that he has not slept since he was attacked, and that he feels indescribable sensations all over him—his eye is shining, and viewed by candle light wears a maudlin expression with evident traces of previous injection,—his complexion is of a pale straw yellow

—there remains slight pain of his forehead and loins. His mind appears tolerably coherent, but his memory is manifestly impaired.

The period of vascular excitement is past, the sympathies of the system are nearly destroyed, and he is in the condition which is a prelude to the speedy development of black vomit.

Ordered mustard bath *hot* and *strong* for his feet, to be applied above his knees—and to be repeated every few hours—two ounces of the infusion of senna, rhubarb and manna every three hours—and fifteen drops of *tinct. opii, acetat* (black drop) immediately, and eight drops every five hours subsequently. Keep him carefully covered, and if he sleeps do not, on any account arouse him. Toast water acidulated with sour orange in small quantities.

Oct. 26. 9 A. M.—After the mustard bath, the opiate and first potion of the infusion, the patient fell asleep and did not awake till nearly day dawn. The medication was then continued as directed—and he had two copious consistent operations of his bowels this morning. His condition is much improved, feels much refreshed—there is a slight glow of his surface—the irritability of the stomach is smartly abated. Ordered five drops of the *tinct. opii acetat.* every eight hours and a potion of the infusion every six hours; same directions in other respects as before.

Oct. 27. A. M.—His condition has been regularly and rapidly improving since yesterday morning. He has had several refreshing naps—his bowels have been moderately open—thirst greatly diminished and irritability of stomach quite subsided—there is a fine glow on his surface, and he seems in a fair way to become speedily convalescent.

I was compelled to leave this patient to visit another out of the city, and was absent some days. He however became rapidly convalescent, using no further medicine than the infusion and opiate *pro re nata*.

This case is one of many examples in this disease of the irritating effects of mercurials and of their inefficiency in evacuating the bowels—and of the soothing kindly operation of milder cathartics combined with opiates.—The

first operations procured by the cathartic infusion, contained considerable quantities of whitish, pasty puruloid matters, such as I have found in the large bowels in dissections of cases of this disease. My notes do not state whether this patient had been bled or not, previously to my visiting him.

CASE XVIII. Mr. R., age about 35, of middle stature, robust, of good constitution and good general health:—was attacked in the forenoon of Nov. 3,—and took of his own suggestion 20 grs. of calomel. About 6 P. M. of the same day he presented the following state—*great restlessness, intense and agonizing pain through the forehead, eyes and in the loins—face very turgid with blood—eyes bloodshot, shining and protruded—pulse very full and frequent—surface hot—some gastric uneasiness without having vomited—epigastrium insensible on pressure—thirst inconsiderable—tongue moist and moderately coated.*

He was forthwith bled copiously, which mitigated his pains and the excitement—and was followed by a profuse diaphoresis—warm tamarind water was given him as a beverage, his feet were put in a mustard bath—and he was moderately and carefully covered in bed. The cathartic infusion was ordered, but before it was prepared, he commenced vomiting spontaneously. The vomiting continued with much urgency for some time, when the patient took the first potion of the infusion which quieted the stomach promptly and completely.

Nov. 4, The infusion operated copiously on the bowels—the patient slept a little the latter part of the night—stomach is quiet, the other symptoms remain the same as yesterday, except moderated in severity.

Repeat the mustard bath—keep the bowels open by a moderate use of the infusion—*caet. contin.*

This course was pursued for three days—the pains and vascular excitement gradually subsided—no adverse symptoms occurred, and no other medication was employed. The patient became firmly convalescent about the fourth or fifth day.

CASE XIX. T.—Steward on steamboat R. of short stature, stout, age from 20 to 25—of good constitution and generally enjoying good health—was attacked in the afternoon of November 4th, with the usual symptoms of the epidemic, viz—*intense pain of forehead, eyes and loins—face turgid with blood—eyes bloodshot and shining—pulse frequent and full—great gastric uneasiness and occasional vomiting—great restlessness*, incessantly changing his position in bed—intellectual operations coherent.

He was immediately bled about 16 oz., which mitigated his sufferings, and was followed by copious perspiration—his feet were immersed in a warm mustard bath—he was carefully covered in his berth,—took of the infusion of senna and rhubarb freely, and warm tamarind water for a beverage,

The infusion produced copious bilious and feculent stools—a mild glow was kept up on his surface by the occasional repetition of the mustard bath, the warm beverage and careful covering. The pains, vascular excitement, and restlessness regularly and gradually subsided until the 3d day, when he became convalescent.—During the attack he wholly abstained from all nourishment.

CASE XX. Watchman on steamboat R. P. November 4. This case is so nearly similar to the preceding in its symptoms, treatment and termination, that I omit the details.

CASE XXI. *Yellow Fever succeeded by an attack of Congestive Fever.*

M. C. S., living on the strand, aged about 27 years, of middle stature and good constitution, has been a good deal exposed in this country, and his general health is somewhat impaired.

He had a tolerably severe attack of yellow fever on November 6th, characterized by pain in the forehead, eyes and loins,—injected, shining eye,—flushed and bloated face,—augmented and equally diffused warmth of sur-

face—pulse full, open and frequent, and irritability of the stomach.

It yielded pretty readily to free venæsection, warm mustard baths for the feet, the infusion of senna and rhubarb, and careful guarding against exposure to the cold. The third day he appeared pretty firmly convalescent. The next day about 12. M., he was violently attacked with congestive fever and presented the following state. *Surface shrunk and cool—extremities cold—epigastrium and right and left hypochondriac regions hot and incapable of enduring the lightest pressure—the spleen* which is, I believe, affected with chronic enlargement, was so gorged with blood as to protrude the surface of the abdominal parietes, and it was exquisitely painful on slight pressure,—*pulse very small, almost thready and very frequent—face shrunk and haggard—respiration frequent and laborious—very urgent thirst—copious vomiting of porraceous matters.*—Mind clear, no jactitation,—no pain of the forehead or eyes—some pain of the loins.

His feet were immediately immersed in a hot mustard bath—mustard plasters were applied on his upper and lower extremities. He took of an infusion of senna rhubarb and manna, but without relief. I then gave him 35 grs. of calomel in syrup and repeated the dose at the expiration of eight hours—subsequently he took the same quantity of calomel at intervals of twelve hours. *His stomach was quieted*; in three days his pulse regained its healthy volume and frequency,—his surface, its equably diffused warmth—the respiration was natural—the tenderness of the epigastrium subsided. From this time forward, quinine was given freely, and he was in a few days able to walk about—but wearing the aspect of extreme dilapidation. His gums were *very slightly* touched.

There was a marked exacerbation of the symptoms,—about noon on the two days following the attack of congestion. During the remission of the congestion, the pulse did not regain its volume nor was the heat of the surface restored—the system did not re-act. Mustard plasters were worn on the limbs *constantly*, while the congestion lasted. No particular care was taken to guard this patient against exposure to air while suffering under the congestive attack—a very important part of our treatment in cases of yellow fever.

This patient had been *boating* on the Buffalo bayou. I did not regard this as yellow fever terminating with a bilious disease—but that the debility occasioned by the first disease was the exciting cause to the miasmata of the bayou, which produced an attack of congestion.

I have seen in several cases of yellow fever, smart congestion of the portal system, but in none was it so considerable as to veil or obscure the characteristic symptoms of the disease.

CASE XXII. L.—The case of this patient has been alluded to in the history of the epidemic, as among the first that occurred. It was omitted in its proper place, and I now pass over the early history of it as offering nothing new. About the fifth day of his attack, he discovered in the night that he was bleeding from the gums. In the morning when I saw him, I ordered two grains of sulphate of quinine, in good claret wine, every two hours. This course was pursued about three days. The hæmorrhage continued about sixty hours. He emaciated with extreme rapidity, became gradually *very yellow*, and this hue was most intense about the eighth or ninth day, when convalescence appeared firmly established.—He recovered slowly without adverse symptoms.

CASE XXIII. I was requested to visit Mr. M. at the bakery. On my arrival, I found him ejecting black vomit freely; his case had been pronounced hopeless by two physicians who had seen him previously, and abandoned him. In his countenance and manner were very strongly depicted that indescribable union of anguish of the feelings, and sluggishness of the intellectual faculties, that harassed mental condition which appears more desirous of present repose than anxious about the result of the disease.—To my few inquiries he answered rather sluggishly and indifferently, betraying a defect of memory amounting almost to incoherence. He complained only of thirst and sleeplessness. I professed to his friends

my inability to do more than smooth the pillow of death and ordered him ten drops of black drop every four hours. Returning in the evening, eight hours after the former visit, I found him sleeping quietly and sweetly. After a time he awoke greatly refreshed, and accosting me with a cheerful countenance and in a pleasant and prompt manner, said "I am so proud to be able to sleep once more."—His friends thought there was renewed ground for hope:—I disabused them and expressed my great willingness for them to make trial of any means that might be suggested by others. I learned on further inquiry that they had misunderstood my directions and given ten drops, once an hour for four hours—in all forty drops in four hours—and then had discontinued them. After I left, they sent for a physician, who prescribed what was supposed to be an emetic, during the operation of which the patient died.

This case, and I might add others of a similar character, shows that we need not always fear using opiates in the *exhausted* condition of the brain, lest they produce coma. On the contrary, by their judicious use even in hopeless cases, they renovate or preserve the clearness of the intellect, bring together the scattered, disjointed ideas, *lengthen* the hours of life,—an object some times of immense importance—and soothe the pillow of death.

CASE XXIV. Oct. 4, Mr. B—r from 30 to 35 years of age, of short stature, has been some years in Texas, enjoys tolerably good general health, was attacked about 5 days since. I visited him this morning in consultation, when he presented the following state: mind clear—pulse of moderate frequency and regular,—surface of a lemon hue, dry, of the temperature of health nearly—stomach very irritable with occasional ejection of *black vomit*—black passages from his bowels—difficulty of urine—thirst—tongue moist—some tenderness of epigastrium—watchfulness. His treatment has been in general, I am informed by the attending physician, bleeding, mercurial and other cathartics and revulsives to the surface. He died in the evening.

Oct. 5. *Sectio cadaveris*, 15 hours after death.—Ex-

ternally of a deep yellow hue, not much emaciated—chest very prominent; limbs rigid. *Lungs* sound. *Pericardium* contain a small quantity of yellowish serum—*cavities of heart* contain a considerable quantity of darkish blood.

Stomach contains two or three ounces of a turbid fluid of an intensely dark chocolate color—it is black vomit. That portion of the mucous membrane surrounding the cardia to the distance of about an inch, is the seat of an intense red injection or sanguineous engorgement evenly diffused; the mucous tissue itself is here smooth, of healthy firmness and thickness. The rest of this membrane is of a pearl white, thickened and softened; the portion adjacent to the pylorus is utterly destitute of injection, and here the thickening and softening are the greatest; a few bright red points are scattered throughout the remaining parts of this tissue, most numerous in the great cul-de-sac. A large brown patch is situated in the lesser cul-de-sac, the pyloric portion of the mucous coat is thrown in rugæ and studded with several papillæ of the size of the head of a small pin.

Intestines—externally dry and of a dull brownish color: they contain considerable quantities of a dark slimy fluid, in which black flakes are swimming. Their mucous coat is smeared with a dirty starchy matter; the duodenal and ilio-cæcal portions are injected of a deep red—small red patches are met with, in different portions of the intestinal tube; the remaining portions of this organ are of a dull greyish white intermixed with extensive patches of a brownish color.

Liver, externally and internally, of a light fawn color; its substance is dry, destitute of bile.—Gall bladder contains a *small* quantity of extremely tenacious black bile—*Gall ducts* empty.

Urinary bladder empty and contracted. *Kidneys* sound. *Pancreas* and *spleen* natural.

CASE XXV. Mr. B—n age between 40 and 50, of middle stature, robust and of full habit—a free liver—was attacked on Oct. 4, with *severe pain in the forehead, eyes*

and loins---face flushed and turgid---surface warm with occasional free perspiration---great and incessant restlessness---thirst considerable---epigastrium somewhat tender on pressure---stomach quite irritable.

He was bled and took 20 grs. of calomel. The vascular excitement and pains were somewhat diminished---he vomited severely. The mercurial treatment was pursued in this case to its close. He took 20 grs. of calomel every 8 or 10 hours---it was given in syrup, in pills---alone, and in combination with Dover's powder---and with small quantities of opium, near the termination of his case. His bowels were freely moved with castor oil---after its operation, the mercurial treatment was resumed. The warm bath, sinapisms extensively to the extremities, blisters to epigastrium, cold and warm beverages were employed at different periods in conjunction with the mercurials. The thirst and irritability of the stomach steadily increased, until they became perfectly uncontrollable. The patient did not sleep at all. Twenty four hours before his death, on the morning of the 7th, it was observed that his surface had assumed in places a pale lemon hue, and had become of nearly the natural temperature. His mind was clear, his pulse had the frequency and volume of health; and this condition of the intellectual faculties and of the circulation continued till a very short time before dissolution. The irritability of the stomach persisted; the matters ejected soon displayed the unequivocal characteristics of black vomit; about 20 hours after which he expired, on the morning of the 8th Oct,--the commencement of the 5th day of his disease.

Oct. 8. Sectio cadaveris---six hours after death.---Surface of an intense yellow, with livid patches about the hypochondria---fat---body not yet cold.---*Lungs* exhibit a little cadaveric infiltration.---*Heart* sound.

Abdomen, all the organs still warm. The portal vessels are full of blood.

Liver large, of a mahogany color, contains in its substance a considerable quantity of darkish fluid blood. *Gall-bladder* small, not distended, destitute of bile, contains a small teaspoonful of mucous matter and several dark bottle green concretions, varying in size from the head of a pin to a large grain of wheat, and having the consis-

tence and tenacity of Tripoli paste. Internal coat of the gall-bladder deeply injected and granulated. Biliary ducts are permeable and contain a small quantity of thin yellowish mucus.

Stomach contains half a pint of black vomit—the flakes are abundant and very large. The mucous membrane surrounding the cardia is deeply and evenly injected to the extent of upwards of an inch in every direction—this tissue is here of the usual thickness and firmness, with a perfectly smooth surface; the color is intermediate between venous and arterial red. The rest of the mucous coat is white, thickened and softened, and interspersed with bright red points and patches which are most abundant in the great cul-de-sac, and wholly wanting in that portion of the mucous coat immediately adjacent to the pylorus; the lesser cul-de-sac is the seat of several darkish brown patches, and the surface of the tissue is here studded with several papillæ, and rugose. The mucous coat is so much softened as to be nearly pulpy, particularly the portion investing the lesser cul-de-sac or antrum of the pylorus.—Dark flakes, the ‘grounds’ of black vomit are adherent to all the middle surface between the cardiac and pyloric portions of the mucous coat.

Intestines, viewed externally, are of a darkish color in various portions of the tract. This color is seen to be owing, in some degree, to that of their contents. The *duodenum* is of a dirty greyish white, throughout its entire length—its mucous surface is covered with a starchy secretion, and presents several small patches of red injection; its minute glands are much developed. There exists a similar condition of the ilio-cæcal portion; the patches of Peyer are very prominent.—Considerable quantities of a dark gelatinous fluid with black flakes swimming in it, are found in different parts of the intestinal tube. The black flakes are confined to the superior portion of the tube and appear to have descended from the stomach.

Urinary Bladder empty, contracted to a point.—*Pancreas, Spleen, Kidneys* present no traces of disease.

A few of the dark bottle green concretions are found in the duodenum, where they appear to have been carried from the gall bladder by the violent efforts in vomiting. I regard them as biliary concretions, and not the product of

the present disease. They do not resemble at all the matters of black vomit. The inspection of the liver and its appendages renders it clear that the black vomit could not have traversed the biliary ducts.—An inch or thereabouts distant from the middle of the great curvature of the stomach, the mucous membrane was deficient about one half of a line in diameter, as if a portion of it had been removed with a punch. I was not satisfied whether to regard it as an ulceration or not.

CASE XXVI. L.—Aged about 25, of middle stature. I was invited to see this patient in consultation, on the 6th inst., the fifth day of his disease. His condition was truly awful. He was alone in the room without an attendant; lying on the bed in every variety of position, sometimes on his face and knees, with no covering but his shirt—bleeding at the gums—ejecting black vomit—passing dark stools, which, where they had dried on the floor, resembled baked blood—his mind sluggish, incoherent, wandering over past or distant scenes, and unconscious of his present state—his whole surface of deep yellow, cool—pulse slow—tongue rather thin, moist with the hæmorrhage from his gums. Four days previously, this patient, I was informed, was attacked with the assemblage of symptoms described in the preceding cases. His case was regarded as hopeless, especially in the destitution of attendance for him. He died on the night of the seventh and eighth—about the seventh day of his attack.

Oct. 8th. Sectio cadaveris.—Surface of the deepest yellow hue, with livid patches of depending parts, particularly of the hypochondria.—Limbs rigid, moderate embonpoint.

Lungs and heart sound. A small quantity of yellow serum in the pericardium.

Liver large, dry, and of a light drab color externally and internally.

Gall bladder moderately distended with dark viscid bile.

Stomach externally, of a dull white, marbled appearance—its bloodvessels visible in their course through its parietes—contains upwards of half a pint of black vomit, in-

tensely dark and quite turbid. The portion of the mucous membrane surrounding the cardia, is injected with blood, pretty evenly diffused, has a smooth surface and is of the ordinary thickness and consistence. The rest of the mucous coat is of a dull white color, with a few bright red points and small spattered patches, mostly existing in the great cul-de-sac—and with large brown patches in the small cul-de-sac. The mucous membrane immediately adjacent to the pylorus presents neither red point nor dark patch. Large rugæ of this membrane exist in the small cul-de-sac. This tissue is thickened and much softened except in its cardiac portion. That portion of it investing the pyloric half of the stomach is so softened that it can be scraped with the finger nails into a pulp. Numerous small dark flakes adhere to the internal surface of the stomach, except the portions surrounding the cardia and pylorus.

Small intestines viewed externally, present a dark marbled appearance, owing in part to the dark starchy fluids they contain. They appear however to have imbibed so much of this color, that when washed they preserve a darkish marbled hue.

The duodenum contains a quantity of black vomit which appears to have descended from the stomach; the follicles in its mucous coat are prominent—the patches of Peyer situated in the lower portion of the small intestine, are very large.

Urinary bladder contains a small quantity of flocculent urine.

Peritoneum, pancreas, spleen, kidneys, present no traces of disease.

CASE XXVII. Mr. F., aged about 25—died in the night of the 18th and 19th inst., of the prevailing epidemic—about the 14th day of the disease—has not vomited for some time, it is said, before death. Treatment various, not well known.

Oct. 19. *Sectio Cadaveris.* Surface yellow with livid patches, particularly of the depending portions. Moderate embonpoint. Limbs rigid.

Lungs. Considerable cadaveric infiltration; sound.---
Heart sound, loaded with fat, considering his age; a tea-spoonful of yellow serum in the pericardium.

Liver of usual color, dappled with light drab, externally and internally; contains a small quantity of blood in its vessels, rather dry; of its usual dimensions and healthy firmness.

Gall Bladder moderately distended with dark and ropy bile.

Stomach and *bowels* externally are of a darkish clouded, or marbled appearance. *Stomach* contains upwards of half of a pint of a very dark liquor, resembling strong turbid coffee. Small dark flakes are adherent to the middle portions of the mucous coat of the stomach. These flakes—the flocculi of black vomit—are so firmly adherent, that the stomach being removed entire from the body, it requires smart washing in water with the application of the hand to remove them. The flakes are most abundant on the middle portions of the stomach. The mucous membrane surrounding the cardia to the distance of an inch and a-half or two inches, was of its ordinary thickness and firmness, and about three fourths of this portion is the seat of deep sanguineous injection or engorgement. The color is pretty uniform and even, and not unlike that of an inflamed gum. No flakes adhere to this portion. The rest of the mucous membrane is of a pale white, thickened and somewhat softened; and the line of demarcation between this and the cardiac portion, is as apparent by the different thickness as by the different color of the two portions. A few small points and spattered patches of red are dispersed throughout the white and thickened portion of the mucous tissue, except that immediately adjacent to the pylorus. It is here however that the thickening and softening are the greatest. The mucous coat is neither dissolved or disorganized, but two small holes exist, about the size of a large pin's head, which resemble ulcerations. I cannot however assert confidently that they are so.

The first part of the *duodenum* is of a deep brick red, and presents a granulated aspect; as we descend, this condition gives place to a severe injection, where the blood appears still to be contained in the minute vessels. The rest of the intestines are of a darkish marbled color, their

mucous coat presenting no extensive injection, nor thickening nor softening. They contain a quantity of darkish gelatinous fluid; some of this fluid has a reddish tinge, especially that found near the juncture of the large and small intestines, as if blood had been mingled with it. I am unable to discover any anormal condition of the mucous tissue here. The patches of Peyer are not unusually large. No bile is found in any portion of the alimentary canal.

Urinary Bladder contains a moderate quantity of limpid urine in which a few white mucous flakes are swimming. Its entire mucous coat is gorged with blood, which gives its inner surface the uniform red appearance of the inside of the eyelid when moderately inflamed.—Is this a condition precedent to hæmorrhage from the bladder?—This condition of the mucous coat of the bladder is found on comparison, closely to resemble that of the injected portion of the mucous membrane of the stomach surrounding the cardia, which has been described above. It was stated of this case, that he had not ejected black vomit during life. The characters of this fluid existing in his stomach, upwards of half a pint in quantity were *perfectly unequivocal*.

CASE XXVIII. Mr. R. Oct. 23.—This person was attacked some days since with the characteristic symptoms of the prevailing epidemic. He called on an apothecary for some medicine, which he took; its nature unknown. I was requested to visit him about forty-eight hours before his death. I found him ejecting black vomit freely, restless, suffering severe thirst; his surface was of natural temperature, becoming yellow; his pulse near the standard of health; his mind sluggish, but tolerably coherent, towards the termination of his case, it wandered; epigastrium tender on pressure. I confessed my inability to afford him relief; and calomel and opium were given in combination, without much expectation of advantage.

Sectio Cadaveris, fifteen hours after death. Surface of a deep yellow hue, livid patches about the hypochondria, and other depending parts. Black vomit has run from his nose and mouth since death.

Thoracic viscera, sound ; moderate cadaveric infiltration of lungs.--An ounce of yellow serum in pericardium.

Omentum, slightly injected.

Stomach, moderately distended, of its usual dull white color ; contains a pint of intensely dark and turbid fluid, —*flocculi*, adherent to its internal surface.----On being washed, the mucous coat is of a dull pearl white, thickened and much softened throughout its whole extent. The thickening and softening are greatest of that portion which invests the pyloric half of the stomach. This tissue where it covers the small cul-de-sac, can be scraped readily into a pulp with the nails.

A few bright red, stellated points and patches exist—they are most numerous in the left portion of the stomach.

Small Intestines, externally of a darkish clouded appearance ; their superior portions much distended ; they contain large quantities of a darkish gelatinous matter. The mucous lining of the *duodenum*, is much injected, especially near the pylorus. The termination of the small intestine, for a few inches above the ileo-cæcal valve is greatly contracted, and quite destitute of any coloring matter. The mucous coat, here is covered with a thick whitish pasty matter, and studded pretty thickly with papillæ, some of which are larger than the head of a large pin. The mucous tissue is here thickened, and quite firm.--The large intestine presents a similar condition to the lower part of the ileon ; the papillæ are not so large nor numerous, and disappear after the middle of the transverse arch of the colon. Not a particle of bile in any portion of the alimentary canal.

Liver, of usual size and appearance, a little dappled with drab ;--rather dry. *Gall bladder*, contains a teaspoonful of dark yellow bile.

Urinary Bladder, natural, nearly full of limpid urine. *Pancreas*, spleen and kidneys, sound,

XXIX. Mr. T.—Of the previous history, occupation or general health of this patient, I have no information.—I saw him on the morning of the 3d. He was then vomiting a very dark turbid black vomit, in large

quantities. He was recently arrived from New York, had been sick about three days. I did not learn what had been his previous treatment.—Professing my inability to render him any permanent service, I made no prescription. The persons who took charge of him, as they have since informed me, gave him warm teas, wine, and paregoric. He continued to discharge immense quantities of black vomit—and died about 3 A. M., of November 5.—At 9 A. M., six hours after death, I examined the body. He was apparently, about 22 years of age—of middle stature, and inclining to fatness.

Deep yellow suffusion of the surface, with livid patches of the depending portions.

Thoracic viscera sound, a few drams of yellow serum in the pericardium. Some darkish blood in the cavities of the heart.—Cadaveric infiltration of the posterior portions of the lungs—no adhesions.

Abdominal viscera.—*Liver* of usual dimensions and firmness—contains a small quantity of venous blood. Parenchyma rather dry, no bile exudes on squeezing—externally and internally, the natural color is somewhat dappled with drab. Gall bladder contains a small quantity of thin, dark yellow bile.—Internal coat of gall bladder healthy. Biliary ducts rather contracted, and contain a small quantity of mucus and thin bilious matters. *Stomach.*—Peritonæal coat healthy—gastric vessels moderately distended with blood.—Stomach contains a pint or upwards of turbid black vomit of deepest dye, with a tinge of red when viewed in a strong light;—a few flocculi adherent to the mucous coat. This coat is *entire*, of a dull *white* color, *thickened* from pylorus to cardia, *softened*, especially about the lesser cul-de-sac, and can here with the nails be scraped almost into a pulp;—a few scattered and clustered points of bright *red*, as in *active* inflammation of this tissue: they are neither abundant nor large, are found about the lesser cul-de-sac, and dispersed along towards the great cul-de-sac; wholly wanting about the pylorus, their aggregate would amount to a circle from three fourths of an inch to an inch in diameter;—no erosions nor abrasions any where discoverable except of the edge of the cardia.—*Intestinal canal.*—externally dark colored, not gangrenous.—Peritonæal coat slightly injected.—*Duode-*

num distended, partly with air, and with a brown gelatinous fluid:---a few patches of bright red as in common duodenitis:---its mucous membrane elsewhere of a dull white, and of its ordinary thickness, and firmness;---the rest of the small intestines, present in their contents and the general appearance of their coats, a state similar to that of the duodenum, except that there are no red patches. The ilio-cæcal portion, is contracted and contains a brownish starchy matter more consistent than that in superior portions of the canal.---Glands of Brunner and Peyer not unusually developed.

Large intestines---contracted, pale, and contain small quantities of a whitish, *pasty* matter.

Urinary bladder, contains a few drams of urine-----and presents no obvious pathological lesion.

Kidneys sound.

CASE XXX. Dr. W. Nov. 11.---This gentleman arrived in Galveston, from Pennsylvania, during the epidemic, he was in the prime of life, apparently of excellent constitution and in robust health. He was attacked about five days since; and is said to have managed his own case. Dr. B., informed me that he saw him yesterday ejecting black vomit, and that he died in the night. I am not informed of any thing whatever, which was done in his case. I requested permission to examine his body which was granted.

Nov. 11. Six hours after death. Rather short of stature, stout frame, fat. Deep yellow suffusion of the surface with livid patches, especially about the depending portions.---Thoracic viscera sound. A few drams of yellowish serum in the pericardium. Large yellow coagulum in the left ventricle of the heart.

Abdominal Viscera.---*Liver*---surface of its usual color dappled with light drab; in its structure presenting no deviation from a healthy condition---a small quantity of blood of healthy appearance exudes from the extremitities of its vessels when cut. Gall bladder contains not quite a dram of thin, darkish bile---its internal coat presents a few bright red *points* of inflammation.

Omentum, loaded with fat—its vessels somewhat congested. *Stomach*—moderately distended, of a dull pearl white, externally—its blood vessels apparent from moderate distension with blood—peritonæal coat healthy—contains about a half pint or rather more, of black vomit resembling dirty turbid coffee. *Mucous coat considerably thickened and softened*, especially about the small cul-de-sac and a few flocculi adherent to its surface, of a dull white color from its pyloric to its cardiac orifice, except where it is interspersed with *bright red* points and patches. These are more abundant than in any other case examined—and exist in largest quantities about the great cul-de-sac of the stomach.—Where the points and patches are most densely aggregated, they do not present the uniformly diffused blush observed in the cases of B—n, L., and B—r; but are rather clustered points.—The edge of the cardiac orifice appear slightly abraded.

Intestines.—Portions of them livid externally, not gangrenous.—Colon perfectly bloodless, and pretty firmly contracted. The duodenum is much distended—contains considerable quantities of a black fluid like that found in the stomach—its mucous tunic smeared over with a dirty starchy matter—this tissue presents no appreciable lesion, being of its usual thickness and firmness, and destitute of injection.—The rest of the small intestines are smeared on their mucous surface, with starchy matters containing flocculi of black vomit. The *plaques* of Peyer about the *ilio-cæcal* valve are *enormously* enlarged or developed.—The edges of the *valvula conniventes*, generally are of a delicate pink. The colon much contracted and smeared on its mucous surface with a small quantity of white pasty matter.—not a particle of bile was found in the alimentary tract.

The different portions of the intestines apart from the matters they contain, offered no important pathological lesion, except that the minute glandular system of the mucous coat appeared to have been the seat of some morbid or inordinate action. The orifices of the glands of Peyer were rendered very distinct by the dark matters in them—and in my opinion the extremities of all the small glands were unusually patulous, particularly those of the duode-

num, and lower part of the ileon. The dark fluids in the upper portion of the intestines had descended from the stomach.

The bladder of urine is contracted---contains two or three drams of urine---and in a healthy state.

CASE XXXI. Nov. 19. Mr. S.—Aged about 25 tall and slender ; has been in feeble health for some time past ; has had a paroxysm or two of fever quite recently, from which he was imperfectly convalescent, when he was attacked about five days since with what he regarded as a relapse. He presented the characteristic symptoms of the prevailing epidemic ; the pains of the forehead, eyes and loins ; the shining eye ; turgid features ; warm surface ; full and frequent pulse ; and irritable stomach.

He was bled with very sensible relief ; his feet bathed in hot mustard water ; his bowels freely evacuated with bilious and faecal stools, by the infusion of senna, rhubarb and manna ; he was carefully and faithfully attended ; he vomited a little on the first day of treatment, but his stomach was soon quieted, he slept sufficiently, and appeared to be doing well until the third day. At this time he had several watery stools, which harassed him smartly. His stomach was quiet and he had no other unpleasant symptoms. To arrest the watery discharges, calomel appeared the appropriate, and a safe remedy ; it was given in a dose of twenty-five grains, and repeated. His stomach became irritable, its irritability increased ; opiates alone, in the form of black drop ; and by the counsel of another physician, combined with calomel, were given in vain, to allay the gastric irritability---he vomited in small quantities, a slate colored fluid ; became slightly comatose and died about the close of the fifth day, of treatment.

Sectio cadaveris, fifteen hours after death---surface of a deep yellow, with livid patches about the hypochondria. Limbs rigid.

Thoracic viscera sound---Cadaveric infiltration of the lungs. Pericardium, contains a little yellow serum.

Stomach contains upwards of a tea cup full of black vomit. The mucous membrane lining the right, or py-

loric half of the stomach, is of a pale white color, interspersed with a few bright red points, and small patches, thickened and softened. The mucous membrane of the left portion of the stomach is clean, smooth, of usual thickness and firmness; the great cul-de-sac, is the seat of a pretty extensive, extremely delicate, rose colored blush, the rest of the left portion, is of a dull pearl color.---I do not regard the rose colored blush as evidence of disease.

Small intestines, contain a considerable quantity of a brownish fluid, in their superior portions; in the duodenum and upper part of the jejunum, there are numerous black flakes, which appear to have descended from the stomach.---The contents of the intestines, are much lighter colored and thinner than any hitherto examined. A few patches of moderate injection of the mucous coat of the duodenum, exist near the pylorus. Glands of Brunner and Peyer, of normal size and appearance. Lower portions of the ileon, and the colon in its entire length, contracted nearly a point.---The mucous coat of the intestinal tube generally, is smeared with a very small quantity of thin mucus.

Liver of natural size and appearance, rather dry. *Gall Bladder*, contains a moderate quantity of thin, dark green bile.

Urinary bladder contains about half a gill of urine. *Pancreas*, spleen and kidneys sound.

Immediately below, and rather behind the kidneys, adjacent to the spine on each side, was a mass, about three inches by one and a half inches in dimensions, of clotted, bruised blood existing in the cellular tissue. This corresponds in situation to the pains of the loins so generally complained of in this disease. Does any connection exist between this mass of extravasated, clotted blood, and the pains of the loins?---I have not seen it in any other case.

Although I have written pretty fully on the subject of *post mortem* appearances under the head of pathology, it may not be amiss at the close of the cases of dissection, to make a very brief recapitulation.

In every case the stomach contained considerable quantities of black vomit, of a perfectly unequivocal character; and its mucous coat was thickened and softened; (expanded and flabby, without, perhaps, much accession to its substance.) The right or pyloric half suffered invariably more than the left. There was no erosion nor gangrene either of this tissue or of any other organ. In all cases there existed a deficiency of the biliary secretion without any observable structural derangement of the liver. In no case could a suspicion be entertained of the liver's having furnished the black vomit.—The intestinal tube exhibited traces of morbid action, but they were uniformly, of a less intense degree than those furnished by the stomach.

I cannot but regret that I was unable to make any examination of the brain or spinal marrow. They who have attempted to make dissections in private practice are aware of the obstacles to be encountered. Permission to examine the viscera of the thorax and abdomen was more than once denied me; and when given, it was usually with an injunction not to disfigure the body.

ERRATA.

Page 10, line 15, between the words "not accompanied" insert "*always.*"

Page 13, line 18, before "whey looking" insert the words "*slate colored.*"

Page 16, line 10, for two read *some.*

Page 16, line 14, for "curvature" "*cul-de-sac*"

Page 16, line 18, after "etat mamelonné," a point of interrogation, thus—"etat mamelonné?"

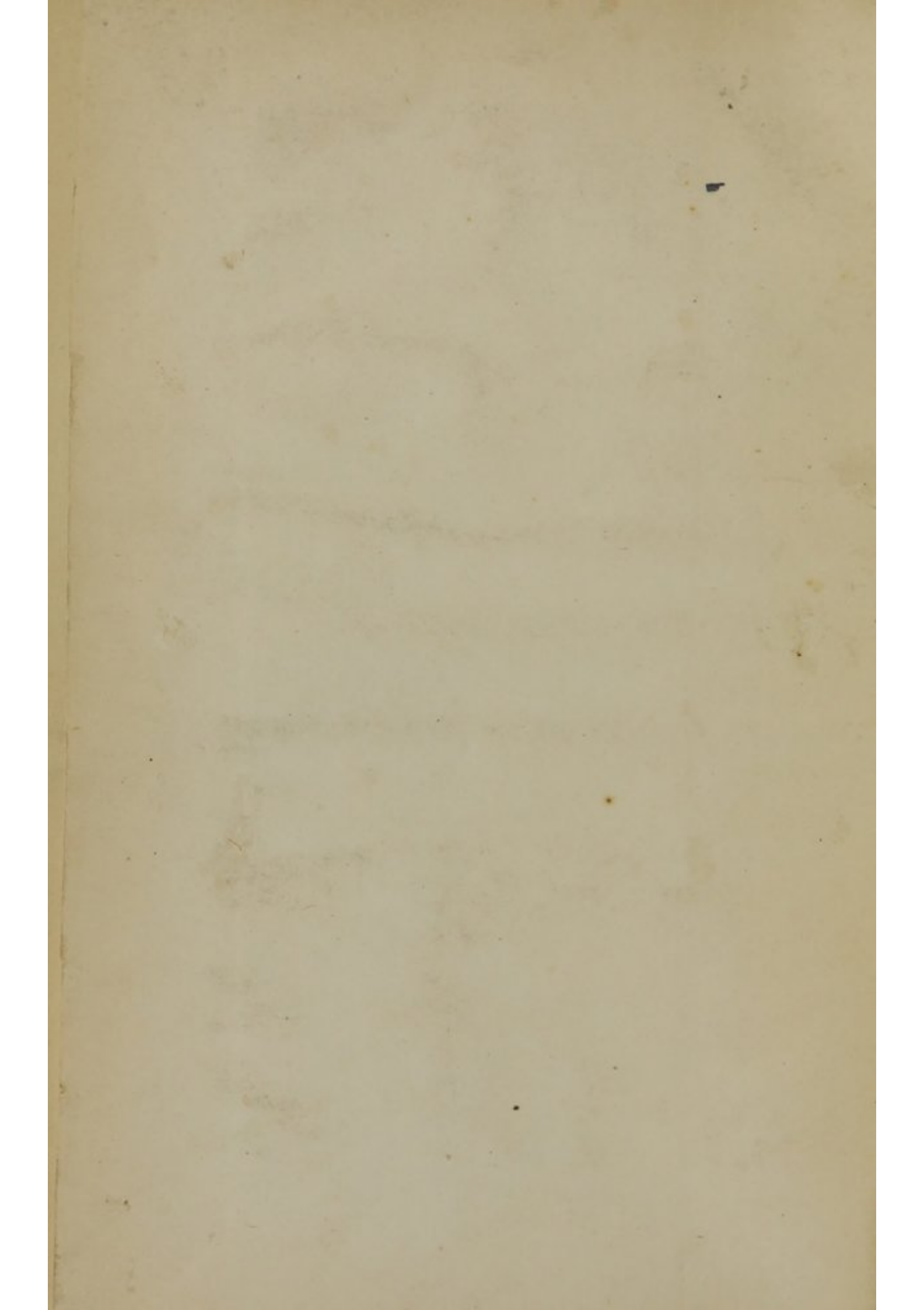
The last line of page 32 should be the first line of the following page, commencing the remarks under the head "*contagion.*"

ERRATA

Page 10, line 15, between the words "not accompa-
nied" insert "always."
Page 11, line 18, before "why looking" insert the
words "with each."
Page 15, line 10, for "two" read "some."
Page 16, line 11, for "centenare" read "centen-
nary." Page 16, line 12, after "centenare," a period of
interrogation, thus—"that was intended?"
The last line of page 32 should be the first line of the
following page, commencing the remarks under the head
"conclusion."

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